The Impact of State and Local Taxes
In
North Carolina and the Southeastern States

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PREFACE

The present study represents an attempt to provide some basic, quantitative information on the impact of state and local taxes in North Carolina and the other states of the Southeast. The report was designed to fulfill the requirements of Section 6 of Resolution Number 49 of the 1955 Session of the North Carolina General Assembly in providing as complete a record of the techniques of analysis and the results of the work as the limitations of time and resources would permit. The report attempts to offer all possible "proof" of the results as well as a detailed statement of the limitations that inevitably attach to the tools and the raw materials of an analysis of comparative tax burdens. Supporting evidence is presented in such a way as to permit checking and reworking by other investigators and to support extended calculations and additional explorations under more leisurely circumstances. In this respect, a conscious effort was made to be as exhaustive as possible in the reporting. The only exception to this self-imposed rule of completeness relates to those precautions which it was necessary to take to preserve the anonymity of individual taxpayers.

Because of the importance of the interstate comparisons of the present study, and because of the widespread interest in the comparative position of North Carolina among the states of the Southeast with respect to corporate tax burdens, Mr. Brandon Hodges, Chairman of the North Carolina Tax Study Commission, requested a summary of the interstate impact comparison. This summary has been separately published under the title of *Corporate Tax Burdens in the Southeastern States—A Comparative Analysis*. This summary also includes a brief description of the methods used in the interstate analysis.

In any study of the magnitude of that which produced the present report, the author's debt of gratitude is bound to be extremely large and due to many individuals. The debt is magnified when, as in the present case, the study must be conducted within the frenzied confines of a calendar year. The author is particularly grateful to Mr. Brandon Hodges, Chairman, and to the other members of the Tax Study Commission. At the outset the Commission expressed the view that the impact study should be conducted as a project of strictly independent and uninhibited research. This attitude was scrupulously maintained throughout the study.

A particular acknowledgement is due to the staff of the Tax Study Commission. Inevitably, this body assumed a floating character that added to the difficulties of the project, but always its members performed admirably under trying circumstances. Miss Sarah G. Bradford, Miss Nelda M. Clements, Mrs. Mary Pierce, and Mr. Benton Braswell, Jr., were especially zealous in the demanding tasks of calculating and typing and in preparing the Appendix and other tabular material. Mr. Harlan E. Boyles, formerly Staff Accountant of the Commission, and presently Executive Secretary of the Tax Review Board contributed much energy and experience to the progress of the study.

The project would have been impossible without the extensive assistance of the staff of the Department of Tax Research. Special thanks are due to Mr. James S. Currie, Director of the Department of Tax Research and Executive Secretary of the Tax Study Commission, and to Mr. Hudson C. Stansbury, Public Finance Analyst of the Department of Tax Research, who were helpful in all phases of the work and who exhibited extreme patience throughout. Mr. William O. Suiter, formerly Director of the Department of Tax Research, was always ready with comment and criticism and an enormous fund of information.

Valuable assistance was obtained from a large number of state and local government officials and university personnel in the eleven Southeastern states. Particular mention must be made of the following: Messrs. R. L. Hungerford, Chief of the Research Division, Alabama Department of Revenue; Pierce Culver, Chief of the Ad Valorem Tax Division, Alabama Department of Revenue; Dr. Robert A. Sigafoos, Tax Economist, Industrial Research and Extension Center, University of Arkansas; Dr. Wylie Kilpatrick, Executive Secretary, Florida Citizens' Tax Council; Professor Penrose B. Jackson, Florida State University; Messrs. C. G. Campbell, Director Property Tax Division, Georgia Department of Revenue; Fred L. Cox, Director of Foreign Corporation Income Taxes, Georgia Department of Revenue; John Shannon, Research Analyst, Kentucky Department of Revenue; Dean William D. Ross, College of Commerce, Louisiana State University; Messrs. Rufus W. Fontenot, former Collector of Revenue, Louisiana Department of Revenue; H. N. Eason, Division of Income Tax, Mississippi State Tax Commission; Otis W. Livingston, Chairman South Carolina Tax Commission; Z. D. Atkins, Commissioner, Tennessee Department of Finance and Taxation; and M. Watkins Rhodes, Division of

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SUMMARY OF MAJOR CONCLUSIONS

1. Among the Southeastern states North Carolina appears to levy the highest or nearly the highest state and local tax burdens upon manufacturing corporations.

2. The tax differentials between North Carolina and other Southeastern states appear to be *real* differentials and not merely *apparent* differentials. For some states, however, the North Carolina position is improved by the consideration of actual taxes as opposed to hypothetical taxes.

3. The most important origins of the interstate tax differentials, from North Carolina's point of view, are as follows:

   (a) North Carolina levies the highest corporate income tax rate of any of the Southeastern states with the exception of Kentucky. Kentucky's two-step rate of 5 per cent and 7 per cent usually results in an *effective* rate that somewhat exceeds North Carolina's 6 per cent levy;

   (b) North Carolina's failure to include a sales factor in its statutory allocation formula for manufacturing corporations tends to inflate North Carolina income tax burdens for most corporations. The absence of a sales factor has little effect upon corporations whose North Carolina activities are about evenly distributed between manufacturing and selling. The absence of a sales factor has its greatest effect upon corporations whose North Carolina activities are restricted to manufacturing. Those states which, for some corporations, make use of more severe statutory allocation formulae than does North Carolina also permit (or require as a first condition) the use of separate accounting. For selling corporations the absence of a manufacturing cost or pay roll factor in the allocation formula results in the same high tax burdens in North Carolina as opposed to the other states of the Southeast as exists for manufacturing corporations.

   (c) As compared with some of the Southeastern states, North Carolina's burdens are relatively high because of the failure to permit the deduction of federal income taxes in the derivation of taxable net income.

(d) Although North Carolina's relatively centralized revenue system provides, in general, somewhat lighter property tax burdens than are common in other states of the Southeast, the same advantages do not necessarily accrue to all corporations. In some cases North Carolina property tax burdens are heavier than those imposed upon the same type of corporation in other states. North Carolina's property tax *rates* are almost always lower than those of other states. The low tax rates are, however, often offset by relatively high ratios of assessed to market value and by the relative absence of permanent exemptions in the North Carolina law. In addition, four states of the Southeast provide temporary (up to ten years) property tax exemptions for new corporations or expanding corporations, providing, in some cases, substantial net annual savings. The findings of the present study do *not* support the contention that North Carolina's high income tax burdens are *always* offset by correspondingly low property tax burdens.

4. The relative position of North Carolina among the Southeastern states in terms of the tax burdens imposed upon manufacturing corporations seems to be approximately reproduced in terms of the tax burdens imposed upon retail establishments of the chain store variety.

5. Other evidence tends to indicate that North Carolina occupies one of the top positions among the eleven Southeastern states in terms of the tax burdens imposed upon all types of corporations with multi-state operations.

6. Although manufacturing corporations tend to be subjected to higher taxation in North Carolina than in other Southeastern states, they also tend to be subjected to lower taxation (as a group) in North Carolina than do other types of corporations in North Carolina. This is, of course, true in the average sense only, and may not be true of individual corporations.

7. On the average, beverage, food, and drug corporations (in the trade category) seem to be subjected to lower than average tax impositions within North Carolina.

8. On the average, public utilities and recreation and amusement corporations seem to be subject to higher than average tax impositions within North Carolina. To a slightly lesser extent this also seems to be true of service corporations such as real estate and rental corporations, hotels, laundry and dry cleaning corporations, and so on.

9. The fact that some types of corporations are subjected to relatively heavy or relatively light taxation within North Carolina *may* be the result of the fact that small corporations are, in general, subjected to somewhat heavier taxation than are large corporations.

10. The results of the interstate analysis and the intrastate analysis may indicate that other Southeastern states go much further than North Carolina in favoring manufacturing corporations as compared with other types of corporations in the same state.

CHAPTER I

SCOPE OF THE STUDY

For a broad description of the scope of this portion of the problem assigned to the Tax Study Commission, Resolution Number 49 of the 1955 Session of the General Assembly must be taken as definitive. The significant language is contained in Section 2(c) of the Resolution, as follows: "... and to make a report upon the economic impact of the North Carolina tax structure upon the business enterprises of various types of industry, as compared with those of other Southeastern states."

The analytical requirements which define the scope of the study thus appear to be rather clear and uncomplicated. The existing revenue structures of North Carolina and the other Southeastern states must be the starting point. From this beginning the analysis must develop a body of facts that will offer convincing testimony as to both the nature and the magnitude of the total tax burdens imposed upon business enterprises in the states of the Southeast. However formidable the mechanics of such an assignment may appear, however necessary it may be to substitute estimation for measurement in the analytical method, however essential it may finally be to surround the answers with exceptions and qualifications, the *factual* emphasis of the legislative mandate is unmistakable. In an area as filled with strong opinions and as empty of basic facts as this one, and in an area with as many powerful implications for fiscal policy, the legislature has recognized the importance of a clear, quantitative approach designed to produce as much factual information as possible.

THE TAX STRUCTURE

Empirical explorations in the field of tax burdens have been rare and generally unproductive largely because of the extreme difficulties that must be overcome in order to obtain rather meager results. The first, but by no means the greatest, of these difficulties is directly related to the nature of the tax structure itself.

The multiplicity of tax types

Economists and tax philosophers have long argued the pros and cons of particular types of taxes in an attempt to develop

the logic of a "perfect" tax system. These arguments have often been based upon the tacit assumption that if any one method of transferring wealth from the taxpayer to the taxing authority can be proved to be inherently preferable to all others it should become the sole revenue instrument of that taxing jurisdiction to which it is best suited.

Whether because of a distrust of the philosophical bases of such conclusions, or because the conclusions themselves have been somewhat contentious, or because state and local governments have been forced to accept a real world that is rather less than perfect, state and local tax systems have been constructed upon *many* tax bases rather than upon a *single* tax base. In recent years it has become popular to rationalize the use of many types of taxes in the state and local structure as an attempt to develop a "balanced" tax system. Such a system, it is maintained, must contain revenue instruments that fluctuate with business conditions. It must also contain revenue instruments that do not fluctuate with business conditions. It must contain taxes on earnings, taxes on the source of earnings, and taxes on the use of earnings. It must contain taxes of general application that everyone is supposed to pay, and it must contain taxes of special application, designed for those who escape payment of the general taxes. It must contain taxes that assist economic development *i.e.*, it must not contain taxes that impede economic development, and it must contain taxes that can be used to control undesirable economic activities. An interest in the conservation of natural resources justifies the use of severance taxes, and an interest in the immediate exploitation of natural resources justifies the use of special depletion allowances under the income tax. An apparent disaffection for chain stores and for gambling explains the use of special levies in these areas, while an obvious affection for veterans and welfare agencies explains special exemptions under the property tax. A need for revenue produces taxes on tobacco and on alcoholic beverages. The close relationship between highway use and gasoline consumption justifies the imposition of gasoline taxes. Gift taxes represent an attempt to close a loophole in death taxes, and death taxes are popular, in part because they help to redistribute an unearned income. Taxes on intangibles represent an attempt to relieve a feeling of futility in the administration of the property tax. Gross receipts and gross premiums taxes attempt to provide a kind of income tax in areas where the net income

tax is difficult to apply. Licenses and franchise taxes are imposed for the privilege of doing business within certain political boundaries, while poll taxes are imposed presumably for the privilege of being a human being within certain political boundaries.

It may or may not be that the agglomeration of these many forms of taxation produces a "balanced" tax system. And even if this is the result, it may or may not be that a balanced tax system of this sort is desirable. But it cannot be denied that it does present a difficult barrier for the analysis and measurement of tax burdens. It is clearly not possible to talk about *the* tax burden of *the* tax system. Within any one taxing jurisdiction tax burdens experienced by different taxpayers will differ widely merely because of the number and variety of taxes to which they are subjected. In an interstate comparison the difficulties are compounded, for it is necessary to find out whether the burdens imposed upon a particular type of corporation under a set of North Carolina taxes are greater or less than those imposed upon the same type of corporation and upon different types of corporations under a completely different set of taxes in another state.

Administrative complexities

The analytical difficulties arising from the nature of the tax system do not, however, come solely from the multiplicity of tax types in common use at the present time. For tax *laws* do not automatically define tax *burdens*. However loud the protestations that often surround the legislative process, a tax burden is not experienced at the time a new revenue act is passed or an existing provision amended. A tax burden is experienced only when a tax is *paid*. It is an elementary but vital fact that there may be little or no relationship between the tax *law* and the actual tax *payment*. Between the legislative intent and the revenue result lies the important step of tax administration. In the absence of a careful and zealous administration of the law, the individual and total burdens implied by the law are likely to be purely illusory.

It must also be recognized that tax administration and taxpayer compliance are basically inseparable. Even the most eager and effective administrator cannot hope for great success if the evasion of taxes is considered to be a national pastime and if the misfortune of detection is commonly held to be the only

evil of tax evasion. Satisfactory compliance by individual and corporate taxpayers depends, in turn, upon clarity in the law and consistency and completeness in the administrative regulations, as well as upon the emotional and moral framework of the society in which the taxes are imposed. From another point of view, compliance with the law involves costs for the taxpayer, such as accounting and legal costs (although these costs may be even greater if the taxpayer chooses a calculated non-compliance), and these costs may be considered as part of the total burden of taxation even though they do not represent revenue for the taxing jurisdiction.

It is thus quite possible that identical tax statutes applied to identical taxpayers in two different taxing jurisdictions will produce markedly different tax payments, so that any method of analysis based upon an observation of the statutes alone and proposing to measure tax burdens must, no matter how carefully executed, be viewed with considerable skepticism. Unfortunately, the task of examining and quantifying administrative practices and compliance standards is an extremely difficult one. It is also likely to be unrewarding. Hence, the analytical dilemma is usually resolved in favor of the easier method, by which the point of view is narrowed to telescopic observations of the tax laws, rather than in favor of the technically more accurate method, by which the point of view is broadened to a panoramic survey of all the instruments and activities that lead to the payment of a tax.

Interstate complexities

These difficulties of empirical analysis would be severe enough if the area of investigation were restricted to North Carolina and its political subdivisions. But when it is concerned (as the present study is concerned) with an interstate comparison of tax burdens, the task presents a forbidding aspect indeed. Tax laws in two states are rarely similar and never identical, so that it is natural to expect differences in tax burdens from these statutory origins. Even minor differences in specific definitions can produce large differences in tax payments. For some taxpayers these differences may make one state more desirable. For other taxpayers the same differences may make another state more desirable. The fact that the tax structure of one state is different from the tax structure of another state is the thing that makes an interstate comparison necessary. But the fact that these interstate differences are not uniformly distributed

within the two tax structures means that a comparison of individual taxpayers (or at least of individual classes of taxpayers) is essential, if meaningful results are to be produced.

But if the analyst is impressed with the infinite variety of basic tax laws in interstate comparison, he must be even more impressed with the infinite confusion of administrative practices, court decisions, attorney generals' opinions, and special statutory and administrative provisions for relief. Administrative regulations may exist for one state and not for another, or for one tax and not for another. In property tax administration, assessment levels are subject to wide variation between taxpayers and between two points in time, in spite of the fact that laws and constitutional provisions explicitly require uniformity. In some states and localities the administrator is permitted wide latitude in interpreting the law, so that, in any case involving a slightly unusual situation, it is impossible to determine a tax liability without an official, *ad hoc* declaration by the administrator. In other jurisdictions the law is detailed and definitive, so that administrative clarifications and legal decisions are both minimized and generalized. In some states the statutory provisions for relief are much more flexible and much more generous than in others, and in some cases an attempt is made, *through the administrative process,* to create an incentive to business enterprises and wealthy individuals to invest, employ, and spend within their jurisdictional boundaries.

There is much evidence to suggest that administrative standards and compliance attitudes show marked interstate and inter-regional differences. That these differences are less dramatic than those exhibited by the laws themselves is probably due to the fact that they are less easily discovered. It is not unreasonable, however, to expect the character and the vigor of the administrative process at all levels of government to reflect the historical patterns of the region's economic development and the prevailing character of its social, economic, and political institutions. These differences are undoubtedly greater as between the large economic "regions" of the United States than they are between states in the same region, so that the restricted geographical scope of the present analysis (the eleven Southeastern states) somewhat reduces the importance of this analytical difficulty. But the Southeastern states are by no means homogeneous in historical background and in social, political and economic heritage. The same forces that have produced differences

in the tax laws of the Southeastern states have also produced important differences in the attitude of the people to governmental institutions and in the attitude of governmental institutions to the people. Furthermore, the kinds of problems that are being brought to the state administrator and to the local administrator as a result of industrialization and the rapidly changing complexion of the economic face of the South are, of necessity, different from the problems that have been brought to these officials in the past. That these recent developments in economic environment have created serious problems of tax administration has been indicated by the fact that several of the Southeastern states have recognized the need for sweeping organizational changes. When translated into the political realities, the recognition of the need for basic structural changes in the administrative machine has, to be sure, often resulted in relatively minor adjustments to the façade. The point remains however, that the changes in tax administration, as in the tax laws themselves, indicate a growing uneasiness as attempts are made to solve new problems with old tools. Furthermore, in a general way, these changes indicate the essential connection between the economic institutions and the tax structure, in all of its manifestations. The additional observation that the several states of the Southeast have enjoyed quite different institutional backgrounds points to the existence of differences in prevailing attitudes to tax administration and tax compliance This situation creates an additional and serious analytica difficulty.

Informational deficiencies

The difficulties of interstate comparison are magnified particularly with respect to local tax levies, by the astonishing paucity of dependable information. The atmosphere of mystery which surrounds much of the fiscal activity of local governments in the United States is indicative, at best, of a most cavalier attitude on the part of local government officials to the principle of an informed electorate which serves as a philosophical rationale of any system of political democracy. At worst this secrecy is indicative of an attempt to conceal gross inequities and administrative insufficiencies by the suppression or the disguise of information which should be not only "available" to the public but published in a form that lends itself to public analysis and interpretation.

This deficiency in the data is, of course, greatest in the field of property taxation, although it is by no means restricted to this much-maligned tax. Unbelievable though it may appear in a society as devoted to keeping records and accounts as ours is, it is impossible, in many states, to discover the total taxes *collected* by units of local government, let alone to explore the unaccountable meanderings of the assessment process or the wild confusion of other local administrative practices.

Once again, of course, it is necessary to draw sharp distinctions between the practices of the several states involved in the present study. Fortunately, North Carolina is one of a small number of states which have done much to remove these barriers to factual interpretation. As was pointed out above, many of the informational difficulties are associated with the local property tax and other levies of local government. It is well known that North Carolina has de-emphasized the property tax as a revenue device, by the assumption at the state level of many of the traditionally local responsibilities. Thus, in the sense of their revenue importance, at least, the blank spots in the North Carolina data tend to be minimized. This situation, of course, is fortuitous rather than designed, but the analyst must accept his favors where he finds them. Furthermore, the emphasis placed upon research in North Carolina, as represented, in particular, by the work of the Department of Tax Research, has provided excellent sources of information that are as reliable and complete as resources will allow.

The situation is not nearly as happy in some other states of the Southeast. Assessment ratios for some counties are not published in any form, and two or three letters to assessment officials will bring no response whatever. In such cases it is extremely difficult to find anyone, either at the county or the state levels, willing to make even an educated guess as to the proper assessment ratio to apply in an interpretation of the burdens of a property tax levy. In some cases, this may, undoubtedly, be explained by the fact that no one (even the assessing officer) *knows* what the proper ratio would be for a new manufacturing establishment or for a new business of any kind. It may even be that the assessing officer is honestly unable to say what the prevailing practice is in terms of the ratio of assessed to market value for taxable properties within his jurisdiction. In other cases, however, the unavailability of information is to be ex-

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plained only by the more reprehensible traits of sheer disinterestedness or outright attempts at concealment.

Even in the relatively enlightened atmosphere of North Carolina, however, serious problems of the availability of information do arise. For example, in the matter of the application of the allocation formulae to the total net income of corporations in the determination of a corporate net income tax liability, the Tax Review Board has been granted the authority (under Section 105-134 of the North Carolina General Statutes) to extend relief to corporations that satisfy simple procedural requirements and extremely general substantive requirements. It is impossible, under present statutory arrangements, for the ordinary citizen of North Carolina or the interested observer in other states to find out the kind of relief granted, the amount of tax funds involved in the relief granted, or the specific reasons for the granting of the relief. It is even impossible to find out what sort of relief *would be* granted under a set of generalized circumstances, for the Board acts only upon the individual cases that come before it as fully documented requests for relief or as fully documented requests for information by a firm contemplating location in North Carolina.[1] Whether or not this procedure is justified by the circumstances that surround it is not in question at the moment. The point is that *it is not possible, by a simple observation of the law or by any other technique available to the ordinary citizen or investigator, to determine the effect of the North Carolina Revenue Act upon a foreign corporation subject to the allocation provisions.*

The scope of the study—the tax structure

The term "tax structure" is thus not a term that describes a simple element in our economic life. Rather it is a term that describes a complex pattern of statutes, constitutions, administrative regulations, administrative practices, court decisions, legal dicta, standards of compliance, taxpayer recognition of statutory and administrative requirements, and the multi-phasic processes of collection. For some purposes it may, of course, be sufficient to examine only one element of the total structure. Indeed, the Tax Study Commission has found that for some parts of its study program such a restricted examination is quite appropriate. But when the scope of the question is in terms of the *impact* of taxes or the *burdens* of taxation, it is clearly

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1. The problems of income allocation, as related to the authority and work of the North Carolina Tax Review Board are further discussed in Chapter IX.

not possible to stop short of the actual, final payment of taxes without seriously endangering the validity of the results.

It is thus apparent that the mandate of Resolution Number 49 can be completely fulfilled only if (1) all types of taxes are included for all taxing jurisdictions in the eleven Southeastern states; and (2) if consideration is given, not only to the tax laws but to all of the elements of the tax structure that are instrumental in determining the final tax payment.

In this, as in other portions of the study, however, the clear meaning of the governing Resolution must be viewed as a counsel of perfection rather than as a standard of minimum performance. The foregoing discussion has indicated many areas in which the basic raw materials for a factual analysis of tax burdens do not exist. Although the methods adopted in this study did involve the collection of much original material available from no other source, it was impossible, in the time available for the study, to extend this ferreting operation into all phases of the problem. As a result, it is necessary to make early, if somewhat reluctant, concessions to the status of the basic data in the delineation of the scope of the study.

An attempt is made, in the ensuing analysis, to examine the burdens of taxation in each of the eleven Southeastern states.[2] Attention is paid, of course, to the problems of local tax burdens within each of these states, although no attempt is made to examine each of the countless local jurisdictions that comprise the total governmental structure. The analytical problems associated with inter-local differences in tax burdens are indeed severe. The methods used to deal with these problems are described in detail in the methodological introduction to each of the approaches adopted in this study. Although these methods may hardly be said to produce the final answers to the local tax element of the total tax burden, they do permit the declaration that the *scope* of the investigation embraces both state and local tax levies.

With two important exceptions, all types of taxes payable by business enterprises within the jurisdictions selected were considered to lie within the practical scope of the study, and all are treated, in some way, in the analysis. The two exceptions are the sales tax (and the associated use tax), and the unemploy-

2. The states, as defined in the United States Department of Commerce, *Survey of Current Business*, are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.

ment insurance tax. An early attempt was made to include the sales tax, but the difficulties of reconciling conflicting accounting systems and differing concepts of the impact of the tax made it necessary to redefine the scope of the study in midstream. Unemployment insurance taxes were assumed to lie beyond the scope of the impact study partly because of the special problems involved in analyzing and comparing experience rating schemes, and partly because some investigators have insisted that unemployment insurance levies are not taxes at all.[3]

Difficulties of method also made it essential to adjust the scope of the study to include only those taxes levied upon *corporate* business enterprises. Special problems of data collection are associated with the interpretation of the tax burdens on partnerships, individual proprietorships, and other forms of business organization, not the least of which is the large number of such enterprises and the relatively minor tax-paying condition of many of them. While it is extremely important to study the impact of taxes upon non-corporate business, it was felt that attention should be concentrated, at this time, upon that class of enterprise most meaningful from the point of view of economic development and most likely to be responsive to differences in the impact of taxes. However, the most important deciding factor was the extreme difficulty of handling the mass of cases in a useful and accurate way.

As indicated above, it was felt that the value of the study would be seriously impaired if it did not take into account the total act of taxation. This would clearly not be possible if the scope of the study were narrowly confined to an examination, however intensive, of the tax *laws* of the Southeastern states. Although it was found to be impossible to establish clear, quantitative comparisons for such activities as administration, compliance, and collection, the methods adopted emphasize the final payment of taxes and hence include, by implication, all of the motions that are part of the imposition of a tax burden.

THE MEANING OF "IMPACT"

In an attempt to fulfill the requirements of the 1955 Session of the General Assembly, a serious conceptual difficulty was encountered in the use of the term "impact". If the impact of tax-

3. See, for example, Harold M. Groves, *Financing Government*, Henry Holt and Company, New York, third edition, 1950, pp. 327-328; and Edward D. Allen and O. H. Brownlee, *Economics of Public Finance*, Prentice-Hall, New York, 1947, pp. 372 et seq., for a general discussion of the terminology.

ation upon business enterprises was to be measured it was obviously necessary to know at what point in the economic process the operation should be conducted, and, as precisely as possible, what the object of the investigation should be. Once again, of course, it was necessary to recognize the possibility that the implied intentions of the General Assembly could not, because of the nature of the problem, be perfectly matched by the analytical techniques.

A terminological debate

In the rather fussy lexicon of public finance the term "impact" is given a particular meaning that requires a recognition of the fact that the person or business who makes the tax return, writes the check to the collection agency, and technically "pays" the tax, is not necessarily the person or business who bears the ultimate burden of the tax. In this terminology there is an important distinction between the *impact* of the tax and the *incidence* of the tax.[4] The point of impact of the tax is the point at which the first effects are felt. It describes those individuals or businesses making actual payment to the collection agency. The incidence of the tax is on those who bear the "ultimate" burden of the tax. Between the point of impact and the point of incidence lies an economic process—a process by which the burden of the tax is passed from shoulder to shoulder to its final host. One such process of passing the burden (although it is not the only one) is that known as *shifting*, by which the original taxpayer passes on the burden of the tax through an increase in the prices of the things he sells or a decrease in the prices of the things he buys. Thus, we are instructed by the traditional theory of shifting and incidence, as well as by common sense, that it would be a mistake to assume that the retailer who makes the sales tax return and mails his check to the collection agency actually bears the whole burden of this tax. If he is a rational individual, and if he chooses to maximize his profits both before and after the tax, he will (for example) pass on part of the sales tax by increasing the price of his product to consumers. To this extent, the consumers will bear the burden of the tax and the incidence will lie upon them.

It must also be made clear that the process of tax shifting is merely an extension of the whole process of price determination.

4. These and other related concepts are definitively discussed in E. R. A. Seligman, *The Shifting and Incidence of Taxation*, Columbia University Press, New York, 1927, Introduction.

If the individual businessman is able to determine the prices of the goods or services he sells he is also able to determine whether a particular tax will be shifted or absorbed. The *effects* of the decision upon sales and profits will, of course, be determined by the kind of market situation in which the businessman finds himself, but the decision itself belongs to the entrepreneur. Furthermore, this authority is not abridged by any provision of law, except for those provisions that have the effect of determining the base price. Many state laws, for example, insist that sales taxes *must* be passed on to the purchaser.[5] Such provisions, however, are little more than legalisms designed to assure the purchaser a deduction for federal income tax purposes and designed to clarify the legal relationship between debtor and creditor. If the seller wishes to absorb the tax he simply lowers his base price by the amount of the tax, adds the sales tax to this lowered price, and charges the same total price as he did before the tax was levied. The total price would be *quoted* in such a way as to indicate 100 per cent shifting, but the facts of the case would show 100 per cent absorption. Only when the law or an administrative agency sets out to determine the base price itself, as is approximated in the case of wartime price controls or in the case of public utility rate regulation, can the economic prerogative of shifting or absorption be taken from the individual entrepreneur.

A large part of the theory of shifting and incidence is concerned with the problem of how *much* shifting will take place under a given tax. This, of course, is a natural extension of the problems of *whether* the tax will be shifted and *to whom* it will be shifted, but it emphasizes the economic conditions in which the "taxpayer" finds himself. Without attempting to reconstruct the usual theory, it may be pointed out that this "economic condition" must include such things as the type of product being produced; the demand for the product in general; the demand for the product as produced by a particular firm, as this is

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5. The North Carolina sales tax law contains only a declaration of legislative *intent* rather than an unequivocal mandate that the tax be shifted. The relevant language of Section 105-165 of the General Statutes is as follows:
"Retail merchants *may* add to the price of merchandise the amount of the tax on the sale thereof, and when so added shall constitute a part of such price, shall be a debt from purchaser to merchant until paid, and shall be recoverable at law in the same manner as other debts. It is the *purpose and intent* of this article that the tax levied herein on retail sales shall be added to the sales price of merchandise and thereby be passed on to the consumer instead of being absorbed by the merchant.
"Any retail merchant who shall, by any character of public advertisement, offer to absorb the tax levied in this article upon the retail sale of merchandise, or in any manner, directly or indirectly, advertise that the tax herein imposed is not considered as an element in the price to the consumer, shall be guilty of a misdemeanor." Italics added.

affected by the nature and degree of competition among the producers and sellers of the product; the variability through time of the demand for the product, as this is affected by changes in the demands for other products and by changes in the community's disposable income. And since the decision to shift the tax or not to shift the tax is usually a decision that must be made by an individual businessman, the theory must, in some way, take account of the principles that determine business decisions as well as the methods available to the business community for a careful calculation of its own advantage.

It should not be surprising that the problems of shifting and incidence are the subjects of a lively and continuing controversy—even within a purely theoretical frame of reference.[6] But however the conflicts are resolved, the distinction between the impact of a tax (or of a tax structure) and the incidence of a tax remains as an important factor in tax burden analysis.

Hence, there arises a problem of scope for the present study. Should the language of Resolution Number 49 be taken at its face value? If so, the study should clearly be concerned with a description of those individuals and institutions who transfer dollars from their own bank accounts to the bank accounts of the taxing authorities, whether or not the transfers represent real burdens. Or should the scope of the study be defined more broadly, on the assumption that the term "impact" is used loosely (from an economic point of view)? If the latter question is answered in the affirmative, the study must clearly attempt to locate and measure "ultimate" burdens, without especial concern for those who originally make the dollar transfers to the taxing authorities. From the point of view of the collection and

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6. Neither should it be assumed that there is perfect agreement on terminology. In one modern school of tax theory, for example, it is suggested either that the older terms are virtually useless in the solution of significant problems or that their reference must be so broadened as to make them almost unrecognizable. One such argument would hold that tracing the elusive tax burden is really a much more difficult stunt than implied by the traditional theory. If the purchaser of an article subject to the sales tax or to a specific excise tax finds the price of the product increased because of the tax and by the full amount of the tax, he may continue to purchase the article in the same quantity as before. In the older theory, he could be said to be bearing the entire burden of the tax. This will mean, however, that he will have less money left over after purchasing the article than he would have had if there had been no tax. He will thus have less to spend on other (perhaps non-taxed) commodities. The sellers of these other commodities will feel the "burden" of the tax through reduced sales, and will, in turn, be forced to reflect their lower earnings in decreased savings or decreased consumption, as well as by decreased purchases from suppliers. The chain effects is, of course, of infinite length, with the "burdens" of the original imposition spread out over each link. Since the burden of the original imposition can thus be traced only by examining the effect of the tax on the purchases of all commodities, as well as its effects upon such economic aggregates as employment, national income, savings, and consumption, the complexity of the tax shift becomes much greater than that pictured in the simple price-shifts of the traditional approach. There is, of course, much merit to the argument advanced by this "total-effect" school, but the narrower concepts still seem to provide the most useful framework for the analysis of practical state and local tax problems, even though it must be admitted that the burdens postulated are not likely to be "ultimate" burdens.

interpretation of the data, the first definition is certainly to be preferred. From the point of view of the theoretical usefulness of the results, the latter definition is to be preferred.

The "official" criterion of usefulness is stated in the purposive language of Section 2(b) of Resolution Number 49 of the 1955 Session of the General Assembly. This language indicates that the study shall be conducted and recommendations offered "... to the end that our revenue system may be stable and equitable, and yet so fair when compared with the tax structure of other states, that business enterprises and persons would be encouraged by the economic impact of the North Carolina Revenue Laws to move themselves and their business enterprises into the State of North Carolina."

Although this portion of Resolution Number 49 relates to the basic characteristics which the *future* revenue structure of North Carolina must have if alterations are to be proposed, rather than to the factual requirements of a study of the *existing* revenue structure, it has clear relevance to the definition of the scope of the so-called impact study. For it is this language which gives real meaning to the term "impact" and describes the thing that is to be measured. It is clear that the factual analysis should be designed to answer two kinds of questions (1) Does the existing structure of taxation in North Carolina represent a total burden that is equitably distributed among business enterprises operating in the State of North Carolina? This is, primarily, a question of internal equity, although many other questions of an economic character are closely related to it. (2) Does the existing structure of taxation compare favorably or unfavorably with the tax systems of other Southeastern states in terms of the burdens which they impose upon business enterprises? This is, primarily, a question aimed at the problems of industrial location and economic development, although it, too, contains many other economic questions worthy of exploration.[7]

It would therefore seem to be obligatory that the scope of the study be such as to embody the broadest possible definition of the term "impact". The analysis of the equity effects of existing or proposed taxes cannot be meaningful unless it is made to refer to actual tax burdens affecting economic welfare rather

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7. As stated above, Resolution Number 49 also emphasizes the need for *stability* in the tax system. Problems of stability, however, may always be expressed as problems of revenue rather than as problems of burden as such, and hence are properly excluded from a study of the *impact* of taxation.

than to the often illusory tax burdens of original payment. Similarly, although business institutions may show some reaction to an original tax payment, they are likely to make locational decisions (if taxes are important in such decisions) upon the basis of reality rather than upon the basis of illusion. This would appear to be the case at least with respect to the distinction between the ability to shift the tax and the necessity of bearing the full burdens of the tax.

Once again, however, the character of the raw material and the condition of the tools of analysis make it necessary to construe the implied requirements of Resolution Number 49 rather liberally. While it is true that the basic statistical tools for a scientific measurement and location of the burdens of taxation do exist (if, by the term "burdens" we mean something capable of qualification), the concepts which permit the application of these tools are not now drawn with sufficient clarity to provide useful results. Furthermore, the number of variables that would have to be considered in order to give even approximate answers is so large as to make the venture totally impracticable for a study such as this.

From the point of view of the *measurement* of tax burdens, then, the most that can be hoped for is an analysis of the total tax payments of the original payers—that is, an analysis of tax "impact" in the narrow, technical sense of the term. But however this narrowed scope may be justified by the nature of the concepts involved and by the character of the analytical tools available, it must be understood to be a limitation to the usefulness of the results. In other words, all of the quantitative answers obtained must, in the consideration of policy, be tempered by a certain theoretical appreciation of the transferability of tax burdens.

The dimensions of a tax burden

There is one further conceptual problem concerned with the meaning of the term "impact" that must be discussed briefly at this point in order to clarify the scope of the study and to anticipate some of the problems of method. Even with the decision to measure tax burdens at the point of original impact, it is necessary to know what it is that must be measured. Is a tax burden a tangible thing capable of being measured? If so, what are its precise dimensions? Is it something which exists even when the taxpayer does not recognize it, or must the taxpayer be aware

of his afflictions before they can be considered to be true burdens? In a study such as this it is certainly not necessary to answer all of these questions in a final way, if, indeed, they are capable of being answered in any final way. But special problems of concept arise in the taxation of business enterprises—both corporate and non-corporate—that have an important bearing upon the methods that must be used to measure the impact of such forms of taxation.

With respect to non-corporate business, it is proper, for purposes of an analysis of tax burdens, to emphasize the fact that a business has no existence independent of the individuals in whom the ownership of the business inheres. This may also be the case for a great many corporate businesses, for in small or closely held corporations there is often a close identification of the owners (stockholders) with the business itself. In such cases, a tax burden on the business is a tax burden on the owners of the business. In another sense, it may be held that the business itself is incapable of feeling tax burdens, since the business is an impersonal economic institution that can feel neither the pains of taxation nor the joys of exemption. Neither of these points of view is at all inconsistent with the argument that the tax burdens experienced by the owners of the business may have an important *effect* upon the business decisions of these individuals, and consequently upon the operations of the business. But it would still be true that any tax imposed upon the business or using the activities of the business as a measure of the tax base, would merely represent a circuitous and disguised method of imposing an additional burden upon the owners of the business.[8]

For large corporate businesses, however, this interpretation is likely to be very misleading. Such enterprises are typically owned by many individuals who have neither the desire nor the ability to make decisions (other than those concerned with the purchase and sale of shares of stock) that will affect the company's operations. From the point of view of tax burdens, the most important corollary of this separation of ownership from control is the decision by corporate management to retain earnings for corporate expansion or other investments rather than to distribute earnings in the form of dividends to stockholders.

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8. This idea has often been used to support the conclusion that a tax levied upon corporate profits constitutes a form of "double taxation" when considered in conjunction with the personal income tax on corporate dividends. Although this may be true, it is difficult to see why such heat is generated over the taxation of the same income twice, when, in fact, the same income may be taxed *many* times in our complex system of multiple-taxation. A complaint on equity grounds must be made of sterner stuff if it is to survive the hazards of modern tax warfare.

Although this decision will certainly be *affected* by the nature and magnitude of tax burdens, it is not *made necessary* by these tax burdens. The "plowing-back" of profits is, in other words, a distinct and separate phenomenon that would exist whether taxes were high, low, or entirely absent.

Because of the fact that the corporation's profits are not automatically translated into the personal earnings of the corporation's owners, and because of the fact that the managerial decision to distribute or not to distribute corporate profits has an existence independent of the tax system, it is extremely difficult to say, on *a priori* grounds, whether taxes levied on the corporation will be paid from funds which would otherwise be used to pay dividends to stockholders or from funds which would otherwise be used to add to surplus and to provide for corporate reinvestment.

In theory, of course, any plowing-back of corporate profits should be reflected in an increase in the equity of each stockholder. The stockholder could elect to realize this equity increase immediately, in the form of a capital gain, or to extract it gradually, in the form of increased dividends. If this reasoning were valid, any tax levied upon the corporation and not shifted to the consumers of the corporation's product, would prevent the accretion of stockholder equity. Of course, if the corporation earned no profits during the accounting period to which the tax referred, the tax would serve to reduce stockholder equity. In any event, stockholder equity would be lower than it would have been if the tax had not been imposed. Thus, in theory, the decision of management to distribute dividends or not to distribute dividends makes no difference to the location of the burdens of corporate taxes. The burdens always lie upon the stockholder-owners of the corporation and are always individual rather than institutional. It would not be correct to apply the label "shifting" to the process which placed these burdens upon the stockholders, for the tax would, in effect, be a direct imposition upon the stockholders, with the corporation merely playing the role of a withholding agent.[9]

9. It is often claimed that all corporate taxes are reflected in the prices of things sold to consumers by the taxpayer, simply because the price must cover "all costs" if the enterprise is to operate profitably. This interpretation implies that all corporate taxes are "shifted". At the same time, a denunciation is put forth in terms of the double taxation of dividend income. It is here that the incompatibility of the two arguments becomes apparent. "To the extent that consumers or wage earners actually pay the tax, the 'double taxation' and similar equity criticisms of the tax are not admissible, for certainly the tax cannot be at the same time a burden on consumers and workers and a 'double' tax on stockholders. If the tax is passed on, it may be charged with the same inequity as a sale tax or a payroll tax but not with discriminating against stockholders." Richard Goode, *The Corporate Income Tax*, John Wiley and Sons, Inc., New York, 1951, p.45.

This theoretical approach may, indeed, be useful in explaining some types of corporate reactions to some types of taxes, but as a general explanation of the distribution of the burdens of corporate taxes it has obvious defects. The operations of the stock market, through which a corporate tax burden falling upon undistributed profits must be transformed into an individual tax burden are so complex and uncertain that it is impossible, for practical purposes, to predict the effects of a corporate tax on realizable stockholder equity. Thus, although there may be some theoretical validity to the conclusion that all or part of a corporate tax is, in reality, a tax upon the stockholders, it must be assumed, for purposes of *measurement*, that the tax burden is borne by the corporation itself, as a separate and distinct economic entity.

At least one serious problem of measurement is removed by the decision to clock the impact of corporate taxes at the level of the corporation itself. As an impersonal economic institution, the corporation is clearly incapable of experiencing the kinds of psychological burdens which make measurement so difficult in the field of personal taxation and which make interpersonal comparisons of tax burdens virtually impossible. A corporate burden need only be expressed in terms of the dollars extracted from the corporation by the taxing authority, and need not be concerned with the abstractions of individual personality. Individuals in identical economic positions who make identical tax payments do not necessarily bear the same tax burdens, since tax burdens have more than a simple dollar dimension in interpersonal comparisons. But it can reasonably be maintained that corporations in identical economic positions who make identical tax payments do bear identical tax burdens. As a first approximation, total dollars paid in taxes would seem to be a good measure of the corporate tax burden.

Regrettably, however, a comparative analysis must be concerned with more than a comparison of *identical* corporations. Problems of equity in taxation are found in the comparison of small firms with large firms, profit-making enterprises with those taking periodic losses, manufacturing corporations with distributive corporations, expanding corporations with corporations in decline. If problems of equity are at all important, some method must be devised for comparing the tax burdens of corporations in widely disparate economic situations. The total dollars paid in taxes is obviously an unsatisfactory meas-

ure. Consider two corporations, each with a total tax bill of $100. If one corporation has a net profit before taxes of $3 million and the other has a net profit before taxes of $3 thousand, it would hardly be proper to consider the tax burdens on the two corporations equal. Similarly, if two corporations have identical tax bills and identical profits before taxes, but markedly different net worth or total asset figures, a conclusion that tax burdens are identical would seriously distort the comparison. Clearly, what is required is some measure of the *tax-paying ability* of corporate business institutions.

Taxation may, for present purposes, be defined as a compulsory transfer of property rights from a private individual (or corporation) to the taxing authority. This definition, of course, implies that the total property rights possessed by the taxpayer will be lower after the tax than before the tax. It would seem, then, that the best possible measure of a tax burden would be one which related the dollar amount of the tax (the amount by which the corporation's property rights are reduced as a result of the tax) to the total property rights held by the corporation before the tax was imposed. One such measure would be based upon a calculation of *net* property rights, so that claims *against* the corporation would have to be deducted from the claims *of* the corporation. In a rough way, this concept corresponds to the net worth accounts of the corporation. In this method, tax burdens would be measured by expressing *total taxes as a percent of total net worth of the corporation*.

Unfortunately, however, there are several difficulties with this yardstick of tax burdens. In the first place, it assumes that taxes are paid *"out of"* net worth and that they have only a secondary claim upon the assets of the corporation. This is clearly not the case, for a tax liability must be counted with the most current items in the liability structure, as possessing a primary claim upon the assets of the corporation. It would, in other words, be possible for the corporation to have a considerable tax-paying "ability" with a very small net worth. Theoretically, the tax liability could even exceed the net worth of the corporation, in which case, of course, taxes would be paid by means of a liquidation of the assets and at the expense of the holders of other prime claims against the corporation's assets. In this extreme case the tax burden would no longer be solely upon the corporation, for part of it would lie upon those whose claims against the corporation could no longer be fully satisfied

because of the tax claim. Nevertheless, the point remains that the net worth items do not measure the absolute tax-paying ability of the operating corporation.

A second difficulty with the net worth measurement comes from the fact that net worth does not ordinarily reflect market valuations of the corporation's assets and liabilities, so that it cannot be said to represent the "ultimate" taxpaying ability of the corporation. In liquidation proceedings the market may place a higher or lower value on the assets and liabilities than that carried on the books of the corporation just prior to the liquidation. Furthermore, accounting practices and those management practices which dictate the character of the net worth accounts are not developed for the sole advantage of the tax analyst, and are often markedly different for different corporations. In the great majority of cases, accounting practices must necessarily avoid such difficulties to be of service to management, stockholders, and investors. But until the difficulties are removed, or until it can be shown that the differences between practice and perfection are proportional for all corporations, the measure of tax burdens based upon net worth must remain unsatisfactory.

In the theoretical sense, the absolute ability of a corporation to pay taxes (and hence, in a negative sense, the sacrifices involved in the actual payment) may be approximated by a consideration of the total assets of the enterprise. Such consideration would mean that the tax burdens would be measured by *total taxes as a per cent of the market value of total assets.*

The immediate impact of a tax upon a corporation is, of course, on its most liquid assets—cash and bank accounts—but it is obvious that the gross "wealth" of the corporation is more nearly measured by its total assets. Given time, the taxpayer could normally convert any of his assets into cash for purposes of paying a tax bill.[10] This measure avoids the theoretical difficulty of the net worth measure in that a consideration of total assets assumes that taxes have a prior claim upon the assets.

Although the measure based upon the market value of total assets is the theoretical ideal, it is subject to serious practical difficulties. There are, for example, important differences be-

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10. One suspects that many individual taxpayers who are so imprudent as to spend their incomes upon frivolous assets immediately after receiving the incomes, are forced, at tax time, to liquidate a portion of their holdings to meet their tax obligations. The withholding system has undoubtedly done much to solve this problem, both from the government's point of view and that of the taxpayer. The same problems can, of course, exist for a corporate taxpayer, although, in view of investment opportunities, the activity may not necessarily be said to be imprudent.

tween corporations in accounting practices, both in terms of the kind of items included in the asset structure (assets versus negative liabilities, for example) and in terms of the valuation of the assets (depreciation policy and the valuation of inventories, for example). Corporations with the same total assets and the same total tax payments may bear very different tax burdens because of the possibly "fictitious" character of the asset structure of one of them. In order to minimize these difficulties, taxes are sometimes expressed *as a per cent of physical assets* (land, improvements, and tangible personal property, in the terminology of taxation). This amendment does eliminate many of the difficulties contained in the measure based upon total assets, but its theoretical validity is also reduced. In addition, the problems of asset valuation are not solved in this way. The inability of an accounting system to measure "real" depreciation (in the sense of a reduction in *market* value through time as a result of the use of capital equipment), the practical impossibility of determining the market value of all asset items, and the fact that practices differ so widely as between corporations, remain as serious limitations of any of the balance sheet measures of tax burdens.

The most popular yardstick of corporate tax burdens is undoubtedly that which shows *total taxes as a per cent of gross receipts*. This yardstick owes its popularity to the relative ease with which the figures are obtained and to the relative clarity of its meaning. Gross receipts is usually taken to mean the total receipts of the business for a specified period of time (the accounting year of the corporation, for example) from all sources, less such things as returns and allowances. The insufficiencies of this measure are, of course, associated with the fact that the figures relate to an arbitrary period of time. There is no necessary relationship between the total receipts during this period and the fund out of which the corporation must pay taxes. When used for comparative purposes, the measure contains the additional defect that the relationship between gross receipts and distributable earnings differs widely for different corporations. This situation, of course, results from the fact that corporations in different technological and different competitive positions are faced with markedly different non-tax cost structures.

Of the several possible measures of tax burdens based upon the corporate income statement, the most theoretically valid

is that which shows *total taxes as a per cent of net profit before taxes*. This measure, too, suffers from the defect that it is based upon an arbitrary time period and is not necessarily representative of the absolute tax-paying "ability" of the corporation. It assumes that the corporation has total net earnings before taxes and that, if there were no taxes at all, all of this amount could be distributed to stockholders in the form of dividends. The tax payment reduces the amount available for dividends, and hence is an indication of the burden of the tax on the corporation (and, perhaps, on the stockholders). In interstate comparisons, however, the net income figure is by no means easy to calculate, especially in the case of a corporation with interstate business, for the income must be properly allocated to the states in which it was actually earned. For income of the "unitary" type, this allocation is not only difficult, but theoretically impossible, for the terms "unitary income" and "income allocated according to its source" are mutually contradictory. Some of the "formulae of convenience" that are used by many states in the application of state income taxes, however, can provide a useful measure of net income and, consequently, a useful yardstick for the measurement of tax burdens, even if such formulae do not produce results of outstanding purity.

With measures of tax burdens based upon the corporate income statement it is important that the yardstick figures be analyzed for more than one time period. Net profits before taxes can show up as a negative figure (that is, net losses may appear) in one year, even though the corporation had a substantial tax-paying ability as a result of the more enjoyable experience of earlier years. This analysis through time is particularly important when the results are to be used in an intercorporate or an interstate comparison of burdens.

A number of other measures are commonly used, either to facilitate special kinds of comparisons or to serve as approximate measures of general tax burdens. These include such measures as taxes as a per cent of total pay roll, taxes as a per cent of manufacturing costs (limited, naturally, to manufacturing corporations), and taxes per unit of total output. All of these have their uses, although none can be theoretically justified as a perfect, "stand-by-itself" measure of tax burdens.

It should be clear that a measure of the corporation's ability to pay taxes is the criterion that is most useful for the meas-

urement of comparative tax burdens.[11] Unfortunately, none of the corporate statistics that is normally available properly measures this financial ability to pay, and the one measure that is theoretically ideal (the market value of total assets) is not normally available in corporate statistics. In the present study, therefore, it has been necessary to fall back on the traditional, if impure, measures such as book value of physical assets, gross receipts, total pay roll, and (hopefully) net profits. No one of these is considered to be "best" under all circumstances, and no one of them is used as a single, isolated measure of corporate tax burdens. Taken by itself, each is extremely rough and unsatisfactory. Taken in combination and interpreted simultaneously, they can provide some convincing and, it is hoped, useful information.

The scope of the study—impact

In terms of the scope of the impact element, the present study is in clear violation of the requirements of Resolution Number 49 of the 1955 Session of the North Carolina General Assembly. Against all reason, except the sweet reason of practicability, the study is limited to an examination of the immediate impact of the taxes considered. In addition, the study is limited by the quantitative meaning attached to the term "impact".

Although neither of these limitations is at all unusual in studies of comparative tax burdens, more than the usual amount of space has been devoted to an examination of the reasons behind them because it is felt that they are significant limitations. Unfortunately, quantitative answers often have the appearance of finality and purity, even when they are, in reality, tentative and inexact. The foregoing, then, must serve as a warning against over-confidence in the answers, and against the use of the results to answer questions that are not asked in the study— questions which, for one reason or another, were considered to lie beyond the scope of the present investigation.

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11. The term "ability to pay", used here with reference to *corporate* tax burdens, should not be confused with the same term used with reference to *personal* tax burdens. As used to justify progressive rate structures in the personal income tax and death taxes, the term "ability to pay" has usually emphasized a *psychological* element, in the so-called principle of the diminishing marginal utility of money. Although the profitability of this psychological excursion may be questioned even with respect to the levy of personal taxes, it obviously has no place in an analysis of corporate tax paying ability. As used here, the term refers only to the *financial* abilities of the corporation, and these are clearly defined, at the maximum, as the total financial resources at the command of the corporation, undiminished by offsetting debts. For a discussion of the ability-to-pay principle as it affects the progressive rate structure of the personal income tax see Walter J. Blum and Harry Kalven, Jr., *The Uneasy Case for Progressive Taxation*, University of Chicago Press, Chicago, 1953, which should immediately be followed by Professor Harold M. Groves' antidote "Toward a Social Theory of Progressive Taxation", *National Tax Journal*, March, 1956, pp. 27-34.

TYPES OF BUSINESS ENTERPRISES

If the purposes of the study were defined solely by an interest in the relationship between tax burdens and industrial location, it would be possible to be highly selective in the kinds of businesses singled out for analysis. Without attempting to prejudge the question of how important interstate tax differentials are in the determination of industrial location, it may be concluded on broad theoretical grounds that many types of business institutions exhibit very little sensitivity to the attractions of relatively low state and local tax burdens. While it is possible to construct a theoretical situation in which the tax burdens associated with location in one state are so high, relative to those imposed by neighboring states, that industrial location of even these "non-sensitive" firms is prohibited, these theoretical tax differentials would, in all probability, have to be much greater than those which can reasonably be expected to arise from current taxing practices in the United States.

In general, the enterprises which might be expected to exhibit very little sensitivity to tax differentials are those which require particular kinds of resources which are expensive or impractical to transport, and those which require certain kinds of market situations. Where the availability of resources or the proximity of markets exist as strong pre-conditions to industrial location, tax differentials are likely to play a significant role only for the marginal firm. And even then, they are more likely to determine whether the firm will operate at all than they are to determine whether it will operate in one state or another.

If the purposes of the study were even more narrowly defined to include only those industries that would be capable of participating in a program for North Carolina's economic development, the list of business enterprises to serve as the subjects of the autopsy would be even smaller. It is clear that not all of the industries that *could* be attracted to North Carolina by tax advantages (or by the absence of tax deterrents) *should* be attracted to North Carolina, for the simple reason that not all industries have the same things to offer to North Carolina's economy and to a solution of its present problems.

With either of these purposes, then, it would be possible to rule out all of those enterprises that could not be brought to North Carolina no matter what the tax inducements; all of

those enterprises that are now in North Carolina and that would stay in North Carolina (if they would "stay" anywhere) no matter what the tax differentials; and all of those enterprises that could be induced to locate in North Carolina but that are, from the point of view of a sound program of economic development, relatively undesirable. The remaining enterprises could then be used as a selective sample of tax-sensitive, economically desirable industries in a test of the nature and the degree of the tax differentials between North Carolina and other Southeastern states.

The need for a sound program of industralization as part of a general program of economic development was, of course, one of the most powerful impulses behind the present work of the Tax Study Commission. As a result, it had an important bearing upon the scope and methods of the impact inquiry. But *"industrialization-at-all-costs" was not the battle-cry of the 1955 Session of the North Carolina General Assembly, nor of other responsible individuals both in and out of the government.* If it had been, the policy answers would have been superbly simple. They would have started with a request for a theoretical and/or empirical investigation to find out which industries were both desirable to the State and susceptible to a tax inducement. With answers to these questions, it would have been possible to grant complete tax exemption, a long-term tax moratorium, or even a "negative tax" in the form of an outright subsidy to these enterprises. If these lures were restricted to new enterprises, there would have been no immediate loss of revenue. Any loss of revenue resulting from the extension of some of the concessions to existing enterprises that were found to be sensitive to tax differentials and that were found to be desirable components of the North Carolina industrial machine could have been met by increasing the rates on whatever tax base existed at the time—emaciated though it might be.

On paper, such a program of governmental largesse would produce a very considerable movement of industry into North Carolina—at least until other states picked up the competitive mood and made small, peripheral improvements. And even in practice it might be expected to produce some significant increase in the size of the North Carolina industrial family. Certainly if taxes can be placed at a *high* enough level to keep industry out of the state (and the ceiling is unlimited), they can

be placed at a *low* enough level (if we admit the possibility of negative taxes) to bring industry into the state.

But to repeat, such was not the mood of the North Carolina General Assembly. It was clearly indicated that any revisions to the tax structure had to conform to the principles of *equity* as well as to the principles of industrial attraction.

The inclusion of the equity consideration means that the choice of enterprises to be examined in the impact study could not be made on a highly selective basis, with "undesirable" and "non-sensitive" enterprises completely neglected. If an equity comparison means anything it means a comparison of *all* taxpayers within a given jurisdiction. It means that tax-sensitive corporations must be compared with corporations that have no mobility at all. It means that small businesses uniquely indigenous to North Carolina must be compared with large businesses with operations in every state in the Union. It means that foreign corporations must be compared with domestic corporations. It means that manufacturing enterprises must be compared with retail, distributive, and public utility enterprises. It also means, of course, that individual taxpayers must be compared with business taxpayers, and that non-corporate taxpayers must be compared with corporate taxpayers.

As has already been pointed out, the present study is arbitrarily limited to an analysis of the burdens of business taxpayers, and, within the business group, to corporate taxpayers. To this extent, any equity findings subsequently displayed must be understood to be incomplete. And for this reason, it is important to emphasize the need for further work in comparative tax burdens within North Carolina. In particular, of course, it is important to know more about the tax burdens imposed upon small, non-corporate businesses, farmers, and wage earners of all kinds, before irreversible steps are taken which might significantly redistribute the total tax burden between these groups.

In the present study an attempt was made to include corporations of all kinds and sizes. In only two important cases was the attempt unsuccessful. Special difficulties arose in the collection of data for railway corporations. Although these were originally included in the study, it was found that the figures were not comparable with those for other types of corporations. It was, therefore, necessary to remove the quantitative references to railways in all parts of the study. It would have

been possible to design a separate study for railway enterprises so that the results would have been roughly comparable with those for other types of enterprises. Unfortunately, however, the time available for this study did not permit such separate analysis.

Perhaps an even more serious omission was that of operating insurance companies. The starting point for much of the quantitative analysis was the list of corporations required to file annual corporate income tax returns in North Carolina. Since insurance companies are subject to an in lieu gross premiums tax, they are not represented in the corporate income tax files. This omission, too, could have been prevented by a separate study of insurance companies, designed to connect with the larger piece. Once again, however, time was the limiting factor.

The statement of these significant omissions should also be taken as an indication of the need for future analysis of railway and insurance taxation in North Carolina and the other states of the Southeast. Both of these tax areas contain many elements of controversy and both are in need of a complete and objective analysis. The analysis should, furthermore, be on a *comparative* basis, establishing relationships between these enterprises and other types of tax-paying enterprises. The argument that such businesses are unique and that they must be separately treated in any discussion of tax burdens is too often little more than a means of avoiding a controversial issue and is occasionally a method of obscuring serious inequities in the tax structure. It may be that railways and insurance companies (and many other enterprises, such as other public utilities, banks, extractive industries, and so on) are ill-suited to the generalized application of certain types of taxes (notably, income and property taxes), but the adoption of special types of taxes to facilitate administration is not proof that inter-industry comparisons of tax *burdens* are impossible. In common with other businesses, railways and insurance companies usually operate under the corporate form of business organization. In common with other businesses, they normally operate under the impulse of a profit motive which appears as a desire for the distribution of dividends to stockholders and as a desire for corporate expansion. In common with other businesses, most railways and insurance companies are fortunate enough to be able to pay taxes. Neither is it meaningful to claim that some of these are regulated en-

terprises while others are non-regulated enterprises. Although the fact of regulation does add a new dimension to the business calculus, the basic motives and the basic operational characteristics of a regulated private enterprise are the same as those of a non-regulated private enterprise. If it is claimed that the existence of regulation means that the corporation automatically shifts its tax burdens to its customers, and that the measurement of *corporate* "burdens" is therefore futile, it may also be claimed that the absence of competition in other industries persuades many non-regulated corporations to do the same. The ability or the inability to shift taxes, and the degree to which taxes are in fact shifted are, in a very real sense, the products of the *total* economic environment of the business in question. One element of this environment may be governmental regulation, another may be the threat of regulation, another may be the fear of actual or potential competition by publicly-owned enterprises, another may be the competitive structure of the industry, and another may be the strength of the bargaining position of the labor force. In the calculation and comparison of tax burdens, the similarities between railways and insurance companies and all other business institutions loom much larger than the difference.

CONCLUSIONS

The boundaries of the present study are defined in several dimensions. These include the types of taxes considered in the analysis, the concept of the tax system as it relates to the total act of taxation, the qualitative and quantitative meanings attached to the term "tax impact", the types of business institutions included in the analysis, and the number of states selected for comparative treatment.

In all respects, the language of Resolution Number 49 of the 1955 Session of the North Carolina General Assembly was assumed to contain a statement of the broadest outlines of the study requirements. It was recognized, however, that, because of the amorphous character of the raw materials and the rough nature of the tools of analysis, it would be impossible to make the product conform precisely to specifications. In a number of instances it was necessary to contract the scope of the study to workable proportions. Thus, although the twin purposes of equity and industrial location would logically require the analysis of "ultimate" burdens, taking into account all of the

economic reactions to a tax imposition that tend to shift its burden from shoulder to shoulder, the impossibility of locating and measuring "ultimate" burdens forced a consideration of only the superficial burdens of original impact. And although the governing legislation clearly required the inclusion of all types of business institutions, it was necessary, for practical reasons, to concentrate upon corporate business, and, within this class, to omit quantitative references to railways and insurance companies. In terms of the types of taxes considered, it was necessary to make two important exceptions to the requirements. These consisted of the omission of sales (and use) taxes and unemployment insurance levies, both of which may, under certain circumstances, be considered burdens upon corporate taxpayers.

With these narrowing amendments, the scope of the study is contained in the following questions:

1. For a corporate taxpayer in a given industry, what total tax burdens are imposed by state and local governments in North Carolina?

2. How do these tax burdens compare with those imposed upon other corporate taxpayers in the same industry in North Carolina?

3. How do these tax burdens compare with those imposed upon corporate taxpayers in other industries in North Carolina?

4. How do these tax burdens compare with those imposed upon corporate taxpayers in the same industry in other states of the Southeast?

CHAPTER II

SOME PROBLEMS OF METHOD

Many productive efforts have been made to measure, on a comparative basis, the impact of state and local taxes on business institutions. Those conducted under the auspices of state legislatures or commissions have often had similar, if not identical, purposes to those of the present study, although the methods adopted have usually been applied exclusively to the kinds of interstate comparisons that permit a state to assess its competitive position with respect to the attraction of new industry or the retention of existing industry. Other studies have approached the problem of comparative tax burdens from the point of view of a particular business enterprise or of business enterprises in general, in order to produce advice on a proposed industrial location or in order to develop a methodology that could become a useful part of the pragmatic calculus of an expanding enterprise. In addition, there exists a number of excellent studies conducted by university research bureaus and independent academic personnel, representing a number of points of view and a number of methodological approaches.

In all such studies, the methodological conclusion that stands out in sharpest focus is the necessity of compromising the principles of scientific inquiry: the necessity of becoming reconciled to the weaknesses of the raw data and the impotence of the analytical tools. For the most part, these insufficiencies stem from the glorification of secrecy which has become a part of both personal and corporate attitudes whenever taxes are mentioned and which has, unfortunately, produced some minor deities in government itself. The futility of a crusade against this attitude and the impossibility of walking around it without the assistance of much larger resources than are commonly available in such study programs have led to the more or less conscious acceptance of makeshift methods and half-way solutions. Since the present study begins with the same feeling of futility and the same inadequacy of resources, it must, of necessity, be based upon the same less-than-perfect methods.

In spite of these difficulties, some extremely useful methods of analysis have been developed. If their limitations are fully appreciated, they can provide answers that are reasonably accurate and infinitely superior to the kind of guesswork that is

not uncommon in this area. In the present chapter, some of these methods are briefly explored for their good and bad points. In addition, the present chapter contains a summarized statement of the methods adopted for this study.[1]

METHODOLOGICAL POSSIBILITIES

The representative sample approach

In any quantitative description of a world as large and complex as that enclosed by the boundaries of the present study, the first method that should be explored is that based upon a representative sample of the total population.[2] In this case, of course, the total population consists of all corporate taxpayers in the eleven Southeastern states.

The theoretical requirements of the representative sample approach are clear. The total number of corporations selected for inclusion must be determined by the resources available for the study, on the general principle that, other things being equal, the larger the sample the better. The actual selection must be made according to strict rules of random sampling procedure, so that all elements of the population have an equal chance of being selected. If possible, the selection should be made from strata carefully designed to represent meaningful classifications in the real world, and with the sample representation of each stratum established in such a way as to indicate the statistical "importance" of each stratum in the total population.[3] A primary stratification might be based upon state boundaries, with proper account being taken of those corporations operating in more than one state in the Southeast. A secondary stratification might be based upon the major industrial types, so that tobacco manufacturing corporations in North Carolina would be distinguished from textile manufacturing corporations, machine shop corporations, or retail selling corporations in North Carolina, and so that all of them might be distinguished from similar industrial types in the ten other states of the comparison.

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1. A detailed description of the methods used is reserved for the several chapters dealing with each of the individual approaches. See, for example, Chapters IV, VI, and VIII.

2. The sample approach is described in Frederick E. Croxton and Dudley J. Cowden, *Applied General Statistics*, Prentice-Hall, New York, Second ed., 1955, passim. The basic procedures are, of course, generally applicable to empirical research in the social sciences and, indeed, to all problems of quantitative inquiry.

3. The term "population" is used here in its technical, statistical sense to mean the total number of items that could be selected. As stated above, it is, for purposes of the present study, the total number of corporate taxpayers in the eleven Southeastern states. Similarly, the population of each stratum is the total number of corporate taxpayers in each of the industrial classifications in each of the states.

The selection of the sample must be followed by the difficult
step of "measuring" the tax burdens of those firms selected. The
total taxes paid by each firm might be compared with the book
value of the firm's assets, the firm's net profits, the firm's gross
sales, or any other measure or.combination of measures con-
sidered to represent corporate taxpaying ability. The real diffi-
culty, however, is not in the selection of the kinds of factors that
may be used to measure tax burdens but in the collection of the
information so that it accurately reflects corporate experience.
How does one go about discovering the total taxes paid, the net
profits, the gross receipts, and the book value of physical assets
of a thousand or two thousand corporations operating in one or
more of the eleven Southeastern states? There are two major
sources of such information, neither of which, unfortunately,
is entirely satisfactory. These are, first, the tax returns filed by
the corporation with state and local revenue officials, and, sec-
ond, the corporation itself. The second of these sources may be
approached by means of a questionnaire directed to the corpora-
tion, by personal interviews with corporate officials, or, under
certain circumstances, by means of a direct audit of the cor-
porate accounts.[4] If, however, the sample is a very large one,
the only practicable methods are those based upon an examina-
tion of the tax returns and upon an information questionnaire.
Each of these has its own special hazards, but these are prob-
ably no greater than those associated with other techniques in
a tax burden analysis.

The next step in the representative sample approach involves
the aggregation of the individual measures of tax burden and
the determination of averages and other measures of central
tendency for each of the strata in the total population and for
the sample as a whole. This is the beginning of a long and more
or less complex activity known as "interpreting the data", by
which attempts are made to establish generalizations about the
entire population from a knowledge of the characteristics of
the sample. With these statistical devices it is possible to set
up comparisons between states, between industrial categories
within any state, and between the same industrial categories
in different states. It is also possible to determine whether the
variations in tax burdens between individual taxpayers in the

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4. For a discussion of the methods of obtaining the basic data see Joe Summers Floyd,
Effects of Taxation on Industrial Location, The University of North Carolina Press,
Chapel Hill, 1952, pp. 38-45. Although these methods are described with reference to
a slightly different approach, they are equally applicable to the representative sample
method.

same industrial categories are significantly greater or less than the variations in tax burdens between industrial categories and between states.

Theoretically, the sample approach is the ideal approach for problems of this kind, assuming, that is, the impossibility of full coverage. If the sample is carefully drawn, if the measures are accurately made, and if the results are interpreted according to scientific statistical procedures, the answers can be extremely useful as summary descriptions of the differences in tax impact between states and between taxpayers in the same state. Furthermore, if it were possible to match theory with practice, there would be no need to supplement the sample approach with other approaches, for, by definition, all other approaches are theoretically inferior and would add nothing to the level of confidence in the results.

But the practical difficulties of applying the representative sample approach to the problems of tax burden analysis are great and undoubtedly account for the fact that the method is rarely used in projects of this sort. They enter as serious limitations to the method at the very first step, the selection of the sample. There must, of course, be some source of information that will yield a list of all taxpaying corporations in each of the eleven Southeastern states, preferably by major industrial classifications (which must be uniformly delineated for each state). Needless to say, such a source of information does not exist. Although this limitation is sufficient to prevent the use of the method, it might also be observed that difficulties arise in the collection of the data. A study conducted under the auspices of North Carolina could hardly expect to have access to the tax returns of corporations doing business and filing tax returns only in Florida or Kentucky or Louisiana. And even if it were possible to select a reasonable sample in these states, the response to a questionnaire mailed to purely intrastate corporations in states other than North Carolina would, in all probability, be very small indeed. Thus, even if the sample could be selected, there would be no practical way of obtaining the information needed to produce a measure of corporate tax burdens on an interstate basis. These difficulties are crushing and effectively prohibit the use of the sample technique in the solution of the total impact problem presented to the Tax Study Commission. The method may still be extremely useful in the development of an *intrastate* comparison, but as the sole meth-

odological instrument of a study that is necessarily both intra-state and interstate in scope, the representative sample approach is, unfortunately, useless.

The hypothetical corporation approach

The hypothetical corporation approach involves the construction of one or more imaginary corporations with characteristics selected to emphasize whatever questions the investigator wishes to ask about comparative tax burdens.[5] The approach imposes very few requirements beyond the insistence that the hypothetical corporations be reasonably realistic in appearance and that the tax laws of the several states be carefully applied to the corporate statistics in the calculation of hypothetical tax burdens.

By nature, the hypothetical corporation approach is highly selective and embraces a very narrow range of the truth. Only a limited number of aspects of the tax structures of each state may be tested in any one hypothesis, and the mechanical difficulties of constructing a large number of models provides a practical limit to the scope of the hypothetical corporation approach. At the same time, this selectivity proves to be an important advantage of the approach, for it is possible to select particular aspects of the total problem and give them concentrated attention. Thus, if the problems of industrial location and economic development are considered to be particularly important, the hypothetical corporation approach is admirably suited to pinpointing the kinds of enterprises that would best fill the economic needs of the state.

The hypothetical corporation approach thus differs from the representative sample approach in the breadth of its coverage and in the fact that the corporations considered are hypothetical corporations rather than actual corporations. It also differs from the sample method in that the *taxes* are hypothetical. The computed tax figures have, in other words, an artificial character that is distinct from the artificial character of the corporations themselves. This is the case because the method is, for all practical purposes, restricted to an examination of the published laws and regulations for each state. Even if there were a corporation exactly like the hypothetical model, it would not neces-

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5. For a discussion of these and other methodological problems, see Floyd, op. cit., Chapter III; and Carl Shoup, *Is the Tax Burden on Manufacturing and Mercantile Concerns in New York Heavier than the Tax Burden on Similar Concerns in other Important States?* a monograph prepared for the New York State Tax Commission, mimeographed, passim. For an illustration of the hypothetical corporation approach, with, however, but little discussion of method, see *Report of the Connecticut State Tax Committee*, Hartford, 1949, pp. 62-67.

sarily pay taxes according to the strict letter of the law. Either because of the flexible moral standards of the taxpayer, or because of the application of special, unwritten provisions for relief, or because of the uncertain way in which the tax laws are administered, the differences between the law and the eventual tax burden may be very large indeed.

These difficulties have been recognized by most investigators with respect to the application of the property tax laws, and especially with respect to the administrative determination of the assessed value base of the property tax levy. In this area the differences between law and practice are so obvious and so monstrous that they could scarcely be neglected. But the recognition of a difficulty is not the solution of a difficulty. There is, unfortunately, no easily available method of measuring these administrative deficiencies and consequently no way of assuring the complete realism of the answers. The hopelessness of this situation has persuaded many investigators to neglect these levies completely,[6] although this commendable interest in objectivity hardly qualifies as an improvement in the hypothetical corporation method. Others have adopted, with varying degrees of success, various techniques for estimating the actual assessment ratios of particular state and local jurisdictions. None of these, however, can quite overcome the uncertainties of the process and the consequent uncertainties of the answers.[7]

The special attention which is usually given to property tax problems in the hypothetical corporation approach should not be permitted to hide the fact that the same problems exist in the application of the model to other types of taxes. Income and franchise taxes, in particular, are characterized by provisions for relief that often grant wide discretionary authority to the

6. See, for example, Clarence J. Turner, *Report on Comparative Study of Corporate Taxes in Fifteen Industrial States*, Pennsylvania State Chamber of Commerce, Harrisburg, 1938.

7. Mr. Marvin E. Lee, of the Faculty of the Department of Economics, University of North Carolina at Chapel Hill has suggested, perhaps facetiously, a revised hypothetical corporation approach, in which the researcher would actually set up a dummy corporation, properly chartered in Delaware. He would then go through the motions of planning a series of locations for a new plant in each of the eleven Southeastern states. With this method, a purely hypothetical corporation with a research function only would be given the added bargaining power of an actual enterprise. The results would, presumably, reflect this bargaining power in special tax arrangements that might be made with some jurisdictions. Aside from the embarrassment which this "actual-dummy corporation" approach might involve, and aside from its questionable morality, it could produce some rather misleading results. In the first place, the results would not be subject to objective test by other observers, and subsequent denials by tax officials would leave the interpretations in a somewhat chaotic state. The insistence on signed statements would be unduly inhibiting and would carry its own set of biases. In the second place, there is no reason to assume that the bargaining power of all firms is equal, merely because they are business institutions seeking industrial location. A large and well-known enterprise, with a locational offering that is extremely desirable from the point of view of the state's economy, is likely to receive more favorable attention than one that is small, unknown, and economically marginal. In any event, and in spite of the excellence of its sponsorship, this interesting proposal was not made a part of the present study.

tax administrator or other agency. Many specific details of these and other types of taxes are subject to conflicting interpretations. In the absence of clarifying litigation, regulations, and attorney generals' opinions, it may be assumed that the taxpayer will select that interpretation most in his own advantage, but there is no way of knowing whether his interpretation is the "correct" one or whether he will be permitted to follow the same course in the future.

The uncertainties which surround the application of the tax laws to the model corporation do not necessarily provide a reason for the complete abandonment of the hypothetical corporation approach. There is a sense in which it is important to test the impact of the tax laws themselves, and for this test the approach is admirably suited. But the method is a dangerous one if its limitations are not fully appreciated. It is too often used to support generalizations that are quite invalid. Strictly speaking, the answers which the method provides are applicable only to the types of corporations constructed in the hypotheses, and then they may be assumed to describe real tax burdens only if it can be shown that tax laws accurately reflect tax burdens.

The actual corporation approach

The actual corporation approach contains some of the elements of the representative sample approach and some of the elements of the hypothetical corporation approach. The resemblance to the representative sample approach comes from the fact that the measurements are of taxes actually paid. The resemblance to the hypothetical corporation approach comes from the fact that the subjects of analysis are consciously selected for certain rather specific reasons, so that the results have only limited applicability to the entire body of corporate taxpayers within the jurisdictions involved.[8]

There are two major variants of the actual corporation method. By the first, two or more independent corporations are selected in two or more taxing jurisdictions. By the second, a selection is made of a single corporation with more or less independent branch operations in two or more taxing jurisdictions. In view of the fact that one state's corporate tax records are not normally available for an investigation sponsored by another state, it is the second of these variants that is the more

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8. This method is discussed briefly in Floyd, op. cit., pp. 38-45; and in Shoup, op. cit., passim; and in P. H. Wueller, "Comparing Business Tax Burdens," *Bulletin of the National Tax Association*, June, 1943, pp. 264-270.

practical for a study such as this. It is also important that the operating units selected be similar with respect to products or services produced and with respect to basic corporate statistics. Once again, the actual selection of the sample is followed by the determination of the total taxes paid by each unit of the enterprise. This may be done by an examination of the tax returns, by the circulation of a questionnaire, by interview, or by a direct audit of the corporate accounts.

By choosing operating units that are similar, it is possible to measure comparative tax burdens under the actual corporation approach in much the same way as under the hypothetical corporation approach, that is, by a direct comparison of total taxes paid. If it were possible to find two corporations or two branch operations that were identical in every respect except for the taxes paid, it would be unnecessary to relate taxes paid to such things as net profits, book value of assets, and gross receipts. Since these figures would be the same for both units being compared, a comparison of ratios rather than of total taxes paid would add no refinement to the results. When perfect identity is lacking, these or similar computations are, of course, required, but the interpretive difficulties and the interpretive dangers are greatly reduced when there is substantial identity between the corporate units being compared.

The actual corporation approach does yield a measure of taxes actually paid and need not, therefore, be concerned with the differences between the law and the administration of the law, unless, of course, an attempt is made to *explain* the interstate differences in tax burdens. It automatically takes into consideration the total act of taxation, so that the tax paid is the resultant of all elements of the tax system, with the possible exception of the appeal and litigation machinery. Because of this exception to the general rule, and because corporations sometimes pay taxes under protest and are later awarded refunds or assessed additional taxes, it is necessary either to rule out comparisons for years in which these special problems exist or to study tax burdens over a period of years. In any event, as far as the realism of the tax burden measure is concerned, the actual corporation approach is clearly superior to the hypothetical corporation approach.

In other respects, however, the actual corporation approach is inferior to the hypothetical corporation approach. It is cer-

tainly more limited in the support it offers for *generalized* statements about comparative tax burdens. It is, after all, rather difficult to find corporations operating in more than one or two states with branch plants which are relatively independent in their operations and which are, at the same time, engaged in the same kind of productive activity and in approximately the same volume. Such comparisons are fairly easy to establish in the retail trade, but in manufacturing enterprises branch plants tend to be specialized and heterogeneous.

The collections approach

While the representative sample approach is based upon an analysis of *individual* tax burdens, the collections approach is based upon an analysis of *total* tax burdens. And while the representative sample approach attempts to generalize from the experience of the individual case, with only incidental reference to the tax burdens of the total population, the collections approach attempts no analysis of individual tax burdens and no analysis of the distribution of tax burdens other than that made possible by the examination of particular types of taxes.

There are many examples of the use of this approach as a general descriptive device and as a device to support other calculations, rather than as a method for the exclusive analysis of relative tax burdens.[9] In either case, however, the construction of the comparison is essentially the same. As its title suggests, the approach is based upon the total taxes collected by the jurisdictions selected for analysis. In the same sense that a comparison of simple dollar amounts of tax payments can be misleading in the comparison of unlike individual taxpayers, however, a comparison of simple dollar amounts of tax collections can be misleading in the comparison of unlike states. Certainly we would expect the total taxes collected in New York or California to be greater than the total taxes collected in New Jersey, South Dakota, North Carolina, or Iowa. The differences in total tax collections would clearly not be indicative of the differences in the burdens of taxation as between these states. The solution, once again, requires the determination of the tax-paying *ability* of the communities being compared. In this case, the most common measures of tax-paying ability are total population and total income payments during a given period of time. With these

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9. A particularly interesting analysis based upon tax differentials measured by the collections approach is Clark C. Bloom, *Studies in Business and Economics*, New Series No. 5, "State and Local Tax Differentials and the Location of Manufacturing", Bureau of Business and Economic Research, State University of Iowa, Iowa City, 1956.

figures, the tax burdens are simply expressed as total taxes collected as a per cent of total population (per capita tax collections), total taxes collected as a percent of total income payments, or as per capita total taxes collected as a per cent of per capita total income payments.[10]

The greatest difficulty in the collections approach, as related to the present study, is the difficulty of finding out the total collections of state and local governments in the eleven Southeastern states. Collection by state governments are, of course, readily available from a number of sources, although in some cases with a considerable delay. But collections by local governments are, in some cases, totally unavailable without a detailed audit of the records of governmental institutions involved. As with other approaches, the tendency is to neglect local levies and use the collections approach to test differences in state-level taxes only. In a tax burden analysis, however, this easy solution can provide serious distortions. States differ widely in the degree to which the functions of government are distributed between state and local units. North Carolina's highly centralized revenue structure (matching its highly centralized distribution of governmental responsibilities) would appear to impose unusually high tax burdens under the collections approach if only state-level taxes were considered. Thus, if the collections approach is to be used at all, it must be used for very restricted purposes or it must be based on estimates of local collections that are as accurate as possible.

As far as the usefulness of the results is concerned, the greatest difficulty in the collections approach comes from the fact that it cannot be used to analyze individual tax burdens. It is basic to the method that a single figure (such as per capita tax collections) is used to represent the tax burden imposed upon *all* taxpayers in a given state. There may, however, be wide differences between states in the way the total tax burdens are distributed among the major groups of taxpayers and among the individual taxpayers in each group. Since the present study is, by its legislative mandate, committed to a study of the burdens of taxation upon *business* taxpayers and, by implication, of the burdens of taxation upon particular kinds of business institutions, the collections approach would seem to have little to offer. To a certain extent it is possible to imply a certain distribution of tax burdens through an examination of particular

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3   10. ibid., pp. 14-17.

types of taxes.[11] Thus, it would be possible to compare those taxes levied solely on corporations (corporate net income tax, and franchise tax, principally) by one state with similar taxes levied by another state. But the difficulties of partial analysis arise, once again, as a serious restriction.

There is a sense, however, in which the collections approach can be used productively, even when the purposes of the study and the quality of the method are so apparently in conflict. If one of the purposes of the study is to examine tax burdens from the point of view of their possible relation to industrial location, and if it is reasonable to suppose that business enterprises make use of the collections approach (in however impure a way) as part of the calculation that lies behind a locational decision, the collections approach can be useful in describing the *appearance* of the tax structure of one state as compared with the *appearance* of the tax structure of other states. There is reason to believe that such calculations are commonly used for this purpose by business enterprises. Furthermore, even though the collections approach cannot tell a corporation what its tax burden in a state of proposed location will certainly be, it can, it seems, indicate the general level of taxation and, to some businessmen, the general philosophy of taxation in the state. Although these imputations are not necessarily correct, there is some value to knowing what other people think, especially if an attempt is to be made to propose the advantages of a permanent connection with such people. But whenever the collections approach is to be used for such purposes, it must be made clear that the test is of the *appearance* and not necessarily of the *reality*.

METHODS ADOPTED IN THE PRESENT STUDY

The most outstanding feature of the approaches described above is the demonstrable inadequacy of each as the sole method of analysis. The sample approach is inadequate because of the practical difficulties of adapting it to a study of comparative state and local tax burdens. The hypothetical corporation approach and the actual corporation approach are inadequate because of their theoretical confinement and because they do not provide a suitable means of generalization. The collections approach is inadequate because it describes only total burdens and says nothing about the distribution of the total burdens.

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11. In the 1949 Connecticut study this modified collections approach is used to emphasize the interstate differences in taxes that are uniquely applied to business institutions: op. cit., Chapter 5.

In an attempt to minimize the effects of these inadequacies, although with no hope of removing them, the present study is based upon a combination of all of the approaches described above. From a negative point of view, each has its own inadequacies. From a positive point of view, each has its own contributions to make to an exposition of the total answer.

In this eclectic method, the representative sample approach is used mainly as a device to describe the distribution of tax burdens within North Carolina. The sample originally selected comprised an ambitious 25 per cent (3,350 corporations) of the total number of corporations filing corporate income tax returns in North Carolina in 1953, the last year for which complete statistics were available at the time the sample was drawn. The sample was selected by carefully developed random processes from data on file in the North Carolina Department of Tax Research. The information used in the calculation of tax burdens was obtained by the circulation of a questionnaire to the sample corporations. The questionnaire was developed so that the information would connect, as far as possible, with the information required to be submitted as part of the corporate income tax return to the State of North Carolina, although the questionnaire involved much material that is typically not contained in the tax return.

Because the sample was selected by strictly random processes,[12] it naturally contained corporations of all types and sizes. It contained, for example, both domestic and foreign corporations, and, in both groups, it contained corporations with all of their operations in North Carolina as well as corporations with operations in other states and other countries. This method of selection made it possible to collect information relating to the taxes paid and to the nature and magnitude of operations in other states. But since these out-of-state data are in no sense statistically "representative", they must be looked upon as of incidental interest only. The main reference of the representative sample approach remains the distribution of tax burdens *within* North Carolina. As such, of course, it is strongly oriented toward the equity problem in the impact study, particularly as this relates to the tax differentials between the major industrial groups now represented in the State.

The heaviest burdens of the interstate comparison are placed upon the hypothetical corporation approach. Three dummy cor-

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12. Technically, the sample is of the "random stratified" variety.

porations were manufactured and moved, in imagination, to specific sites in each of the eleven Southeastern states. The corporate statistics were designed to represent particular types of firms in particular types of industrial and economic situations, and were based upon actual corporations in order to maximize the realism of the comparison. In this case, the basic data were gathered from many sources, although the emphasis was upon the law as written and as interpreted in published administrative regulations, attorney generals' opinions, and court decisions. It is possible to make use of the comparative findings under the hypothetical corporation approach for a comparison of burdens between industrial types *within* any of the states analyzed, but here, too, this comparison must be considered as incidental to the main function of the approach.

In terms of its contributions, the actual corporation approach is used to supplement the hypothetical corporation approach. It is designed, in other words, to produce comparisons of tax burdens between states rather than between taxpayers in the same state. Three corporations were selected from fields that were not covered by the hypothetical corporation approach. One of these corporations was a retail establishment with outlets in all of the Southeastern states except Arkansas. Another corporation selected was a textile manufacturer with branch operations in North Carolina and South Carolina. A second textile corporation was selected with branches in North Carolina and Alabama. The comparisons presented by the actual corporation approach are thus highly selective, both with respect to the types of corporations involved and with respect to the states in which they operate. In this approach, the data were collected by means of specially designed questionnaires sent to each of the corporations. These were supplemented by personal interviews with corporate officials and by detailed examinations of corporate tax returns.

Although the collections approach is represented in the present study, it is not presented as a separate study with a separate set of findings. Instead, it is combined with other interpretive material in a general, qualitative analysis.

No attempt was made to combine the answers produced by these approaches into a single answer to the problem of comparative tax burdens. Indeed, as pointed out earlier, there are really two types of problems involved: that concerned with a comparison of tax burdens within North Carolina, with an

equity orientation; and that concerned with a comparison of tax burdens between North Carolina and the other Southeastern states, with an orientation to the problems of industrial location and economic development. In this respect, the method of the present study is an eclectic method rather than a mongrel method, a method which permits the selection of the most relevant aspects of each approach to solve particular problems, rather than a method which represents a blend of genetically different materials. Even so, the answers are decidedly incomplete and regrettably tentative. An understanding of the limitations of each approach is, therefore, an integral part of an understanding of the answers themselves.

THE METHOD OF EXPOSITION

In the following chapters, each approach is developed in two parts. In the first part, an attempt is made to explain, often in considerable detail, the techniques of analysis, the sources of the data, the limitations of the approach, and the inferences which may legitimately be drawn from the results. In the second part, the findings are displayed and some of the more obvious inferences are drawn.

The computations are shown, as fully as possible, in a series of appendices to the study. These were prepared under an impulse to present the material in such a way as to permit any interested (and energetic) spectator to carry out the same calculations with the same investigative procedures, and arrive at the same answers. It is also presented in detail in the hope that the material may serve as the building blocks of further analysis. If the many blank spots in the present study are to be filled in at a later date, it would be desirable if the work could be combined with the present study in a more complete comparison.

The quantitative material is preceded, in Chapter III, by a brief discussion of the relationship between state and local taxes and the problems of industrial location. This, of necessity, is a general discussion, designed to highlight some of the more important considerations and is by no means an attempt to establish in a definitive way the relationships between taxes and industrial location. As was clearly indicated in Resolution Number 49 of the 1955 Session of the General Assembly, problems of industrial location are of paramount importance in interpret-

ing the *effects* of whatever tax differentials do exist. The brief theoretical discussion, then, is an attempt to place the quantitative results in context, and to provide a rough guide for interpretation and for policy.

The whole piece is summarized in Chapter IX, at which point some of the inescapable conclusions are briefly discussed.

In form, this report is presented as a "reference book", rather than as a "narrative of necessity". The desire to offer as complete proof as possible and the desire to provide full documentation naturally serve to limit the audience. For this reason, a summarized version of a portion of the present report was prepared. It carries the main conclusions displayed in this report, but minimizes the amount of detail required to reach these conclusions. For those interested in "proof", the present report is offered as a humble beginning.

CHAPTER III

TAXATION AND NORTH CAROLINA'S INDUSTRIAL DEVELOPMENT

ECONOMIC STATUS AND ECONOMIC NEED

Realistic appraisals of North Carolina's economic condition properly begin with a statement of the income payments made within North Carolina as compared with the income payments made within other states of the United States. From North Carolina's point of view the statistics are not notably gratifying. The United States Department of Commerce has reported that per capita income payments in North Carolina in 1955 were $1,236. For continental United States per capita income payments were $1,847. Of the 48 states and the District of Columbia only four states had lower per capita income than North Carolina.

Table 1 indicates clearly that the problems of low per capita income are regional problems. The six lowest states on the per capita income scale were located in the Southeastern region of the United States. Of the eleven Southeastern states included in the present study, only Virginia and Florida showed sufficient prosperity, as measured by per capita income payments, to justify a ranking slightly above the general level of the other states in the region; nevertheless even these two states were well below the level of the United States as a whole. For the entire Southeastern region the per capita income figures were lower than those of any other geographical region delineated by the Department of Commerce.

North Carolina's position among the eleven Southeastern states with respect to per capita income payments is described in Table 2. The highest per capita income is that recorded for Florida; the lowest is that recorded for Mississippi. With a per capita income of $1,238, Kentucky was the median state of the Southeast in 1955. North Carolina's per capita income of $1,236 was thus almost the same as that of the median state.

While these statistics of income payments are extremely impressive, they do not describe the whole drama of North Carolina's economic aspirations. And while they do serve as a useful bench mark for judging the effects of policy action, they

TABLE 1

PER CAPITA PERSONAL INCOME, BY STATES AND REGIONS, 1955

State and Region	Per Capita Income	State and Region	Per Capita Income
Continental United States	$1,847	Southwest	$1,581
New England	2,087	Arizona	1,577
Connecticut	2,499	New Mexico	1,430
Maine	1,593	Oklahoma	1,506
Massachusetts	2,097	Texas	1,614
New Hampshire	1,732		
Rhode Island	1,957	Central	1,992
Vermont	1,535		
		Illinois	2,257
Middle East	2,100	Indiana	1,894
		Iowa	1,577
Delaware	2,513	Michigan	2,134
District of Columbia	2,324	Minnesota	1,691
Maryland	1,991	Missouri	1,800
New Jersey	2,311	Ohio	2,062
New York	2,263	Wisconsin	1,774
Pennsylvania	1,902		
West Virginia	1,288	Northwest	1,595
		Colorado	1,764
Southeast	1,292	Idaho	1,462
		Kansas	1,647
Alabama	1,181	Montana	1,844
Arkansas	1,062	Nebraska	1,540
Florida	1,654	North Dakota	1,372
Georgia	1,333	South Dakota	1,245
Kentucky	1,238	Utah	1,553
Louisiana	1,333	Wyoming	1,753
Mississippi	946		
North Carolina	1,236	Far West	2,189
South Carolina	1,108		
Tennessee	1,256	California	2,271
Virginia	1,535	Nevada	2,434
		Oregon	1,834
		Washington	1,987

Source: U. S. Department of Commerce, Office of Business Economics

TABLE 2

PER CAPITA INCOME IN ELEVEN SOUTHEASTERN STATES, 1955

State	Per Capita Income (1)	Column (1) as Index (North Carolina=100) (2)	Rank (3)
North Carolina	$1,236	100.0	7
Alabama	1,181	95.6	8
Arkansas	1,062	85.9	10
Florida	1,654	133.8	1
Georgia	1,333	107.8	3
Kentucky	1,238	100.2	6
Louisiana	1,333	107.8	3
Mississippi	946	76.5	11
South Carolina	1,108	89.6	9
Tennessee	1,256	101.6	5
Virginia	1,535	124.2	2

Source: U. S. Department of Commerce, Office of Business Economics

must not be considered to define the goals of such action. It is only those who are anxious to create the illusion of well-being who find the ultimate goal of economic policy in an increase in per capita income payments. Only those who are envious of the illusions cherished and displayed by others find complete satisfaction in the elevation of the state to higher ranking positions in the scale of income payments. Behind these statistics lie the real problems of economic welfare. By common agreement these are recognized to be the problems of providing for the basic human needs of the entire population and of permitting the development of character in a society untroubled by the raw demands of a continuous search for the bare necessities. In the broader community of the modern world, and especially in the fortunate climate of the United States, the technological opportunities to eliminate the crushing poverty which still afflicts a surprisingly large percentage of the population have never been greater. These opportunities appear as an especial challenge to the states of the Southeast, and it is this challenge that defines the goals of economic and social policy. It is a clear challenge to provide adequate housing, adequate nutrition, adequate clothing, and a large enough share of the economic surplus to guarantee at least minimal amounts of leisure and recreation. It is a challenge to provide adequate sanitation and adequate health facilities. It is a challenge not only to assure the rights to a full and stimulating education but to provide the kind of society and the kind of economy within which these rights will be avidly pursued by all of the people. It is a challenge that can not at all be met by the dole and the largesse. It is a challenge that can be met only by means of a sweeping structural change in the economy of the state, by means of a corresponding change in social values, and by means of a conscious reorientation of educational policies.

Statistics of per capita income are, to be sure, partially descriptive of the condition of a state or a region with respect to these basic economic requirements. But in their failure to describe the distribution of the total product such statistics can also be deceptive. By the same token, a policy pointed narrowly at inflating per capita income can leave the more basic problems virtually untouched. It is possible, for example, to enlarge the per capita income figure by the importation, calculated or otherwise, of a hundred individuals fortunate enough to have been able to retire with large dividend and rental in-

comes. But, desirable though such importation is, it can hardly be glorified as a serious solution to the fundamental problems of poverty and the economic indigence of the mass of the population. Similarly, it is possible to enlarge the per capita income figure by the exportation, calculated or otherwise, of large numbers of individuals unfortunate enough to find few economic attractions in the land of their inheritance. But, desirable though economic mobility may be as a general rule, it can hardly be glorified as a serious solution to the fundamental problem of a chronic waste of economic resources, and it can hardly be claimed to contribute to the realization of the enormous potential embodied in an under-utilized labor force.

It is impossible, of course, fully to describe the economic condition of North Carolina, or any other state, in terms of these basic objectives. But the indicators that are available are hardly more refreshing than the figures of per capita income. For example, we are informed by the 1950 United States Census that North Carolina ranked forty-third (among the 48 states and the District of Columbia) in the number of dwelling units with modern plumbing and not in a dilapidated condition. Approximately 63 per cent of all dwelling units in the United States in 1950 were equipped with modern plumbing. In the Southern states, only 44.6 per cent of the dwelling units were so equipped. In North Carolina only 34.5 per cent of the dwelling units were so equipped. Approximately 64 per cent of North Carolina dwellings had piped running water. But in the United States as a whole, approximately 84 per cent had piped running water. In this respect, North Carolina ranked forty-third among the states. As an indication of the extent of overcrowding in housing, it may be noted that North Carolina ranked first in the number of persons per occupied dwelling unit. In the field of education the statistics are equally distressing. For the United States as a whole, approximately 34 per cent of the number of persons 25 years of age or older had completed high school. In North Carolina only about 29 per cent had completed high school. In this statistic, North Carolina ranked forty-eight, or second from the bottom. In the United States as a whole, approximately 89 per cent of the persons 25 years of age or older had completed five or more grades of school. In North Carolina only 78.6 per cent of these persons had completed five or more grades of school. In this statistic North Carolina ranked forty-fourth among the states. It was also

found that 70.8 per cent of the families in the United States
had incomes over $2,000 in 1950. In North Carolina only 52.9
per cent had incomes over $2,000. North Carolina occupied
forty-first position in this ranking. Professors Herbert A.
Aurbach and C. Horace Hamilton of the Rural Sociology De-
partment of North Carolina State College have constructed a
level-of-living index out of six variables. The six variables in-
clude the following:

1. Education: Per cent of persons 25 years of age or over
   who have completed five or more grades of school;
2. Modern plumbing: Per cent of homes which are equipped
   with running hot water and modern bath room equipment
   and which are not dilapidated;
3. Hospital service: Per cent of newborn infants delivered
   by physicians in hospitals;
4. Electricity: Per cent of homes with electric lights;
5. Commercial farming: Per cent of farms with value of
   farm products sold of $2,500 or more;
6. Farm ownership: Per cent of commercial farms operated
   by owners.

The application of this index to all of the states and the District
of Columbia shows North Carolina in forty-third position in
the rankings.

There can be no doubt about the presence of a deep-seated
desire for the fruits of a modern industrial economy in the
Southeast and in North Carolina. Neither can there be any
doubt about the fact that irreversible steps have been taken in
the direction of becoming such an economy. Mr. Philip Hammer
has said that "only twenty years ago the South was a 'colony'
in every economic sense ... The South is not going to become an
economic colony again. It is not likely to go backwards. The
forces of transition have carried us to a point of no return."[1]
So the impulses of the South are molded into a spirit of revolt
against colonial status. In economic terms it is clear that the
success of such a revolt depends upon the development of a
Southern market that will be potent enough to relieve the South
of the necessity of producing low-value agricultural products
for national distribution at the expense of Southern agricultural
labor. It is also clear that the growth of a non-dependent econ-

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1. Mr. Philip Hammer, industrial consultant and President of Hammer and Company,
   Atlanta, Georgia, in an address delivered to the Carolina Symposium on Public Affairs
   in Chapel Hill, North Carolina, March 12, 1956.

omy must redound to the benefit of all who are able to take
advantage of the enormous market which a liberated South
must become. Thus, the revolt against colonial status is not en-
tirely a geographical conflict. It is, more significantly, a conflict
of traditions and growth: it is a conflict of the new and the old
economic alignments.

The development of a large Southern market cannot be based
solely upon the principle of more and more of the same low
income payments. It must be based upon the principle of more
and more payments of much larger incomes. An increase in the
number of people in the rural economy able to take advantage
of the supplementary income offerings of industry is, to be sure,
extremely important, but to suggest that the economic salvation
of the state or the region lies in the expansion of the *number* of
individuals participating in low manufacturing pay rolls in-
volves the grossest sort of equivocation. There is nothing partic-
ularly desirable about industrialization *per se*. If the problem is
to increase, through industrialization, the per capita income of
North Carolina, and, more importantly, to improve the condi-
tion of all of the citizens of North Carolina, it is ridiculous to
assume that the problem can be solved by retaining the present
low wage level. At first sight this argument may seem to re-
move the strongest attraction to new industry which the South
in general and North Carolina in particular have to offer. For
who can deny that the most common enticement to new indus-
try has been the relatively low wage level of Southern labor?
But it may be stated categorically that if this is the only entice-
ment which the Southeastern states have to offer they might as
well be reconciled to a status of permanent economic colo-
nialism. The use of low-wage Southern labor to produce products
(especially agriculturally based products) for sale in a national
market represents an exploitation that is just as destructive as
an irresponsible mining of natural resources. Whether self-
induced or whether imposed from outside by the force of geo-
graphical circumstances, such exploitation takes the form of
extracting the energies of the state without replacement and
without proper compensation. For any one state in a presently
underdeveloped condition, industrialization has very little point
unless it results in the elevation of the prevailing level of wage
payments or the prevailing level of employment. It has *some*
point, but very little. And a transition from an agricultural
community to an industrial community means very little if the

industrial wage level is but slightly higher than the subsistence incomes which, in much of the South, have been associated with agricultural pursuits. The realization of the market potential of North Carolina must be based not only upon a broadening of the income base but upon a deepening of the income base as well. In this sense, the advertising slogans which make use of the low-wage argument as a device of industrial attraction may be, if not dishonest, at least self-defeating in the long run. In all honesty, the argument should be stated as the proposition that "we are able to offer lower than average wages to new industry, but we hope that we won't have to do so for very long".

At the base of the problem of low per capita income in North Carolina lies the North Carolina farmer. The United States Department of Commerce reports that in 1955 the total farm personal income payments in North Carolina were exceeded by those of only four other states: California, Texas, Illinois, and Iowa. And the Bureau of the Census reports that in terms of the total value of farm products sold in 1949 North Carolina ranked third among the states. Yet in 1950 the median net money income of North Carolina farm families was only $1,304. In this respect North Carolina was in fortieth position among the states. The farm population of North Carolina is larger than that of any other state. The number of farm units in North Carolina is the second largest in the United States. North Carolina has the largest amount of labor per acre of cropland of any state. For the United States as a whole the farmland available for each member of the farm population is approximately 50 acres. For North Carolina the farmland available for each member of the farm population is approximately 14 acres.

North Carolina agriculture is characterized by the intensive use of labor and the extensive use of land and capital equipment. The crops produced are, for the most part, those which lend themselves to the concentrated application of labor resources. As a result, the productivity figures (either in physical or in dollar terms) *per acre of land* are very high, while the productivity figures *per farm worker* are very low. It has been widely recognized that the only significant opportunities for increasing the productivity of North Carolina farms lie in the increased use of capital equipment through mechanization and the use of greater quantities of fertilizers, and in a shift to the production of other types of agricultural commodities. Both of

these solutions, however, require a larger amount of financial capital at reasonable interest rates. It is doubtful that such financial capital will be made available under the prevailing system of land ownership and under the prevailing system of very small, independent farm units.

The North Carolina farmer is thus faced with the unattractive plight of being too small to get any larger. Before he can acquire the necessary capital to permit him to become a more productive farmer he must become much larger and much more prosperous. But the only clear road to prosperity involves an increase in productivity. It is difficult to see how this vicious circle can be broken, short of a drastic revision of the system of land ownership or short of a much more extensive use of producers' cooperatives and other agencies capable of producing the same economies of scale enjoyed by the operators of larger farm units.

North Carolina farm families have reacted to this apparently insoluble problem by transferring labor from farm to non-farm employment. This transfer has taken the forms of an acceptance, where possible, of supplementary employment in industry; of a migration to other areas of the State for full-time industrial employment; and of a migration to other states. According to the 1955 Census of Agriculture, 42 per cent of the farm operators in North Carolina are employed in off-farm work. Approximately 25 per cent of North Carolina's farmers worked in off-farm employment for 100 days or more in 1954. In 1949 approximately 46 per cent of the income received by farm families was received by persons whose major occupation was in non-agricultural work.[2] The extent of the migration both within North Carolina and from North Carolina to other states is indicated by the fact that during the period 1940 to 1950 there was a net migration from North Carolina farms of 516,990.[3] The Bureau of the Census reports that the net migration from the State as a whole was only 258,000.[4]

This shift of North Carolina's population away from the farm has been accompanied by a noticeable change in the number of farm units in the State. In this respect, North Carolina has participated in a nation-wide development, although at a somewhat slower rate than that which applies to the United

2. C. R. Pugh and C. E. Bishop, *Effects of Industrialization on Incomes of Farm House-holds, North Piedmont Area, North Carolina*, AE Information Series No. 46, North Carolina State College, Raleigh, September, 1955.
3. loc. cit.
4. Bureau of the Census, Current Population Report, Series P-25, No. 72.

States as a whole. The 1955 Census of Agriculture shows that the number of farm units in North Carolina fell by approximately 7 per cent from April 1950 to October 1954. For the United States as a whole, the number of farm units decreased by approximately 11.4 per cent over the same period. The decrease in the number of farm units is to be explained, in part, by the tendency to farm consolidation. From 1950 to 1954 the average size of the farm unit in the United States increased from 215 acres to 242 acres, or approximately 12.5 per cent. In North Carolina the average size of the farm unit increased from 67 acres to 68 acres, or approximately 1.47 per cent. With a much greater opportunity for farm consolidation (in terms of the number of farms that *could* be consolidated) and with a greater need for farm consolidation, North Carolina lagged significantly behind the United States as a whole. It is clear that the large farm units of the United States are showing a pronounced tendency to become much larger while the small farm units are showing a tendency to remain small or to increase slightly.

The problems of North Carolina agriculture are thus intimately associated with the problems of North Carolina's economic development. If progress is to be made in raising the level of per capita income payments, it is essential that the low income status of the North Carolina farmer be relieved. While the present study is not directed to the farm problem as such, it is clear that part of the solution lies in providing employment in non-agricultural pursuits in order to relieve the pressures of a serious oversupply of agricultural labor. Such relief, however, must be accompanied by a new approach (for North Carolina) within agriculture itself. All of the evidence points to the vital necessity of increasing the capital-labor ratio and the capital-land ratio. This shift in the agricultural state of the arts requires, in turn, a willingness to innovate in the fields of farm credit and farm technology and a determination to defy the traditional patterns of property ownership and the traditional attitudes of social inferiority that have plagued southern agriculture and that have preserved the curious paradox of an abundant agriculture and an impoverished people.

The question remains as to whether industrial activity in North Carolina has properly compensated for the insufficiencies of the agricultural economy. It is difficult not to be aware of the attractions of industrial employment in many of the agricultural

areas of North Carolina. A new manufacturing enterprise lo-
cating in any agricultural area of the State appears to have no
difficulty in acquiring an army of recruits from the surround-
ing territory. And it is difficult not to be aware of the larger
industrial communities in the Piedmont and in the western por-
tion of the State. It is even more difficult to deny the fact that
North Carolina is predominantly an industrial state. In terms
of personal income payments the largest contributions to the
total are made by manufacturing enterprises. Table 3 shows
that in 1955 approximately $1,342,000,000 of personal income
payments were made within North Carolina by manufacturing
enterprises. This represented approximately 25 per cent of the
total personal income payments in North Carolina in 1955. Gov-
ernment disbursements occupied second position, representing
approximately 18 per cent of total income payments. In third
position were the trade and service payments, representing
approximately 16 per cent of total income payments. Farm in-
come occupied fourth position, representing less than 13 per
cent of total income payments. Furthermore, in the interstate
comparison North Carolina ranked fourteenth among the 48
states and the District of Columbia in terms of wage and salary
disbursements from manufacturing in 1955. In terms of the
number of individuals employed in manufacturing, North Car-
olina stands in twelfth position among the states.

In spite of these evidences of manufacturing activity, North
Carolina ranks close to the bottom of the list in such measures
as wage per employee, value added by manufacture per em-
ployee, and average hourly and weekly wage of production

TABLE 3

SELECTED COMPONENTS OF PERSONAL INCOME IN NORTH CAROLINA, 1955

Type of Income	Amount of Income (in millions of dollars)	Type of Income as a Percent of Total Income [1]
Farm Income [2]	676	12.6
Government Income Disbursements [3]	974	18.1
Manufacturing	1,342	25.0
Trade and Services	872	16.2
Contract Construction	160	3.0
Mining	13	.2

Source: U. S. Department of Commerce, Office of Business Economics

[1] Total Income Payments in North Carolina in 1955 were $5,371,000,000.

[2] Consists of net income of farm proprietors, farm "other" labor income, and farm wages (net of
employee contributions under the OASI program.

[3] Consist of the total income received by residents of the States from Federal and State and local
governments. Such disbursements are comprised of wages and salaries (net of employee con-
tributions for social insurance), "other" labor income, interest, and transfer payments.

workers. These interstate comparisons are shown in Tables 4, 5, and 6. It is these figures, of course, that are most directly related to per capita income and to the economic well-being of North Carolina's population.

The first step in the diagnosis of North Carolina's illness in the area of manufacturing activity involves an analysis of the *kinds* of industries that North Carolina has been able to attract. *The enterprises which comprise the North Carolina industrial family are, almost without exception, those which are low-wage industries wherever they are located.* In terms of the number of people employed, six industrial types dominate the manufacturing activity of North Carolina. The largest of these industrial types employs more than all of the other five combined. These six industrial types are as follows:[5]

1. Textile mill products manufacturers employ 22 per cent of all non-agricultural employees in North Carolina;

2. Lumber and basic timber products manufacturers employ 3.7 per cent of all non-agricultural employees in North Carolina;

TABLE 4

WAGE OR SALARY PER EMPLOYEE IN MANUFACTURING,
BY STATES, 1953

Rank	State	Per Employee	Rank	State	Per Employee
1	Michigan	$4,800	25	Maryland	$3,880
2	Wyoming	4,660	26	Iowa	3,870
3	District of Columbia	4,610	26	Texas	3,870
4	New Mexico	4,520	28	Missouri	3,830
5	Ohio	4,480	29	Idaho	3,740
6	California	4,460	30	Massachusetts	3,700
7	Nevada	4,440	31	Vermont	3,690
8	Delaware	4,350	32	Nebraska	3,660
9	Washington	4,330	33	Utah	3,620
10	Illinois	4,310	34	Kentucky	3,540
11	Indiana	4,230	34	South Dakota	3,540
12	Connecticut	4,210	36	Louisiana	3,500
12	Oregon	4,210	37	Rhode Island	3,480
14	New Jersey	4,200	38	Tennessee	3,280
15	Wisconsin	4,170	39	Maine	3,220
16	Arizona	4,160	40	North Dakota	3,120
17	Kansas	4,130	41	Virginia	3,090
18	New York	4,110	42	New Hampshire	3,080
19	Minnesota	4,050	43	Alabama	3,060
19	Montana	4,050	44	Florida	3,010
	UNITED STATES	4,020	45	Georgia	2,770
21	Pennsylvania	3,950	46	South Carolina	2,750
22	Colorado	3,930	47	Arkansas	2,720
23	Oklahoma	3,910	48	NORTH CAROLINA	2,700
23	West Virginia	3,910	49	Mississippi	2,560

Source: 1953 Annual Survey of Manufacturers, Bureau of the Census, March 30, 1955.

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5. The following figures, and those describing average weekly earnings, are from United States Department of Labor, Bureau of Labor Statistics, *Employment and Earnings,* February, 1956; and from North Carolina Department of Labor, *North Carolina Labor and Industry,* Raleigh, North Carolina, February, 1956. All figures relate to November, 1955.

TABLE 5

VALUE ADDED BY MANUFACTURE PER EMPLOYEE,
BY STATES, 1953

Rank	State	Per Employee	Rank	State	Per Employee
1	Nevada	$10,350		UNITED STATES	$7,120
2	New Mexico	10,150	26	Idaho	7,110
3	Arizona	9,590	27	Maryland	7,100
4	West Virginia	8,290	28	Iowa	7,070
5	Texas	8,280	29	Connecticut	6,970
6	Kentucky	8,050	30	Nebraska	6,960
7	Montana	8,000	31	Missouri	6,870
8	Michigan	7,930	32	Pennsylvania	6,780
9	Ohio	7,850	33	Delaware	6,470
10	Washington	7,800	34	Oklahoma	6,420
11	Utah	7,780	35	Virginia	6,350
12	South Dakota	7,750	35	Vermont	6,350
13	California	7,720	37	Florida	6,260
13	Louisiana	7,720	38	Massachusetts	6,240
15	Illinois	7,680	39	Tennessee	6,140
16	Indiana	7,580	40	North Dakota	5,980
17	Wisconsin	7,560	41	Alabama	5,740
18	New Jersey	7,550	42	Rhode Island	5,420
19	Wyoming	7,500	43	Arkansas	5,310
20	Oregon	7,450	44	Maine	5,290
21	Kansas	7,300	45	NORTH CAROLINA	5,090
22	Colorado	7,270	46	Georgia	5,040
23	Minnesota	7,260	47	Mississippi	5,010
24	District of Columbia	7,210	48	New Hampshire	4,820
25	New York	7,200	49	South Carolina	4,740

Source: 1953 Annual Survey of Manufacturers, Bureau of the Census, March 30, 1955.

TABLE 6

AVERAGE HOURLY WAGE OF PRODUCTION WORKERS
IN MANUFACTURING, BY STATES, 1953

Rank	State	Per Employee	Rank	State	Per Employee
1	Michigan	$2.18	25	Missouri	$1.75
2	Nevada	2.12	26	Delaware	1.74
2	Washington	2.12	26	Maryland	1.74
4	Wyoming	2.11	28	Utah	1.73
5	Oregon	2.10	29	Texas	1.70
6	Ohio	2.03	30	Oklahoma	1.69
7	Montana	2.01	31	Massachusetts	1.67
8	California	2.00	31	South Dakota	1.67
9	Indiana	1.96	33	Nebraska	1.64
10	Illinois	1.94	34	Kentucky	1.63
11	District of Columbia	1.93	35	North Dakota	1.60
12	Arizona	1.90	36	Rhode Island	1.59
13	Kansas	1.88	37	Vermont	1.58
14	New Jersey	1.87	38	Louisiana	1.56
14	Wisconsin	1.87	39	Tennessee	1.48
16	Connecticut	1.85	40	Maine	1.46
16	West Virginia	1.85	41	New Hampshire	1.45
18	New York	1.82	41	Virginia	1.45
18	Minnesota	1.82	41	Alabama	1.45
20	Pennsylvania	1.81	44	Florida	1.35
	UNITED STATES	1.81	45	Arkansas	1.28
21	Idaho	1.80	45	NORTH CAROLINA	1.28
22	Colorado	1.79	47	South Carolina	1.27
23	New Mexico	1.78	48	Georgia	1.26
24	Iowa	1.76	49	Mississippi	1.22

Source: 1953 Annual Survey of Manufacturers, Bureau of the Census, March 30, 1955.

3. Furniture and finished lumber products manufacturers employ 3.4 per cent of all non-agricultural employees in North Carolina;
4. Tobacco manufacturers employ 3.4 per cent of all non-agricultural employees in North Carolina;
5. Apparel and other finished products manufacturers employ 2.2 per cent of all non-agricultural employees in North Carolina;
6. Food and kindred products manufacturers employ 2.1 per cent of all non-agricultural employees in North Carolina.

The average weekly earnings in all manufacturing industries for the United States as a whole are $79.52. The average weekly earnings in each of the six industries in question are less than the average weekly earnings for all manufacturing industries. The following figures indicate the extent to which North Carolina's industrial structure is composed of low-wage industries. Each of the figures should be compared with the $79.52 figure shown above.

1. The average weekly earnings of employees in textile mill products industries for the United States as a whole are $58.50;
2. The average weekly earnings of employees in lumber and timber basic products for the United States as a whole are $68.28;
3. The average weekly earnings of employees in furniture and finished lumber products industries for the United States as a whole are $68.88;
4. The average weekly earnings of employees of tobacco manufacturers for the United States as a whole are $51.56;
5. The average weekly earnings of employees in apparel and other finished products industries for the United States as a whole are $50.32;
6. The average weekly earnings of employees in food and kindred products industries for the United States as a whole are $74.70.

The chemicals and allied products enterprises represent an exception to this general rule. This industry now employs 1.2 per cent of all non-agricultural employees in North Carolina, so that, in this sense, it is just slightly less important than the food products group. Average weekly earnings in the industry for the United States as a whole are $85.07, or $5.55 *more* than the

average for all manufacturing industries. Manufacturers of paper and allied products represent a small but growing industry in North Carolina. These enterprises, too, showed higher than average weekly earnings for the United States as a whole. Average weekly earnings for paper and allied products manufacturers for the United States as a whole are $81.35.

The first incontrovertible conclusion that may be drawn, then, is that the industries that are most important to North Carolina's economy, in terms of the number of people employed in manufacturing in the State, are typically low-wage industries. No causation is implied by the figures, however. There is, in other words, no attempt to prove that North Carolina's wage level is low *because* the State has attracted "inherently" low-wage industries: and, conversely, there is no attempt to prove that the industries in question are low-wage industries *because* they have located (in some cases) in North Carolina and other Southern low-wage states.

Even more significant is the fact that North Carolina superimposes its own low-wage pattern upon the typically low-wage industries that enter the State. *For each of the six important industries mentioned above the average weekly earnings in North Carolina are less than the average weekly earnings for the United States as a whole.* The average weekly earnings in all manufacturing industries for North Carolina is $53.97, as compared with $79.52 for the United States as a whole. The six industries have average weekly earnings as follows:

1. The average weekly earnings of employees of textile mill products manufacturers are $54.66 for North Carolina, as compared with $58.50 for the United States as a whole;

2. The average weekly earnings of employees of lumber and timber basic products manufacturers are $44.31 for North Carolina, as compared with $68.28 for the United States as a whole;

3. The average weekly earnings of employees of furniture and finished lumber products manufacturers are $54.75 for North Carolina, as compared with $68.88 for the United States as a whole;

4. The average weekly earnings of employees of tobacco manufacturers are $51.38 for North Carolina, as compared with $51.56 for the United States as a whole;

5. The average weekly earnings of employees of apparel and other finished products manufacturers are $39.83 for North Carolina, as compared with $50.32 for the United States as a whole;

6. The average weekly earnings of employees of food and kindred products manufacturers are $45.26 for North Carolina, as compared with $74.70 for the United States as a whole.

Although the chemicals and allied products group have average weekly earnings for the United States as a whole that are higher than the average weekly earnings of all manufacturers for the United States as a whole, the North Carolina portion of this industry has average weekly earnings that are substantially below those of the entire industry. The average weekly earnings of employees of chemicals and allied products manufacturers are $62.88 for North Carolina, as compared with $85.07 for the United States as a whole.

Although North Carolina shares with the other Southeastern states the low level of wage payments in manufacturing enterprises, North Carolina is particularly guilty in this respect. In November of 1955 the average weekly earnings for production workers in all manufacturing industries in each of the eleven Southeastern states were as follows: Kentucky: $74.81; Louisiana: $70.85; Alabama: $63.14; Tennessee: $62.06; Virginia: $60.86; Florida: $58.52; Georgia: $57.41; South Carolina: $55.33; Arkansas: $54.23; *North Carolina: $53.97;* and Mississippi: $50.58. Thus, among the Southeastern states North Carolina ranks second from the bottom in average weekly earnings from manufacturing. Far from being pulled down by the other Southeastern states, North Carolina actually helps to pull the rest of the Southeast down to lower per worker earnings levels.

The record is no more satisfying in the area of non-manufacturing, non-farm employment in North Carolina. The North Carolina Department of Labor reports that in January of 1955 some 565,000 individuals were employed in non-manufacturing, non-farm occupations. 95,000 of these individuals had average hourly earnings of less than $.75 and 45,000 had average hourly earnings of less than $.55. Of the 156,000 individuals estimated to be employed in the retail trade, 68,000 had average hourly earnings of less than $.75. Of the 49,000 individuals estimated to be employed in service occupations, 23,000 had average hourly

earnings of less than $.75. In the face of such crushing evidence of the pervasiveness of the low-wage pattern, the assertion that low wages are the *solution* to North Carolina's economic problems, because they represent the State's strongest industrial attraction, is little better than varnish over damaged wood. The low wage level of North Carolina *is* the economic problem.

It is not the purpose of the present study to probe deeply into the reasons for the low income level of the Southeastern states and of North Carolina. But one reason stands out clearly. Since this reason does, in addition, have direct reference to the fiscal policy of the State, it is of vital concern to the development of the present argument. One of the reasons North Carolina income payments in industry are substantially lower than income payments in the same industry in other parts of the United States is that North Carolina has tended to attract those portions of the industries which place fewer demands upon the worker for education and skills. Although there have been several recent examples of the in-service training of personnel by new industries, with apparently happy results, most enterprises choose to locate operations requiring employee skills where these skills are known to exist. The experiments that have been successful serve to indicate only the *capacities* of the North Carolina labor pool rather than the *accomplishments* of the North Carolina educational system. It is still true that the North Carolina labor force is largely unskilled, however great its potential. Such a condition is bound to be reflected in prevailing wage levels and in the kind of industry that is attracted to North Carolina.

Although the statistics shown above leave much to be desired as a total representation of the status of North Carolina industry, they do show in broad outline the nature of the problems to be solved. North Carolina manufacturing enterprises do, no doubt, provide a sufficient attraction for the agricultural population in terms of *supplementary* income offerings. But manufacturing earnings are themselves so low that there is little real inducement to outright migration from farming areas to manufacturing areas within the State, at least to the extent necessary to provide adequate alternative employment for the mass of North Carolina's redundant agricultural labor. The same conclusion is suggested by the fact that much of North Carolina's industry is highly competitive and subject to serious economic fluctuations over short periods. The instability and consequent

insecurity of employment in such industries tends to restrict the employment function of the enterprises to that of providing supplementary income. In no event does it seem likely that low wages and unstable employment in manufacturing will provide the industrial solution to the problem of agricultural over-crowding.

One of the most important, and one of the most neglected features of North Carolina's economic condition is the fact that the most important sectors of the industrial economy are based upon local raw materials. This resource foundation is, of course, a most significant characteristic of the tobacco industry, although it is also important in the forest products industries and, to a lesser extent, in the textile industries. In this sense, it is important to recognize that the industries in question are as much, if not more, interested in preserving the low-wage pattern in agriculture and the extractive arts as in retaining a low-wage pattern in industrial employment. The latter wage pattern is directly reflected in the labor costs of these industries. But the wage level in agriculture and extractive activities is reflected in the raw materials costs of these industries. In the tobacco industry, for example, we may observe a highly mechanized industrial process and one which, through recent technological advances, has tended to become even more mechanized. To this extent, the industrial labor component of the end product tends to diminish while the raw materials component (and consequently the *agricultural labor* component) tends to increase. In the forest products area (excluding furniture manufacturing) a slightly different situation prevails, in that the industrial wage level is relatively high. But the resource basis of the industry is equally important and the industry's stake in the low-wage level of the extractive worker is just as significant as for other North Carolina industries. Partly because of the nature of the technology involved, the textile industry has probably been more concerned with preserving low *industrial* wages than have other resource-based industries. Furthermore, the dependence of North Carolina's textile industry upon North Carolina's agricultural resources has somewhat diminished in recent years. However, the same interest in low-wage agricultural employment is apparent if the analysis is given a regional reference.

To the extent that North Carolina's industrial activity has been dominated by these resource-based industries, there has been a manifest tendency to perpetuate the low income con-

dition of agricultural and extractive workers. The further facts that all of these industries are oriented to a national (or world-wide) market and that most of the enterprises are owned by non-residents of North Carolina indicate that any consumer "advantages" or any accretion of owner profits which result from the low-wage resource base accrue, largely, to individuals outside North Carolina.

It is clear that if the problems created by such resource-based industries are to be solved without total disruption, the attack must be directed as much to the resource aspect of the problem as to the industrial aspect of the problem. From the point of view of the industries in question, the solution must lie in the area of increasing the per worker productivity in resource production while greatly increasing the per worker returns. From the point of view of the North Carolina economy, the solution must lie in the development of non-resource industries and, through higher agricultural and industrial wages, the extraction of a larger share of the economic return.

While the present status of North Carolina's industrial structure is hardly such as to justify loud applause, there have been many developments in recent years which suggest a certain optimism. In common with the industries of other Southeastern states, the older North Carolina industries have shown a tendency to progress from less valuable forms of production to more valuable forms of production. Following patterns common to industrial evolution in other areas of the United States, North Carolina industries have slowly but steadily moved from the production of crude and semi-processed types of manufacture to the finishing stages of the manufacturing processes. This has been particularly true in the textile industry, with the gradual shift of emphasis from the grey goods plant to the print works and the dying and finishing plant. In furniture manufacture, too, North Carolina enterprises have shown a clear tendency to develop production of higher value goods. Such progress is generally the result of the natural desire for product development within established firms, of an equally natural tendency (in some industries) to locate the finishing stages close to the crude stages of production, and of the gradual growth of employee and community skills. It is probable that all three of these factors have been instrumental in stimulating the development of higher value production in North Carolina's established industries.

Even more important, however, has been the introduction of new industries to the North Carolina community. In many instances these new industries have been among the highest value-producing groups and among the highest wage groups in the United States. Particularly notable in this respect have been the recent acquisitions of electrical equipment manufacturers, manufacturers of electronic products, manufacturers of fabricated metal products, manufacturers of chemicals and chemical products, and manufacturers of paper and paperboard products. In each of these classifications the average weekly wage in North Carolina is substantially higher than the average weekly wage for all North Carolina manufacturing establishments. While it is true that most of these industries are still relatively embryonic in North Carolina, and while it is true that most of them pay lower wages in North Carolina than in other parts of the United States, the contributions of these industrial immigrants to North Carolina's economy have been highly significant. In the paper and allied products group the average weekly earnings of employees in North Carolina are actually greater than the average weekly earnings for the same group in the United States as a whole. The chemical industry, on the other hand, has tended to develop its lowest value products and its lowest wage production in North Carolina, although for both of these measures the industry is substantially above the averages for all industries in the State. For the United States as a whole the chemical industry is, of course, strongly oriented to natural resources, particularly with respect to the dramatic development of petrochemicals. In North Carolina the chemical industry is, for the most part, associated with textile manufacture through the use of synthetic fibers.

From the point of view of the overall economy of the State, the growth of new types of industries in North Carolina promises to be particularly healthful. The new diversification holds out the hope that North Carolina will eventually be emancipated from the confinement of a highly specialized economy. In the past North Carolina's manufacturing activity has been concerned with the production of products of necessity, so that the opportunities for growth have been almost entirely limited to the opportunities of attracting industries from other states. In addition, the State's manufacturing activities have been concentrated in the highly competitive textile industry which has been subject to severe short-term fluctuations. But most impor-

tant of all, North Carolina's manufacturing activity has been based upon North Carolina's agricultural resources, so that any change in the fortunes of manufacturing enterprises has tended to be transferred to and magnified in the agricultural sector of the community. In the period since World War II, there has been a growth of industries unconnected with the State's agricultural resources. To suggest that this is desirable is not, of course, to suggest that resource-based industries are unfortunate and that the new, non-resource-based industries should *replace* the industries that depend upon local raw materials. But it is to suggest the desirability of *diversification* as between the two types of industries. The further possibility exists, to be sure, that the new industries will bid up the price of industrial labor and disturb the fortunes of the established industries and, by osmosis, the fortunes of the agricultural community. It is probably fair to say that this possibility has become the fear of many North Carolina farmers and industrialists and has served to blunt the desires for further industrialization. But the North Carolina labor pool is so immense, especially if a solution is found to the problem of labor redundancy in North Carolina agriculture, that the fears must be considered groundless for a decade or more.

The trends in industrial development in the United States as a whole also tend, with some reservations, to be favorable to North Carolina. The growing emphasis upon the desirability of industrial decentralization is undoubtedly one of the most important impulses behind the economic development of the South-eastern United States. This emphasis is particularly applicable to the industrial development of North Carolina. The industrial desire to escape the overcrowded conditions of many of the older industrial communities finds adequate fulfillment in North Carolina's dispersed population. The development of truck transportation which has made industrial dispersion possible is well suited to North Carolina's road system and to industrial dispersion *within* the State. The absence of large urban centers with heavy concentrations of vital industries makes North Carolina particularly attractive to those industries impressed with the possibility of atomic attack. Much progress has been made in American industry in the development of greater flexibility of capital equipment, so that manufacturing processes are, in some areas, less dependent upon huge, expensive capital equipment. Such a development, for example has taken place in the

steel industry with the invention, in the 1940's, of a continuous casting technique. Although, as was to be expected, innovation in this field has been slow, the effects of such techniques are clearly to make possible the development of more plants operating on a much smaller scale. The automobile industry has made great strides in recent years in the decentralization of assembly plants. The electrical equipment industry has pursued a calculated policy of decentralization in the post war period. Much the same thing has been true in the manufacture of paper, tires, rubber goods, plastics, leather, and other goods produced under relatively high wage conditions.[6] For almost all of these decentralizing industries North Carolina can be a particularly receptive host.

The effects of automation upon American industry and upon North Carolina industrialization are still largely unknown. But it does not seem improper to think of these new techniques as those of a new industrial revolution. North Carolina is unquestionably in an excellent position to participate in the manufacture of automation equipment. The State has, in fact, already experienced the beginnings of such activity. But the most dramatic effects, from the point of view of the Southeastern states, are likely to be those related to the radical alteration of the labor-capital ratio which automation implies. The enormous labor-saving potential of automation techniques may create serious problems for all of American labor, although its greatest effects could very well be upon the Southeastern states. Professor Walter S. Buckingham, Jr., has said that automation may lead to ". . . . a shift in labor oriented industries. The attractiveness of low labor cost regions could be reduced, perhaps to the point of elimination . . ."[7] The same conclusions have been reached by Dr. David G. Osborn. Dr. Osborn has found that "automation, in the cases studied, diminished both the amount of space required and the labor force necessary to turn out a given unit of product. The resulting tendency would be to free plant location somewhat from the controlling importance of land and labor force . . ."[8] It may thus be that North Carolina and other Southeastern states will gradually find that the age-

6. Mabel Walker, "The Plant, The Office, and the City," *Tax Policy*, Tax Institute, Inc., Princeton, N. J., August-September, 1955, pp. 16, et. seq.

7. Walter S. Buckingham, Jr., "The Industrial and Economic Implications of Automation", address before the Congress of Industrial Organizations National Conference on Automation, April 14, 1955.

8. David G. Osborne, "Automation of Industry—A Geographical Consideration", *Journal of the American Institute of Planners*, Fall, 1953, p. 212.

old attraction of low wage rates will lose its powers of seduction as automation comes to dominate the American industrial scene.

From this brief survey of North Carolina's economic condition it is obvious that there is good reason for suggesting the need for further industrialization. The extremely low incomes associated with North Carolina agriculture present a challenge that must be met, in part, by a vigorous policy directed to the agricultural community as such. In particular, this policy must include the development of new crops and the actual or the effective consolidation of farm units. The actual consolidation of farm units can be accomplished only with a drastic change in the traditional structure of land ownership in the State: effective consolidation can be accomplished with such devices as producers' cooperative organizations. The greatest need in North Carolina agriculture is for larger quantities of capital equipment. The acquisition of this capital requires, in turn, a liberalization of credit and an enlargement of the productive unit to which capital equipment may be applied. But there should be no mistake about the purposes of these (and other) agricultural policies. They are designed to speed up the migration from North Carolina farms that is already under way and to maintain or increase the productivity per acre. By this method, and by this method only, can there be any hope of substantially increasing the productivity *per worker*, of increasing the farm component of the State's per capita income, and of improving the economic and social condition of North Carolina's agricultural population.

It is at this point that the connection between the agricultural community and the industrial community becomes a matter of vital importance. If the migrating agricultural population is to find employment within North Carolina, it is essential that thousands of new jobs in non-agricultural pursuits be created through an extension of the industrial activity of the State. Without this industrial solution, human resources now being wasted in chronic underemployment will either be wasted in acute unemployment or, from the point of view of North Carolina, totally lost through migration to other states.

But industrialization does not find its sole purpose in the relief it can provide for an harrassed farm community. The present status of North Carolina's industry is such that the industrial community itself needs relief. For this reason, it is clear that

North Carolina's activities should not be directed to a simple *enlargement* of the industrial community. There must be a *qualitative* change as well. Whatever lures can be designed in equity and offered with dignity should be directed to those industries that stand high on the list of value added through the manufacturing process and that are prepared to offer wages that are significantly higher than those now being paid by the textile, tobacco, furniture, lumber, apparel, and food processing industries. The greatest possibilities in this respect seem to be in the machinery (electrical and otherwise), paper, chemical, and metal products industries. The field of electronics and electronic equipment has excellent possibilities, both in terms of long-term growth considerations and in terms of North Carolina's proven ability to assimilate these enterprises into the economy of the State. In the United States as a whole, durable goods industries are generally more desirable from the point of view of wage payments than are non-durable goods industries. Although this is not true in North Carolina (primarily because of the influence of lumber and timber producers), there is a clear need in the State for expanding the production of durable goods. It has been pointed out, too, that North Carolina's manufacturing activity has been aimed at the production of necessities. It is now clear that the growth possibilities of such industries tend to be limited, so that after the first blush of acquisition North Carolina has slowed down in the rate of its industrial growth, at least as compared with other industrial states of the Union. There is thus a great need for the development of growth industries, such as are represented by electrical equipment manufacturers, chemical manufacturers, the manufacturers of electronic equipment, aircraft manufacturers, and the manufacturers of aircraft parts, to name but a few.

To a considerable extent this reappraisal of North Carolina's industrial future has already begun. One of the most significant needs which this reappraisal has revealed is the need for a new approach to education. The acquisition of any large number of enterprises in the high value category is likely to be prevented unless an early attempt is made to push education in North Carolina to higher and higher levels for both races and for all levels of the economic ladder. The present study does not, of course, pretend to be a treatise on educational philosophy. Nor does it presume to offer solutions to North Carolina's vexing educational problems. But it can hardly be denied that a society

that can provide a complete high school education for no more than 21 per cent of those 25 years of age or older and that can assure a *present* enrollment of only 65 per cent of the children in the 16-17 age bracket is, in some respect and for some reason, failing to fulfill its social obligations.

In connection with the much-discussed program of industrialization, the educational need that has been most often stressed is the need for an expanded program of vocational education. Such a program is, of course, extremely important and should be considered as occupying a position of high priority. Technical training of a specific character in the skills of modern industry is vitally needed in North Carolina if the State is to attract high value producing industries and industries that will pay high wages for the high skills needed. But the total educational problem involves much more than vocational education. The needs of modern industry, and, more particularly, of a modern industrial society, are for a thorough basic education of all of the people of the State and for the provision of abundant opportunities for a higher education in all fields. Just as much attention must be paid to rural schools as to urban schools in this respect, for in North Carolina the basic economic problem lies in the rural areas of the State. Furthermore, just as much attention must be paid to the education of the Negro child as to the education of the white child, for in North Carolina the most crushing problem of poverty are those which afflict the Negro people. If North Carolina is to become an industrial society, it must gear its entire educational program to the needs of such a society. An expanded and vitalized education system, is, of course, an expensive thing. For a State such as North Carolina it is also likely to be a disappointing thing in its early years, for many of those given the training will no doubt choose to apply it in other areas of the United States. But such an education is not a luxury. From the individual's point of view it is a right. And from the State's point of view it is a vital necessity.

TAX POLICY AND INDUSTRIALIZATION

Given both the need and the desire for industrialization, the problem remains as to how to persuade the right kind of enterprises to locate within North Carolina. There are, of course, many techniques of industrial attraction, all of which, at some point, are concerned with the factual question of why businesses

select particular sites for their operations. The present study is concerned only with the tax aspects of these locational decisions.

The effect of taxes on industrial location has long been a controversial subject among economists and specialists in the field of public finance. Even businessmen responsible for making the locational decision are far from unanimous on the question. There is, to be sure, substantial agreement at both extremes of the argument. It is agreed that geographical differences in tax burdens do play some role in the locational decision. And it is agreed that tax differences are not the only factors determining industrial location. But between these two extremes lies the practical question of just how much influence geographical differences in tax burdens exert in determining the location of industrial activity. In this area there is very little agreement, either on the answer to the question or on the methods by which the answer should be sought.

The economic theory of industrial location

On the surface, the problem appears deceptively easy. It is part of the traditional business calculus that, for any given output, a firm will attempt to minimize its total costs. Most types of taxes paid by corporations are considered to be costs of doing business. It follows, therefore. that taxes will be considered in the locational decision just to the extent that they enter into the costs of doing business at a series of alternative sites. Of course. all of the costs are really expected costs, for in determining a plant location an enterprise is more interested in its future than in its past. In theory. too, the relevant costs are not merely annual costs but a schedule of costs over the expected future life of the property. Pure theory would thus require the location expert to calculate. for each of all possible sites, the present value of all expected future costs (taxes included) and to select the site yielding the lowest figure.[9] Such calculations would have to be made for the entire company. on the assumption that the new plant were alternatively located at each of the possible sites. and not made merely for that portion of the company represented by the new plant. The construction of the new plant may change the operating relationships of the rest of the enterprise and markedly influence costs for other plants and for

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9. This portion of the theory could be pushed much further. It is technically necessary to take account of the degree of certainty attached to each of the stated expectations and to consider the manner in which this certainty (or uncertainty) is distributed through time. But as an indication of the actual behavior of corporate enterprises, the theory seems ludicrous enough in its present, simplified form.

other corporate activities. This possibility is particularly important for the tax component of the calculations, for the construction of a new plant in one state will change the allocation ratios for the calculation of an income tax liability in all other states in which the corporation is subject to income taxation.

Up to this point the theory has been constructed on the assumption that the type of product and the volume of output of the new plant are given and constant through time. In order to make the analysis fully dynamic, the model must be designed to include expectations of the cost effects of product changes and changes in the volume of output. This refinement, too, may have important tax implications, for a state that is congenial to a plant of a certain size producing a certain product may, from a tax point of view, be very uncongenial if the plant is later doubled in size or if the product is changed in some significant respect.[10] In the same sense, the planned new installation must not be considered to be identical in all of its alternative locations. The architectural and engineering characteristics may have to be quite different in one location than in another. At one site it may be necessary for the company to construct its own sewage disposal system or to install devices to prevent stream pollution. All of these differences will be reflected in total costs. Similarly, it may be possible to minimize tax costs by designing the plant operations to suit the tax conditions at each of the sites.

Thus, when the surface of the problem is penetrated, the theoretical model for a "rational" decision on industrial location is very complex indeed. If only two alternative sites were considered, the application of the full theory would require a sweeping reappraisal of the future of the total enterprise. But the economic theory of plant location requires the consideration of *all* possible sites. In theory, every site is a possible site until the proper cost calculations have been made, so that the number of possible choices is infinitely large. Of course, for the great majority of corporations it is possible to narrow the choices down to a fairly small number of sites by simple observation. It does not require detailed calculations to eliminate the Mojave Desert of California and the Outer Banks of North Carolina as potential sites for an automobile assembly plant.[11] By simple observa-

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10. The North Carolina state and local tax bill of Hypothetical Corporation B, described in Chapter VII, is an excellent illustration of this point.
11. It must be admitted, however, that the revolutionary effects of automation and atomic energy may very well make the ridiculous seem perfectly reasonable.

tion such sites may be ruled out on the grounds of clearly prohibitive costs. The extent to which such subjective elimination is practiced in actual cases is extremely important in assessing the role of taxation in the locational decision. This point is further developed later in the present chapter.

Although the economic theory of plant location outlined above may appear to be more of a logical fantasy than a serious approach to a very practical problem, it does provide one important conclusion. From the point of view of the corporation considering a new location, the entire problem may be expressed in terms of a comparison of costs. The geographical relationship of the enterprise to its natural resources or to its market may always be expressed in terms of the costs of transportation to or from the point of production. Only when it is felt that the location of the plant may influence the market by the advertising effect of a large production unit is it necessary to state the problem in other than cost terms.[12] To the extent that the final decision is influenced by the personal considerations of management or other personnel, or to the extent that the decision is basically non-rational, the exclusive concern with costs need not, of course, apply. But those calculations which apply to the corporation as such may, with the single exception noted, always be expressed as cost problems.

In the cost comparisons of the locational analysis the tax dollar clearly has the same authority as the dollar of transportation expense or the dollar of labor expense or the dollar of rent. If, in parading its virtues, a state offers an abundant market, the state is, in effect, offering low transportation costs to reach that market. This cost advantage may be offset in any number of ways by the opposing virtues of other states. One of these virtues may be a low tax burden. Assuming that the tax advantage of one state is exactly offset by the costs of transporting the product from that state to the large market of a neighboring state, there is obviously no net advantage for either state. The point is, of course, that there is nothing unique about the way in which taxes enter the corporate calculus. If the dollar amounts are the same (and if equal certainty attaches to each), a state's offer of low taxes is exactly as powerful as the state's

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12. Some corporations have, in recent years, given as one of the reasons for a preference for industrial dispersion a desire to affect markets through the location of plants by making people more aware of the company name and by adding, generally, to the company's goodwill.

offer of low wages, low transportation costs to the market, low transportation costs from the source of raw materials, low rental charges, or low interest rates.

From the point of view of these theoretical beginnings, then, the importance of state and local taxes in determining the location of industrial enterprises *is determined entirely by the magnitude of the differences between the tax bills at alternative sites*. If labor cost differentials are greater than tax cost differentials, then, by definition, labor costs are more important than tax costs in determining industrial location. If tax cost differentials are greater than transportation cost differentials, then, by definition, tax costs are more important than transportation costs in determining industrial location. This argument does not disturb the conclusion that it is the total comparison that is significant, for the argument simply grades the component parts of the decision in terms of their importance. The conclusions will, of course, be different for each enterprise considered. For some types of enterprises transportation costs to the market are inherently large. For other types of enterprises transportation costs from the source of raw materials are inherently large. For other types of enterprises labor costs are inherently large. For other types of enterprises rental charges (actual or imputed) are inherently large. But in every case tax burdens play the same "negative" role as every other cost element in the calculations.

The fact that the present study is aimed at the significance of *tax* differentials makes it possible to conclude that a number of enterprises are, on theoretical grounds, likely to be relatively insensitive to tax lures or to tax hardships. The reasoning, of course, is simply that such enterprises are, by the nature of their operations, likely to be relatively sensitive to other costs. For the most part, such enterprises feel the especial power of transportation costs. Thus, enterprises manufacturing perishable commodities feel obligated to locate close to the market because the costs of refrigerated or other preservative transportation are generally high. Similarly, enterprises concerned with transforming bulky raw materials into compact finished products feel obligated to locate close to the source of the raw materials because the costs of transporting the raw materials are significantly greater than the costs of transporting the finished products. It is possible to construct a theoretical situation in which an enterprise normally attracted to the source of raw materials

could be lured closer to the market by tax differentials, but in many such cases the tax differentials would have to be much larger than can reasonably be expected to arise among states that are conscious of the locational problem.

In locational theory transportation costs are somewhat unique. The locational problem is a *spatial* problem. Transportation costs *inevitably* show spatial variation if, other things being equal, distances are different. Tax bills in two widely separated taxing jurisdictions may be identical. Labor costs in two alternative areas may be identical. Rent charges at two alternative sites may be identical. But given the mode of transportation, given the fact of a homogeneous terrain, and given all of the other factors (except distance) that can influence transportation costs, transportation costs are a positive function of *distance*. Thus, distance from raw materials and distance from markets are always sources of cost differences and must, in some fashion, enter into every locational decision. This inevitability that attaches to the relationship between transportation costs and industrial location explains the fact that much of the economic theory of plant location is concerned exclusively with differences in transportation costs, as though this were the only significant variable in the problem. It is possible to plot, on a map, a set of transportation cost "contour" lines to show, for a market-oriented enterprise, the circumference on which transportation costs to the market are identical. As the distance from the market increases, in all directions, the transportation costs increase.[13] Clearly, the same analysis cannot be made for other kinds of costs. To the extent that markets are related to the degree of urbanization, and to the extent that the degree of urbanization is associated with high rental charges and, sometimes, with high assessed valuations for tax purposes, these costs may have something in common with transportation costs. But there is nothing "inevitable" about the geographical variations in these non-transportation cost items. In the final calculations implied by locational theory the transportation dollar has no more significance than the rental dollar or the tax dollar. But for certain types of enterprises it is safe to assume that differences in transportation costs are likely to be greater than differences

13. One of the most comprehensive theoretical treatments of location is that of August Lösch, *The Economics of Location*, translated from the second edition by William H. Woglom and Wolfgang F. Stolper, Yale University Press, New Haven, 1954. See also a review article by Stefan Valvanis, "Lösch on Location", in *The American Economic Review*, September, 1955, pp.637-744. The Lösch work, constructed on traditional assumptions of economic theory, covers a much wider field than that of transportation costs and, in fact, a much wider field than that of *industrial* location.

in all of the other costs combined. For this type of enterprise it would be possible for a taxing jurisdiction to increase its tax burdens by large amounts without offsetting the transportation cost advantages. Indeed, it is likely that the tax costs could be increased to the point at which it would be impossible for the enterprise to continue in business. In spite of this it may not pay the enterprise to change locations. Under these circumstances, the business would simply cease to exist. In cases of this sort, taxes may not be considered to have any locational effect, other than that of determining whether the business will operate at all.

The foregoing is, then, a rough sketch of the theoretical argument concerning industrial location. The argument concludes that differences in tax burdens are just as important as comparable dollar differences in any other cost factor. In theory, a particular site is selected only after an analysis of *total* costs, so that the ultimate importance of tax burdens is determined entirely by the relationship between the *size* of the tax differentials and the *sizes* of the differentials for other cost factors. On the assumption that businessmen behave with perfect rationality in their locational decisions, and on the assumption that they are able to collect enough information to transform the theoretical model into a practical calculus, the theoretical conclusions are incontestable. Theoretical debate on the significance of taxes in the locational decision thus seems entirely without point.

Difficulties of measurement

Although the theoretical argument provides some important insights into the practical problem of industrial location, the theory exists in too rarified an atmosphere to be useful as an explanation of the manner in which locational decisions are actually made. In the first place, businessmen are not "perfectly rational" individuals, in the traditional economic sense of the term. Partly because of intra-corporate power arrangements, and partly because of individual personality traits, businessmen are more than occasionally guided by emotional considerations, by untested prejudices, or by considerations of personal comfort or advantage. It must be remembered, too, that rationality itself can be a costly luxury. If all of the logical requirements of the theory were to be fulfilled in practice, it would be necessary for the firm to employ an army of expert data-gath-

erers and banks of electronic calculators. For any but the largest enterprises such attempts at rationality are likely to prove highly irrational.

The most serious limitation to the practical application of the theory of industrial location comes from the fact that detailed quantification is virtually impossible. In the field of state and local taxes this limitation is particularly powerful. The difficulty is not merely that of being unable to plan for a definite set of tax costs over a long period of time. The difficulty is that of being unable to determine, with reasonable certainty, the *first year's* tax costs. It is this difficulty that provides the most important distinction between the tax costs and the non-tax costs. It is generally possible to determine, before the bills have to be paid, what the rental charge will be. And it is generally possible to determine what the prevailing wage rate is and how this prevailing rate will be adjusted by the entry of a new enterprise. It is also possible to determine the architectural and engineering requirements in advance and to plan a definite set of operational costs for each of the potential sites. Transportation costs may be established without difficulty. Only in the case of tax burdens is it impossible to make a definite pre-determination of costs. It may be, to be sure, that such determination is possible for some of the sites on the list. But a comparison of total costs is impossible unless there is a definite determination for *all* of the sites.

The difficulties faced by the location expert in determining the magnitude of the tax burden differences between a series of alternative sites are exactly the same as the difficulties faced by the tax analyst in attempting an objective measurement of interjurisdictional tax burden differences. These difficulties have already been described at some length in Chapter I, and are further discussed in Chapters VI and VII. They need not, therefore, be described at length here. Briefly, however, the difficulties come from the fact that it is not possible to assume that the tax burdens implied by the law are the same as the tax burdens actually imposed. In many cases a good deal of discretion is permitted the tax administrator. In other cases the tax administrator assumes discretionary power without specific statutory authorization. In other cases the law provides for tax relief if the taxpayer satisfies certain conditions. In other cases the law is precise and the administrator is inflexible. In other cases the administration is sufficiently lax to make tax evasion a profitable

risk. In very few cases is it possible to examine the tax laws and arrive at a tax cost figure in which great reliance may be placed. Although all types of taxes are subject to the same difficulties of interpretation, the income tax and the property tax are undoubtedly the chief offenders. Through administrative adjustments to the formula by which taxable income is determined, and through arbitrary and inexpert appraisal practices, these taxes often obliterate Adam Smith's familiar cannon that taxes be "certain".

In one other sense taxes tend to be less certain than do other types of costs. All costs are, of course, subject to variation through time, and all are, to a certain extent, unpredictable. But for the individual firm tax costs are probably unique in the *degree* to which they may fluctuate and in the *extent* of their unpredictability. An apparently small change in the tax laws, involving virtually no revenue change for the taxing authority, may have a very considerable effect upon the tax burdens of individual enterprises. Changes in the growth pattern of the state or of individual communities can bring unexpected problems of providing governmental services, and hence unexpected tax problems. Changes in the composition of the legislature or of the administration, and consequent changes in the philosophy or techniques of government, may impose totally different tax burdens upon individual corporations than those which were imposed before the changes. Changes in non-tax costs are related to changes in the economy as a whole. Changes in tax costs may be quite unrelated to general economic changes. A state with a low corporate income tax rate may find itself in fiscal straits and be forced to double the rate. Changes in non-tax costs tend to be continuous. Changes in tax costs may be discrete and violent. A state may spend a decade reducing previously-accumulated surpluses in a desperate effort to maintain its low tax rates. When the surplus is turned into a deficit the state may feel obligated to attempt "recovery" in one or two years with extraordinarily high tax rates. Property tax assessments may deteriorate for fifty years. The final discovery that the situation is intolerable may result in a shocking revision, to redress, in a single year, the ills of half a century. The imminence of a radical departure from the status quo is rarely obvious on the surface and is never indicated by a simple examination of the existing statutes. Such changes are the source of the inherent and unique unpredictability of state and local tax burdens.

The fact that reasonably accurate tax differentials cannot generally be calculated by a corporation interested in industrial location does not, by any means, prove the unimportance of taxes in the locational decision. It merely adds a new dimension to the tax calculus and takes practice one step further away from theory. The difficulties of measurement force state and local taxes to play a secondary or a tertiary role in the locational decision. Thus, the corporation will typically establish a set of minimum conditions which must be met by the new location. Although these conditions may not be expressed in cost terms, they will clearly have a cost reference. The probability is that taxes will not be on this minimum-requirement list. Different basic factors will naturally appear for different corporations. One enterprise may require a large water supply. Knowing that the cost of supplying water by other techniques tends to be high, such an enterprise will probably include a running stream as one of its basic requirements. Another enterprise may know, from experience, that the cost of air conditioning and air filtration is extremely high for the kind of operations involved. Such an enterprise will tend to include a temperate climate on its list of most-favored factors. Still another enterprise may realize that no conceivable cost differential could offset the costs that it would have to bear if it did not locate close to a source of electric power.

Any number of factors may be considered to be of primary importance, but it is probable that there are very few enterprises that would include state and local tax differentials in the list of basic considerations. There can be only two reasons for this omission: either tax differentials between jurisdictions are small relative to differentials in other costs, or it is impossible to calculate tax differentials with any confidence. In view of the fact that some enterprises are known to exhibit sincere dissatisfaction with particular locations because of tax differentials discovered *after* location, and because of the evidence contained in Chapters V, VII, and VIII of the present report, it is here maintained that the only defensible argument for the omission of state and local taxes from the list of primary considerations for the majority of firms is the inability to discover the real differences in burdens between alternative sites.

The statement of the basic requirements will, of course, narrow the list of possible sites by eliminating those sites which are obviously unsatisfactory. Even in this primary consideration,

however, it is too much to expect that management determine every site that could possibly satisfy the basic requirements, unless, of course, these requirements are so unique that they are met by a very small number of locations. As a result, many taxing jurisdictions will not have an opportunity to display their wares. Some will be eliminated because they do not offer the basic requirements. Others will be eliminated because of the prejudices of management or because of the prejudices of the professional industrial location experts. Others will be eliminated because of the fact that human beings occasionally overlook a good thing.

Once the list of possible sites has been narrowed to those which can fulfill the basic requirements, there is likely to be a consideration of those factors which are considered to be "desirable but not essential". The secondary consideration simply implies that these factors are known, perhaps intuitively, to involve smaller cost differentials than those involved with the primary factors. But still it is unlikely that taxes will be considered in any clear, quantitative way. Some enterprises may consider that the differences in labor costs emphasize the desirability of the remaining locations in the Southeastern states. Other enterprises may consider that the differences in labor skills emphasize the desirability of the remaining locations in the Northeastern states. Still other enterprises may conclude that the costs involved in a location in the midst of industrial overcrowding are too great. In any event, a second process of elimination takes place. Once again, many taxing jurisdictions are eliminated before they have had a chance to prove their low-tax status, for the simple reason that other, more easily calculated and more readily predicted elements are found to be uncongenial.

By this argument, industrial location appears to be a process of elimination. Some sites are rejected because non-tax costs are known, *by common sense*, to be prohibitive. Other sites are rejected because non-tax costs are known, *by actual measurement*, to be relatively high. But it would seem that, until the final step, sites are not rejected because *tax* costs are *known* to be relatively high. This kind of knowledge simply does not fit the pattern of state and local taxation. Thus, because of imperfect knowledge, taxes are relegated to the position of final arbiters. When everything else has been decided, and when

everything else has been found to produce equal advantages for those sites which have not been eliminated, taxes may be considered to be the deciding factor.[14]

The fact that tax differences are capable of only imperfect discovery would seem to be sufficient reason for relegating state and local taxes to this role of final arbiter. But there is another reason which may be introduced as a second line of defense. This reason is embodied in the observation that *taxes are considered, by many corporations, to be negotiable payments*. There are few areas in the American economy in which higgling and bargaining may still be practiced. The modern market place with fixed prices has taken over the bazaar. But state and local taxes have fallen prey to the "fair trade" principle in a legalistic sense only. Outside the law (although sometimes permitted by the law) bargaining is still possible. Furthermore, industrialization has been endowed with such an air of desirability that, when a corporation presents a dozen possible locations in various states, and when the choice is made to rest upon tax concessions beyond the law, the corporation often finds itself bargaining from a position of considerable strength. In this way at least part of the uncertainty of state and local taxes is removed in the final stages of the locational decision.

To the extent that tax considerations are introduced at earlier stages in the deliberations they tend to take the form of a calculation of the obvious. In the same way that a site may be rejected because of an obviously inadequate water supply, a site may be rejected because of an "obviously" inadequate tax levy. A high corporate income tax rate, a demanding allocation formula, a high franchise tax rate, and high property tax rates will tend to prejudice the management against particular states or against particular sites within a state. The results of such an incomplete examination may be quite invalid. But they will permit the corporate officials to sift out those states whose tax burdens *appear* to be high. Faced with the monumental task of persuading a large number of local tax assessors to disperse, for a moment, the clouds of mystery which surround local assessment practices, and faced with the equally monumental task of persuading a large number of state officials to generalize on the

14. The conclusion that industrial location takes the form of a process of elimination rather than the form of a simultaneous solution of countless variables is suggested by Glenn E. McLaughlin and Stefan H. Robock, *Why Industry Moves South*, National Planning Association, Washington, D. C., 1949, chapter 3; and again by Stefan H. Robock, "Industrialization and Economic Progress in the Southeast", *The Southern Economic Journal*, April, 1954, pp. 317-319.

subject of special determinations, a corporation in the beginning stages of the exploration for a new location can hardly be expected to do more than examine the tax laws and related material, and, perhaps, to conduct the kind of hypothetical comparison illustrated in Chapters VI and VII of the present report. In such considerations the state that conceals, however inadvertently, the low-tax elements of its tax structure is clearly at a disadvantage. Conversely, the state that conceals the high-tax elements of its tax structure is clearly at an advantage. The *real* tax advantage may, in fact, lie in the state that is rejected because its *apparent* tax burdens are excessive.

The role of state and local taxation in the locational decision thus appears to have two facets. If taxes are considered early in the explorations, the calculations are likely to be of the obvious aspects of the state and local tax structures. If taxes are considered late in the explorations, it is probable that they will serve as the final element in the choice between a number of sites which are otherwise comparable in their locational advantages. In this latter event, the tax calculations which form a part of the final decision may be concerned only with the apparent differences or they may be the result of extended negotiations in which several taxing jurisdictions act out the roles of competitive suitors.

Even though the calculations of interstate tax differentials are, of necessity, superficial in character, it is still important for the businessman to have some idea of the magnitude of these differentials. It is impossible to say, however, how great the interjurisdictional differences must be before they may be assumed to influence industrial location. For some enterprises the non-tax factors may be in such close balance that small tax differences may tip the scales. Assuming a prior decision to locate somewhere in the Southeastern states, the probability is that many of the non-tax factors show such similarity in the region in question. It may thus be that, in this kind of intraregional competition for industry, taxes play a more important role than they do in inter-regional competition. It is wise to remember, however, that a simple comparison of state and local tax burdens is not enough to indicate, even superficially, the magnitude of the interstate differences. Almost all state and local taxes levied upon corporate enterprises are permitted as deductions from gross income in the computation of federal income tax liability. With the present federal income tax rates,

the absolute differences between alternative sites must be reduced approximately 48 per cent to provide a measure of the kind of tax differentials that influence tax location. Thus, a difference of $1,000 in the state and local tax bills of two taxing jurisdictions would, in effect, be a difference of only $520 if federal income taxes were taken into account. The same thing is true, of course, of other types of costs which are allowed as deductions in the computation of the federal income tax base. The magnitude of the difference is further reduced by considering the effect of the new location upon the allocation ratios and the state income tax liabilities in other states in which the company operates. Although this feature of the problem is often neglected in locational problems, it can have extremely important implications for a company planning a large, new installation.

Effects of tax lures on industrial location

Mr. Philip Hammer has classified industrial development activities on the part of governments in the South as "instructive, constructive, and seductive."[15] The "instructive" category covers informational and research services of all kinds. The "constructive" category covers programs of public expenditure of all kinds. The "seductive" category covers special incentives consciously developed to lure industry to a location in specific states or in specific localities. One of the most important of such lures is the tax exemption or the tax concession, and of these, the most important is the plan whereby new or expanding industry is granted a temporary property tax exemption (usually a *partial* exemption) for a specified number of years.[16]

Professor William D. Ross, of Louisiana State University, has commented, at the conclusion of his study of the effects of the Louisiana 10-year property tax exemption program, as follows:

> "Theoretical analysis and empirical evidence presented in this study coincide to support the widely held belief that the industrial property tax exemption will, under special circumstances, serve as the deciding influence upon the decisions of management to develop and to locate a new enterprise in Louisiana rather than in another state. In such a case, the added employment, income, business activity, and the new tax base thereby created in the community where

15. Philip Hammer, op. cit.
16. Of the eleven states in the Southeast, Alabama, Louisiana, Mississippi, and South Carolina make use of the temporary property tax exemption as a conscious lure to industry.

the plant is located and in the State may well offset the direct and indirect costs of the exemption. Only in such a case, however, can an economic justification for the granting of the tax exemption be found. The results of this study indicate that such cases are very few in number, that exemptions cannot be so selectively employed, and that the cost in terms of lost revenue entailed in the granting of exemptions to all firms is great in proportion to results.[17]

Thus, as was to be expected from industrial location theory, temporary property tax exemptions may be instrumental in attracting some enterprises to the state granting such exemptions. But many enterprises that would have located in the state without such exemptions accept the exemption as a gratuity. As a result, the technique "gives away" much more than it needs to give away in order to attract industry. This excessive beneficence can have only two results: It can result in lower governmental expenditures, or it can result in shifting the tax burden to some other taxpayers' shoulders. It may be argued that, to the extent that *new* industry is attracted, there will be no *loss* of revenue but only a failure to *gain* revenue. This argument is correct enough as far as it goes. But to the extent that the participating firms would have entered the state without the exemption, the exemption represents an unnecessary failure to gain revenue. Furthermore, while industry undoubtedly does not exhibit the same demands for direct governmental services as do retail establishments and homeowners, industrial growth nevertheless brings the need for greatly expanded governmental services of all kinds. If the revenue structure fails to keep pace with the need for governmental services, there must, of course, be a reduction in the *level* of such services.

If the level of services is maintained, the tax burdens that would have been borne by the new enterprises would have to be borne by other taxpayers, corporate and personal, in the exemption state. It is important to note that after the expiration of the exemption period the enterprise able to obtain the exemption will be forced to bear the relatively high tax burdens in order to permit the continuing exemption for other firms newly entered. The enterprise will, in effect, be helping to pay for its own exemption. This pattern would certainly be apparent if the granting of the property tax exemptions served, by fractionalizing the base, to increase the property tax rate. But adjustments to the exemption may take place entirely outside the

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17. William D. Ross, *Louisiana's Industrial Tax Exemption Program*, Division of Research, College of Commerce, Louisiana State University, Baton Rouge, 1953, p. 47.

property tax area. It may be that the corporate net income tax rate will have to be raised to help carry the burden of the new exemptions. In this case, the exempt firm will still receive a net advantage from the property tax exemptions as compared with other taxpayers in the same state, but the interstate advantage will be greatly reduced or eliminated altogether.

There are some reasons for believing that a good many businessmen look with distrust upon temporary exemption schemes. The feeling is apparently strong that the level of governmental services will suffer or that the tax structure will contain hidden devices to assure the artificiality of the exemption. It may thus be that the temporary exemption programs have actually dissuaded some enterprises from new location in favor of states with a declared policy of "fairness and equity and no free-rides".

Too little attention has been paid to the relationship between industrial location and governmental services, the relationship implied by Mr. Hammer's "constructive" activities. On the significance of these policies Mr. Hammer commits himself with a strong declaration of faith:

> "The 'constructive' aspects of Southern industrial development are not usually recognized as part of the program. No state development agencies have responsibility for this type of activity—and yet I personally believe that it is by all odds the most important factor in industrial expansion.
> "The South faces the need for a tremendous additional investment in its public facilities—its streets, schools, libraries, parks, water and sewer systems, and other physical improvements. It has already made substantial investments, but the task has just begun."[18]

In some cases the insufficiencies of governmental services will force the company to provide essential services for itself. Such basic requirements as fire protection, police protection, sewage facilities, water supply, and even employee transportation facilities may have to be provided privately if they are not provided publicly. In a community in which such services are missing or in which they are inadequate for a large industry, the low tax bills imposed by the community may not be considered to be economic gravy. The substitute costs that would have to be borne by the company may, in fact, more than offset the low tax

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18. Philip Hammer, op. cit. These views are expressed by many economists and location experts as well as by many individual businessmen. The importance of such governmental services is stressed, for example, by Mabel Walker, op. cit., p. 27. In an article in *Fortune*, July, 1956, by Richardson Wood, the *only* reference to the locational effect of taxes is in terms of the worry of the businessman that taxes might not "keep up with the requirements for schools and streets and sewers", p. 128.

status of such a location. In other cases the insufficiencies of governmental services cannot be remedied by private operation. Roads, highways, port and airport facilities are among the services which must be considered indispensible to industrial location and which are almost universally recognized to be governmental in character. But industrial enterprises are more and more recognizing the need for governmental services which do not *directly* influence the costs of the business. Hospital facilities, parks, libraries, and other recreational and cultural facilities are often considered to be extremely important. A good system of schools for the children of company personnel stands high on the list of primary requirements of many companies. It is commonly recognized, too, that the values of a good school system extend beyond the needs of company personnel. These values are, from the company's point of view, the intangibles of community stability and social health. If taxes are reduced at the expense of these services, or if the reduction in taxes serves to delay the necessary expansion of these services, the result may very well be a diminished interest in the community as a possible industrial location. To this extent, low taxes (at least *extremely* low taxes) may have exactly the opposite effect to that desired. They may, in fact, drive industry away.[19]

There is thus no clear answer to the old question of whether state and local taxes significantly affect industrial location. At the first level, the answer depends upon the magnitude of the differences between the tax bills of the sites in question. Even after the differences between state and local tax bills are reduced by the proper consideration of the federal income tax, it is apparent, by even a superficial examination, that fairly large differences in state and local tax bills do exist. But these differ-

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19. It is possible to draw this interpretation from an extension of the findings of a very interesting study by Clark C. Bloom, "State and Local Tax Differentials and the Location of Manufacturing", *Studies in Business and Economics*, New Series, No. 5, Bureau of Business and Economic Research, College of Commerce, State University of Iowa, Iowa City, Iowa, March, 1956. The author makes use of a correlation technique to test a number of postulates regarding manufacturing location and state and local tax burdens. The author shows that "there is only a rather unimportant relationship between state tax collection levels and increases in manufacturing employment. But it (the statistical evidence) indicates that *manufacturing employment increased most where per capita gains are highest.*" (p. 26) The probability that higher per capita taxes are related to higher service levels may indicate the favorable attitude with which businesses approach areas in which governmental services are adequate. In addition, the author found that "there is no discernible tendency for growth in manufacturing employment to be depressed where *corporate income and license tax collections* are high." (p. 34, italics added.) Unfortunately, the evidence does not seem fully to support the conclusion that "state and local tax collection differences from state to state *as they presently exist* are not important to the mass of industrial location decisions." (p. 40) This may be true when *aggregate* collections are considered, but it may or may not be true when *corporate* tax burdens are considered. The author's concern with "business taxes" does not remove this difficulty, for he has included only those taxes which are *exclusively* corporate taxes. He has not considered, for example, the effects of corporate property taxes upon the corporate decision.

ences in tax bills must be interpreted differently for different enterprises. For some types of businesses the tax differentials will be insignificant as compared with the differentials in transportation costs or labor costs or building costs. For other types of businesses the tax differentials will not only be significant, but, in all probability, constitute a determining factor. In any event, the tax differentials that are used in any but the final calculations are almost certain to be hypothetical and superficial. It is in the nature of state and local taxation that, without collusion between taxpayer and tax collector, certainty in the imposition is virtually unknown. In the final stages of the decision-making process, it may very well be that many enterprises acquire certainty through the bargaining process. But even this apparent certainty must be tempered by the possibility of a change of administrative personnel, a change in the political atmosphere, or a change in the law itself.

State and local tax bills thus present a greater problem of uncertainty to the corporate official than almost any other cost. It is this uncertainty that forces a consideration of the *apparent* tax differentials. But even in this sense, tax differentials must be compared with the differentials in other costs before the locational analysis becomes truly meaningful.

For many reasons, the differentials in non-tax costs are likely to be greater if the comparison spans a wide geographical area than if the comparison spans a narrow geographical area. Regional comparisons, for example, are likely to show greater non-tax cost differences than are comparisons between counties of the same state. As compared with other regions of the United States, the Southeastern region exhibits a low level of wage rates. The differences between wage rates (and consequently labor costs) are hence much greater in the regional comparison than they are if wage rates are compared *within* the Southeastern states. Price levels in general also tend to exhibit significant regional differences, partially, no doubt, as a result of the differences in the wage component of the price level. Assuming fixed market conditions and assuming a fixed distribution of natural resources, transportation cost differentials tend to be greater if the distance between the prospective sites is large than if the distance is small. Taxes, on the other hand, may or may not exhibit greater differences between sites that are widely separated than between sites that are narrowly separated. Assuming perfect knowledge of all these cost differentials, it may thus

be that state and local taxes play a very slight role in the selection of the *regions* of industrial location, a slightly more important role in the selection of the *states* of industrial location, and a still more important role in the selection of the *locality* of industrial location.

On the question of the relationship between industrialization and state and local tax burdens the theoretical conclusions are clear and unequivocal. In the practical terms in which the problem of industrial location must be phrased in a policy debate, the answers are much less clear. If anything, these practical considerations tend to diminish the importance of state and local tax burdens in the locational decision. Nevertheless, it seems fair to say that tax *policies* are often formulated on the basis of the theoretical reference, however intuitively recognized, rather than on the basis of the institutional realities. But even more significantly, policy action often results from a simple statement of the magnitude of the differences in apparent tax burdens as between competing tax jurisdictions. This unsophisticated approach does not receive even theoretical sanction.

It is probable that much of the policy reasoning is based upon contentions advanced by enterprises already located in the state in question. The contentions may take the form of an implied threat by such enterprises to leave the state unless the tax burdens are reduced to levels comparable with those which seem to be imposed by other states with "equal locational advantages". Or the contentions may take the occasionally more forceful form of a suggestion that other enterprises not now located in the state but urgently needed in the industrial community will not seek location unless the tax burdens are reduced to levels comparable with those which seem to be imposed by other states. In either case, the arguments are likely to be extremely effective in a state that is searching desperately for new industry and seeking to retain the industry it now has.

Such arguments are, of course, a natural product of the desire of business institutions to reduce total costs wherever possible. Once a business has located in a particular state the business has a clear economic motive to attempt a reduction in its state and local tax bill, whether the expectation of this tax bill played a major role, a minor role, or no role at all in the locational decision. In this sense, state and local tax burdens may be much more important in retrospect than in prospect. The recognition of the origins of this argumentation does not prove that the

contentions are necessarily invalid. It merely emphasizes the need for exercising due care in the policy process and for exploring below the surface of any self-serving declarations.

CONCLUSIONS

North Carolina's need for increasing the size and improving the economic quality of its industrial family is indisputable. Although the attraction of more and better industry should not be considered to be the complete solution to North Carolina's economic problems, it is clearly essential that such attraction occupy an extremely important position in the roster of North Carolina's economic policies.

From the point of view of practical policy, the question arises as to whether the North Carolina tax structure should be considered to be an instrument of industrial attraction. In the present study no attempt is made to answer this question categorically. But the preceding discussion has pointed to several dangers inherent in the use of extremely liberal tax favors as the foundation of a program of industrialization. These dangers, and associated argument, may be summarized as follows:

1. It is difficult, if not impossible, to devise the tax attractions so that they will apply only to those new enterprises considered to be desirable additions to the North Carolina economy and that could be attracted to the State by no other device. It may even be politically difficult to restrict the favors to new enterprises. Because of the fact that the policies cannot be selective, the effects of the policies on revenue are necessarily great as compared with the economic accomplishments.

2. Important problems of equity arise if the total tax burdens of state and local governments are shifted to other taxpayers. These problems of equity relate to the distribution of tax burdens *within* North Carolina. It may be, in other words, that an attempt to solve the problems of an unfavorable *interstate* comparison will create even greater problems in the *intrastate* comparison.

3. If tax burdens are shifted to corporations not granted tax relief, problems of survival may arise for these corporations even though they are unresponsive to interstate tax differentials.

4. If tax burdens are shifted to individuals, particularly those individuals with relatively low incomes, the program of industrialization loses much of its justification, for the basic *purpose* of industrialization is to improve the lot of such individuals.

5. Since state and local taxes tend not to be a matter of first consideration for the majority of corporations, tax favors may very well tend to attract the most mobile business enterprises, *i.e.* those enterprises which are not committed, by the force of *non-tax* considerations, to remain long in the chosen location. If North Carolina's tax policies were to change at a later date, or if other, so-called "competitor" states offered a more attractive tax package, these migrant industries might well feel the impulse to move *out of* North Carolina as freely as they moved into North Carolina. It is probably true that the community's stake in "not-moving-out" is even greater than the community's stake in "moving-in".

6. In adopting a policy of conscious attraction through extreme tax concessions, North Carolina would be firmly committed to a policy of competition with other states. This competition would, undoubtedly, have its most important manifestations among North Carolina's companion states in the Southeast. At this point, two supplementary questions must be posed. These are as follows:

   (a) Is interstate competition within the Southeastern region necessary or desirable? There is good reason to suppose that the answers to both of these questions must be in the negative. There is, in fact, much to be said for the view that North Carolina's continued economic development cannot take place *without a roughly comparable economic development of the other Southeastern states.* In recent years the mobility of Southern labor has been extremely high. Just as the historical movement of population in the United States as a whole has been described as a "westing", so the modern population movement in the Southern states might be described as a "northing". In this movement, North Carolina has been a "way station", receiving immigrants from more southerly states and dispensing emigrants to more northerly states. Any substantial improvement in North Car-

olina's economic condition, *accomplished at the expense* of its neighbors in the Southeast, could only speed up the immigration and slow down the emigration. North Carolina thus has an important stake in the economic and social development of the Southeastern *region,* and cannot afford the insularity implied by a desire to *compete* with the states which are its unfortunate companions in low economic status.

(b) Is "successful" competition between North Carolina and the other Southeastern states possible? This question, even if it is assumed that state and local taxes do have an important effect upon industrial location, must also be answered in the negative. If North Carolina is to "compete" with other Southeastern states in tax concessions, it must be prepared to offer roughly equivalent attractions. Assuming that this is done, and assuming that this policy is successful in attracting industry to North Carolina at the expense of other Southeastern states, there is every reason to suppose that the competition will at least be matched by the competitors. Competitive industrial attraction is by no means a one-way street. It is not a policy practiced by one determined state while neighbor states sit idly by watching the fruits being consumed by others. The decision to pursue such a course is thus not a decision to take the first step and no more. It is a decision to participate in a long-run program of ever-increasing concessions. The cumulative results of such a program can only be disastrous for all of the states who are willing to participate.

7. Since the tax costs of industrial attraction tend to be much larger than they need to be (in view of the impossibility of devising a highly selective policy of concessions), the policy of extreme concessions carries the danger of lowering the level of governmental services. This danger is particularly significant for North Carolina and the other Southeastern states. Perhaps the primary need, *purely from the point of view of industrial necessity,* is for improved educational facilities, of the vocational type and of the type designed to produce a balanced, basic educational system. The demands of North Carolina's industrial fu-

ture are such that both an increase in manual skills and an increased emphasis upon higher education are essential to continued progress. If tax concessions, designed to *stimulate* economic development, have the effect of preventing the extension of educational facilities at all levels, the probability is that they will eventually *prevent* economic development.

Without denying the possible importance of the tax comparison for some types of businesses, it is thus possible to establish the dangers of a policy of industrial attraction by large tax concessions. But the same analysis makes it clear that a state runs the risk of turning away potential industrial immigrants if its tax structure is consciously discriminatory against manufacturing establishments or if its tax structure has an especially demanding appearance. There is, therefore, much to be said for a periodic analysis of the state and local tax structure to make sure that it is fair in its impositions and equitable in appearance. Purely from the point of view of enlightened self-interest, a state should set out to grant whatever tax favors it sees fit *through the legislative process rather than through the administrative process.* Administrative discretion to deal with unusual cases is, of course, indispensable, but it must be established as a general principle that the area of administrative discretion should be minimized. Administrative activity is, by nature, unavailable for public scrutiny and incapable of generalization. But the character of the analysis that lies behind much industrial location is such that only the published provisions and only those provisions which can be generalized are taken into account. For every potential industry that seeks to bargain with the local assessor or the state administrative or relief agency there are, in all probability, many more who are repulsed by the first examination of the taxing statutes and the other superficial evidences of tax burdens. From the point of view of the effects of taxation upon industrial location, as from the point of view of the sound functioning of a democratic process, there is no substitute for candor.

CHAPTER IV

THE REPRESENTATIVE SAMPLE APPROACH—
THE METHOD

A STATEMENT OF PURPOSES AND LIMITATIONS

The purposes of the representative sample approach are, theoretically, the purposes of the entire impact study. Of all the approaches available for use in the present study, only the sample approach is theoretically equipped to describe individual tax burdens of large groups of corporate taxpayers in the Southeastern states. If it were possible to retain this quality through all the adversities of the practical application, it would be possible to answer almost any of the important impact questions posed in the present study. Are the tax burdens imposed by North Carolina on tobacco manufacturers greater or less than the tax burdens imposed by North Carolina on textile manufacturers, furniture manufacturers, extractive corporations, retail establishments, or public utilities? Are the tax burdens imposed by North Carolina on manufacturing enterprises greater or less than the tax burdens imposed by other Southeastern states on the same types of enterprises? Does North Carolina's tax structure rest more heavily upon foreign corporations than upon domestic corporations, upon small corporations than upon large corporations? Are the differences in tax burdens significantly greater as between the major industrial categories than as between individual corporations within any one industrial category? These and many other questions are clearly within the theoretical scope of the representative sample method, and all are within the field of interest of the impact study.

Unfortunately, the theoretical qualities that make the representative sample method so attractive in problems of quantitative inquiry cannot be preserved in the rough-and-tumble operations of an interstate comparison of tax burdens. As pointed out in Chapter I, there is no source of information that may be utilized for the selection of a reputable sample in states other than North Carolina. The scientific requirements of the random technique are such that it is necessary to have permanent access to corporate income tax returns or to a complete listing of corporations required to file income tax returns. In order to collect the necessary information for a measurement of tax burdens, it is

similarly necessary to have unlimited access to tax returns or at least to the names and addresses of the sample corporations so that information may be obtained by direct questioning. Tax returns are, of course, universally held to be sacred instruments and are quite beyond the reach of the analyst who is without official status in the jurisdiction in question. If official listings of corporate names and addresses do exist for some states, these, too, are generally considered to be confidential or are, for mechanical reasons, unavailable.

The impossibility of selecting a sample that is representative of the entire eleven-state area of the study thus makes it necessary to adjust the purposes of the sample approach. The method must be designed to disclose as much as possible about the distribution of tax burdens *within* North Carolina.[1] It cannot have as its purpose the systematic analysis of the tax burdens imposed by other states of the Southeast. Its purpose is therefore *intra*state rather than *inter*state.

There are, of course, important reasons for wanting to know as much as possible about the tax structure of North Carolina and the way in which its burdens are distributed. In the first place, the problem of whether the present structure spreads its burdens fairly is a question of very real substance and stands on its own as a possible stimulant to policy. But from the point of view of the study of interstate impacts and the kind of policy questions that might arise in connection with such a study, a detailed knowledge of the existing tax structure is essential. It may be, for example, that the interstate differences that do exist (and that are described in other sections of this report) will induce some sort of remedial action in North Carolina. Assume, for the moment, that the tax system of North Carolina is found to impinge rather heavily on the kinds of corporations that would assist the economic development of the state as compared with the burdens imposed by the tax systems of the other Southeastern states. Assume, further, that there is a desire to address some kind of policy to this situation and that the policies under consideration are such as to reduce total revenue collections. From this point, there are several avenues which policy might take, depending upon the extent to which the original action is expected to affect revenues and depending upon the strength of the desire to maintain (or increase) existing stand-

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1. For purposes of the present study and, in fact, for all of the work of the Tax Study Commission, there was virtually unlimited access to corporate tax returns of all kinds in the files of the North Carolina Department of Revenue.

ards and levels of governmental services. If it is desired to maintain present levels of expenditure and, roughly, present levels of total tax collections, the original action must be balanced by opposite adjustments to other parts of the structure. These opposing adjustments may, in turn, take two forms. They may be either specific adjustments applying to one kind of taxpayer and one kind of tax, or general adjustments applying to all taxpayers and all kinds of taxes. The first of these would take the form of an adjustment to a particular tax *base*, to remove an exemption, to prohibit a deduction, or to eliminate an exclusion. The second would take the form of an increase in the tax *rates*, on an across-the-board basis (applying even to the enterprises whose more favorable treatment created the need for the adjustment). With the first, the increased burdens would be localized to a particular group of taxpayers. With the second, the increased burdens would be generalized, so that all taxpayers would bear the same relationship to one another after the increased burdens as before. These policy alternatives are a little like the difference between poking a lump of wet clay with the blunt end of a pencil and pressing a half-filled balloon with the same instrument. In one case, the surface reaction is concentrated in the area opposite the pressure. In the other case, the reaction is diffused over the entire surface.

Whether recognized or not, a policy action in either direction is based upon an assumption about the existing distribution of tax burdens (if, that is, the problems of equity are considered to have any importance at all in the development of a tax system). A generalized increase is based upon the assumption that the existing distribution is satisfactory, while a localized increase is based upon the assumption that the area in question is presently not bearing its full share of the tax burden. While such decisions are usually based upon little more than intuition, or, in some cases, upon convincing (and possibly correct) arguments presented by interested parties, it is obviously desirable that they be based upon as much factual information as it is possible to muster. This is a role which the representative sample approach is excellently suited to fill.

Thus, in terms of policy considerations, the representative sample approach has two connections with the equity problem. If the sample approach itself shows up pronounced inequities within the North Carolina structure, tangible evidence is provided of the need for revision, quite apart from the problems

of interstate comparison. If, on the other hand, the other approaches show up the need for policy in certain areas in order to permit North Carolina to attain or maintain a desirable competitive relationship with respect to industrial attraction, the answers provided by the representative sample approach should, if any confidence may be placed in them, assist in the decision as to whether the "adjustment" policies should be general or specific. They should also point to *particular* areas which might equitably be explored for additional revenues.[2]

Although the representative sample approach is thus aimed at an analysis of North Carolina taxes, it may be assumed to have an incidental reference to the tax systems of other states of the Southeast. The methods adopted in the sample approach were designed to collect as much information as possible about taxes paid and business done by the sample corporations in the other ten states of the Southeast (listed separately) and in all other states and countries (listed as a single entry). Because of the way the sample was selected, many of the corporations studied were found to have operations in states other than North Carolina. This, of course, was particularly true of foreign corporations (those chartered outside North Carolina), although it was also true of many domestic enterprises. However, the factor of multi-state operations was not considered in the process of selecting the sample, and, since nothing is known about the corporate populations of other states, it is impossible to claim proper representation in these cases. The results of the interstate comparison are thus advanced merely as supplementary to the other studies (which, of course, are also "non-representative") of interstate burdens contained in this report. They certainly cannot stand on their own as proof of the nature and degree of interstate tax differentials.

Even with the circumscribed purposes assigned to the representative sample approach, the methods adopted necessarily diverged from theoretical perfection at a number of rather critical points. These difficulties were recognized in advance, and every effort was made to minimize their effects. But it was in the nature of the problem that some of the materials would fail to yield to even the most strenuous efforts. Many of these diffi-

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2. It must be remembered that the subject matter of the impact study is the *corporate* taxpayer only. Thus, any shifts of burden which are implied by the quantitative analysis must be understood to be shifts only within the corporate category. There are, obviously, many other things that need to be explored before it can be said that burdens should be shifted from the corporate group to the personal group, or from the personal group to the corporate group.

culties will become apparent as the explanation of the method proceeds, but one or two must be mentioned at this point as significant limitations to the purity of the techniques.

As pointed out above (and as more fully described below), the sample itself was selected by methods carefully designed to assure the "randomness" of the selection, to remove the possibility of conscious bias, and to minimize the incidence of unconscious bias. It is felt that these goals at least were satisfactorily achieved. Much of the information, however, had to be collected by means of a questionnaire circulated to the sample corporations. As was expected, a number of those to whom questionnaires were sent did not reply, for one reason or another, so that the sample was necessarily reduced in size. Many of these blank spots were subsequently filled in by reference to the tax returns of the sample corporations. This operation was possible, for the most part, only for those corporations with all of their operations in North Carolina. Although the residue was relatively small, it was of such a character as to disturb the distribution of the sample and seriously affect the randomness so carefully established in the selection process. Most of these blank spots were, in turn, filled in by means of additional persuasion addressed to the corporations originally selected, and, finally, by means of a program of replacement. In terms of the size of the final sample, only a few blank spaces remain, and, although it cannot be said that these absentees are randomly distributed, there is reason to believe that distortion coming from the sample itself is slight.

A serious problem was also encountered in the *measurement* of the individual tax burdens. An early decision was made to establish several lines of comparison, utilizing several different "measures" of tax burdens. Some of the sample corporations could not (or, in any event, did not) submit the kind of answers that could be permitted to remain in the final results. Thus, in terms of the actual *measures* utilized in interpreting the sample, the sample is even more seriously restricted in size. Here, too, there is no reason to suppose that the absent measurements are randomly distributed. Neither is there reason to suppose the contrary.

Finally, there developed a serious limitation of time and resources. There can be no question about the fact that the original sample was designed in an over-ambitious fashion. This was done under some rather grandiose delusions about the avail-

ability of staff and equipment. In any event, the difficulties had the effect of limiting the time available for cross-checking calculations and for making many interesting analyses which the data would undoubtedly support. It is felt that the first does not represent a serious limitation to the accuracy of the results. The second difficulty may be removed at a later time, if it is found desirable to do so.

THE CHARACTERISTICS OF THE POPULATION[3]

According to the records of the North Carolina Department of Tax Research, a total of 13,404 corporations filed corporate income tax returns in 1953. These were classified into 18 major groups of enterprises, as shown in column 1 of Table 1. The classification system is that used by the Department of Tax Research in the preparation of the biennial publication *Statistics of Taxation,* now published jointly by the Department of Tax Research and the State Board of Assessment. The classification is based upon a careful examination of all corporate tax returns for the year in question and the determination of the "principle business" of each taxpayer, as indicated by the taxpayer and as detectable from an analysis of the sources of income and the nature of expenses. Separate classifications are provided for corporations chartered in North Carolina (domestic) and for corporations chartered in other states and countries (foreign). Most of the major classes are further broken down into sub-classes. These are shown as follows.[4] The alphabetical designations indicate the "major" classes from which the sample was selected.

A. Agriculture and Extractive
    1. agriculture and horticulture
    2. lumber and lumbering
    3. mining
    4. stone, gravel, etc.

B. Construction and Contracting

C. Finance
    1. banks
    2. brokers
    3. insurance agencies

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3. The term "population" as used in the present context is taken to mean all corporations filing net income tax returns in North Carolina in the year 1953.
4. "Statistics of Taxation", *Biennial Report of the Department of Tax Research and the State Board of Assessment,* Raleigh, 1954, pp. 140 et. seq., and pp. 184 et. seq.

    4. insurance companies
    5. mortgage and finance companies
    6. collection agencies and factors

D. Food and Feed Manufacturers
    1. bakeries
    2. bottling (non-alcoholic)
    3. brewers, distillers, and wineries
    4. dairy products
    5. food packers and processors
    6. milling, grain, feed, etc.
    7. vegetable and fish oils and feeds

E. Forest Products Manufacturers
    1. baskets, boxes, and wood products
    2. furniture and furnishings
    3. millwork, plywood and special lumber
    4. paper and pulp

F. Mineral, Chemical and Metals Manufacturers
    1 fertilizers and chemicals
    2. metals and machine shop
    3. stone and clay products

G. Textile Manufacturers
    1. synthetics other than rayon
    2. clothing and garment
    3. cotton and cotton yarn
    4. dyeing and finishing
    5. hosiery
    6. rayon and rayon yarn
    7. wool and worsted
    8. other textiles

H. Tobacco Manufacturers and Processers

I. Other Manufacturers
    1. auto, body, and accessory manufacturers
    2. business equipment and supplies
    3. industrial equipment and supplies
    4. newspapers
    5. printing and publishing
    6. all other manufacturing

J. Miscellaneous
  1. non-profit
  2. holding companies
  3. inactive
  4. unclassified

K. Public Utilities

L. Recreation and Amusement
  1. film distributors and producers
  2. theatres
  3. theatre equipment and supply
  4. other recreation, booking companies, etc.

M. Service
  1. advertising
  2. beauty shop, etc.
  3. burial associations, mutual
  4. cafes and restaurants
  5. engineering and management services
  6. co-operatives
  7. other service corporations
  8. hotels and inns
  9. laundry, dry cleaning, etc.
  10. real estate and rental
  11. transportation (other than franchise utilities), taxi, etc.
  12. undertaking
  13. warehousing and storage

N. Automotive—trade
  1. gas and oil refiners, selling
  2. gas and oil retailers
  3. gas and oil wholesalers and distributors
  4. motor vehicle dealers and distributors
  5. motor vehicle manufacturers branch sales and
     subsidiary selling
  6. motor vehicle tires and accessories and services

O. Beverage, Food, and Drug—trade
  1. beverage distributors
  2. chain store, drug and grocery
  3. manufacturers' branch sales and subsidiary selling
  4. other retailers, drug and grocery
  5. wholesalers and jobbers, drug and grocery

P. Equipment and Supplies—trade
   1. building materials and supplies
   2. business and office equipment and supplies
   3. electrical, heating, plumbing equipment and supplies
   4. industrial equipment and supplies
   5. other equipment and supplies—agriculture, construction, etc.

Q. General Merchandise—trade
   1. department store and mail order
   2. chain stores
   3. household furniture and furnishings
   4. manufacturers' branch sales and subsidiary selling
   5. other retailers
   6. wholesalers and jobbers

R. Unclassified—trade
   1. bulk commodity distributors—feed, fertilizer, coal, ice, etc.
   2. commodity brokers and commission firms
   3. publishing company sales
   4. textile selling agents
   5. tobacco dealers and warehouses
   6. all other trade corporations

The classification scheme, established and maintained by the Department of Tax Research, thus provided an excellent description of the total population. It was unfortunate that the 1953 classification had to be used, but this was the latest completed classification available at the time the sample was designed and selected. The 1954 classification was in the process of being prepared, but it was impossible to delay the first steps of the sampling operation until the completion of the list for the later year.

Each of the corporations represented by a tax return in the files of the Department of Revenue is also represented by a summary information sheet in the files of the Department of Tax Research, with one sheet for each corporation. It was these sheets that were used as the tangible basis for the selection of the sample. The information sheets are filed in four separate groups: Domestic Taxable, Domestic Non-Taxable, Foreign Taxable, and Foreign Non-Taxable. The designations "taxable" and "non-taxable" refer to the liability of the corporation under the North Carolina corporate net income tax law.

Section 105-152 of the North Carolina General Statutes requires that "every corporation doing business in this State" file a corporate net income tax return with the Department of Revenue. Section 105-138 of the North Carolina General Statutes lists a number of types of corporations that are "exempt from *taxation* under this article" (italics added) but that are not considered to be automatically exempt from the requirement that they file annual income tax returns. Most of the corporate types listed in the exemption section are non-profit corporations, such as fraternal beneficiary societies, building and loan associations, co-operative banks, chambers of commerce, farmers' fire insurance mutual companies, and so on. The exemptions granted by Section 105-138 in these cases are *conditional exemptions,* and depend upon proof that the corporations are truly non-profit in the year in question. Such proof clearly involves the submission of an annual income tax return even though no tax is expected to result. Many such corporations do, of course, pay other types of taxes, such as property taxes, intangibles taxes, and franchise taxes. There is, however, one exception to these conditional exemptions in Section 105-138. This refers to the exemption, for purposes of the corporate net income tax, of "insurance companies paying the tax on gross premiums" as specified in Section 105-228.5 of the General Statutes. Although there is no specific exclusion of these operating insurance companies from the list of those required to file an income tax return, it is assumed that the return filed in conjunction with the gross premiums tax is a sufficient declaration by these companies. Thus, since the population considered for the representative sample approach is defined by the corporations submitting corporate income tax returns, it does not include operating insurance companies. It does, however, include many corporations that are conditionally exempt from the income tax, and other corporations which, because of their temporary non-profit status, paid no income tax in the year in question.

THE SAMPLE DESIGN

With the total population of 13,404 corporations arranged in major groups by type of business done, it was felt that it would be possible to select a sample according to the requirements of the "random stratified" sampling technique. It is a commonly accepted statistical principle that confidence in the results can be appreciably increased if the selection is systematically made

from clearly defined strata in the population rather than from the population as a whole.[5] Furthermore, the most important questions to be answered are concerned with the differences between various types of businesses rather than with an abstract measure of the "average" tax burden imposed upon all corporations in North Carolina. With these purposes in mind, each class was looked upon as a separate "sub-population" within the total for purposes of the sampling operation.

The first decision that had to be made concerned the total number of corporations to be selected for the sample. In this decision there had to be two guiding principles. The first is that, other things being equal, the larger the sample the better. The second is that as the sample increases, the confidence in the results increases continually but, beyond a certain point *at a decreasing rate*. In other words, after a certain minimum size has been attained, the addition of other items to the sample will add to the confidence with which the results may be interpreted but it will add progressively less as more items are added. It is still true, of course, that *perfect* confidence requires a "sample" that is 100 per cent of the total population. Basically, then, the decision regarding the size of the sample must be made after consideration of the time and resources available for the entire study. It was decided that it would be possible to select and study a sample that was 25 per cent of the total population. Thus, the decision was made to select a total sample of 3,351 (rounded to 3,350) corporations. As stated earlier, it was subsequently found that this decision was somewhat ambitious in terms of the clerical staff and computational equipment that could be assigned to the representative sample approach.

The next problem involved the distribution of the total sample over the 18 classes into which the total population was arranged. In the theory of random stratified sampling it is a recognized principle that the larger the population of each class the smaller the sample needs to be in order properly to represent the class. By this "inverse ratio" theory of sampling, the percentage of the population selected for the sample should be larger for those classes containing relatively few items than for those containing relatively many items. The alternative would obviously involve the application of a uniform 25 per cent sample over all of the

5. Frederick E. Croxton and Dudley J. Cowden, op. cit., pp. 29-30.

strata. It was felt, however, that the product from very scarce resources would be maximized with the adoption of the inverse ratio method.

TABLE 1

DERIVATION OF NORTH CAROLINA SAMPLE OF CORPORATIONS, BASED UPON 1953 CLASSIFICATION, BY TYPE OF BUSINESS

Sample Code	Type of Business	Population [1]	Type of Business as a Percent of Total Population	Number in Sample with a Uniform Sample Ratio of 25 Percent	Sample as a Percent of Total Population —Adjusted	Number in Sample with Adjusted Sample Ratio	Type of Business—Sample—as a Percent of Total Sample	Final Sample Size (rounded)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
H	[3]Tobacco	32	.239	8.00	80.00	25.60	.76	26
A	Agriculture and Extractive	165	1.231	41.25	45.00	74.25	2.22	74
J	Miscellaneous	220	1.641	55.00	37.39	82.26	2.45	82
L	Recreation and Amusement	263	1.962	65.75	32.80	86.26	2.57	86
F	[3]Mineral, Chemical, Metals	287	2.141	71.75	32.60	93.56	2.79	94
D	[3]Food and Feed	387	2.887	96.75	31.80	123.07	3.67	123
K	Public Utility	452	3.372	113.00	31.30	141.48	4.22	141
I	[3]Other Manufacturing	469	3.499	117.25	31.00	145.39	4.34	145
E	[3]Forest Products	516	3.850	129.00	30.75	158.67	4.73	159
B	Construction	635	4.737	158.75	29.75	188.91	5.64	189
O	[4]Beverage, Food, and Drug	701	5.230	175.25	29.00	203.29	6.07	203
R	[4]Unclassified Trade	715	5.334	178.75	29.00	207.35	6.19	207
C	Finance	771	5.752	192.75	28.50	219.73	6.56	220
G	[3]Textile	817	6.095	204.25	28.00	228.76	6.83	229
N	[4]Automotive Trade	1284	9.579	321.00	24.25	311.37	9.29	311
P	[4]Equipment and Supplies	1287	9.602	321.75	24.20	311.45	9.29	311
Q	[4]General Merchandise	2005	14.958	501.25	18.55	371.92	11.10	372
M	Service	2398	17.890	599.50	15.75	377.68	11.27	378
	Totals	13404	99.999	3351.00	25.00[2]	3351.00	99.99	3350

NOTES: [1]Total number of North Carolina corporate income tax returns filed. Includes taxable and non-taxable, foreign and domestic.
[2]Total sample as a percent of total population
[3]Classified as manufacturing corporations
[4]Classified as trade coprorations

Table 1 shows the classes into which the total population was arranged, in ascending order of the number of items in each stratum. Column 2 shows the number in each stratum expressed as a per cent of the total population. Column 3 shows the number of items that would have fallen into each stratum *of the sample* if a uniform sample ratio of 25 per cent had been applied in each case. If this procedure had been adopted, the sample of tobacco manufacturers would have contained only eight items, hardly enough to be useful in statistical interpretations; whereas the largest group, service corporations, would have contained 599 items, more than needed to give adequate representation to this type.

Column 4 of Table 1 shows the adjustments that were made to the uniform 25 per cent sampling. The extent of the adjustment for each stratum can be seen by comparing the figures of column 4 with the 25 per cent figure. In arriving at the adjusted percentages, it was first decided how many items would have to be included in the smallest three classes in order to assure reasonable representation. In view of the non-continuous nature of the population distribution, the resulting percentages for the first three classes appear relatively large. Thus, the sample was designed to contain 80 per cent of all tobacco manufacturers and 45 per cent of agriculture and extractive corporations. In view of the fact that there were only 32 tobacco manufacturers in North Carolina in 1953, however, the total number selected for the sample was only 26 (rounded). Similarly, the total number of agriculture and extractive corporations selected for the sample was 74, out of a total of 165. The remaining sample was distributed over the other classes according to the pattern set by a declining straight line that crossed the 25 per cent standard between stratum G (textile manufacturers) and stratum N (the automotive group among trade corporations). In other words, stratum G contains 229 items in the sample, or 5 *more* than it would have contained if a uniform 25 per cent ratio had been applied. Stratum N contains 311 items in the sample, or 10 *less* than it would have contained if the uniform 25 per cent ratio had been applied.

Column 2 of Table 1 may be compared with column 6. The former shows the per cent which each stratum *in the population* bears to the total *population*. The latter shows the per cent which each stratum *in the sample* bears to the total *sample*. With a uniform 25 per cent ratio these columns would, of course, have been equal. Column 5 shows the number of items in the sample after these adjustments. The figures are rounded to the nearest unit, to give the final sample size of column 7.

Although the design of the sample would have been greatly simplified by the combination of some of the smallest classes with others in the population, it was felt to be important to represent the tobacco manufacturers in a separate stratum in spite of the small number of such enterprises in the total population. The present design is thus offered as the most useful pattern that could be developed to meet the practical requirements of the case.

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THE SELECTION OF THE SAMPLE

The procedures of random sampling are the reverse of the procedures of haphazard sampling. They are, in fact, based upon well-tested scientific principles and require the utmost care in the execution. In general, the principles require that all elements that might tend to produce bias (conscious or unconscious) be carefully eliminated. For this purpose, many sampling techniques have been devised to suit the nature of the population from which the sample must be drawn. In the present case, however, the clarity with which the population was defined, and the functional way in which the files were maintained made it possible to use the simplest and least sophisticated of sampling techniques.

The first step involved the preparation of I. B. M. cards for each of the corporations in the population. These cards were given four distinctive colors to indicate that in the year in question the corporation was either domestic taxable, domestic non-taxable, foreign taxable, or foreign non-taxable. The cards were automatically sorted into the 18 strata to be used as the basis for sample selection. Each of these groups was automatically numbered from 1 to the end of the color series, and the number printed in the upper left-hand corner of the card. The I. B. M. cards were then cut, in a uniform manner, into smaller cards approximately 2″ x 1″ in size, to provide a more manageable object for sampling purposes. The portion used was that containing the number assigned to that corporation.

The actual selection was made by the laborious but effective process of blending all four groups (domestic taxable, domestic non-taxable, foreign taxable, and foreign non-taxable) for each of the strata in the population, thoroughly mixing the cards in a large box, drawing one card at a time, replacing the card, thoroughly mixing the cards again, and drawing another card until the requisite number of items had been selected for each of the sample strata. Thus, in stratum A (agriculture and extractive corporations), a total of 74 items was selected from the 165 cards of all groups representing the population of this stratum. Similarly, in stratum M (service corporations), a total of 378 cards was drawn to represent the population stratum of 2,398 corporations.

The cards were found to be of sufficiently sturdy material to withstand the constant mixing of the sampling operation, so that the original uniformity of the cards was not disturbed as

the selections were made. Since all four groups were blended before the selection, and since the selection was made without benefit of observation, no distinction was made in the selection process between the four groups that comprised each stratum. However, the four groups were *recorded* separately after they had been selected.

When the selection had been made, the card numbers and groups were recorded (as, for example, domestic non-taxable number 27; foreign taxable number 16; and so on). These were then related to line numbers on I. B. M. "run sheets" prepared for the Department of Tax Research. Four such "run sheets" are prepared every year, one for each of the groups mentioned above. Each of the "run sheets" shows the Department of Tax Research code number for each corporation in the group, along with certain information used in the preparation of the statistical reports of the Department. In order to obtain the code number of the corporation to be used in the sample, the appropriate "run sheet" was selected (from the color of the card selected in the drawing) and the appropriate line number noted. The code number of the corporation was then copied on an "identification sheet". On these "identification sheets" each item was recorded against a *sample* code number which indicated only the letter designation of the stratum and the line number. The recording was done by groups. Thus, on the identification sheets for stratum A, the domestic non-taxable selections were recorded as A 1 through A 73; the domestic taxable selections were recorded as A 74 through A 141; the foreign non-taxable selections were recorded as A 142 through A 145; and the foreign taxable selections were recorded as A 146 through A 165. For convenience, each of the four groups was additionally labeled by a letter from the bottom of the alphabet—W, X, Y, and Z, respectively.

Each of the "run sheet" code numbers corresponded with a similar code number on an information sheet on file in the Department of Tax Research. Only by referring to these sheets was it possible to find out the *name* of the corporation selected. And not until the selections were referred to the "run sheets" was it possible to gain any idea as to the *characteristics* of the corporation. It was thus impossible for those who made the selections or tabulated the results to be influenced, in any way, by the name of the corporation or the characteristics of the corporation. Needless to say, no changes were made in the selection once

these facts were known. Separate *sample* code numbers were assigned for easy, sequential filing, and in order to place the identification of the corporation at one further removed from those responsible for the tabulation and calculation of the data.

In view of the many difficulties encountered in the representative sample approach (some of which have already been referred to and some of which will be described presently), it may seem odd that such elaborate care was taken in the actual selection of the sample. The entire approach, however, is based upon the attitude that the purity *of each part* of the approach should be maximized. The expectation of impurities in one part does not justify unnecessary impurities in other parts. Furthermore, this attitude provided the only means of localizing the possible areas of error and, perhaps, of removing them later. It is thus felt that the possibility of bias was effectively removed from the original sampling operation itself. Whatever errors are attached to the representative sample approach were not, it seems fair to say, produced by the techniques of selection.

It is interesting to note, in Table 2, that although no attention was paid in the sampling operation to the *group* classification (domestic non-taxable, et cetera), the percentage representation of each group in the sample is approximately that which would have been expected from an examination of the population. The data of Table 2 were, of course, prepared *after* the sample had been selected and recorded. In the largest group (domestic taxable) there were 7,624 corporations in the population, representing 56.88 per cent of the total population of 13,404. After the sample had been selected by random processes, it was found that 1,815 corporations fell into this group. These represented

TABLE 2

NORTH CAROLINA CORPORATE SAMPLE RECAPITULATION, BY GROUP

Group	Number in Population (1)	Percent of Total Population (2)	Number in Sample (3)	Percent in Total Sample (4)
Domestic Non-Taxable	4,192	31.27	1,077	32.15
Domestic Taxable	7,624	56.88	1,815	54.18
Total Domestic	11,816	88.15	2,892	86.33
Foreign Non-Taxable	283	2.11	95	2.84
Foreign Taxable	1,305	9.74	363	10.84
Total Foreign	1,588	11.85	458	13.68
Total Domestic and Foreign	13,404	100.00	3,350	100.01

54.18 per cent of the total sample of 3,350, almost the same as the population percentage. Similar comparability is exhibited by the other three groups in the table. This similarity tends to support the claims of randomness in the selection.

THE COLLECTION OF THE DATA

Once the sample had been selected, it was necessary to devise a system for determining the tax burdens imposed upon the sample corporations by state and local governments in North Carolina and, in some cases, by similar jurisdictions in other states of the Southeast. Needless to say, this was the most difficult part of the representative sample approach and involved the major expenditure of time and effort by the Tax Study Commission staff.

In view of the known insufficiencies (for these purposes) of the North Carolina corporate tax returns, and in view of the probable insufficiencies of the questionnaire technique, it was decided to make use of a combination method which utilized both sources of information. This obviously required that the two sources of information be made fully comparable, in the sense of the definitions used, or that they be designed in such a way as to permit an easy internal adjustment to one of them. It was decided that the questionnaire should serve as the basic source of information, with the tax returns serving as a checking device and as a source of supplementary information.

To this end, a corporation tax questionnaire was prepared, to be sent to every corporation in the sample.[6] The questionnaire contained three kinds of questions: those concerned with taxes paid, those concerned with other significant corporate statistics, and those concerned with explanatory material. Each corporation was asked to show these figures separately for each of the eleven Southeastern states (if applicable) and for all other states (listed as a single item). In addition, each of the corporations was asked to show the figures for two years, ending anywhere in calendar 1953 and anywhere in calendar 1954. In the original mailing, the questionnaire form contained 27 separate questions. The questionnaire was prepared on the principle that although it might not be possible to make use of all information in the formal calculations, it would be better to have too much information than too little. Definite plans were drawn up, how-

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6. A sample of this questionnaire, in a revised form, is shown in Appendix A.

ever, for the utilization of every piece of information requested. As it later turned out, it was impossible to complete many of the calculations that the questionnaire information would have permitted.

With the use of I. B. M. equipment, a master file showing the name and mailing address of each corporation in the sample was prepared and used as the machinery of the first mailing. This was completed December 1, 1955, with the request that the questionnaire be completed and returned by December 15, 1955. Unfortunately, the time element proved a serious drawback, for many corporations found it impossible to complete the rather elaborate questionnaire in the allotted time, especially since it was mailed close to the end of the fiscal year of many corporations and close to the period when the preparation of tax returns and reports was in full-swing. Nevertheless, the response to the first mailing was excellent. By December 15, 1955, almost one third of the total sample had responded, in some form, to the request. Not all of these responses represented usable questionnaire returns, however. Some contained requests for extensions of time, others represented requests for further information, some represented corporations that had gone out of business since the filing of the 1953 tax returns. By January 1, 1956, 800 usable questionnaires had been returned. This number represented almost 25 per cent of the total sample.

After the first mailing it was discovered that a number of questionnaires had been returned by the post office because the corporations addressed were out of business or were otherwise unavailable by mail. This was only to be expected, since the questionnaires were mailed almost two years after the submission of the corporate income tax returns that served as the basis of the sample selection. All such corporations were immediately replaced in the sample by additional selections made with techniques that were exactly the same as those used in the original selection.

Every questionnaire returned prior to February 2, 1956 was checked carefully against the corporate net income tax return filed by the corporation involved.[7] From this check it was found

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7. In the covering letter to the first questionnaire the sample corporations were assured that the questionnaire material would be kept in strictest confidence and would be used only for research purposes. This confidence was scrupulously preserved in all of the work of the Tax Study Commission. All work on the questionnaires was done by the staff of the Tax Study Commission or by employees assigned to the Commission by the Department of Tax Research. The work was done in the offices provided for the Tax Study Commission and all tax returns were brought to the questionnaires rather than vice versa.

that one or two of the questions were commonly misinterpreted, so that corrections had to be made on a number of questionnaires. It was not possible, of course, to check all items on the questionnaire, but it was soon found that it would be possible to use only a portion of the questionnaire in the final calculations. Therefore, only the most essential items were checked against the tax returns. Even so, it was impossible to check the breakdown by states for those questionnaires showing multistate operations. In some cases, to be sure, the information on the tax return was very complete and did permit this analysis. But in the majority of cases, only the totals and the North Carolina portion could be checked. If both of these were correct, the reports for the remaining states were assumed to be correct. If one or the other was incorrectly reported on the questionnaire, an attempt was made to clear up the difficulty by correspondence. There were, of course, some cases of sheer incompatibility between the questionnaire information and the tax return, cases obviously not involving a simple misinterpretation of the questions. Once again, a solution was attempted through further correspondence. In any case where the differences were small, the questionnaire was assumed to be correct. In any case where the differences were large and where attempts at reconciliation through correspondence proved futile, the item was removed from the sample and a space saved for later replacement. Fortunately, in this period of the work there were very few such deletions. By February 2, 1956, approximately 1,000 questionnaires had been checked and reconciled with the tax returns of the sample corporations.

The mass of correspondence produced by this first phase of the data collection also indicated that many corporations had misinterpreted the *purposes* of the investigation. Many expressed the belief that because they were small corporations (or that because they were large corporations doing a very small amount of business in North Carolina) their replies could add very little of value to the study. Others assumed that, because the questionnaire contained questions about states other than North Carolina, and because they operated exclusively in North Carolina, their replies were not necessary. All such correspondents were quickly disabused of these notions in personal correspondence.

On February 2 a second mass mailing to all of the corporations who had not been accounted for on the first was completed.

are so large and complex that it would have been virtually impossible to submit the kind of answers requested, with the detailed breakdown by states. Others, no doubt, did not reply because of sheer indifference to the kind of study program undertaken by the North Carolina Tax Study Commission. One is tempted to assume that this last-mentioned group has no tax problems that its members consider worthy of scrutiny, or, perhaps, that the group is determined not to rock a perfectly adequate boat. Finally, some corporations were, no doubt, unimpressed with the assurances of the Commission that the data would be considered as highly confidential, and, fearing (perhaps) a disclosure to the administrative authorities or (more probably) an inadvertent disclosure to competitors, pursued the discretionary course of complete silence.

It is difficult to say how these absentees *were* distributed as between, for example, large and small corporations, simple and complex corporations, and single-state and multi-state corporations. But in view of the many possibilities, it would be dangerous to claim the complete absence of bias. All that can be claimed is that any bias that does remain in the sample is strictly unconscious and that a strenuous effort was made to minimize even this troublesome element.

The final results of the sampling operation are recorded in Tables 3 and 4. The final column of Table 3, showing the per cent of the original sample for which usable data were obtained, indicates surprising uniformity as between the classes of businesses. With one exception, all classes are over 90 per cent complete. The two lowest classes (B and J) are, in fact, surprisingly high. Stratum B was assigned to contractors. Many of these corporations that had operated in North Carolina in 1953 and filed an income tax return at that time subsequently moved to other projects in other states or were dissolved. Undoubtedly much the same thing was true of stratum J, the "miscellaneous" category. Even in 1953 many of these corporations were classified as "inactive", so it is probable that many were non-existent in 1955.

The figures of Table 4 describe a somewhat less satisfying situation. It is apparent that the percentage of usable replies received from domestic corporations was considerably higher than the percentage of usable replies received from foreign corporations. It is also apparent that the percentage of usable replies received from taxable enterprises was somewhat greater

than the percentage of usable replies received from non-taxable enterprises. The smallest percentage return was received from the foreign non-taxable group: those corporations chartered outside North Carolina and filing an income tax return in North Carolina but paying no income tax in North Carolina. It cannot be denied that the distribution of the final sample as between these groups presents the possibility of bias in the results. There is no way of knowing how serious this possibility is or the direction that the bias might take.

TABLE 3

FINAL SAMPLE RECAPITULATION, BY TYPE OF BUSINESS

Stratum	Number in Original Sample (1)	Number In- complete (2)	Number in Final Sample (3)	Final Sample as a Percent of Original Sample (4)
A. Agriculture and Extractive.............	74	2	72	97.297
B. Construction and Contracting..........	189	24	165	87.302
C. Finance...............................	220	2	218	99.091
D. Food and Feed Manufacturers.........	123	4	119	96.749
E. Forest Products Manufacturers........	159	2	157	98.742
F. Mineral, Chemical, and Metals Manu- facturers............................	94	1	93	98.936
G. Textile Manufacturers.................	229	5	224	97.816
H. Tobacco Manufacturers................	26	0	26	100.000
I. Other Manufacturers..................	145	3	142	97.310
J. Miscellaneous.........................	82	7	75	91.463
K. Public Utilities[1]......................	141	10	131	92.908
L. Recreation and Amusement............	86	5	81	94.186
M. Service...............................	378	3	375	99.206
N. Automotive Trade.....................	311	9	302	97.106
O. Beverage, Food, and Drug Trade......	203	12	191	94.089
P. Equipment and Supplies Trade........	311	20	291	93.569
Q. General Merchandise Trade...........	372	6	366	98.387
R. Unclassified Trade....................	207	4	203	98.068
Totals.........................	3350	119	3231	96.448

NOTE: [1]Nine deletions from original sample not replaced.

TABLE 4

FINAL SAMPLE RECAPITULATION, BY GROUP

Group	Number in Original Sample (1)	Number In- complete (2)	Number in Final Sample (3)	Final Sample as a Percent of Original Sample (4)
Domestic Non-Taxable....................	1077	20	1057	98.134
Domestic Taxable.......................	1815	5	1810	99.724
Total Domestic.....................	2892	25	2867	99.135
Foreign Non-Taxable....................	95	38	57	60.000
Foreign Taxable........................	363	54	309	85.124
Total Foreign......................	458	92	366	79.913
Total Domestic and Foreign..........	3350	119	3231	96.448

The second possible source of error associated with the data-collection phase of the approach relates to the character of the data itself. In spite of every effort to check replies by means of an examination of tax returns and by extensive correspondence, errors undoubtedly do remain in the basic data. To a certain extent these were removed in the *interpretation* of the material by the deletion of those answers which were, on theoretical grounds, extremely unlikely or widely different from the great mass of answers to the same questions by corporations of the same type. But it is, unfortunately, too much to expect that all errors could be removed by this method. Once again, it can only be claimed that the efforts were heroic—the results, something less.

It must also be pointed out that the size and character of the sample were altered in another way by the problems of data-collection. As has already been explained, an attempt is made in the present approach to measure the tax burdens of each corporation in the sample by four statistical relationships. These relationships are expressed by the following ratios: total taxes as a per cent of the book value of physical property; total taxes as a per cent of gross receipts; total taxes as a per cent of total pay roll; and total taxes as a per cent of net profits (allocated, where necessary, by a method approximating that of the so-called "Massachusetts Formula").

Even in those cases in which all corporations in a particular sample stratum responded to the questionnaire, it was found that some of these *measures* would be missing. A corporation might make very substantial tax payments in a given state even though it owned no property in that state. (This was especially the case in the finance and service strata.) Another corporation might pay high taxes in a state even though it had fully depreciated its property in that state. Another might pay small taxes in a given state in spite of the fact that it had no net profits in that state (it may, in fact, have had a loss). In cases such as this, of course, the loss of the denominator is the loss of the ratio. The same result was produced by the necessary deletion of some of the answers submitted. In several cases, for example, the answer *to a particular question* was so obviously impossible and, by the processes discussed above, so incapable of being reconciled with other evidence, that the answer *to that question* had to be removed from the sample in order to preserve the reasonableness of the results. In such cases, the sample size for

purposes of the calculations was somewhat smaller than the sample size indicated by the corporate response to the questionnaire. None of the four measures applied perfectly to all corporations in the sample, so that all of the statistical series are smaller in number than the sample itself.

It is, perhaps, some consolation to recognize that this latest difficulty was produced by the same problems that made it necessary to make use of several alternative measures of tax impact rather than a single, unambiguous measure. It cannot be emphasized too strongly that the most important single problem confronting the entire impact study was the difficulty of measuring with precision something which is by nature imprecise and something which cannot be measured with a simple yardstick or a pair of calipers. In the end, every interpretation must be conditioned by an appreciation of this fact.

THE INTERPRETATION OF THE DATA

The interpretation of the data collected by means of the representative sample approach follows, as closely as possible, well-established statistical techniques.[8] The preliminary calculations naturally consist of computing the four ratios that were to serve as the alternative measures of tax burden for each corporation. These ratios were recorded on special "calculation sheets" that were filed separately. The only reference to a particular corporation on these calculation sheets was the sample code number, so that, once again, it was impossible to know the name or character (other than the ratios themselves) of a particular corporation without referring to the master file or to the questionnaire.

From these calculation sheets an attempt was made to develop a series of frequency distributions, to show the number of corporations falling within certain predetermined class limits. It was found to be impossible, however, to handle the statistical material as grouped data. For purposes of easy comparison it was obviously desirable to work with uniform class intervals for each of the strata. Unfortunately, it was not possible to determine a suitable set of class intervals for the entire series. All attempts, including that by the Sturges method,[9] proved

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8. These are described in Frederick E. Croxton, and Dudley J. Cowden, op. cit., Chapters 8-10; and in Frederick Cecil Mills, *Introduction to Statistics*, third ed., New York, Henry Holt and Co., 1956, Chapters 6-8.
9. The Sturges method, as cited in Frederick Cecil Mills, ibid., p. 46, gives the class-interval as

$$i = \frac{Range}{1 + 3.322 \log N}.$$

only that the grouped-data approach would be more mislead-
ing than revealing. Most of the series, for example, showed a
marked degree of positive skewness, with a large number of the
values clustered at the lower end of the scale but with a number
of items spread unevenly over the high values. With this kind
of pattern, a narrow class interval would have had the effect
of producing a large number of classes, many of which would
have been blank in the frequency distribution. A wider class
interval would have had the effect of lumping the great mass of
items in one or two classes at the lower end of the scale and
consequently of obscuring the important differences between in-
dividual measures. It would, of course, have been possible to
delete many of the large values on the theory that they repre-
sented variations that could only be explained as variations in
the ruler rather than as variations in the thing being measured.
But there must always be a reluctance to indulge in such arbi-
trary selection, especially when, with a few notable exceptions,
there is no way of knowing when to stop deleting. All of these
elements conspired to make the grouped-data approach unde-
sirable, and made it necessary to resort to the much more
laborious, but much more accurate (under the circumstances)
ungrouped-data approach.

This approach begins with the manufacture of an array for
each of the statistical series, by which the measurements are
arranged in order of their magnitude. For the North Carolina
data four such arrays were prepared for each stratum, one for
each of the four tax burden measures. Since there were 18
strata, a total of 72 strata arrays was prepared. These were
then rearranged into four arrays for the total sample, to rep-
resent the distribution of items for each of the tax burden
measures.

With these arrays it was relatively easy to pick out those
items of extreme variation which clearly should not be per-
mitted to influence the statistical interpretation. Where, for ex-
ample, all of the items but one were spread between a range
of .01 and 44.20 and where the single item showed an extreme
value of 3124.90, there was little hesitation about removing the
extreme value from the calculations. Very few such deletions
were necessary, however, and all are shown in the footnotes to
the appropriate tables.

From the arrays, a number of summary descriptive devices
was calculated for each of the strata and for each of the meas-

ures. These basic descriptive devices were the arithmetic mean,
the median, the absolute range, and the standard deviation. The
same measures were computed for the total sample for each of
the four measures of tax burdens. The results and meaning of
these calculations are described in Chapter V.

All of these calculations were designed to do nothing more
than *describe* the sample in various ways, and to bring statisti-
cal order out of the chaos of many individual measures. All but
the range and the standard deviation are measures of central
tendency which, under certain circumstances, may be taken to
"represent" the entire sample (or stratum) from which they are
derived. The standard deviation and the range are measures of
the variation of the individual corporation measures around the
arithmetic mean or within specified limits.

In a comprehensive listing of these descriptive measures for
the North Carolina sample there would be 76 separate arithmetic
means, 76 separate medians, and 76 separate standard devia-
tions. There would be an arithmetic mean for stratum A to show
the average tax burden as expressed by the ratio of total taxes
to book value of property. There would be another arithmetic
mean for stratum A to show the average tax burden as ex-
pressed by the ratio of total taxes to gross receipts, and so on
for each of the measures and for each of the strata and for the
total sample. There would be no particular point in comparing
one *measure* with another *measure* (for example, taxes as a per
cent of book value as compared with taxes as a per cent of gross
receipts) for the same stratum. The most meaningful compari-
son for purposes of the present study is the comparison of *strata*
for the same measure. The basic question involved is whether
the corporations of the finance stratum are, on the average,
more heavily taxed than the corporations of the stratum re-
served for forest products manufacturers (and the corporations
of all other strata) if both tax burdens are measured *in the same
way*. This kind of comparison is, of course, extremely simple
once the descriptive measures have been computed.

A serious problem remains, however, as to whether the ob-
served differences between the strata (and between all of the
strata and the total sample) are *significant* differences. The solu-
tion of this problem involves the processes of statistical infer-
ence, for it is necessary to make certain inferences about the
total population from a knowledge of the characteristics of the

sample drawn from that population.[10] If the average tax burden for stratum A is found to be X, and the average tax burden for all corporations in North Carolina is found to be X + 6, is the difference between these averages a significant difference, or can it be explained as the result of chance fluctuations in the sampling operation? If the difference cannot be explained as the result of chance factors, it must be concluded that there is something in the tax structure that makes the tax burdens heavier on this kind of enterprise than on corporations in general. If the average tax burden for stratum R is found to be Y, and the average tax burden for stratum M is found to be Y — 5, is the difference between these two strata means a significant one, or can it, too, be described as coming from the mass of possible influential factors not considered by the classification scheme and assigned to the world of "chance"?

The statistical technique that is best suited to answering these questions of significance is the so-called "z" test. Briefly, the method is based upon a comparison of the variation of the individual corporate measures around the arithmetic mean of that stratum (the variation *within* strata) with the variation of the strata means around the mean of the entire sample (the variation *between* strata). The variation within each stratum obviously cannot be influenced by the differences between strata, and serves as a standard of the effect of chance factors (all those factors not concerned with the classification system). In stratum G, for example, the tax burdens measured for individual textile manufacturers will differ more or less from the average tax burden of all of the sample textile manufacturers. The extent to which each corporation differs from this class average is determined only by chance, by which we mean nothing more than that it is *not* determined by those factors which make textile manufacturers *in general* unique among North Carolina corporations. The variation *between* the strata will be determined, perhaps, by the same things that determine the variation within strata. If this is the case, the "between" variation will be of approximately the same magnitude as the "within" variation, and we may conclude that tax burdens are not significantly affected by the distinctions between the industrial categories selected for analysis. If the "between" variation and the "within" variation *are* substantially different, however, we may conclude that there are special forces that determine the tax

10. Frederick Cecil Mills, op. cit., pp. 137 et. seq.

burdens of each class, forces concerned with the basic differences between each of the strata in the classification scheme. The z test provides a means of comparing these two kinds of variation based upon the concept of a normal curve of error.

The distinction between "chance" factors, on the one hand, and "factors related to the method of classification", on the other, should not be permitted to confuse the policy implications of the findings. In the policy sense it may be that *any* differences in tax burdens are worthy of attention. This idea, in fact, is implicit in the kinds of measures adopted for tax burden analysis.

The whole basis of the equity approach to the impact study might be said to be the *assumption of uniformity*. By this it is meant that perfect equity exists in the corporate world only when all taxpayers are taxed in a uniform way. Uniformity, in this sense, is taken to refer to the ability of the corporation to pay taxes, as this, in turn, is determined by the total financial resources commanded by the corporation.[11] Thus, if taxes are measured as a per cent of the measure of ability to pay, the principle of *uniformity* becomes the principle of proportionality.[12] The present study makes use of four separate measures of ability to pay: book value of physical property, gross receipts, pay roll, and net profits. If each of these were a theoretically perfect measure, complete equity in the tax structure could be said to exist only if every corporation in the sample paid exactly the same percentage of each of these measures as every other corporation in the sample. *Any* differences between corporations would, in this theoretical sense, be grounds for policy to adjust an inequitable (by definition) situation. It would not matter whether the differences existed within the specified classes or between the specified classes, although this distinction might still help to determine the *kind* of remedial policy that would be needed. In technical terminology, the population of tax burden measures would not, in the utopian world of perfect equity, follow a normal curve. They would, rather, form a single value. The arithmetic means of any sample selected from the popula-

11. It is necessary, at this point, to repeat a warning introduced in Chapter I. The concept of "ability to pay" as applied to corporations, and as used in the present study, does not have the same meaning as the same term applied to individuals. The latter is usually taken to refer to psychological and economic ability to pay, while the former is assumed to refer only to the *financial* ability of the corporation to pay taxes.

12. There is much room for debate, on philosophical and economic grounds, about the principle of proportionality in corporate taxation. There may be good reason for developing a system of corporate taxes that is *progressive* with respect to financial ability to pay. This, however, is not the usual assumption in the analysis of corporate tax equity, and it was not adopted in the present study.

tion would have the same value as the arithmetic mean of the population, and there would be no variation around the individual sample means.

Although this theoretical condition is, in a practical sense, ridiculous, it does provide a standard for the measurement of imperfections. Indeed, it is here argued that almost all discussions of tax equity—technical and non-technical, professional and amateur, interested and disinterested, honest and dishonest—make use of this kind of comparison. This is exactly the sense of the argument that Corporation X or Industry Y is not bearing its fair share of the tax burden, or that Industry Z should be taxed more heavily to bring it up to the level of other industries.

From the point of view of the analytical method, if the concept of a perfect distribution of tax burdens could be defined this clearly *and in quantitative terms*, there would be no need to develop special tests to determine the significance of tax burden differences. *Every* difference, however large or small, would be significant and would call for remedial action. If the distribution of the *actual* population of tax burdens were normal or abnormal, it would still be necessary to compare the individual cases with a single value (which could, but need not, be the average tax burden in the population). Statistical inference would be necessary, of course, to determine whether the sample selected adequately represented the population from which it was drawn, but there would be little significance to the tests of stratification differences.

Unfortunately for the analyst, but more unfortunately for the policy-maker, the concept of a perfect distribution of tax burdens cannot be defined with clarity, largely because of the impossibility of establishing a measure of corporate ability to pay taxes that is uniformly applicable to all shapes, sizes, and conditions of enterprises. Because of the fact that book value of physical assets means something different for one corporation than it does for another, as related to the ultimate financial ability of the corporations to pay taxes, the burden on one may be quite different from the burden on the other even though the measures indicate an identity. The lack of confidence which such difficulties induce leads to the practical suggestion that reasonable tolerance limits be established before policy correctives are invoked. In this way, identity of tax burdens would be assumed if the measures fell within a range of, say, 1 or 2 per cent. It is clear that this tolerance range must be subjectively

determined, largely on the basis of intuition and experience, rather than upon the basis of scientific observation, but it is a practical necessity when policy questions are involved.

These practical tolerance limits are not the same as the limits produced by the application of the z test. The latter are based upon the kind of variations that could be expected to arise as a result of the operations of chance in sampling, that is, they indicate the kind of "errors" that might be expected to arise in the sampling operation if all of the randomness requirements were perfectly fulfilled. The errors for which the tolerance limits are devised are not errors of simple sampling, but errors inherent in the measures themselves. If a large number of measures were made of a given straight line, and if the measures were made with the same ruler but by different individuals, a large number of different answers would, no doubt, result.[13] These would be errors of measurement that could be satisfactorily analyzed by means of the relationships contained within the normal curve, because the standard itself (in this case, the ruler) would be constant. But the problems of tax burden analysis are the same as those that would arise if the ruler changed length by an unknown amount every time a measurement was taken. With a constant ruler, there is reason to believe that the observations would follow a normal curve.

It would thus appear that the z test and other statistical tests of comparative significance have very little meaning for a study of tax burdens, at least until a constant and unambiguous standard of measurement can be developed. Nevertheless, a z test was applied in the present study for the simple reason that it offers an easy method of comparing the magnitude of tax burden differences within strata and between strata and hence provides some guidance for policy.[14]

The interpretation of the data collected for states other than North Carolina is much less sophisticated and consequently much less reputable as an approximation to the truth. For any other state, the sample was, of course, highly selective, in that it included only those corporations with operations in North Carolina. Nor can it be said to be properly representative of

13. See Frederick E. Croxton and Dudley J. Cowden, op. cit., p. 591 for a discussion of this case.

14. The detailed techniques of the z test need not be discussed here. They are described in most statistics text books dealing with the subject of statistical inference and with the problems of testing the significance of differences in variation. The two references most closely relied upon for present purposes were Frederick E. Croxton and Dudley J. Cowden, op. cit., and Frederick C. Mills, op. cit. Some of the z-test calculations are shown in Appendix A.

even this type of corporation. In addition, the data themselves were subject to error, for it was almost always impossible to check the figures for states other than North Carolina against any official report by the corporations. The figures are, however, thought to be fairly accurate in themselves. Their limitations come largely from the fact that they relate to a sample that is, of necessity, haphazard and incomplete.

For some states, a fairly large number of items was reported, while for others a very small number showed up on the North Carolina questionnaire. In all cases, the interpretation was simple. It consisted of the computation from ungrouped data of an arithmetic mean and a median for each of the strata and for each of the measures. In view of the fact that the items cannot be said to form a random sample for any state, for any stratum, or for any measure, no attempt was made to develop measures of statistical inference. Such measures have meaning only when the sample closely approximates a random selection from the population in question.

A RESTATEMENT OF LIMITATIONS

From the foregoing discussion it is apparent that the data which comprise the North Carolina portion of the representative sample approach are subject to a number of possible errors and limitations. None of these disturbs the theoretical validity of the representative sample approach itself. They are, rather, errors (or *possible* errors) of commission, and come from the difficulties of molding very recalcitrant materials to the model provided by statistical theory. The major areas of possible error might be summarized as follows. The list is not intended to be exhaustive.

A. The population
   1. errors in the total count
   2. errors in the classification
   3. biases introduced by the fact that some businesses included in the population of 1953 were not available for sampling in 1955-56
     (a) out of business
     (b) business consolidations

B. The selection of the sample
   1. unconscious errors in drawing the original sample

    2. biases introduced by the fact that some corporations originally selected did not reply to the questionnaire

    3. biases introduced by the fact that replacements represent (for the most part) only those corporations willing to reply to the questionnaire

    4. biases introduced by the deletion of railway corporations

    5. biases introduced by the fact that the final sample size and distribution were different from the sample design

C. The collection of the data

    1. the limitations of the *measures* of tax burdens

        (a) not uniformly applicable to all corporations

        (b) data relate to only one year—1954

    2. biases introduced by the fact that the sample size and sample distribution were changed by the absence or the necessary deletion of some measures for some corporations

    3. the possible inaccuracy of questionnaire replies

        (a) possible misunderstandings of questions

        (b) incomplete checks of questionnaire replies

        (c) possible invalidity of tax return information

D. Errors of calculation

In partial defense of the accuracy of the answers it must again be stated that these and many more possible sources of error were recognized in the process of conducting the manifold operations of the representative sample approach. It must also be emphasized that, within the limitations of time and resources, every effort was made to minimize the effects of these difficulties. And in partial justification of the significance of the answers, it must be claimed that the method has produced the largest body of evidence, however tentative in character and however hesitantly offered, so far produced on the distribution of state and local tax burdens upon corporate enterprises within North Carolina.

CHAPTER V

THE REPRESENTATIVE SAMPLE APPROACH—THE RESULTS

The representative sample approach produced two kinds of statistical comparisons. The first, and by far the more formidable, describes the differences in tax burdens between the major industrial types within North Carolina. The second describes the differences in tax burdens between the several states selected for analysis.

THE INTRASTATE COMPARISON

As explained in Chapter IV, the representative sample of corporations filing income tax returns in North Carolina was selected from 18 major types of businesses. These types of businesses were defined by the nature of the principal business conducted in North Carolina by each corporation, as determined by annual studies made by the North Carolina Department of Tax Research. The most important task assigned to the representative sample approach was the analysis of the differences in tax burdens *between* these major industrial types.

A second purpose of the representative sample approach, as applied to the analysis of tax burdens within North Carolina, was the summary description of the differences in tax burdens between individual corporations within each of the major industrial groups.

Tax burden differences between industrial types

Table 1 shows the average tax burdens for the total sample of North Carolina corporations by four separate tax burden measures. The table also shows the average tax burdens for each of the 18 individual types by the same four tax burden measures. For all types of corporations the average tax burden by the book value measure, as shown at the bottom of column 1, was determined to be 7.61 percent. In other words, for all the corporations in the sample state and local taxes in North Carolina (not including sales and use taxes and unemployment insurance taxes) extracted, on the average, 7.61 percent of the book value of the tangible property owned by the corporations within North Carolina. The total number of corporations included in the calculations that produced this average tax burden figure was 3,044, as shown at the bottom of column 2.

TABLE 1

ARITHMETIC MEAN STATE AND LOCAL TAX BURDENS FOR NORTH CAROLINA BY FOUR TAX BURDEN MEASURES AND BY TYPE OF BUSINESS

Type of Business	Taxes as a Percent of Book Value			Taxes as a Percent of Gross Receipts			Taxes as a Percent of Payroll			Taxes as a Percent of Net Profits		
	Arithmetic Mean (1)	No. of Items in Sample (2)	Rank for Col. (1) (3)	Arithmetic Mean (4)	No. of Items in Sample (5)	Rank for Col. (4) (6)	Arithmetic Mean (7)	No. of Items in Sample (8)	Rank for Col. (7) (9)	Arithmetic Mean (10)	No. of Items in Sample (11)	Rank for Col. (10) (12)
A Agriculture and Extractive............	2.72	69	18	3.31	70	6	8.05	66	7	49.30	38	2
B Construction.....................	9.02	142	5	1.79	161	8	3.87	132	15	31.50	117	12
C Finance.......................	28.67	194	1	2.43	214	7	8.27	213	6	47.75	93	15
D Food and Feed[1].................	4.20	119	14	1.13	118	15	5.59	119	12	47.75	93	3
E Forest Products[1]................	3.06	157	17	1.81	157	10	2.71	152	17	26.26	115	16
F Mineral, Chemical, and Metals[1]......	3.66	91	15	1.27	93	11	4.07	89	14	33.60	80	10
G Textile[1]......................	3.08	222	16	1.17	215	14	3.08	216	16	38.88	152	8
H Tobacco Manufacture[1]............	5.90	26	8	4.15	26	4	5.82	26	11	21.31	24	17
I Other Manufacture[1].............	6.28	139	6	1.12	138	16	2.60	137	18	20.42	105	18
J Miscellaneous..................	6.26	52	7	12.81	67	1	14.96	34	2	34.57	47	9
K Public Utility..................	12.71	120	3	4.28	129	3	9.39	126	3	59.90	107	1
L Recreation and Amusement.........	17.36	73	2	3.47	80	5	9.13	73	4	45.06	51	5
M Service......................	5.35	344	11	6.47	370	2	34.10	278	1	47.09	274	4
N Automotive Trade[2].............	5.27	293	12	.78	297	17	7.06	290	8	41.51	215	7
O Beverage, Food, and Drug[2]........	5.76	181	9	.62	188	18	5.92	177	10	29.33	147	14
P Equipment and Supplies[2].........	5.62	281	10	1.22	288	12	4.92	275	13	32.86	212	11
Q General Merchandise[2]...........	4.58	354	13	1.21	362	13	6.25	357	9	43.73	276	6
R Unclassified Trade[2].............	12.70	187	4	1.64	196	9	8.54	189	5	31.26	153	13
Total Sample................	7.61	3,044	—	2.38	3,169	—	8.65	2,949	—	37.55	2,379	—

NOTES: [1]Classified as Manufacturing Corporations
         [2]Classified as Trade Corporations

The figure at the bottom of column 5 of Table 1 indicates that the average burden of state and local taxes in North Carolina on all corporations in the sample accounted for 2.38 percent of the North Carolina gross receipts of the corporations in the sample. The number of corporations included in the gross receipts calculations was 3,169.[1]

The figures at the bottom of column 7 indicates that the average burden of state and local taxes in North Carolina on all corporations in the sample was 8.65 percent of the North Carolina payroll of the sample corporation. The total number of corporations entering into the payroll calculations was 2,949.

The figure at the bottom of column 10 indicates that the average burden of state and local taxes in North Carolina on all corporations in the sample accounted for 35.55 percent of the net profits before state and local taxation assignable to North Carolina (where necessary) by the Massachusetts formula. The total number of corporations included in the net profit calculations was 2,379.

The figures of columns 1, 4, 7, and 10 of Table 1 show, for each of the four tax burden measures, the distribution of these average tax burdens between the 18 industrial types. The interpretation of these figures for selected business types is as follows:

1. For the 26 corporations included in the book value sample of tobacco manufacturers, the average burden of North Carolina state and local taxes was found to be 5.90 percent of the book value of tangible property owned by these corporations in North Carolina;

2. For the 80 corporations included in the gross receipts sample of recreation and amusement corporations, the average burden of North Carolina state and local taxes was found to be 3.47 percent of the North Carolina gross receipts of these corporations;

3. For the 152 corporations included in the payroll sample of forest products manufacturers, the average burden of North Carolina state and local taxes was found to be 2.71 percent of the North Carolina payroll of these corporations;

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1. The reasons for the differences in the number of corporations appearing in the sample for each of the four tax burden measures are explained in Chapter IV. Briefly, they are concerned with the fact that some of the questionnaire replies were clearly unsatisfactory for some of the corporations and with the fact that a few deletions were made of the extreme values in each of the tax burden measures. The deletions that were made are indicated in the footnotes to Table 5 of the present chapter.

4. For the 147 corporations included in the net profits sample of beverage, food, and drug corporations, the average burden of North Carolina state and local taxes was found to be 29.33 percent of the North Carolina net profits of these corporations, as allocated by the Massachusetts formula.

A comparison of each of the figures of column 1 thus yields a comparison of the average tax burdens *measured by the North Carolina book value of tangible property* for each of the 18 types of corporate businesses of the sample. Similarly, a comparison of each of the figures of column 4 yields a comparison of the average tax burdens *measured by North Carolina gross receipts* for each of the 18 types of corporate businesses of the sample. The same kind of comparison is produced by an examination of the individual figures of columns 7 and 10, for the payroll and net profits measures respectively.

Columns 3, 6, 9, and 12 of Table 1 show the ranks for each of the 18 industrial types for each of the four measures of tax burdens within North Carolina. The highest tax burdens are indicated by the figure 1, and the lowest tax burdens are indicated by the figure 18. Thus, column 3 indicates that, *by the book value measure*, the highest average tax burdens were borne by the finance corporations, whereas the lowest average tax burdens were borne by the agriculture and extractive corporations. The figures of column 6 indicate that, *by the gross receipts measure*, the highest average tax burdens were borne by the miscellaneous corporation group, whereas the lowest average tax burdens were borne by the beverage, food, and drug group. The figures of column 9 indicate that, *by the payroll measure*, the highest average tax burdens were borne by the service corporations, whereas the lowest average tax burdens were borne by the "other manufacturing" corporations. The figures of column 12 indicate that, *for the net profits measure*, the highest average tax burdens were borne by the public utility group, whereas the lowest average tax burdens were borne by the "other manufacturing" corporations. Similar meanings may be attached to each of the other figures in each of the rank columns of Table 1.

Table 2 provides the same kind of information as Table 1, except that Table 2 describes median tax burdens whereas Table 1 describes mean tax burdens. Thus, the figure at the bot-

TABLE 2

MEDIAN STATE AND LOCAL TAX BURDENS FOR NORTH CAROLINA BY FOUR TAX BURDEN MEASURES AND BY TYPE OF BUSINESS

	Type of Business	Taxes as a Percent of Book Value			Taxes as a Percent of Gross Receipts			Taxes as a Percent of Payroll			Taxes as a Percent of Net Profits		
		Median (1)	No. of Items in Sample (2)	Rank for Col. (1) (3)	Median (4)	No. of Items in Sample (5)	Rank for Col. (4) (6)	Median (7)	No. of Items in Sample (8)	Rank for Col. (7) (9)	Median (10)	No. of Items in Sample (11)	Rank for Col. (10) (12)
A	Agriculture and Extractive	1.06	69	18	.84	70	6	3.06	66	13	14.93	38	13
B	Construction	4.20	142	4	.54	161	14	2.05	132	18	17.36	117	10
C	Finance	10.03	194	1	1.62	214	5	4.32	213	6	12.07	173	17
D	Food and Feed¹	3.38	119	5	.66	118	11	4.51	119	5	17.81	93	9
E	Forest Products¹	2.13	157	16	.68	157	12	2.15	152	16	13.87	115	15
F	Mineral, Chemical, and Metals¹	2.56	91	10	.79	93	8	3.01	89	14	17.02	80	11
G	Textile¹	1.58	222	17	.55	215	13	2.08	216	17	15.30	152	12
H	Tobacco Manufacture¹	2.26	26	15	.39	26	18	3.94	26	10	13.46	24	16
I	Other Manufacture¹	2.40	139	14	.81	138	7	2.22	137	15	14.22	105	14
J	Miscellaneous	2.44	52	12	3.92	67	1	4.22	34	8	11.28	47	18
K	Public Utility	4.82	120	2	3.79	129	2	9.43	126	1	37.07	107	1
L	Recreation and Amusement	4.44	73	3	1.92	80	4	7.58	73	2	18.06	51	7
M	Service	2.40	344	13	2.56	370	3	5.09	278	3	25.86	274	2
N	Automotive Trade²	2.58	293	9	.40	297	17	3.80	290	11	19.25	215	5
O	Beverage, Food, and Drug²	2.88	181	7	.42	188	16	4.11	177	9	19.64	147	4
P	Equipment and Supplies²	2.85	281	8	.54	288	14	3.45	275	12	18.52	212	6
Q	General Merchandise²	2.49	354	11	.71	362	9	4.54	357	4	23.22	276	3
R	Unclassified Trade²	3.35	187	6	.67	196	10	4.29	189	7	17.84	153	8
	Total Sample	2.43	3,044	—	.72	3,169	—	3.63	2,949	—	18.09	2,379	—

NOTES: ¹Classified as Manufacturing Corporations
²Classified as Trade Corporations

tom of column 1 of Table 2 indicates that half of the 3,044 corporations included in the book value measure had tax burdens greater than 2.43 percent of book value and half had tax burdens less than 2.43 percent of book value. Similarly, the figure at the bottom of column 4 indicates that half of the 3,169 corporations included in the gross receipts measure had tax burdens greater than .72 percent of gross receipts and half had tax burdens less than .72 percent of gross receipts. Similar interpretations may be provided for the figures at the bottom of columns 7 and 10, for the payroll and net profits measures respectively.

For the book value measure of tax burdens the highest median tax burdens were found to be those borne by the finance corporations. The lowest were those borne by the agriculture and extractive corporations. For the 194 corporations included in the book value measure for finance corporations, the median value was 10.03 percent. Thus, half of the 194 corporations had tax burdens higher than 10.03 percent of book value and half had tax burdens lower than 10.03 percent of book value. For agriculture and extractive corporations, however, half of the 69 corporations included in the book value measure had tax burdens higher than 1.06 percent of book value and half had tax burdens lower than 1.06 percent of book value.

For the gross receipts measure, the highest median tax burdens were found to be those borne by the miscellaneous corporations. Half of the 67 corporations in the sample had tax burdens that extracted more than 3.92 percent of North Carolina gross receipts while half had tax burdens that extracted less than 3.92 percent of North Carolina gross receipts. At the opposite end of the scale, half of the 26 tobacco manufacturers in the sample had tax burdens that extracted more than .39 percent of gross receipts in North Carolina while half had tax burdens that extracted less than .39 percent of gross receipts in North Carolina.

For the payroll measure (columns 7, 8, and 9) public utility corporations were first in the rankings. Half of the 126 corporations included in the payroll sample had tax burdens that exceeded 9.43 percent of North Carolina payroll while half had tax burdens that were lower than 9.43 percent of North Carolina payroll. Construction corporations exhibited the lowest tax burdens as measured by the payroll element. Half of the 132 construction corporations in the payroll sample had tax bur-

dens that exceeded 2.05 percent of payroll, while half had tax burdens that were less than 2.05 percent of payroll.

Finally, for the net profit measure of tax burdens, the highest tax burdens were found for public utilities and the lowest tax burdens were found for the miscellaneous group. Half of the 107 public utility corporations bore tax burdens greater than 37.07 percent of the net profits assignable to North Carolina. Half had tax burdens less than 37.07 percent of net profits. For the miscellaneous corporations, however, half of the 47 corporations included in the measure had tax burdens greater than 11.28 percent of net profits whereas half had tax burdens less than 11.28 percent of net profits.

At first sight the figures of Tables 1 and 2 appear to offer little but an extremely confused picture of corporate tax burdens within North Carolina. In terms of the ranks shown in Table 1, should textile manufacturers be ranked sixteenth, fourteenth, or eighth among the eighteen business types? Or, in terms of the ranks shown in Table 2, should textile manufacturers be ranked seventeenth, thirteenth, or twelfth? Any one of these ranks is possible, since each is represented in the four tax burden measurements for the mean and median tax burdens. Should service corporations be ranked first, second, third, fourth, eleventh, or thirteenth? Should public utility corporations be ranked first, second, or third? Should forest products manufacturers be ranked tenth, fifteenth, sixteenth, or seventeenth?

To answer these questions unequivocally and to provide a definite ranking position for each of the corporate types in the sample it would be necessary to select one of the measures of tax burdens as the *best* measure for all of the corporate types in the analysis. *But it is the argument of the present study that such selection is not possible.* The book value measure of tax burdens must be assumed to be differently applied to finance corporations than to manufacturing corporations, so that if the measure is "best" for one it cannot be "best" for the other. Similarly, the gross receipts yardstick must be assumed to apply differently to corporations with a large markup and a high rate of turnover than to corporations with a small markup and a low rate of turnover. The payroll measure has a different appearance for corporations such as service corporations, for whom labor is typically an important factor of production, than for public utility enterprises, for many of whom labor is a relatively

minor factor of production. The net profit measure applies imperfectly to enterprises that exhibit cyclical fluctuations in earnings while it applies more accurately to enterprises that are relatively steady with respect to earnings.

Thus, all of the measures have their faults. All illustrate the fact that the ruler itself tends to change length as it is applied to different types of enterprises. If it were possible to determine the extent of the change in the length of the ruler (or even the *direction* of the change) it would be possible to adjust the figures to assure a representation of variations in nothing but tax burdens. As it is, however, the figures of Table 1 and Table 2 reflect changes in both the tax burdens and the yardstick used to measure the tax burdens. *Because of this difficulty, no one of the measures shown in Table 1 or Table 2 may be considered to be an adequate representation of the distribution of North Carolina's corporate tax burdens.*

No statistical manipulations can fully overcome this basic limitation of the measurements themselves *if the purpose of the analysis is to determine a precise set of rankings for each of the 18 types of business in the sample.* In the face of such an effective indictment of the measures of tax burdens, the analyst of comparative tax burdens has no choice but to accept the inevitable and to adjust his purposes—to relax the demands he places upon the raw materials, to be content with wider margins of error, and to search for indications rather than for proof. It is in this spirit that the results of the present study are analyzed.

The resolution of these difficulties is based, in the present study, upon the principle of consistency. It seems clear that the results would lend themselves to confident interpretation if one of the corporate groups were found to occupy the first position for all four measures of tax burdens. For such a group it would be difficult to deny the claim that a high-tax rank should be assigned. It would not be impossible to support such a claim, but it would be difficult. Similarly, if a business type were found to rank eighteenth on all four measures there could be little doubt that the business type deserved a low-tax ranking. Of course, if it could be shown that the individual measures produced biases which worked in the same direction, a measure based upon the consistency of the ranking positions would not be valid. But such effects are not at all probable. One of the measures is a balance sheet measure. Three of the measures are

profit and loss measures. One of the profit and loss measures is taken from the expense side of the corporate accounts. Two of the profit and loss measures are taken from the income side of the corporate accounts. The two income measures are taken from opposite ends of the income scale, so that there are many opportunities for intercorporate variation in the figures which lie between the two extremes. There is thus no reason to suppose that any biases which would tend to establish a particular set of rankings for one of the measures would tend to establish the same set of rankings for another measure. In other words, there is no reason to suppose that the *consistency* of the four measures is the result of anything but the tax burden element.

Nevertheless, it is apparent from the figures of Tables 1 and 2 that no corporate type shows perfect consistency in its ranking for the four measures. No type of business shows a number 1 ranking or a number 12 ranking for all four of the tax burden measures. This lack of perfect consistency requires a further relaxation of the demands placed upon the analysis. In this case, the method emphasizes the determination of a high tax *area* of ranks rather than the determination of a set of specific ranking positions. If it is impossible to say which type of business is consistently *first* in the rankings it may be possible to say which type of business is consistently *among the first five* ranking positions. Similarly, it may be possible to determine which of the business types consistently occupies the last five ranking positions (ranks 14 through 18), in order to determine those business types which are consistently subject to low North Carolina tax burdens.

Table 3 was designed to illustrate this approach for the arithmetic mean tax burdens. Table 4 was designed to illustrate this approach for the median tax burdens. These two tables constitute the main intrastate tax burden comparison of the present study.

The first three columns of Table 3 represent the relatively high tax ranks. The last three columns of Table 3 represent the relatively low tax ranks. The figures shown in Table 3 were obtained from a count of the number of times each of the business types fell within certain ranges in the rank columns of Table 1. Thus, line A of Table 1 shows that agriculture and extractive corporations had ranks of 18, 6, 7, and 2 for the four tax burden measures. Three of these ranks were within the

first *nine* ranking positions, so that the figure 3 is entered in column 1 of Table 3. Only one of the ranks was within the first *five* ranking positions, so that the figure 1 is entered in column 2 of Table 3. Two of the four tax burden measures shown for agriculture and extractive corporations were higher than the corresponding measures for the total sample, so that the figure 2 is entered in column 3 of Table 3. (For this last item compare the 3.31 figure at the top of column 4 of Table 1 with the figure 2.38 at the bottom of column 4 of Table 1. Compare also the figure 49.30 at the top of column 10 of Table 1 with the figure of 37.55 at the bottom of column 10 of Table 1).

Since there are 18 groups and 18 possible ranking positions, column 1 of Table 3 divides the ranking positions equally. It indicates, in other words, the lower half of the ranking numbers. (This is the same thing as saying that it indicates the upper half of the tax burden scale, since the highest tax burdens are given the lowest positions in the rankings). Since column 2 of Table 3 describes the number of times a particular corporate type falls into the first *five* rankings, it might be considered to represent the very high tax burdens.

Careful consideration of the figures of column 2 of Table 3 will show two patterns of consistency. Public utility and recreation and amusement corporations are each represented by the figure 4 in column 2. *In other words, these business types ranked somewhere in the first five positions for each of the four tax burden measures.* (The public utility rankings in Table 1 are 3, 3, 3, and 1. The recreation and amusement rankings in Table 1 are 2, 5, 4, and 5). At the other end of the scale, eight business groups are ranked in the first five positions for none of the tax burden measures. For public utility and recreation and amusement corporations it may be inferred, from column 2 of Table 3, that these types of businesses were consistently in the "very high" tax rankings. For those corporations represented by the figure 0 in column 2 it may be inferred that these types of businesses were consistently *not* in the "very high" tax rankings. (This, however, is not to say that they were consistently in the "very low" tax rankings).

Columns 4, 5, and 6 of Table 3 describe the low tax ranks. Column 5 might be said to describe the "very low" tax ranks. The highest figure shown in column 5 is 3. This figure relates to the forest products manufacturers, textile manufacturers, and

the "other manufacturers" group. We may conclude that these groups were consistently in the low tax area. The 7 zeros which appear in column 5 indicate the consistently *not* very low tax groups.

It should be noted that the figures of any one of the columns in Table 3 do not indicate the *magnitude* of tax burden differences between corporate groups. It may not be inferred that a figure of 4 indicates a tax burden that is twice as large as that represented by a figure of 2. The figures of Table 3 indicate only the *consistency* with which corporate types appeared in the selected ranking positions.

Although definitive statements are difficult for the groups between the two extremes, a careful examination of Table 3 will indicate a surprising degree of consistency for the extremes themselves. In column 2, for example, for only two types of business may the data be considered indecisive. Miscellaneous corporations and unclassified trade corporations are represented by the figure 2 in column 2 of Table 3. In other words, on two out of four measures these enterprises were ranked among the very high tax corporations. The miscellaneous corporations were among the first *nine* ranking positions for all four measures. The inference seems clear that these corporations must be included with the high or the very high tax groups. This is especially the case when it is considered that for none of the measures were these corporations among the low or the very low tax ranks. The interpretation of the unclassified trade group must be somewhat the same as that for the miscellaneous corporations, although the confidence attached to the interpretation is somewhat reduced by the fact that these enterprises were included in the first nine ranks only three times and in the last nine ranks only once.

The evidence at the other end of the tax burden scale appears almost equally convincing. Forest products manufacturers were among the last nine ranks (the low-tax ranks) all four times. Three of these rankings were among the very low tax group. Mineral, chemical, and metals manufacturers were also in the last nine ranks all four times. These corporations were in the last five ranks two out of four times. Textile manufacturers were among the first nine ranks once, but were never among the first five ranks. They were, on the contrary, among the *last* five ranks three out of four times. The "other manufacturing" group shows

TABLE 3

RANKING FREQUENCY: ARITHMETIC MEAN, STATE AND LOCAL TAX BURDENS FOR NORTH CAROLINA BY FOUR TAX BURDEN MEASURES AND BY TYPE OF BUSINESS

Type of Business	High-Tax Ranks			Low-Tax Ranks		
	Number of Times In First Nine Ranks (1)	Number of Times In First Five Ranks (2)	Number of Times Group Mean Higher Than Mean of Total Sample (3)	Number of Times In Last Nine Ranks (4)	Number of Times In Last Five Ranks (5)	Number of Times Group Mean Lower Than Mean of Total Sample (6)
A Agriculture and Extractive.....	3	1	2	1	1	2
B Construction.................	2	1	1	2	1	3
C Finance.....................	3	1	2	1	1	2
D Food and Feed[1].............	1	1	1	3	2	3
E Forest Products[1]............	0	0	0	4	3	4
F Mineral, Chemical, and Metals[1]	0	0	0	4	2	4
G Textile[1]....................	1	0	1	3	3	3
H Tobacco Manufacture[1]........	2	1	1	2	1	3
I Other Manufacture[1]...........	1	0	0	3	3	4
J Miscellaneous................	4	2	2	0	0	2
K Public Utility................	4	4	4	0	0	0
L Recreation and Amusement....	4	4	4	0	0	0
M Service.....................	3	3	3	1	0	1
N Automotive Trade[2]..........	2	0	1	2	1	3
O Beverage, Food, and Drugs[2] ...	1	0	0	3	2	4
P Equipment and Supplies[2]......	0	0	0	4	0	4
Q General Merchandise[2]........	2	0	1	2	0	3
R Unclassified Trade[2]..........	3	2	1	1	0	3

NOTES: [1]Classified as Manufacturing Corporations
        [2]Classified as Trade Corporations

almost the same pattern as the textile group. Beverage, food, and drug corporations must, by this method, be considered to be subject to relatively low North Carolina taxation. This group was among the last nine ranks three times and among the last five ranks for two of the tax burden measures. The equipment and supplies group was among the last nine ranks all four times, although it was never in the very low tax rankings.

From Table 3, then, it is possible to isolate, in a fairly clear way, those types of corporations subject to relatively high and relatively low average taxes in North Carolina. *The relatively high tax enterprises are the public utility corporations, the recreation and amusement corporations, and the service corporations. The relatively low tax enterprises are the forest products manufacturers; the mineral, chemical, and metals manufacturers; the textile manufacturers; the "other manufacturing" group; the beverage, food, and drug group (in the trade category); and, to a lesser extent, the equipment and supplies group (also in the trade category).*

The consistency of the manufacturing corporations is particularly significant. Manufacturing corporations are indicated, in Table 3, by the footnote reference[1]. They include the six groups labeled D, E, F, G, H, and I. All of these groups, with the possible exception of tobacco manufacturers, are consistently located in the low tax rankings. Tobacco manufacturers are in a marginal position in this respect, showing almost as much tendency to lie in the high tax area as in the low tax area. Although the food and feed manufacturers are not as clearly established in the low tax area as are the other manufacturing groups, there can be little question that the tax burdens on this group tend to be relatively low. Food and feed manufacturers were located among the first five ranks only once. They were located among the last nine ranks three times and among the last five ranks twice.

The figures of Table 4 were constructed in the same way as the figures of Table 3 except that the former relate to the median tax burdens shown in Table 2 rather than to the mean tax burdens shown in Table 1. Although the results of Table 2 are not exactly comparable with the results of Table 1, they nevertheless indicate that manufacturing corporations tend to be low tax groups in North Carolina. Food and feed manufacturers, however, appear to have moved out of the low-tax group, while to-

TABLE 4

RANKING FREQUENCY: MEDIAN, STATE AND LOCAL TAX BURDENS FOR NORTH CAROLINA BY FOUR TAX BURDEN MEASURES AND BY TYPE OF BUSINESS

Type of Business	High-Tax Ranks			Low-Tax Ranks		
	Number of Times In First Nine Ranks (1)	Number of Times In First Five Ranks (2)	Number of Times Group Median Higher Than Median of Total Sample (3)	Number of Times In Last Nine Ranks (4)	Number of Times In Last Five Ranks (5)	Number of Times Group Median Lower Than Median of Total Sample (6)
A Agriculture and Extractive.....	1	0	1	3	1	3
B Construction.................	1	1	1	3	2	3
C Finance......................	3	2	3	1	1	1
D Food and Feed¹.............	3	2	2	1	0	2
E Forest Products¹............	0	0	0	4	3	4
F Mineral, Chemical, and Metals¹	1	0	2	3	1	2
G Textile¹.....................	0	0	0	4	2	4
H Tobacco Manufacture¹........	0	0	1	4	3	3
I Other Manufacture¹...........	1	1	1	3	3	3
J Miscellaneous................	2	1	3	2	1	1
K Public Utility................	4	4	4	0	0	0
L Recreation and Amusement....	4	3	3	0	0	1
M Service......................	3	3	3	1	0	1
N Automotive Trade²...........	2	1	3	2	1	1
O Beverage, Food, and Drugs²....	3	1	3	1	1	1
P Equipment and Supplies².....	2	0	2	2	1	2
Q General Merchandise².........	3	2	3	1	0	1
R Unclassified Trade²..........	3	0	2	1	0	2

NOTES: ¹Classified as Manufacturing Corporations
²Classified as Trade Corporations

bacco manufacturers have moved further into it. In terms of the
median tax burden, beverage, food, and drug corporations appear
to have moved to a somewhat higher plateau than the one they
occupied for the mean tax burdens. The same thing is true, to a
lesser extent, of the equipment and supplies group. It is just as
clear, however, that public utility corporations, recreation and
amusement corporations, and service corporations are the con-
sistently high tax groups among North Carolina corporations.[2]

It must be emphasized that these comparisons are valid in the
average sense only. It is quite possible that some *individual cor-
porations* in group G, for example, have tax burdens that exceed
the *average* tax burden of group L, even though the average tax
burden of group L exceeds the average tax burden of group G.

It must also be observed that the only group test made in the
present representative sample approach is the test of the tax
burden differentials *between the several types of businesses.*
The possibility exists that this test conceals a very important
classification of a different sort. It may be, for example, that
high tax burdens are related to the size of the corporation as
much as to the type of business conducted by the corporation.
There are, indeed, some strong indications (although no proof)
that such is the case for many of the groups shown. Textile
manufacturing enterprises are, on the whole, larger than service
corporations, and forest products manufacturers are generally
larger than agriculture and extractive corporations, at least in
North Carolina. If these size relationships are correct, and if
they prevail for other types of enterprises, it would seem that
tax burdens in North Carolina tend to be larger for relatively
small corporations than for relatively large corporations. This
may, in fact, be a more significant explanation of the variations
in intercorporate tax burdens than the explanation implied by
the analysis of business types. There are good theoretical reasons
for supposing that there exists a significant inverse relationship
between the size of corporate enterprises and the magnitude of
the tax burdens upon corporate enterprises. Unfortunately, there
was insufficient time to test this hypothesis, but the possibility
should not be neglected in an interpretation of the results.

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2. Although each of these measures of central tendency has its own unique contribu-
tions to make to an understanding of the distribution of tax burdens within North
Carolina, the arithmetic mean is probably the more useful for present purposes, if
only because its value is influenced by the *size* of the tax burdens.

In general, no attempt has been made in the present study to discover the *reasons* for the tax burden differentials discovered. And no attempt has been made to examine the differentials between the several sub-groups which comprise most of the industrial classifications. An analysis of the reasons for tax burden differentials as between the major industrial classifications might well begin with an examination of the differences between the sub-groups described, in tabular form, in Chapter IV. It may be, for example, that one of the high tax burden strata described above contains sub-groups which are, on the average, subject to relatively low taxation. The same thing may be true in reverse for those business types described as low tax groups. With a finer classification of tax burdens it might be possible to move closer to the establishment of a relationship between tax burdens and particular elements of the North Carolina tax structure which are known to have narrow application. In the same sense, it may be desirable to establish the relationship between the size of tax burdens and the character of the corporate charter. There may, in other words, be significant differences between the tax burdens of foreign corporations and those of domestic corporations.

Unfortunately, none of these additional tests was possible in the present study. But the raw materials of the study are available in such a form as to facilitate such analyses at a later date. The data may be rearranged to illustrate the relationship between tax burdens and the size of the sample corporations and the relationship between tax burdens and the character of the corporate charter, as well as to develop a more detailed analysis of all or any one of the business types described in the present study.

Tax burden differences within industrial types[3]

By any of the common statistical tests which may be applied to a random stratified sample in order to describe the spread of the individual measures within any of the sample strata or within the total sample the dispersion of the data appears to be relatively large. There are, in other words, important differences

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3. Much of the discussion in this section is, of necessity, somewhat technical in character. As explained in Chapter IV, the methods used are those which are the common statistical tools of descriptive analysis. The meaning and construction of the several measures may readily be discovered in any beginning or intermediate statistical textbook. In any event, the lay reader may well omit all but the first few paragraphs of this section without disturbing the narrative of the piece.

between the tax burdens borne by individual corporations even within the same business category. This relatively high degree of dispersion is common to all of the measures of tax burdens selected for the present study.

To a considerable extent the dispersion of the individual tax burden measurements comes from the fact that a relatively small number of corporations was found to bear tax burdens (by any one of the measures) that are a good deal higher than the burdens borne by those corporations which comprise the bulk of any one sample stratum. In technical terminology, the data exhibit a marked skewness to the right, with a bunching of the data toward the lower end of the measure and with a number of individual measures spread among the higher values. The presence of this pronounced skewness makes the application of some of the measures of absolute dispersion rather academic. But it is possible to develop a measure to facilitate a comparison of the relative dispersion of one stratum with the relative dispersion of another—to test, in other words, the degree of internal variation of one business type as compared with the degree of internal variation of another business type.[4]

(a) *The range*

The absolute range of the data is described in Table 5 for each of the business types and for the entire sample for each of the measures of tax burdens. For the book value measure, for example, the widest absolute range is exhibited by group R, the unclassified trade category. The narrowest range is exhibited by the D group, the food and feed manufacturers. For the book value measure the range of the total sample is shown at the bottom of column 3 of Table 5. The calculated ratios of total state and local taxes to total North Carolina book value of tangible property (expressed as a percent) *for individual corporations* extended from a low of .02 percent to a high of 548.23 percent, to provide a range of 548.21 percent.[5] The absolute range of the data for each of the other tax burden measures is described in columns 4 to 12, inclusive, of Table 5.

The usefulness of the range is greatly diminished by the fact that there are, in most of the series, significant discontinuities

4. The calculations by which the several measures of dispersion were derived are shown in Appendix A. They are, however, shown only for the total sample for each of the tax burden measures, in view of the mass of figures that would have to be included in order to illustrate the process for the 18 business types.

5. The range is, of course, stated to exclude those measures which were deleted. All deletions are shown in the footnotes to Table 5.

TABLE 5

RANGE OF INDIVIDUAL RATIOS: STATE AND LOCAL TAX BURDENS FOR NORTH CAROLINA BY FOUR TAX BURDEN MEASURES AND
BY TYPE OF BUSINESS

Type of Business	Taxes as a Percent of Book Value			Taxes as a Percent of Gross Receipts			Taxes as a Percent of Payroll			Taxes as a Percent of Net Profits		
	Lower Limit (1)	Upper Limit (2)	Range (3)	Lower Limit (4)	Upper Limit (5)	Range (6)	Lower Limit (7)	Upper Limit (8)	Range (9)	Lower Limit (10)	Upper Limit (11)	Range (12)
A Agriculture and Extractive	.17	58.70	58.53	.07	70.87[9]	70.80	.18	73.70[14]	73.52	3.18	878.82	375.64
B Construction	.04	179.26[3]	179.22	.01	75.11	75.10	.02	36.67[15]	36.65	.82	252.78	627.60
C Finance	.08	587.23[4]	537.15	.03	23.35	32.32	.08	145.45	145.37	.14	400.00	399.86
D Food and Feed[1]	.44	27.43	26.99	.06	8.57	8.51	.77	39.42	38.65	1.92	460.63	458.71
E Forest Products[1]	.08	40.80	40.72	.08	67.44	67.41	.17	20.68	20.51	1.06	175.51	174.45
F Mineral, Chemical, and Metals[1]	.19	42.88	42.69	.14	14.60	14.46	.30	27.17	26.87	1.38	261.75	260.42
G Textile[1]	.05	109.59	109.54	.04	46.33[10]	46.29	.11	75.00	74.89	2.02	934.67[18]	982.65
H Tobacco Manufacture[1]	.50	89.72	89.22	.01	48.85	48.84	.22	22.48	22.26	8.24	149.04	140.80
I Other Manufacture[1]	.02	319.72	319.70	.01	10.55[11]	10.54	.01	62.72	62.71	.33	146.04	145.71
J Miscellaneous	.12	88.00	87.88	.01	135.00[12]	134.99	.22	151.84	151.62	.09	562.22	562.13
K Public Utility	.22	133.08	182.86	.09	15.82	15.73	.20	92.61	92.41	4.85	750.00[19]	745.15
L Recreation and Amusement	.14	480.25	480.11	.05	84.05	84.00	.25	75.35	75.10	2.16	242.56	240.40
M Service	.05	155.36[5]	155.31	.01	80.56[13]	80.55	.01	384.67[16]	384.66	.36	559.37	559.01
N Automotive Trade[2]	.21	189.53[6]	189.32	.01	9.11	9.10	.35	146.55	146.22	.08	787.56	787.48
O Beverage, Food, and Drug[2]	.17	114.60	114.43	.04	14.94	14.90	.13	153.67	153.54	.32	149.08	148.76
P Equipment and Supplies[2]	.09	305.82	205.73	.01	115.56	115.55	.12	67.07	66.95	.09	445.44[20]	445.35
Q General Merchandise[2]	.07	305.21[7]	305.14	.08	109.09	109.01	.45	110.79	110.34	.22	533.99	533.77
R Unclassified Trade[2]	.19	548.23[8]	548.04	.01	49.51	49.50	.04	330.38[17]	330.34	.56	479.70[21]	479.14
Total Sample	.02	548.23	548.21	.01	135.00	134.99	.01	384.67	384.66	.08	934.67	934.59

NOTES: [1]Classified as Manuracturing Corporations
[2]Classified as Trade Corporations
[3]Deletion: 1,247.62
[4]Deletion: 1,160.00
[5]Deletion: 1,040.91
[6]Deletion: 2,241.94
[7]Deletion: 1,362.79
[8]Deletion: 1,780.00
[9]Deletion: 857.82

[10]Deletion: 1,052.87
[11]Deletion: 576.58
[12]Deletion: 377.27
[13]Deletion: 236.37
[14]Deletion: 429.33
[15]Deletion: 434.06
[16]Deletions: 557.89
                1,899.83
                3,103.83

[17]Deletion: 1,374.00
[18]Deletion: 3,002.80
[19]Deletion: 1,638.53
[20]Deletion: 1,650.00
[21]Deletions: 1,025.93
                1,100.00

in the higher values. Its usefulness as a comparative device is disturbed by the fact that different numbers of corporations are included in each of the sample strata. It is useful, however, in describing the extremes to which the tax structure can go in imposing burdens upon individual corporations. To the heavily taxed firm the extremes of the range are undoubtedly significant.

(b) *The standard deviation:*

As a measure of the dispersion or the spread of the individual measures around the mean of the series the standard deviation is both the most common and the most useful. In the present case, however, the usefulness of the standard deviation is severely restricted by the high degree of skewness in each of the series. If the data were arranged in such a fashion as to approximate a normal, bell-shaped curve, the standard deviation for each of the classes could be interpreted somewhat as follows: if the value of the standard deviation were added to and subtracted from the value of the arithmetic mean of the series approximately 68.27 percent of the individual measures would lie within the limits so determined. Thus, Table 6 column 1 shows a value for the standard deviation of the agriculture and extractive corporations (by the book value measure) of 7.0176. The value of the mean for this group is 2.72 (see Table 1, column 1). Adding the value of the standard deviation to the value of the mean yields an upper limit of 9.7376. Subtracting the value of the standard deviation from the value of the mean yields a lower limit that is a negative quantity, which, for our purposes, may be assumed to be zero. If the distribution of individual corporate measures of tax burdens for the agriculture and extractive group were normal, approximately 68.27 percent of the items would lie within the range 0.000 to 9.7376. In fact, however, approximately 97 percent of the items lie within this range. This is the case because the calculation of the standard deviation is influenced by the few high values for the "very high tax burden corporations" within the agriculture and extractive group.

This pattern is common to all of the groups and to all of the tax burden measures. Of the 76 standard deviation values shown in Table 6 (one for each of the business types and for each of the tax burden measures) only six have a value less than that of the mean. This high value for the standard deviation includes all of the measures below the mean. For slightly skewed distri-

TABLE 6

STANDARD DEVIATION: STATE AND LOCAL TAX BURDENS FOR NORTH CAROLINA BY FOUR TAX BURDEN MEASURES AND BY TYPE OF BUSINESS

Type of Business	Taxes as a Percent of Book Value		Taxes as a Percent of Gross Receipts		Taxes as a Percent of Payroll		Taxes as a Percent of Net Profits	
	Standard Deviation (1)	Rank for Col. (1) (2)	Standard Deviation (3)	Rank for Col. (3) (4)	Standard Deviation (5)	Rank for Col. (5) (6)	Standard Deviation (7)	Rank for Col. (7) (8)
A Agriculture and Extractive	7.0716	15	9.0121	5	12.8617	7	77.4182	6
B Construction	21.4487	5	6.9960	7	5.3553	16	41.1662	14
C Finance	55.7583	2	3.0484	13	16.2859	6	50.9089	10
D Food and Feed[1]	3.7062	18	1.2265	16	22.9806	4	77.5957	5
E Forest Products[1]	4.1304	17	5.4565	9	2.6550	18	29.1283	15
F Mineral, Chemical, and Metals[1]	5.0285	16	2.0809	14	3.3820	17	44.8751	13
G Textile[1]	9.1943	14	3.4384	11	5.8976	14	108.3409	1
H Tobacco Manufacture[1]	16.8854	8	11.3569	2	5.4159	15	27.7766	16
I Other Manufacture[1]	28.5890	4	1.2711	15	6.6464	13	21.3488	18
J Miscellaneous	12.7725	11	23.8426	1	29.4569	2	83.0221	4
K Public Utility	20.9500	6	3.3060	12	19.8643	5	86.8460	3
L Recreation and Amusement	58.4595	1	9.5698	3	10.7134	10	55.3417	9
M Service	13.8925	10	9.2890	4	44.7742	1	71.5586	7
N Automotive Trade[2]	15.1328	9	1.0464	18	12.6899	8	87.3032	2
O Beverage, Food, and Drug[2]	12.4690	12	1.2041	17	11.9195	9	26.0681	17
P Equipment and Supplies[2]	11.9495	13	7.3103	6	8.3959	11	48.4929	12
Q General Merchandise[2]	17.0229	7	5.7536	8	7.8871	12	66.0245	8
R Unclassified Trade[2]	48.3405	3	4.6594	10	28.7921	3	50.1417	11
Total Sample	25.7639		7.0044		20.8252		65.6752	

NOTES: [1] Classified as Manufacturing Corporations
[2] Classified as Trade Corporations

butions it is normal for all of the measures below the mean to be included within the distance measured by the mean minus *three* standard deviations, but it is unusual for this result to be associated with the lower limit established by *one* standard deviation.

The usefulness of the standard deviation as a measure of the dispersion of the data in the individual strata or in the sample as a whole is thus limited by the abnormality of the series. For this reason, the standard deviation is used in the present study merely as the foundation of other, somewhat more revealing calculations.

(c) *The coefficient of variation*

The standard deviation figures shown in Table 6 are not subject to easy comparison as between the several business types. This is the case because the arithmetic means of the sample strata are different. The calculation of the coefficient of variation provides a measure of *relative* dispersion by the simple device of expressing the standard deviation as a percent of the arithmetic mean with which it is associated. The results of these calculations are shown in Table 7.

A comparison of the individual figures of column 1 of Table 7 (and of the rank figures in column 2) shows that the greatest internal variation by the book value measure is that for the "other manufacturing" group. The least internal variation is that for the food and feed manufacturers.

For the gross receipts measure the greatest internal variation is exhibited by the equipment and supplies group in the trade category, whereas the least internal variation is exhibited by the automotive trade corporations.

Food and feed manufacturers show the greatest variation for the payroll measure, whereas the mineral, chemical, and metals manufacturers show the least variation.

Finally, for the net profit measure textile manufacturers show the greatest variation between individual corporations. The least amount of variation for this measure is shown by the beverage, food, and drug companies.

The coefficient of variation may also be used to indicate which of the tax burden *measures* produces the least variation for each of the business types. Thus, for the agriculture and extractive corporations the least internal variation is exhibited when state

TABLE 7

COEFFICIENT OF VARIATION, STATE AND LOCAL TAX BURDENS FOR NORTH CAROLINA BY FOUR TAX BURDEN MEASURES AND BY TYPE OF BUSINESS

Type of Business	Taxes as a Percent of Book Value		Taxes as a Percent of Gross Receipts		Taxes as a Percent of Payroll		Taxes as a Percent of Net Profits	
	Coefficient of Variation (1)	Rank for Col. (1) (2)	Coefficient of Variation (3)	Rank for Col. (3) (4)	Coefficient of Variation (5)	Rank for Col. (5) (6)	Coefficient of Variation (7)	Rank for Col. (7) (8)
A Agriculture and Extractive...............	259.985	8	272.269	9	159.773	11	157.035	7
B Construction...........................	237.790	10	390.838	4	138.380	12	130.686	13
C Finance................................	194.483	14	125.449	15	196.927	6	181.238	4
D Food and Feed[1].......................	88.243	18	108.540	17	411.102	1	165.980	5
E Forest Products[1]......................	184.980	17	416.527	3	97.970	16	110.923	16
F Mineral, Chemical, and Metals[1].......	137.391	16	163.850	12	83.096[1]	18	183.557	12
G Textile[1].............................	298.516	5	293.880	5	191.481	8	278.655	1
H Tobacco Manufacture[1].................	285.846	7	278.660	8	98.057	17	130.845	14
I Other Manufacture[1]...................	455.239	1	113.491	16	255.631	3	104.548	17
J Miscellaneous.........................	204.034	13	186.125	11	196.904	7	240.156	2
K Public Utility.........................	164.831	15	77.243	18	211.547	4	144.985	11
L Recreation and Amusement.............	336.748	4	275.787	7	177.343	15	122.818	15
M Service...............................	259.673	9	148.570	13	131.303	13	151.961	8
N Automotive Trade[2]....................	287.150	6	134.154	14	179.744	9	210.318	3
O Beverage, Food, and Drug[2]............	216.476	11	194.210	10	201.343	5	88.879	18
P Equipment and Supplies[2]..............	212.652	12	599.205	1	170.648	10	147.574	10
Q General Merchandise[2].................	371.679	3	475.504	2	126.194	14	150.982	9
R Unclassified Trade[2]..................	380.634	2	284.110	6	337.144	2	160.402	6
Total Sample....................	338.553		294.303		240.754		174.901	

NOTES: [1]Classified as Manufacturing Corporations
[2]Classified as Trade Corporations

and local taxes are expressed as a percent of the net profits of the corporations in the sample. The same thing is true for construction corporations, even though the net profits measure does not produce the lowest ranking position for this business type. For construction companies the lowest ranking position is associated with the gross receipts measure.

TESTS OF RELIABILITY AND SIGNIFICANCE

Two common statistical tests were applied to determine, first, the reliability of the sample means and, second, the significance of the differences between the arithmetic means of each of the sample classes. Each of these tests was, of course, applied to all four measures of tax burdens.

The standard error of sample means

The standard error of sample means is designed to test the reliability of the sample arithmetic means as estimates of the means of the populations from which the samples were selected. For example, Table 1 shows the arithmetic mean of the service corporations by the book value measure (column 1) to be 5.35 percent. This value was obtained through the selection of a sample of approximately 15 percent of the total number of corporations included in this category in North Carolina. If a second sample of the same size had been selected from the same population the calculated arithmetic mean would probably not have been exactly 5.35 percent. Assuming random processes throughout, the difference between these two sample means could be explained only by the operation of chance factors in the sampling operation. If the sampling operation were repeated many times and if many arithmetic means were calculated, the arithmetic means would tend to form a normal curve, even thongh the population from which the samples were drawn was not normally distributed. For a very large number of such samples, the normal curve of arithmetic means would be distributed around the *true* arithmetic mean of the population, *i.e.*, the *true* arithmetic mean of all of the corporations in the service category.

Unfortunately, however, it was not possible to conduct an infinite number of samples of any category in the total population. Only one sample was taken from each stratum, and only one arithmetic mean was calculated for each stratum. The problem, then, is to determine the reliability of the sample mean

TABLE 8

STANDARD ERROR OF SAMPLE MEANS: STATE AND LOCAL TAX BURDENS FOR NORTH CAROLINA BY FOUR TAX BURDEN
MEASURES AND BY TYPE OF BUSINESS

Type of Business	Taxes as a Percent of Book Value			Taxes as a Percent of Gross Receipts			Taxes as a Percent of Payroll			Taxes as a Percent of Net Profits		
	Standard Error of Sample Means (1)	Lower Limit (2)	Upper Limit (3)	Standard Error of Sample Means (4)	Lower Limit (5)	Upper Limit (6)	Standard Error of Sample Means (7)	Lower Limit (8)	Upper Limit (9)	Standard Error of Sample Means (10)	Lower Limit (11)	Upper Limit (12)
A Agriculture and Extractive	.858	1.862	3.578	1.085	2.225	4.395	1.595	6.455	9.645	12.727	36.573	62.027
B Construction	1.806	7.214	10.826	.553	1.237	2.343	.468	3.402	4.338	3.822	27.678	35.322
C Finance	4.014	24.656	32.684	.209	2.221	2.639	1.119	7.151	9.389	3.882	24.208	31.972
D Food and Feed[1]	.341	3.859	4.541	.113	1.017	1.243	2.116	3.474	7.706	8.090	38.660	54.840
E Forest Products[1]	.331	2.729	3.391	.437	.873	1.747	.216	2.494	2.926	2.728	23.532	28.988
F Mineral, Chemical, and Metals[1]	.530	3.130	4.190	.217	1.053	1.487	.361	3.709	4.431	5.049	28.551	38.649
G Textile[1]	.618	2.462	3.698	.235	.935	1.405	.402	2.678	3.482	8.817	68.712	47.697
H Tobacco Manufacture[1]	3.367	2.533	9.267	2.271	1.879	6.421	1.083	4.737	6.903	5.792	15.518	27.102
I Other Manufacture[1]	2.434	3.846	8.714	.109	1.011	1.229	.570	2.030	3.170	2.093	18.327	22.513
J Miscellaneous	1.789	4.471	8.049	2.935	9.875	15.745	5.128	9.832	20.088	12.241	22.329	46.811
K Public Utility	1.920	10.790	14.630	.292	3.988	4.572	1.777	7.613	11.167	7.826	37.234	52.886
L Recreation and Amusement	6.890	10.470	24.250	1.077	2.393	4.547	1.263	7.867	10.393	4.331	42.759	51.421
M Service	.750	4.600	6.100	.484	5.986	6.954	2.690	31.410	36.790	5.968	35.542	47.478
N Automotive Trade[2]	.886	4.384	6.156	.061	.719	.841	.746	6.314	7.806	2.157	27.173	31.487
O Beverage, Food, and Drug[2]	.929	4.831	6.689	.088	.532	.708	.898	5.022	6.818	3.338	29.522	36.198
P Equipment and Supplies[2]	.714	4.906	6.334	.432	.788	1.652	.507	4.413	5.427	3.981	39.749	47.711
Q General Merchandise[2]	.906	3.674	5.486	.303	.907	1.518	.418	5.832	6.668	4.067	27.193	35.327
R Unclassified Trade[2]	3.544	9.156	16.244	.333	1.307	1.973	2.100	6.440	10.640			
Total Sample	.467	7.143	8.077	.124	2.256	2.504	.383	8.267	9.033	1.347	36.203	38.897

NOTES: [1] Classified as Manufacturing Corporations
[2] Classified as Trade Corporations

actually calculated as an estimate of the *true* mean of the total population from which the sample was drawn. This is the function of the so-called standard error of the mean. Reliability in this sense can, of course, be determined only in terms of probabilities rather than in terms of certainties.

The values for the standard error of the means are shown, for each of the classes and for each of the tax burden measures, in Table 8. The interpretation of selected items shown in Table 8 is as follows:

1. The arithmetic mean of the sample drawn from the agriculture and extractive corporations for the book value measure is 2.72 percent (Table 1 column 1). The value of the standard error of the mean is .858 percent. If this value is subtracted from the mean and added to the mean the resulting limits are 1.862 percent and 3.578 percent. We may make the statement that the *true* mean of the population lies somewhere between these two limits. The statement may, however, be true or false. But if we were to select a large number of samples of the same size from the same population, compute the same kinds of limits around each of the calculated arithmetic means, and make the same statements about the location of the true mean of the population as estimated from the mean of each sample, approximately 68 percent of such statements would be correct.[6]

2. The arithmetic mean of the sample drawn from the population of textile manufacturers for the gross receipts measure of tax burdens is 1.17 percent (Table 1, column 4). The value of the standard error of the mean is .235 percent (Table 8, column 4). If this value is subtracted from the mean and added to the mean the resulting limits are .935 percent and 1.405 percent. The statement that the true mean of the population lies between these limits may be true or false. But if the same operation were repeated many times and similar statements made each time, the statements would be correct 68 times out of 100.

Similar interpretations may be applied to each of the standard error figures of Table 8. For present purposes, then, it may be assumed that the "mean limits" associated with each standard

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6. It would be possible to determine limits established by subtracting and adding twice the standard error and three times the standard error, to show the 90 percent probability limits and the 99 percent probability limits respectively. The 68 percent probability limits were, however, thought to be adequate for present purposes.

error value describe the limits of the true mean of the population in terms of a 68 percent probability. With this understanding, it is possible to summarize the results to show that the means of each of the strata are equal to the mean values shown in Table 1 plus or minus the corresponding standard error values shown in Table 8.

The z test

Under normal circumstances the so-called "z test" provides a test of the significance of the difference between the means of the several classifications in the sample. Table 1 states the fact that differences between the several types of businesses do exist. It shows, further, that these differences exist for each of the tax burden measures selected for analysis. The problem now under discussion involves the question of the significance of these differences. Are the differences between the means small enough to be attributed to chance factors (that is, to all of the factors not included in the classification system itself), or does the fact of classification appear as a necessary part of the explanation of the differences? This is the question which the z test seeks to answer. By this test the variation of individual tax burdens within all of the groups of business enterprises is compared with the variation of the tax burdens *between* business groups.

For the book value measure of tax burdens the value of z is 1.515.[7] From specially-prepared tables it can be shown that, for a sample of the size of that considered in the "book value" measure of tax burdens the differences between the eighteen class averages are too great to be attributed to chance. The chances of obtaining a value for z of 1.515 are, in fact, much less than 1 out of 1000. From the evidence of the z test it must be concluded that the tax burdens of the eighteen business groups are not only different, but, in the statistical sense, *significantly* different. Approximately the same thing is true for the other measures of tax burdens. In every case the chances of obtaining a z value as high as that found for each of the measures is lsss than 1 out of 1000, so that chance may, for all practical purposes, be ruled out as an explanation of the differences between the tax burdens for the eighteen classes of North Carolina corporations.

Even on the assumption of the full validity of the z test, however, the proof of the significance of the classification by types

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7. The basic calculations for the four z values (for each of the tax burden measures) are shown in Appendix A.

the quantitative problem of the *size* of the differences; the second involves the qualitative problem of *why* these differences exist.

From the standpoint of practical policy it is, of course, extremely important to know that most manufacturing enterprises are subjected to relatively light tax burdens in North Carolina as compared, for example, with public utilities and several types of trade and service corporations. But it is also important to know how large the differences are between the high tax area and the low tax area. For any one of the tax burden measures adopted for the present study it is, of course, possible to determine the degree of tax burden differences between industrial types—either in terms of the mean, the median, or any of the other devices of statistical deduction which may be used to describe representative tax burdens for a sample selected from a larger population. But in determining which corporate types are in the high tax brackets and which in the low tax brackets the methods of the present study have utilized a combination approach, by which conclusions were restricted to those which could be derived from an analysis of ranks and ranking frequencies. Although leading to somewhat imprecise answers, this combination method appeared to be the only defensible method available for the handling of basic data that were as fuzzy as those of the present study. Unfortunately, an analysis of ranks and ranking frequencies does not permit a measurement of the magnitude of the differences between business types.

It is probable that the combination approach adopted in the present study will arouse objections in individual businessmen. When, in the business world, an attempt is made to establish comparisons similar to those of the present study, the emphasis is usually placed upon the position of the firm initiating the analysis in relation to other firms in the same industry. As such, the analysis is aimed at a clarification of the competitive relationships within the industry. For these purposes it may be quite legitimate to develop the comparison in terms of a *single* measure of tax burdens. It is to be expected that much less opportunity for non-tax variation exists *within* any narrowly-defined industry than *between* industries. But the present study is necessarily committed to an analysis of tax burdens across industrial lines, so that the use of a single measure could seriously distort the results.

The qualitative problem of why there are differences between business types has been almost totally ignored in the present analysis of intrastate tax burdens. Why, for example, does the North Carolina tax system appear to fall more heavily upon public utility enterprises and service corporations than upon many manufacturing enterprises and some trading corporations? Why are there large differences between the tax burdens borne by individual corporations within each of the industrial groups? These are questions that can be answered only by a thorough examination of the tax laws and of the manner in which these tax laws are applied to the several business types. In theory, the income tax and the property tax tend to be proportional levies, that is, they tend to produce tax burdens which are proportional to the ability of the corporation to pay taxes. In practice however, this tendency may be effectively frustrated by administrative practices that bear little or no relationship to the tax laws. The property tax is likely to be a prime offender in this respect. In addition, the tax structure contains special provisions of one sort or another which may differently affect the several business types. Such, for example, might be the special methods applied to public utilities for the determination of the franchise tax liability or for the allocation of total corporate income to North Carolina. And since the public utility category contains franchise trucking corporations, the special fuel taxes might also be significant in creating disproportionate burdens for the whole public utility category. Similarly, special income tax provisions, such as depletion allowances and the provisions for emergency amortization, apply to some types of corporations and not to others. Finally, part of the North Carolina tax structure makes no attempt to levy taxes that are in any way designed to impose proportional burdens. Business licenses and other special levies tend to fall into this category. To the extent that small corporations pay approximately the same dollar amounts of such taxes as do large corporations, the tax burdens are greater upon small corporations than upon large corporations. If, then, some business classifications are composed primarily of small corporations while other business classifications are composed of large corporations, the effect of such levies would be to place the former classifications high in the tax burden rankings and to place the latter business types low in the tax burden rankings. None of these possibilities was seri-

ously considered in the present study, however, so that an important analytical task has yet to be performed in the exploration of intrastate tax burdens in North Carolina.

Even in the restricted sense in which the findings of the present study are offered, it must be understood that no final and complete proof is claimed. Because of the nature of the materials it is possible to claim only that the distribution of North Carolina's corporate tax burdens is strongly suggested by the results of the foregoing analysis. It is firmly believed, however, that the methods adopted in the present study produce answers which are as complete and as definite as possible in this difficult area of analysis. Combined with the suggested analyses which the present findings will support, the results would seem to maximize the evidence upon which practical policy may be based.

THE INTERSTATE COMPARISON

The interstate comparison of tax burdens supported by the findings of the representative sample method is contained in Tables 9 and 10. Because of the manner in which the sample of interstate corporations was selected, the results cannot, of course, be justified by the same arguments applied to the North Carolina sample analysis. The interstate material does provide a useful guide but it cannot be said to offer irrefutable proof of the character and the magnitude of the tax burden differentials between states. Table 9 shows average tax burdens for all types of businesses and for the eleven Southeastern states and "all other states" expressed as an index series with the North Carolina average tax burden assumed equal to 100. It should be noted that the North Carolina burdens were measured only for those corporations showing multi-state tax payments, so that the North Carolina figures are not the same as those for the total North Carolina sample described in the intrastate analysis. The data of the interstate comparison are not in such condition as to support the application of the more sophisticated statistical techniques applied to the intrastate analysis.

Table 9 shows that North Carolina levies tax burdens which, by the net profit measure, are the heaviest of any of the states represented. For this measure Virginia and Tennessee are the close competitors of North Carolina, while Arkansas, Georgia, and Florida appear as low tax states. By the gross receipts

measure, North Carolina is shown to occupy third position in the rankings, well behind Arkansas and Kentucky, but far above Louisiana and Alabama. By the payroll measure North Carolina is shown to be in a much more comfortable position. Six states appear to levy higher tax burdens upon multi-state corporations than does North Carolina, with Mississippi at the top of the list. At the other end of the rankings, Arkansas is shown to levy tax burdens that are about half the size of those levied by North Carolina. By the book value measure North Carolina is shown to occupy seventh position in the rankings.

Out of the twelve rank positions North Carolina falls into the first three positions for two of the four measures. In this respect, North Carolina is similar to Mississippi and Tennessee. Virginia appears, by this test, to be the highest taxing state, occupying one or another of the first three positions three times out of four. Arkansas, Kentucky, and Louisiana fall into this high tax group only once each. Alabama, Florida, Georgia, South Carolina, and the "all other states" category occupy the low tax positions in this comparison, although Arkansas should clearly be considered a low tax state in view of the fact that it occupies a position among the lowest three ranks three times out of four.

Table 10 provides the same kind of information for the median tax burdens in each of the states. In this comparison North Carolina occupies first position (high tax position) for the net profit and the gross receipts measures. For the other two measures North Carolina occupies fifth and sixth positions. The median tax measure also shows Virginia to be a high tax state by any of the measures of tax burdens, since Virginia falls within the first three ranks for all four measures. The consistently low tax states, in terms of the median tax burdens of Table 10, are Alabama, Arkansas, Florida, and Kentucky.

Although the interstate comparison supported by the representative sample data may not be glorified as providing clear answers in which great confidence may be placed, it seems fair to conclude that there is at least some evidence to support the conclusion that North Carolina is a relatively high tax state. Virginia is quite consistently equal to or higher than North Carolina, while a number of other states (such as Mississippi, Tennessee, and Louisiana) are equal to or slightly lower than North Carolina. But approximately five states must be considered to lie substantially below North Carolina in the tax burdens

TABLE 9

INDEX OF AVERAGE STATE AND LOCAL TAX BURDENS IN ELEVEN SOUTHEASTERN AND "ALL OTHER" STATES

(NORTH CAROLINA=100)

States	Taxes as a Percent of Book Value		Taxes as a Percent of Gross Receipts		Taxes as a Percent of Payroll		Taxes as a Percent of Net Profit	
	Index (1)	Rank (2)	Index (3)	Rank (4)	Index (5)	Rank (6)	Index (7)	Rank (8)
NORTH CAROLINA	100.0	7	100.0	3	100.0	7	100.0	1
Alabama	98.5	8	38.9	11	67.2	9	56.6	7
Arkansas	44.2	12	178.6	1	51.6	12	45.2	12
Florida	117.6	5	67.9	4	58.0	10	52.8	10
Georgia	110.3	6	51.6	7	117.6	6	51.6	11
Kentucky	88.0	9	137.7	2	93.5	8	54.1	8
Louisiana	119.3	4	53.3	12	175.5	2	53.0	9
Mississippi	196.2	1	44.4	10	195.5	1	74.3	6
South Carolina	52.6	11	59.5	5	122.1	4	78.4	5
Tennessee	143.4	3	52.8	6	122.0	5	93.6	3
Virginia	186.7	2	51.6	7	134.2	3	97.7	2
All Other States	67.3	10	45.6	9	57.7	11	87.4	4

TABLE 10

INDEX OF MEDIAN STATE AND LOCAL TAX BURDENS IN ELEVEN SOUTHEASTERN AND "ALL OTHER" STATES

(NORTH CAROLINA=100)

States	Taxes as a Percent of Book Value		Taxes as a Percent of Gross Receipts		Taxes as a Percent of Payroll		Taxes as a Percent of Net Profit	
	Index (1)	Rank (2)	Index (3)	Rank (4)	Index (5)	Rank (6)	Index (7)	Rank (8)
NORTH CAROLINA	100.0	5	100.0	1	100.0	6	100.0	1
Alabama	89.5	8	50.0	10	89.9	9	48.0	8
Arkansas	65.4	12	55.7	8	62.2	12	35.4	11
Florida	84.2	9	50.7	9	83.4	10	38.7	10
Georgia	122.4	3	65.7	7	101.3	5	56.0	7
Kentucky	76.5	10	45.7	11	78.6	11	33.5	12
Louisiana	97.0	7	44.3	12	134.1	2	41.7	9
Mississippi	166.3	1	73.6	6	96.3	7	74.2	4
South Carolina	120.6	4	78.6	3	132.8	3	85.5	2
Tennessee	99.6	6	75.7	5	118.5	4	73.8	5
Virginia	125.8	2	87.1	2	162.0	1	83.2	3
All Other States	66.7	11	77.1	4	93.4	8	60.4	6

imposed upon corporate enterprises. This group consists of Alabama, Arkansas, Florida, Georgia, and Kentucky.

In the analysis of interstate tax burdens the limitations of the representative sample approach are particularly severe. As indicated earlier, the main burden of the interstate comparison is placed upon the shoulders of the hypothetical corporation approach. For selected types of enterprises the actual corporation approach may be considered to provide assistance to the hypothetical corporation approach in the analysis of these interstate tax differences. The foregoing analysis of interstate differences by the representative sample approach also provides assistance to the hypothetical corporation approach by extending the reference to all kinds of multi-state corporations and by expressing the tax burden measures in terms of taxes actually paid rather than in terms of hypothetical tax bills. The role of the representative sample approach in the interstate analysis is restricted to this supernumerary activity.

CHAPTER VI

HYPOTHETICAL CORPORATION APPROACH—THE METHOD

A STATEMENT OF PURPOSES AND LIMITATIONS

By far the most popular systematic method of measuring and comparing the tax burdens imposed by state and local governments is the so-called hypothetical corporation method. This method involves the construction of a more or less realistic dummy corporation, with characteristics carefully manufactured to test certain selected elements in the tax structure or to test the impact of taxation upon a particular type of business enterprise. Comparative tax bills are computed for the hypothetical corporation by the simple insertion of these prefabricated figures into the tax laws of the several jurisdictions selected for comparison.

As pointed out in Chapter I, it is the *selective* character of the method that defines both its greatest utility and its greatest limitation. It is extremely useful to be able to focus analysis upon particular types of business enterprises and to explore, to any extent desired, the minor interstices of the law. This kind of concentrated attention is, of course, particularly desirable if, as in the present study, some types of enterprises are found to be the essential ingredients of a program of economic development. But it must be clearly understood that, by its very nature, the method cannot produce answers that are representative of the impact of the entire tax system upon the entire body of tax-payers. Strictly construed, the answers are relevant only for a business that has the exact appearance of the model constructed. More generously construed, they probably serve to describe the major differences in the impact of tax systems upon a narrow range of business enterprises with characteristics roughly similar to those of the hypothetical enterprise, although even this timid extension of the area of applicability may be admitted only with the greatest care. Thus, the hypothetical corporation approach is limited by the number of questions it may legitimately be expected to answer. But it does contain much of the equipment necessary to provide detailed answers to the questions that are within its scope.

Because of the easy, and sometimes dramatic, comparisons which the hypothetical corporation approach permits, it has

often been assigned more authority in comparative tax studies than it deserves. *It does not, and it cannot, measure tax burdens actually imposed.* Neither does it measure the tax burdens that would be imposed if the actual corporation looked exactly like the hypothetical corporation. Unfortunately, without some rather sweeping assumptions, it cannot even be said to represent the most probable long-run tax burdens of a business similar to that of the model.[1] Complete realism can be claimed only if it is possible to prove that taxes actually paid perfectly reflect the intent of the law, without the distortions that are produced by the exercise of administrative wisdom or administrative whim. Such proof is not possible. On the contrary, there is much evidence in American public finance to demonstrate the importance of the administrative or quasi-administrative decision in the determination of the final tax burden. Of course, to the extent that such decisions are of general application, they tend to be merely interpretative of the law. And where these general interpretations are available in published form, they may be taken into account in the hypothetical corporation approach. The limitations must, rather, be expressed in terms of the large number of *ad hoc* decisions made by the tax administrator, designed to apply to a particular taxpayer at a particular time and under a particular set of circumstances. For present purposes, it makes no difference whether these decisions are justified by explicit statutory authorization or whether they are undertaken without such authorization. Nor does it matter whether the results represent a wise departure from the statutes or are demonstrably witless. The point is that such deviations are common and serve to limit the realism of the hypothetical corporation approach.

In one area of analysis it is necessary to make an exception to the "strict-statute" rule. The laws of most states define the broad outlines of the general ad valorem property tax levied by most local governments and by some state governments. With respect to assessment levels, these definitions are usually expressed in general terms, to require assessment "at full cash value" or "at actual value in money", or in some other terms calculated to carry the meaning of market value without actually

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1. In this sense, Dr. Floyd seems to have overstated his case. It is claimed that the hypothetical tax bills represent "the most probable long-run tax bills for firms of this type under the conditions specified." op. cit., p. 65. Floyd does recognize the differences created by the disparity between law and administration. (p. 51), but he fails to point out that administrative decisions typically have *long-run* consequences. It may even be that the difference between a statutory interpretation and the actual tax bill *widens* over long periods of time.

resorting to the phrase. A strict interpretation of this kind of language would, in the majority of cases, require a calculation based upon 100 percent of the market value of taxable property. But it is common knowledge that fractional assessments are the rule rather than the exception in property tax administration. If, then, the analysis is to pretend to any realism at all, it is necessary to make this concession to administrative practice and attempt to take account of actual assessment levels rather than to be content with the stated or implied statutory level.

As might be expected, there is no possible way of testing any of the extra concessions which some taxpayers (or potential taxpayers) may be able to obtain from a local assessing officer or which may arise as the result of an unconscious bias on the part of a poorly-trained valuation official. In the present hypothetical corporation approach it is possible to account for only the *general* level of assessment as it would, in the absence of concessions, apply to the kind of business enterprises under consideration. Special assessment concessions (whether desirable from the point of view of the entire community or not) often depend upon the bargaining power of the enterprise contemplating a new location. Needless to say, the bargaining power of a purely imaginary enterprise is inconsequential.

A final limitation of the hypothetical corporation approach as used for comparative purposes is that it does not permit, at least without prohibitive effort, sufficient flexibility in the corporate decision. As a practical matter, the method must be based upon the assumption that the corporation has fixed characteristics. The only thing to be tested is the locational effect of various tax structures on a "constant" business enterprise. In fact, however, many corporations possess considerable flexibility and are surprisingly adept at rolling with the tax punch. Operational adjustments may be made to adapt the plant to its tax environment just as other such adjustments may be made to adapt the plant to its social, economic, cultural, and topographical environments. Thus, the installation planned for possible location in Alabama or Arkansas may be a somewhat different creature than that planned for a possible location in North Carolina or Virginia, in spite of the fact that the products to be produced are the same and in spite of the fact that the same management makes the decisions for all. Perhaps a domestically-chartered subsidiary corporation will minimize tax burdens in one state,

while a branch-plant operation directed by a foreign-chartered corporation will minimize tax burdens in another. In a state in which property taxes are important, or in which an income tax allocation formula gives heavy weight to a property factor, it may be desirable to lease the real property rather than to own it; while in a state in which these considerations are unimportant, the advantages of ownership may heavily outweigh the advantages of lease arrangements. It is clear that a corporation contemplating location in one of the eleven Southeastern states must assume that the tax problem consists of *two* major variables: the taxes associated with the sites under consideration, and the many forms which the new operation might assume as a result of the prospective burdens of taxation.

For a study such as this, however, it would be foolish to attempt an eleven-state comparison for three hypothetical corporations if each corporation were permitted to change color like a chameleon as it was moved from one tax surface to another. In the first place, it would be necessary to have the kind of intimacy with the type of corporation involved that is gained only after years of direct experience. In the second place, it would be extremely difficult to claim complete objectivity for the analysis. The slight additional finesse which would be produced by these realistic amendments would hardly justify the large additions to the analytical burdens. As a result, the present method makes use of the limiting but traditional assumption that the exhibits do not change as the hypothetical plants are moved from state to state.

In spite of these limitations, the method is an extremely useful aid in the exploration of interstate tax differences. To the extent that the scope of administrative authority is minimized, the answers can be fairly faithful replicas of real tax differentials. In any event, it is important to know what the effect of the tax laws *would* be if they *were* uniformly administered and strictly construed. Finally, of course, the very popularity of the method makes it a useful tool. If, as seems probable, it is the method most often used by taxpayers and potential taxpayers, the answers can be important in shaping locational and other business decisions. Even if the answers are wrong, they can, from this point of view, be extremely useful in explaining the appearance of the maid in the eyes of those with whom marriage would be highly desirable.

THE HYPOTHETICAL THREE

The selection of industrial types

The first problem encountered in the present study was that of deciding upon the *types* of firms to construct as the hypothetical models. The practical desire to be as realistic as possible in the fabrication suggested the desirability of selecting industrial types that already had representation in North Carolina. The availability of tax returns and supplementary information is a strong attraction when it is necessary to construct something reasonably realistic out of very meager information. On the other hand, the practical necessity of making the results as useful as possible suggested the desirability of selecting industrial types that had not yet been attracted to North Carolina, but that would make excellent additions to the economy of the State. The end product was a compromise—the first of many. The industries selected for analysis were those represented by relatively recent arrivals in North Carolina and those that might, with profit to themselves and with economic benefit to the State, indulge in further expansion in the State.

In all cases, the industries selected are not strongly dependent upon local raw materials or upon local markets. All are concerned with selling to a national market. Two of them produce finished goods and are, consequently, close to the consumer market, while the third produces goods which are used extensively in industry and to a lesser extent in direct household consumption. All stand relatively high on the scale of desirability from the point of view of value added in the manufacturing process. All make extensive use of the kind of labor resources which are present in great abundance in North Carolina. All have found the arguments favoring industrial dispersion persuasive. In all cases, the firms representing the industry have located in North Carolina in the period since World War II. All are industries that might, on general theoretical grounds, be said to be reasonably sensitive to tax differentials.[2] Finally, all are industries with a strong developmental potential. By any standards, these are, with one exception, industries of the future. In the case of the one exception, the pattern of demand is such that development depends upon long-run population increases and the continued expansion of the standard of living in a national market.

2. For a brief discussion of the problems of tax sensitivity with especial reference to North Carolina, see Floyd, op. cit., Chapter I.

The desirability of including a representative of one or two of the long-established North Carolina industries was, of course, seriously considered. Such a decision would have clearly required the inclusion of the tobacco, textile, or furniture industries. For several reasons, however, this approach was rejected. The industries which have, in the past, defined North Carolina's industrial economy have been strongly oriented towards local raw materials, or at least towards raw materials that are unevenly distributed over the Southeastern states. Since it was desirable, in the hypothetical corporation approach, to describe the tax differentials between *all* of the Southeastern states, much wasted effort would have been involved in moving a hypothetical furniture manufacturer or tobacco manufacturer into all of the states when some of the states would have been unwilling and unattractive hosts from the point of view of available raw materials.[3] The exclusion of these industries is further justified by the fact that, however dramatically they characterize North Carolina's economic past, they do not represent the best hope for its industrial future. Although it is extremely important that industries presently located in North Carolina be retained in the new industrial structure, the opportunities for expansion in these areas seem slight in comparison with the economic needs of the community.

The selection of industries that had already located in North Carolina was motivated, in part, by the availability of information. Even more important, however, was the fact that North Carolina has already proved itself capable of assimilating these industries, at least in small measure, to the satisfaction of all parties. In each case, the history of the industry in the State was examined as a problem of the desirability of the industry from the State's point of view and as a problem of the desirability of the State from the industry's point of view. It was found that the attractions were, on the whole, mutual. In the time available for this study, it was impossible to make an intensive investigation of the economic potential and the economic needs of North Carolina and the other Southeastern states. Indeed, it was impossible to make optimum use of the excellent and quite extensive work that has already been done in this field by other investigators. It is nevertheless felt that the industries selected meet

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3. Some of the industries in question are, methodologically speaking, more suited to the highly selective treatment of the so-called "actual corporation method". See below, Chapter VIII.

the two important tests for a study such as this: they are capable of making an important contribution to the State's economy, and they have demonstrated their ability to prosper in a North Carolina location.

In view of the necessity of preserving the anonymity of the firms used as basic informational sources, it is impossible to describe the industries in as much detail as would be desirable on other grounds. All of the industries are characterized by a certain amount of competition (although the degree of competition is by no means the same in all cases), so that a disclosure of operating statistics, of the type essential to a study such as this, would be a disservice to enterprises that showed a commendable willingness to co-operate in the study. The figures themselves are, of course, properly disguised, but the detailed statistical *relationships* are undisguised. Since some of the industries have only one corporate representative in North Carolina, a full description of the industry would, of course, have the effect of pinpointing the firm to which these detailed relationships apply. It is thus possible to describe the industries selected in only the most general terms.

The first industry is concerned with the production of metal goods. Production is fully integrated from the refined raw material to the finished goods, and the final product is distributed directly to retail outlets for sale to the consumer. A small percentage of the industry's output may be used by other manufacturers, particularly those requiring precision tools and instruments. With relatively minor conversion of equipment and techniques, the industry is equipped to accept government defense contracts, although this could not be considered to be a strong area of demand under normal circumstances. As presently constituted, the industry contains one or two large producers producing the bulk of the industry's output, with six or seven other firms of medium size producing the remainder. A number of other firms, both large and small, engage in the production of individual products that are in competition with the products of the industry in question.

The second industry covers the field of electrical equipment. Demand for the industry's output comes from consumers, industry, and government. As would be obvious from this pattern of demand, the industry is of the multi-product variety, although the example developed for present purposes emphasizes the pro-

duction of one type of product. The industry achieves the advan-
tages of specialization by the use of specialized plants which are
in many ways, independent operating units, at least as far as
productive activity is concerned. In its competitive structure, the
industry is one that fits the technical classification of differ-
entiated oligopoly, since a small number of large firms produce
virtually all of the industry's output and since competition is
characterized (at least for the product in question) by product
differentiation between the several firms in the industry. De-
mand for the product of any one firm in the industry tends to
exhibit high price elasticity, and, for the industry as a whole
relatively high income elasticity.

The third industry is more difficult to define, but is, roughly
concerned with the manufacture of electronic and allied equip-
ment. As an industry of economic significance it is, of course
relatively new but extremely important. This, too, is a multi
product industry, with a large industrial demand and a strong
potential in the field of defense equipment. Some of its products
however, are sold directly to consumers. At its present stage of
development, the industry is characterized by a fairly large
number of medium-size firms, many of which have specialized
in the production of particular types of products. Thus, the in-
dustry is such as to permit a high degree of plant specialization
Competition between the firms is strong, as would be expected
from an observation of the industrial structure.

Some basic assumptions

The many different forms that a manufacturing operation
might take made it necessary to resort to several assumption
about the character of the three hypothetical plants. Most of
these assumptions are concerned with minor details and were
made necessary only by the small perversities of individual tax-
ing statutes. Their complete omission would make little differ-
ence to the end result. Such detailed assumptions are described
as part of the calculation of tax burdens and should be consid-
ered more as a concession to consistency than as a matter of
substantive concern.[4]

There are, however, a number of assumptions that it was
necessary to make which could substantially affect tax burden
The first of these is the assumption that all of the hypothetical

4. See Appendix B.

corporations are foreign corporations. It is assumed, in other words, that they are chartered in states other than the eleven Southeastern states. With the possible exception of the electronics example, the industries selected for analysis are such that a new entrant would find the existing competitive structure extremely severe for many years, if it were able to survive at all. And even in the electronics industry, at least that part of it covered by the selected example, the barriers to entry would be by no means inconsequential. This fact argued strongly against constructing a hypothetical new enterprise with a domestic charter in any of the Southeastern states. It would still have been possible, of course, to assume that the operation would be directed and controlled by a foreign corporation acting as a protective parent to a new, domestically-chartered subsidiary. On grounds that this device is somewhat rare in the industries selected—particularly in the early years of a new venture—this possibility, too, was rejected. The assumption, then, that the plants to be used as tax-test-models are branch plants of foreign-chartered corporations is not entirely unrealistic.

The second assumption that could substantially affect tax burdens was introduced solely for reasons of simplification. This was the assumption that the hypothetical plant is the only manufacturing installation operated by the corporation in the Southeastern states. This assumption was known to be an unrealistic representation of the industries in question, but the practical difficulties of considering inter-plant allocations in some states and not in others and the practical importance of simplifying the exposition wherever possible made the assumption essential. Although the assumption is unrealistic, it is clear that no great distortion is introduced, that is, if the purpose of the analysis is kept clearly in mind. This approach does not attempt to show a given enterprise where and how its total tax burdens may be minimized and where and how maximized. It does, rather, attempt to test the effects of selected elements of the tax laws of the several states. For this purpose it is not necessary to determine the taxes which a firm may be paying in one or two or all of the states before it contemplates the establishment of a new branch plant in one of them. The test must be assumed to be adequate if care is taken to preserve uniformity and consistency

as the branch plant is alternatively located in each of the states.[5]

The third assumption is similar to the second, except that it involves the selling operations of the three hypothetical corporations. In state income taxation it is normal for the taxing statutes to prescribe allocation formulae to provide for the apportionment of the total net income of the corporation to the taxing state. As is well known, these formulae differ widely. Some, for example, include a sales factor. Others do not. Some define sales according to the location of the office from which the sale is administered. Still others define sales according to the location of the manufacturing plant or warehouse stock from which the goods are shipped. It is obvious that if these extremely important differences are to be tested, it is necessary to develop a comprehensive set of hypothetical sales statistics to cover all of the possible variations in the sales definition and allocation formulae. This third assumption is concerned with the *application* of these various sales definitions.

It was assumed that the volume of sales (by any one definition) for a given hypothetical corporation is the same in each of the Southeastern states. In other words, sales defined according to "the point of origin" were assumed to be the same in each of the eleven states, and sales defined according to "destination" were assumed to be the same in each of the eleven states. This assumption corresponds to the underlying assumption that the plant that is considered for a Tennessee location is the same, in every respect, as that considered for a Georgia or a North Carolina location. Unfortunately, however, there is less justification, on grounds of realism, for the assumption of identical sales volumes.

This third assumption introduces the possibility of some distortion in the results, although in the present analysis this distortion is not believed to be great. Consider two states, A and B, with identical definitions of the sales factor in their income tax allocation formulae. If Corporation X is contemplating the location of a new branch plant in one of these states, it may be im-

5. In contrast, if the purpose of the study were to offer advice to corporations as to the best locations for a new plant from the point of view of minimizing tax burdens, it might be important to assume *non*-uniformity. It may, for example, be sensible for a corporation to locate its new branch plant in the same state as its pre-existing plant or selling organization (or, depending upon circumstances, in a different state) *as a method of minimizing its tax burdens.* To fail to take these pre-existing conditions into account would be to omit a tax variable that is extremely important from the corporation's point of view. Or, as stated earlier, it may be desirable for a corporation to enlarge its investment in property in one state and not in another, or to consider a foreign-chartered branch plant in one state and not in another. But none of these is considered to be within the scope of the present analysis.

portant for it to consider its *present* volume of sales in each of these states and the taxes it is *now* paying in each. It can be shown that, if all other factors are identical as between States A and B (notably, the definitions of sales, the total allocation formulae, the application of the formulae, the definitions of taxable net income, and the tax rates), a difference of sales volume between the states will introduce no distortion. The taxes associated with each new hypothetical plant will simply be calculated as a constant addition to the original tax burdens and the comparison will be of the additional amounts rather than of the total taxes. The possibility of distortion arises, however, when the introduction of the manufacturing activity serves to change the allocation formula in one state but not in another, or when it acts upon a progressive rate structure in one state but not in another. In North Carolina, for example, the corporation may have been taxed as a merchandising corporation prior to the undertaking of manufacturing activity and have been subject to the property-sales allocation formula. The introduction of the new plant, however, may be enough to change the nature of the company's "principal business" in the State, so that it would be classified as a manufacturing corporation and made subject to the property-manufacturing cost allocation formula.

In the absence of this third assumption, the analytical question might be stated as follows: If a plant of the size and character specified were to be located in State A, where the corporation's sales have already been established as shown, what *additional* tax burden would result in State A? The question for State B, under these circumstances, would be as follows: If a plant of the size and character specified (exactly the same as shown for State A) were to be located in State B, where the corporation's sales have already been established as shown (and *different* from those shown for State A), what *additional* tax burden would result in State B? The additional burdens in States A and B could then be meaningfully compared.

The introduction of the third assumption, however, converts the question to something like the following: If a plant of the size and character specified were to be located in State A, and if sales of the volume specified were made in State A (according to the definition of sales in State A's allocation formula), what *total* tax burden would result in State A? The question for State B, under these circumstances, would be as follows: If a plant of

the size and character specified (exactly the same as shown for State A) were to be located in State B, and if sales of the volume specified (exactly *the same* as shown for State A) were made in State B (according to the definition of sales in State B's allocation formula, which may or may not be the same as that of State A), what *total* tax burden would result in State B? The total tax burdens in States A and B could then be meaningfully compared.[6]

In this latter approach, the only thing that could cause a difference in the dollar volume of sales shown in State A and State B would be a different definition of the word "sales" in the allocation statutes of the two states. Although it is unrealistic to assume that a corporation would have the same volume of sales in North Carolina as in Arkansas (for example), it is felt that this assumption makes for a more manageable and useful comparison. The comparison is more manageable because the number of tax computations is cut at least in half and because the actual geographical distribution of sales by the industries selected for study need not be precisely calculated. The comparison is more useful simply because it is less cluttered and because it permits a simpler interstate comparison of tax burdens.

The construction of the models

The first step in the construction of the three models involved an examination of the general characteristics of a number of firms in the selected industries. This examination made use of any readily available information.[7] One of the enterprises in

6. The objection may be raised that this approach would not produce a technically complete solution. With or without the third assumption, the *entire* tax liability of the corporation should be computed before and after the construction of the new plant. The construction of the new plant, wherever located, changes the property base, and the subsequent operation of the new plant changes such things as the manufacturing cost base and the payroll base of the entire corporation, so that the allocation ratios applied in all of the other states in which the corporation pays taxes are changed. The tendency, of course, is to reduce the tax liability per dollar of taxable income of the corporation in all other states, thereby partially offsetting the increase in tax liability experienced in the state receiving the new plant. Technically, therefore, it should be the *net* increase in taxes associated with the location of the new plant in State A that should be compared with the *net* increase in taxes associated with the location of the new plant in State B (and in the nine other states included in the direct comparison). For the types of corporations chosen for these hypothetical examples, this refinement would have required a two-year calculation of taxes in from 39 to 47 states for each of the three corporations, if the requirements of complete realism were to be fulfilled. These calculations would have had to be repeated eleven times, for each of the states in which the hypothetical plants were assumed to be located. Since such a procedure would have involved the staggering total of about 2794 separate sets of tax calculations, this additional refinement was not permitted to creep in to confuse the analysis. Even so, the effects of such a refinement should not be neglected, in spite of the fact that it is rarely mentioned in comparative tax studies undertaken by the hypothetical corporation method.

7. Moodys Investors Service, *Moody's Industrial Manual, American and Foreign*, John Sherman Porter, ed., New York, 1955; North Carolina income, franchise, and intangibles tax returns; annual corporate stockholders' reports, et cetera.

each category was selected as a "primary model". This, of course, was the corporation with operations in North Carolina, for which the greatest volume of information was available. Three or four "secondary models" were selected in each industry on the basis of the completeness of their reports and the manner in which they might be assumed to represent the industry as a whole. The selection was, of necessity, highly subjective.

From this general information was developed a "representative" balance sheet and income statement for each industry to illustrate the basic statistical relationships of the industry. Particular attention was paid to such things as total assets, the relationship between gross sales and inventory, the relationship between net current assets and net worth, the relationship between net income and total assets, and many other relationships that are important in an analysis of tax burdens.[8] In most cases there was very little difference between the experience of the primary model corporation and that of the secondary models, in terms of these basic relationships. In other cases, however, the individual firms in the industry showed marked dissimilarities. In these latter cases, somewhat more weight was given to the experience of the primary model than to the experiences of the secondary models. The use of unrefined averages would itself have tended to create an artificial entity that would not be representative of any firm in the industry or of the industry as a whole.

The construction of hypothetical balance sheets and income statements was thus conducted in such a way as to maximize the realism of the illustration. The final result is hypothetical in the sense that no firm in the industry has, in all respects, the appearance of the dummy corporation. The result is realistic, however, in the sense that the dummy corporation reasonably reflects the prevailing situation in the industry as a whole. Where no "industry situation" may be said to exist, the appearance of the dummy closely approximates that of the primary model.

The use of these general statistical reports was, of course, restricted to the construction of the *total* hypothetical corporation. But the method previously decided upon called for the development of plant statistics, on the assumption that the corporation was contemplating the location of a single branch plant in one of the eleven Southeastern states. At this point, it

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8. The most important of these relationships are described and quantified in Chapter VII, below, and in Appendix B.

was necessary to make use of the information associated with the several types of tax returns filed in North Carolina by the primary model corporations. In some cases one or more of the secondary model corporations also filed North Carolina tax returns. These were used in conjunction with the primary model statistics to the extent permitted by the data. The sizes of the plants (in terms of investment, payroll, productive capacity, and so on) were established with the use of these data and through correspondence and personal interviews with plant managers and corporate officials. These data were, of course, adjusted slightly for disguise purposes, although the essential relationships were preserved and the overall size of the operations was kept within the bounds of economic efficiency.

Although the volume of information collected from tax returns and general informational sources was indeed impressive, it was quite inadequate as the statistical foundation of an interstate study of tax burdens. In the first place, the kind of information required for compliance with North Carolina's tax laws is quite different from that required for compliance with the tax laws of other Southeastern states. North Carolina tax returns could not, therefore, be expected to contain all of the information needed for an analysis of taxes in all of the Southeastern states. In the second place, some of the primary model corporations had been granted administrative relief under the permissive provisions of North Carolina law, so that information necessary for a strict application of even the North Carolina taxing statutes was not contained in the tax returns. Since it had already been decided to omit all analytical reference to such administrative relief and to test the strict application of the taxing statutes, the missing information had to be obtained elsewhere. Finally, some of the corporations used as models were actually operating two or more plants in North Carolina. The tax returns do not, ordinarily, show an inter-plant breakdown, but only the total corporate activity in the State.

The method adopted to fill this large gap involved a preliminary analysis of the tax laws of the eleven Southeastern states. The purpose of this analysis was to develop a list of the kinds of information that would be needed before it would be possible to compute a hypothetical tax burden for a hypothetical corporation in each of the states. This step was followed by extensive correspondence and personal interviews with officials of

the primary model corporations. These contacts were established at two levels, the North Carolina plant and the head office, and in all cases with the top administrative personnel and their assistants. It was thus possible, in most cases, to fill in the needed data from the actual operating statistics of the primary model corporations. In one or two cases, however, the corporations did not maintain their records in such a way as to yield the information needed, simply because they were not faced with the necessity of complying with the manifold curiosities of all the taxing statutes of the Southeastern states. In these cases, estimates were made with the assistance of corporate officials.[9]

The product of this labor was a comprehensive set of figures for each of the three dummy corporations that is a blend of the hypothetical and the real. It is felt, rather hopefully, to be sure, that the blend is an auspicious one, and that the hypothetical plants of the hypothetical corporations are things of substance rather than things of pure fantasy. If the substance is further found to be the stuff that promises a long and mutually satisfying relationship between industry, people, resources, and government, the technique will receive its full justification.

THE TAX CALCULATIONS

If Corporation A, a foreign corporation chartered in the State of Delaware and currently conducting its manufacturing operations in several locations outside the area of analysis, currently engaged in the manufacture of metal products for use in home and industry, were to locate a new plant alternatively in each of the eleven Southeastern states, what would the corporation's total tax bill be in each of the states if it were to calculate its taxes according to strict statutory interpretation? This is the kind of question that defines the analytical problem for each of the three hypothetical corporations. Detailed exhibits and textual explanations describing the actual calculations made in order to answer the question are shown in Appendix B and in Chapter VII. The ensuing discussion is merely a generalized representation of the troubles experienced and the techniques adopted.

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9. In spite of the care with which these detailed statistics were accumulated, it was necessary to make a number of "on-the-road" estimates as the hypothetical tax bills were computed. These are explained as part of the computations shown in Appendix B.

Types of taxes considered

Although it was recognized as desirable to test the effects of *all* taxes by means of the hypothetical corporation approach, practical considerations necessitated the omission of two important types of corporate tax levies. These were the sales tax (and the associated use tax), and the unemployment insurance tax.

There would have been some theoretical justification for considering the burden of sales taxes paid on purchases made by the hypothetical corporations as well as the burden of sales taxes paid (if any) on sales made by the hypothetical corporations. As indicated earlier, the traditional theory of shifting and incidence, as applied to sales and use taxes, holds that a sales tax paid by the seller of a commodity normally will in part be shifted to the purchaser in the form of a price increase (or, conceivably, to the several factors of production in the form of a lower price for the things or services purchased by the "taxpayer") and in part be retained by the corporation making the actual payment of the tax.

The practical difficulties in quantifying this shifting, or even of proving that it takes place at all, are very great indeed. It would, of course, have been possible to adopt the usual assumption that all sales taxes are passed on to the purchaser of the item subject to tax, so that corporate burdens would have been related to corporate purchases. Aside from the possible invalidity of this assumption, the task of hypothesizing realistically about the kinds of purchases taxable under various sales tax laws seemed quite out of proportion to the possible increase in purity that would result. In most states, sales and use taxation is filled with special, *ad hoc* decisions and administrative interpretations that do not easily lend themselves to generalization.

Unemployment insurance taxes are often omitted from tax burden studies (and from many official listings of tax collections) on the grounds that they are not true taxes. The argument is that such contributions, along with contributions to Federal Old Age and Survivors' Insurance, are more in the nature of insurance premium payments or direct transfer payments than of tax payments as such.[10] This reasoning was not adopted as a justification for omitting these levies from the present study.

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10. See Harold M. Groves, *Financing Government*, Henry Holt and Company, New York, third edition, 1950, pp. 327-328.

On the contrary, and in spite of terminological confusion on the point, there is every reason for including the unemployment insurance contributions of corporations in an interstate comparison of tax burdens. The omission is explained, once again, by the practical difficulties associated with developing a realistic hypothesis that could be uniformly applied to all of the states involved in the comparison. The difficulties come from the common use of experience ratings to determine the rate at which corporate contributions are made. For new plants of the types under present consideration it would have been extremely difficult to develop a convincing unemployment "experience" for the period of time required to permit a combination of this levy with other taxes in the determination of a total burden. Rather than resort to sheer guesswork and the wildest sort of estimation, it was decided to omit the levy altogether.

With these two exceptions, an attempt was made to compute the tax burdens associated with all kinds of taxes (and quasi-taxes) that would be levied upon corporations of the types under consideration. These included levies generally classified as income taxes, franchise taxes, general ad valorem property taxes, taxes on intangible personal property (when subject to separate taxation), business licenses, corporate organization and entrance fees (or taxes), and selected reporting and recording fees. With one exception, taxes were not counted in the total if they were less than $5.00 in annual amount. The exception was made in the case of the intangibles tax, and this merely as a concession to the controversial character of this tax in North Carolina.

The selection of reporting and recording fees was based upon the distinction between the general and the selective character of the requirements. Only the former type was included. Thus, if state law required a corporation to file an annual report of its corporate condition and accompany such filing with an annual fee, the fee was included in the total. If, however, state law required the payment of a fee as a companion to the filing of a report of a change in the corporation's authorized capital stock, the fee was not included in the total.[11] All taxes were calculated

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11. The entire category of "fees" is sometimes omitted, since a true fee is supposed to be just enough in amount to pay for the costs of administering the inspection, filing, or whatever. However, this attitude reflects the point of view of the taxing authority. Fees are not counted because no net *revenue* is produced. To the corporation, fees of all kinds are just as burdensome as other forms of compulsory payments to the government, and are properly included in a measurement of tax *burdens*.

to the nearest dollar. The corporations involved in the analysis were not such as to be concerned with the several special types of taxes levied by most states (such as chain store taxes, gross receipts taxes, or severance taxes), so that these were not subject to test in the present approach. As in the other approaches that comprise this impact study, the taxes considered were those that normally apply to corporations. Even though personal taxes (personal income tax, death and gift taxes, for example) may be important in the determination of industrial location, they were considered to lie beyond the scope of the hypothetical corporation approach, and, indeed, of the entire impact study.

The locational problem

Since it was the aim of the hypothetical corporation approach to measure tax burdens in all of the Southeastern states, at least one locational problem was easily solved. It was clearly necessary to place each of the three hypothetical corporations in each of the eleven Southeastern states.[12] This is not to say that it was considered likely that the types of firms involved would find each of these states equally attractive on non-tax grounds. But each state appeared to be a *possible* location on grounds of technology and a *potentially sound* location from the point of view of market and other economic criteria. Thus, if it were possible to quantify all of the non-tax factors and establish clear interstate differentials, the consideration of the tax factors would show how large the tax differentials would have to be to offset the pulls of the non-tax factors.

But it is obviously not possible to talk about *the* burdens for a hypothetical taxpayer in any one of the states. Levies imposed by county, city, and district units can create large differences in tax burdens within the same state. The comparison of a high local tax location in one state with a low local tax location in another would clearly bias the answers, *unless, of course, there were some reason to suppose that a corporation of the type selected would find such locations attractive on non-tax grounds.* But the existence of intrastate variation means that it is not enough to locate the plants "somewhere in Louisiana" or "somewhere in Arkansas".

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12. The states, as defined in the *Survey of Current Business*, United States Department of Commerce, are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.

This intrastate variation in tax burdens would not cause any severe analytical problems if it were possible to measure the local differences in burdens with precision. This does tend to be the case with such levies as business licenses and fees of various kinds, for it is generally possible to find references in the state statutes or the county and municipal ordinances that define the levy in more or less definite terms. In these cases, the research is laborious, but it is not impossible.

But the major cause of intrastate variation in tax burdens is the ad valorem property tax. With this levy there are three elements of variation: the tax rates, the ratio of assessed to market value, and the pattern of exemptions.[13]

Tax rate variations are easily accounted for, since rates are published and uniformly applied to all taxpayers within each taxing jurisdiction. If full representation were desired in any one state, it would suffice to select a location anywhere in each of the uniform tax rate areas of the state to test the effects of tax rate differences on total tax burdens. In some states it might be mechanically difficult to apply this method because of the large number of such uniform rate areas, so that some system of sampling would have to be devised. But, once again, the task would not be impossible.

The exemption structure, too, is relatively easily handled. Whether the exemptions are concerned with the type of taxpayer (such as the total exemption of churches, schools, et cetera), or the type of property (household furniture, intangible personal property, all personal property, specified types of inventories, et cetera), they are usually spelled out in the law of the state or in local ordinances under state permissive statutes. As such, they are both observable and uniform within the jurisdiction involved. The number of measures required to give total representation to this factor would be dictated by the number of uniform exemption areas in a given state.

The treatment of assessment ratios, however, presents quite a different problem. It is true that state laws usually do require assessment uniformity, and often announce the level at which this uniformity is to be established. But it is safe to say that the requirements are never perfectly fulfilled and rarely approximated. Since the market valuation is itself the product of a

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13. In many states the pattern of exemptions is not a source of intrastate variation, for the exemptions are prescribed by state law and uniformly applied throughout the state. In some cases, however, the prescription is in general terms and gives the local jurisdiction authority to permit or prohibit the exemption.

subjective valuation process, the assessment ratio is never published *as a fact*. Nor can it be expected to be uniform in its application. It is possible for assessment ratios to show almost infinite variation, limited only by the number of parcels of property subject to assessment. In the case of the assessment-ratio element of property tax variation, then, it would be necessary to determine the assessment ratio of every parcel of property in the assessment jurisdiction if complete coverage were desired. There is no such thing as a uniform assessment area in the sense that there is a uniform tax rate area and a uniform exemption area. Even with a sampling operation to determine a "representative" assessment ratio (or a series of representative assessment ratios for different classes of property) the number of items in a universe as large as that of most assessment jurisdictions would present an impossible problem for a study such as this.

Much of the variation to be noted in local assessment ratios for any one assessment jurisdiction is, of course, associated with the fact that different types of property are being compared. The assessment ratio for residential property is different from that for factories, and the assessment ratio for large factories is different from that for small factories. To be sure, this problem should not bother the analyst engaged in the hypothetical corporation approach, for the dummy that is being moved around the universe is assumed to be the same kind of dummy wherever it is located. The possibility remains, however, that even within a single assessment jurisdiction the assessment ratio may vary *by location*. At least it cannot be maintained, without proof, that the assessment ratio does *not* vary by location. It is possible, in other words, that a manufacturing plant located at one point in a given county would have quite a different assessment ratio than if it were located at another point in the same county.

Any research dealing with property tax burdens must begin with an appreciation of the fact that the base of the property tax is subjectively determined. The tax is not, ordinarily, based upon a tangible object or a discoverable event, in the sense in which these terms may be applied to an income tax or a sales tax. It is based upon a hypothesis and is, by nature, conditional. *If* a piece of property were sold at a given time and under certain circumstances, what *would* it sell for? This is the kind of question the property tax administrator must try to answer. The income tax administrator, on the other hand, need only ask what

the taxpayer *actually did* earn during the period in question.[14] The income tax administrator must discover. The property tax administrator must invent. From the practical point of view, therefore, *prediction* of property tax liability is an extremely hazardous adventure indeed. It is especially so if the property for which taxes are to be predicted does not even exist. All that can reasonably be expected is an honest attempt to discover what the general assessment practice seems to be as applied to the types of property in question for location as close to the hypothetical corporation as possible.

One of the techniques that might have been adopted to solve the locational problem is that used by Professor Heer in his study of a selected manufacturing company in six Southeastern states.[15] This consists of the calculation of the property tax *bills* of the hypothetical corporation for all cities (or at least for all principal cities) of each state. Assuming that the corporation will locate in a city, it is possible to compare cities in comparable positions on the tax bill scale (lowest tax bill cities, highest tax bill cities, median tax bill cities, mean tax bill cities). Professor Heer selected the median tax city in each state as a representative location for his hypothetical corporation. The median tax bill city is the middle city on the scale of tax bills, so that as many cities have property tax bills greater than that of the median city as have property tax bills less than that of the median city.

This calculation of tax bills is, of necessity, based upon the assumption that the assessment ratio of each city is uniformly applied within the city, or at least that the reported assessment ratio for the city (which may be an average ratio) properly applies to the kind of property owned by the hypothetical corporation. The assessment ratio is then multiplied by the reported aggregate tax rate to obtain an effective tax rate, which is then applied to the assumed market value of the taxable property of the taxpayer to obtain the general property tax bill for that city. In the Heer study the assessment ratio used to determine

14. In our monetary society these earnings are usually received in money. The money received (and earned in certain ways) then becomes the tangible thing that is measured. In some cases, however, the things received as income are goods and services. In these cases the income tax administrator's job closely approximates that of the property tax administrator's job, for he must *value* (by more or less subjective processes) the real income to establish a money equivalent. This is true, at least, where it is not possible to pay taxes with pigs, loaves of bread, and days of work on the public roads.

15. Clarence Heer, *Tax Bill of Selected Manufacturing Corporation in Six Southeastern States*, Tax Committee, North Carolina State Planning Board, Raleigh, 1945, mimeographed, passim.

the effective tax rate was obtained from the appropriate state volume of *The Corporation Tax Service, State and Local,* published by the Commerce Clearing House, Inc.[16]

For present purposes there are several difficulties with the Heer technique. In the first place, it commits the corporation to a location inside the corporate boundaries of a city in each of the states to be tested. One of the clearest locational conclusions of the present study, as indicated by interviews with corporate officials and as suggested by the present location of the primary model corporations in North Carolina, is that city location is not required for the kinds of corporations involved in the analysis. There is even reason to believe that city locations are actually undesirable for these plants.

Secondly, by basing the location on some measure of general property tax bills (whether high, low, median, or mean city tax bills), the technique assumes a greater significance for the locational impact of the general property tax than can readily be supported on realistic grounds. It implies that the hypothetical corporation always decides to locate at the median tax bill city in each state, even if this city is, in some states, totally unacceptable on other locational grounds. Thus, to the extent that this approach emphasizes the influence of the general property tax on the locational decision (simply by neglecting all other considerations and by insisting on "scale comparability" in all of the states), part of the problem of tax burden comparison is assumed away before the computations really begin.

Finally, of course, the results are subject to the severe criticism (which, in some form or other, may be assessed to all studies dealing with this subject) that the published figures for assessment ratios may bear no relationship to existing assessment practices in the jurisdiction reporting.[17]

The locational technique adopted by Joe Summers Floyd in his study entitled *Effects of Taxation on Industrial Location,*[18] solves some of the problems left by the Heer study, although the methods are basically the same. Once again, the information on assessment ratios is obtained primarily from published sources:

16. ibid., p. 27.
17. Such published figures are usually based upon reports made by assessors and state revenue officials. In some cases, at least, there are strong pressures upon local assessors to report assessment ratios at, or even above, those prescribed by law or considered traditional, even though the actual level is commonly recognized to be well below that figure. In cases where full-scale assessment studies have been conducted, this tendency to overstate the reported assessment ratio has been clearly indicated.
18. op. cit., pp. 53-55.

Commerce Clearing House, *State Tax Reporter* and Prentice-Hall, *State and Local Tax Services*, although a questionnaire method is used to obtain some types of information. The locational emphasis of the Floyd study is also upon urban sites, with, however, the additional refinement that a limited number of rural sites adjacent to the selected cities is also included. Not all cities are listed as possible sites, however, for it is recognized that smaller cities might contain an inadequate labor supply for the types of plants involved in the study. Metropolitan centers are also ruled out, "because special economic conditions appear to influence their industrial growth."[19] Thus, at least one important non-tax variable is recognized as having locational significance. But to the extent that other non-tax factors are omitted in the locational decision, the overemphasis of the role of the property tax remains as a strong possibility.[20]

In some of the calculations Dr. Floyd analyzes tax burdens at the high, low, and median tax bill locations, and does not restrict himself to a single urban site in each state. The high and low bills are not, of course, the highest and lowest for the entire state, but merely for those locations permitted by the assumptions. Although this use of city locations diminishes the effectiveness of the criticism that the locations are too strongly influenced by property tax burdens, it is still important to recognize a severe difficulty in interpreting the results. Should a high tax location in one state necessarily be compared with a high tax location in another state, or should a high tax location in one state be compared with a low tax location or a median tax location in another state? Arguments of statistical comparability are not sufficient to answer these questions, for it may be that if property taxes are considered to be relatively insignificant in the locational decision the corporation would choose, as a

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19. ibid., p. 54.
20. The criticism is of the appropriateness of the technique *for the present study.* The industries selected by Floyd give a rather different purpose to the assumptions than would be justified here.

matter of strong, non-tax preference, a high tax location in one state and a low tax location in another.[21]

Because of these common difficulties, the method adopted in the present study is quite differently oriented. It begins with the assumption that local property taxes are unknown, and proceeds on the assumption that specific locations in each state are determined almost entirely without reference to local property tax differentials. The only reference to local property taxes in the locational decision is contained in the decision to locate the hypothetical plants outside incorporated municipalities. But even this decision is not based upon a *calculation* of property tax differentials between municipal and non-municipal sites, but simply on the observation that municipal property taxes are generally higher than non-municipal property taxes in the same state and on the conclusion that city services and urban facilities are not considered important by the industries in question. In the present study these observations were supported in discussions with officials of the primary model corporations.

In its de-emphasis of local property tax differentials as a strong factor influencing location, this study undoubtedly errs in the opposite direction to that of the Heer and Floyd studies. It does so especially in the case of those states characterized by extensive overlapping of local jurisdictional boundaries. In states heavily committed to government by special district, a taxpayer may be subject to taxation by as many as ten independent districts on one side of a country road and only three on the other. This fact can be easily established for a limited number of possible locations, so that the corporation contemplating a plant location may very well give important consideration to the overlapping of tax levies in making its final choice. However, even this feature of local government should not be given undue weight. Special district units often exhibit large appetites for taxable assessed values of industrial property, particularly

21. Even if the analytical problem is approached primarily from the point of view of the corporation, as in the Floyd study, the technique of choosing a location (or a series of locations) on the basis of the local tax situation appears to be unsatisfactory. In theory, a test of the impact of local tax differences in any one state should begin with careful listing of all possible sites—the possibilities defined in non-tax terms—with dollar amounts of long-run revenue and expense associated with each ranking. The availability of a suitable labor supply will, of course, be one of many such decisive elements. Then, and only then, should local property taxes be inserted to guide the final choice. It may well be that a very high property tax bill will be quite insufficient to offset the extreme non-tax advantages of a particular location. This implied consideration of property taxes as a *residual* element in the intrastate locational decision may or may not conform to actual corporate practice, but it is an essential analytical device where the test is to be a *tax* test. To adopt this line of reasoning is, after all, to apply the same logical framework to the problems of intrastate location as to the problems of interstate location.

where the process of injestion is facilitated by liberal district annexation laws. This mutability of district boundaries tends to suggest the futility of detailed calculations based upon the *present* district map, so that property tax burdens at this level enter the calculus only in the vague and imprecise world of future possibilities.

The technique used in the present study represents an attempt to imitate, in an admittedly rough and impure way, the locational decisions of the types of firms used as models for the analysis. To this end, it was necessary to gain an understanding, albeit a rather primitive one, of the locational problems of the industries in question. This was attempted through the primary model corporations, all of whom had been involved in recent locational decisions and all of whom had the problems in the front of their corporate minds. From rather extensive interviews with corporate officials, presidents, general managers, comptrollers, plant managers, location specialists, and others, it was possible to develop a list of economic, sociological, topographical, and geographical factors considered to be important in the choice of industrial sites for the plants in question. The following is a summary listing of the kinds of questions considered in these interviews:

1. transportation out—finished products:
   (a) rail
   (b) truck
   (c) air
   (d) postal
2. transportation in—raw materials and supplies
   (a) rail
   (b) truck
   (c) air
   (d) postal
3. transportation in and out—personnel
   (a) rail
   (b) road
   (c) air
4. labor availability
   (a) skilled
   (b) semi-skilled
   (c) unskilled
   (d) total needed now and for expansion

(e) seasonal variation
(f) plant training possibilities
(g) male
(h) female
5. "urban" services
(a) police
(b) fire
(c) sewers and other industrial waste disposal problems
(d) water
(e) power—electricity and gas
(f) other
6. desirable to locate *in* city?
7. desirable to locate *near* city?
8. preference for large or small community?
9. prestige location?
10. location and raw materials
11. location and markets
12. wage rate
(a) prevailing
(b) potential
(c) organized or unorganized labor
(d) effects of industrial concentration on wage rate
13. near other industries?
(a) wage rate (see above)
(b) availability of services, trucking, postal, et cetera
(c) repair and machine shop and other supporting industry
14. other locational considerations

With this interview material as background, the preliminary choice of plant sites was made from road, rail, and topographical maps (on which were also described cities and towns, county boundaries, airport facilities, and so on) for each of the eleven Southeastern states. In this choice, valuable assistance was obtained from a large North Carolina firm of industrial contractors with wide and detailed experience in the Southeastern states and with an intimate knowledge of the locational problems of the industries selected for analysis.

In conjunction with other inquiries, these preliminary locations were checked with various correspondents in each of the Southeastern states, all of whom had some familiarity with local conditions. Since the identity of the firms (and, indeed, the specific character of the industries) had to be concealed, it was

possible to make use of these checks only to guard against the grossest sort of errors in interpreting property tax burdens, and to avoid the disasters of locating a plant on a military reservation or on soil with seriously erosive tendencies. As a result of these checks, some small adjustments were made, but, on the whole, the preliminary choices were found to be satisfactory.

In view of the time limitations with which this study was faced, it was possible to select only one site for each hypothetical corporation in each of the Southeastern states, a total of 33 specific locations. It is not suggested that the sites selected are the only ones that would have been possible in each of the states. In some cases, several locations would have satisfied the conditions imposed. It is not even suggested that the sites selected are the *best* (on non-tax grounds) of all those available, for this would have required a much more careful analysis than was possible. (It is probably true that even a diligent official of a large corporation would, in all honesty, be unwilling to claim that he had selected the *best* of all possible sites. Even with the best intentions, the best equipment, and the most pragmatic of interests, it would be impossible to examine all sites which might satisfy a given set of conditions applicable to the three hypothetical corporations in question). It is claimed, however, that the locations are appropriate to the industries in question, that they are capable of fulfilling all of the important industrial requirements, and that they are locations which might well be selected by firms contemplating location in the Southeastern states. It is thus felt that the method used imitates the *form*, if not the *intensity*, of the corporate approach to locational problems.

Property tax techniques

As stated earlier, the property tax bill of a corporate taxpayer depends upon three things: the type of property subject to taxation, the assessed valuation placed upon the taxable property, and the aggregate tax rate applied to the assessed value base. For the most part, the type of property subject to taxation was easily determined from the law and explanatory material in the appropriate volumes of Commerce Clearing House, *State Tax Reporter*. In those cases in which the state laws *permit* a county to grant certain exemptions (as, for example, to new industries for a period of five or ten years), an attempt was

made, through correspondence with county and state officials, to find out whether the county had chosen to grant the exemption or not. Most of these attempts were successful, but where it was impossible to establish contact with the appropriate officials it was simply assumed that the exemption would be available to the hypothetical corporations.

The determination of the appropriate assessed valuation for the hypothetical corporation was, of course, the most difficult phase of the property tax calculations. It was first assumed that the market value of the taxable property was the same as the book value of the property. It is felt that this assumption does not do particular violence to reality, since all of the plants are assumed to have been newly constructed. Ordinarily, the relationship between book value and market value is fairly close under these circumstances. Furthermore, the same assumption was applied in all states, so that any slight distortion in the calculations for a given state would tend to be made insignificant in a comparative analysis.

The assessment ratios to apply to these assumed market values were determined, where possible, by correspondence. A first opinion was obtained from a state-wide officer or agency closely acquainted with property tax matters in the state. In some cases this was an equalization agency, in some cases it was an administrative agency responsible for administering a state property tax levy, and in some cases it was a state research agency. These opinions were checked by correspondence with the individuals who would be responsible for assessing the property of such a corporation at the selected locations. Where the revenue organization of state and local governments do not provide for a state-wide agency that can be expected to have any particular knowledge of the local assessment situation, an attempt was made to obtain the information from university research organizations or individual university faculty members known to have worked in the property tax and assessment field. Here, too, checks were applied through correspondence with local assessing officers, where possible.

In all correspondence requesting information on property tax assessment ratios the request was made as specific as possible. This included a brief description of the plant and a description of the location of the plant in the state in question. For

example, the verbal description of Corporation B in the State of Alabama was as follows:

"Plant B is a manufacturing plant owned by a foreign corporation and manufacturing a complete line of electrical and allied products for use in home and industry. Late in 1954 the company completed construction of a plant in *Butler County, Alabama, at a location 2 to 10 miles southwest of Greenville, Alabama, in the general vicinity of U. S. Highway 31.* Operations were started at the new plant in November, 1954."

This description was followed by a detailed breakdown of the real and personal property of the corporation assumed to have a taxable situs in the State. Provision was made for reporting assessment ratios separately for the major types of property (land, buildings, machinery and equipment, inventories), since it was recognized that these ratios are often markedly different even within the same assessment jurisdiction and as applied to the same taxpayer.

No great purity can be claimed for the results of this assessment ratio determination. No doubt many of the figures are indicative more of the assessor's hopes than of his accomplishments. Short of a full-scale investigation of assessment practices, however, with elaborate sampling of industrial assessments in each jurisdiction, followed by a "scientific" determination of market values, purity in this field is a virtue which must be admired from a very great distance. And even with such a display of analytical energy, final purity must prove an illusion. Answers based upon *measurement* must refer to property already located in the jurisdictions in question. But the assessment ratio that would be applied to a new plant may, through conscious or unconscious processes, be quite different from that applied to establishments with longer histories in the jurisdiction. The only *sure* technique would involve the actual construction of a new plant with the assigned characteristics. When the operations of such a plant had actually begun, and when the first year's property taxes had actually been paid, the subjective processes of assessment would be an historical event, and measurement would be both possible and relevant. For the first year, at least, purity would have been attained. To this extent, of course, the method would no longer be hypothetical in character.

The appropriate tax rates to apply to the assessed value bases were determined through the same correspondence used to determine assessment ratios. In view of the fact that tax rates imposed by the several levels of government levying property taxes at the same location are often applied to different bases (because of different exemption patterns or assessment ratios), it was necessary to determine the rates separately levied by each taxing jurisdiction. All levels of property taxation were considered—state, county, and district. All locations were outside incorporated municipalities, so that no account was taken of city tax rates or city assessment ratios.

Lien dates and assessment dates for property taxation were found to be quite different for the several states being compared. For purposes of simplification, therefore, all property was assumed to be assessed as of the end of the corporate accounting period, in every case, December 31, 1955. In some cases the base is statutorily defined in terms of an average throughout the year (as, for example, average inventories). A number of different averaging periods are specified in the several state laws, but for present purposes it was assumed that the proper average to use in all such cases was the average of the figures for the beginning and end of the calendar year.

The temporary property tax exemptions granted by some states and counties as an inducement to industrial location were taken into account in computing property tax bills. These temporary exemptions made it necessary to compute *two* property tax bills in such cases: one to show property taxes during the exemption period, and one to show property tax bills after the expiration of the exemption period. The manner in which these two tax bills were combined to provide a single measure of tax burdens is described below.

Other tax techniques

In the calculation of other hypothetical tax bills the primary source material was the state tax laws and the explanatory material, including legal opinions and court decisions, published by Commerce Clearing House. This material, however, was supplemented with an analysis of regulations (if any) published by the applicable administrative agencies. In all cases, the data of the hypothetical corporation were fitted into the most recent tax forms which the corporations would be required to file with state and local government agencies.

The calculation of state income taxes provided the largest number of mechanical difficulties. It did so partially because of the complications involved in applying the allocation formulae to the model corporations and partially because of the fact that other taxes are permitted as deductions in the calculation of taxable net income. Two features of the present calculations brought about changes in the total of other taxes. The first of these was the inclusion of qualification and entrance fees. Since these are "once-and-for-all" levies, they had to be counted as part of the burden for the first year but not for the second and subsequent years. The second was the temporary property tax exemptions granted by some states and counties. For the period of such exemptions the income tax must be relatively high, because the amount of other taxes deductible in the determination of taxable income is relatively low. After the expiration of the exemption period, the amount of other taxes increases, so that, other things being equal, the income tax must decrease. Thus, in all states levying an income tax at least two, and sometimes three, calculations were required to account for the varying level of deductible "other taxes".

In the application of allocation formulae for income tax purposes it was assumed, with one or two exceptions, that the alocation ratio must be applied only to unitary net income. In theory, of course, all non-unitary net income directly allocable to domestic operations must be added to allocated unitary net income to arrive at a final figure for taxable income, but the assumption maintained throughout that all non-unitary income was directly allocable to *foreign* states made it unnecessary to make the usual adjustments.

The exception to the assumption that the allocation ratio must be applied to unitary income only was made in those cases in which the allocation formula contained a gross receipts factor and in which the tax forms or administrative regulations seemed to indicate the appropriateness of this method. For a manufacturing or selling enterprise the distinction between gross receipts and sales is usually the distinction between income from whatever source earned and income earned from the principal business of the enterprise. It is usually assumed that, if the income to be allocated by the formula method excludes non-unitary income (sometimes called non-business income), the factor in the formula which most nearly reflects the distribution of these

sources of income should also exclude non-unitary income. It is
assumed, in the opposite sense, that where a sales factor appears
in the allocation formula, and where sales are defined narrowly
to apply to the principal business of the taxpayer, the income
that must be allocated by the formula is unitary income only.
Conversely, it is maintained that, if a gross receipts factor ap-
pears in the allocation formula, the income that must be allocated
by the formula is both unitary and non-unitary income. Although
there is some question as to whether such an interpretation is
constitutionally justified, it seems to be the interpretation which
has received most support in state administrative practices.

One other important assumption was made in the calculations
of state and local taxes. This related to the *timing* of the tax
liability. For simplification purposes it was assumed that all
taxes except the qualification taxes are due and payable on De-
cember 31 for application to the activities of the year just com-
pleted. Qualification taxes were assumed to be due and payable
at the beginning of the first calendar year of operations.

No attempt was made to calculate federal income taxes (or,
for that matter, *any* federal taxes) except where such calcula-
tion was essential to the determination of state tax liability. In
some states federal income taxes are allowed as deductions in the
derivation of state taxable net income. Where necessary, the cal-
culations of interdependent taxes were made by accepted
"approximation formulae", as explained in Appendix B.

The omission of federal income taxes is a serious one in the
sense that the illustrated differentials in total state and local
tax burdens as between the several states considered are not
necessarily the *effective* differentials upon which corporate deci-
sions are based. All state taxes considered in this analysis are,
of course, fully deductible in the derivation of a federal taxable
net income. Since all hypothetical corporations would be subject
to federal taxation at the 52 percent combined normal and surtax
rates, an approximation to the effective tax differentials would
be obtained if all annual interstate differentials were multiplied
by .48. Federal income taxes were not calculated in the present
analysis because of the difficulty of allocating a federal income
tax for the entire corporation to all of the states involved in the
total corporate operation. The choice of hypothetical corpora-
tions with interstate income provides a strong element of real-

ism for the state and local tax calculations, but it prohibits the easy calculation of total tax burdens for individual portions of the total corporation.

Summarization techniques

The calculations of the hypothetical corporation approach are usually limited to a single year. The total tax burden calculated for one state for that year is simply compared with the total tax burden calculated for another state or for a series of other states. If any implications about the corporate activities are drawn from such comparisons, they are necessarily based upon the assumption that the pattern of tax differentials for a single year will be reproduced in succeeding years into the indefinite future, or at least that the single year figures represent the best estimates of future differentials which are, by nature, unknown and unknowable.

If the only problems of a present interpretation of future tax burdens were those concerned with the uncertain character of political decisions and administrative operations, and those associated with the inevitable uncertainties of corporate income and expenses, it may very well be that the single-year calculation, based upon present laws and present corporate statistics, would provide the best estimate of future tax burdens. But these are not the only problems. It must be recognized that *existing* tax laws indicate a definite pattern of variable future tax burdens. Thus, opportunities to make use of rapid amortization for so-called emergency facilities have reference to the future and have definite time limits attached. To this extent, the future is fully calculable. Similarly, the temporary property tax exemptions granted new plants by some states and counties have definite time limits attached. A firm receiving such an exemption knows, with reasonable certainty, that the exemption will not extend beyond five years (for example) from the time the property is constructed or purchased. Qualification fees, although often small in amount, are known to be "once-and-for-all" levies that will not be repeated once they have been paid. Some states, too, have made use of temporary "surtaxes" to supplement their corporate income taxes in order to meet a temporary budget deficit. Although these have often been extended beyond the time

of scheduled elimination, they still contain more or less definite time limits and should be made a part of the comparative tax calculus.

In the present study an attempt was made to account for all of these variable but predictable elements. Only with respect to the treatment of emergency amortization was the refinement found to create more difficulties than benefits, and this largely because of the problems of scheduling a realistic amortization and depreciation pattern in conjunction with a plan for the acquisition of new facilities of an "emergency" character. This variable element was not, therefore, included in the calculations.[22] At the time these calculations were made, no state in the Southeast was levying a temporary surtax applicable to manufacturing corporations, so that this, too, is not represented in the study.[23] Practically speaking, therefore, the only variable-predictable elements included in the calculations are the qualification taxes levied by all eleven Southeastern states and the temporary property tax exemptions granted by some of the states.[24]

The inclusion of these variable elements means that a single-year calculation is no longer adequate. It requires little predictive ability to conclude that the tax bills will be different in the second year than they were in the first year, even assuming all of the "non-predictable" elements to be constant. They will be different because there will be no qualification taxes in the second year and because the state income tax calculations (if any), will contain fewer deductions. If a five-year property tax exemption is allowed, the taxes in the sixth year will differ from

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22. This is not to say that no consideration was given to the rapid amortization of emergency facilities and to the fact that some states allow this as a deduction while others do not. The influence of emergency amortization as a predictable fluctuation element was removed, however, by the assumption that acquisitions of new emergency facilities just match the "retirement" of the property on the books of the corporation with the completion of the rapid amortization schedules. In effect, the rapid amortization charge was made a constant. This assumption, of course, is quite unrealistic, but it is not thought to involve great distortion as the amounts chargeable to this item are relatively small. In the case of one hypothetical corporation, no rapid amortization was shown, for the primary model corporation for this hypothetical corporation has adopted a policy against the use of such opportunities at both federal and state levels.

23. By H. B. 113, the Emergency Revenue Act of 1956, Mississippi extended its "temporary" surtax of 14% as an addition to the corporate income tax rate, for a period of two more years. Manufacturing corporations are, however, specifically exempted from the provisions of the surtax.

24. In the study made by Floyd (op. cit., p. 60), temporary property tax exemptions were not considered because "it appears that the choice of plant sites is not typically influenced by temporary cost differentials." Whether this contention is factually correct or not, it is clear that the states that have adopted the temporary exemption device have done so in an *attempt* to provide an industrial attraction. It is not, therefore, to be so readily dismissed. It is still a debatable question as to whether the *total* tax differentials have any bearing on industrial location. Yet an advance *a priori* decision in the negative should not be permitted to disarm the entire study of tax differentials. The exclusion of this most direct attempt to lure industry is thus a serious prejudgment of the question.

those in the fifth year by the amount of the exemption, adjusted to reflect the interacting effects of the exemption and the income tax base.

It would be possible to show the interstate tax comparison in these cases by a simple juxtaposition of the calculations for the several states for comparable time periods. Thus, State A, with a five-year property tax exemption, could be compared with State B, with no property tax exemption, by computing three sets of taxes for each. The total tax bills could be compared for the first year, when the total bills in each state would include qualification taxes. The total tax bills could then be compared for the second through fifth years (on an annual basis), when the tax bills would contain a property tax exemption in State A but not in State B and when neither tax bill would contain qualification taxes. Finally, the total tax bills could be compared for the sixth and subsequent years (on an annual basis), when the tax bills of neither state would contain a property tax exemption. After the first year, State B's total tax bill could be assumed to be constant, on the further assumption that the second year's calculated taxes would provide the best estimate of future annual tax burdens. After the sixth year, State A's tax bill could be assumed to be constant, for the same reason. The assumption of constancy could also be applied to State A's tax bill for the second through fifth years. The level of this interim tax burden would, of course, be lower than that applying to the sixth and subsequent years, to reflect the property tax exemption available during the earlier years.

Such a multi-period comparison is not without its uses, and is, in fact, exposed as part of the explanatory material of the following chapter. But it leaves one rather large question unanswered. If State A has a *substantially* lower tax bill than State B during the period of tax exemption, is the differential enough to offset the *slightly* higher tax bills in State A after the expiration of the exemption period? It is just this kind of question that must be answered if any test is to be provided of the advisability of utilizing such temporary exemptions as agents of industrial attraction.

This problem was solved in the present study by a calculation which reduces an irregular stream of tax payments to a single present value. In this calculation, two patterns of tax burdens through time were utilized. The first represents those states per-

mitting no temporary property tax exemption or other special
provision to change the tax bill in a predictable fashion beyond
the qualification taxes of the first year. This pattern may be
labeled the "constant-state" pattern. The term is a slight mis-
nomer, of course, as a variation is involved in the passage from
the first to the second years. The second pattern represents states
that do have temporary property tax exemptions that change
the tax bill in a predictable fashion. This may be labeled the
"variable-state" pattern. For a "constant state" two sets of tax
calculations are required: the first to show the first year's tax
bill, and the second to show the second year's tax bill and that of
each subsequent year. For a "variable state" three sets of tax
calculations are required: the first to show the first year's tax
bill, the second to show the second year's tax bill and that of
each year for which the temporary situation exists (for example,
the five-year period of property tax exemption), and the third
to show the tax bill for the first year after the temporary sit-
uation and for every year thereafter. These two patterns are
schematically illustrated in Figures 1 and 2.

In Figure 1 the time periods in years are indicated on the
horizontal axis, and dollars of taxes are indicated on the vertical
axis. The figures on the horizontal axis represent the *end* of each
time period, so that year 1 stretches from the point 0 to the
point 1. The first year's taxes, exclusive of the qualification

FIGURE 1. "CONSTANT STATE" PATTERN
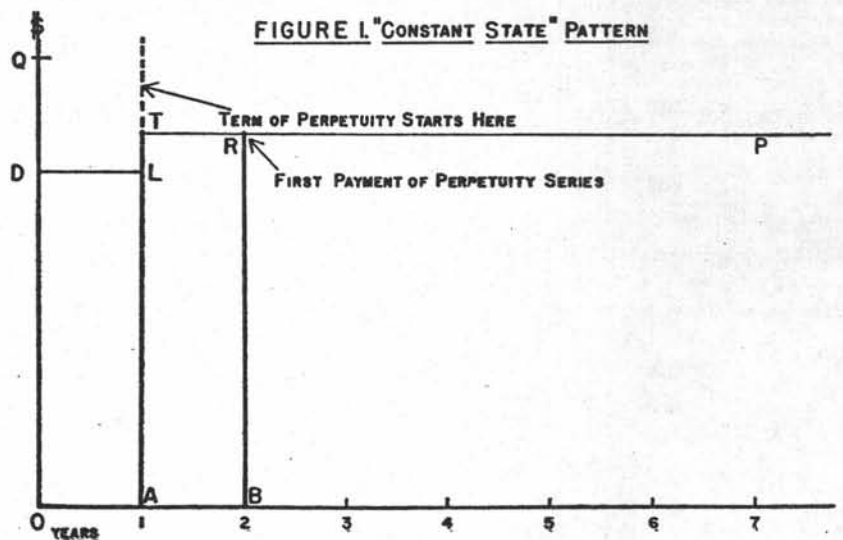
taxes, are given by the vertical distance AL (=OD). These are assumed to be due at the end of the first year, or at the point on the horizontal axis indicated by the figure 1. To these must be added the qualification taxes, shown by the vertical distance DQ, so that the total tax bill of the first year is equal to the vertical distance OQ. The qualification taxes are assumed to be payable at the *beginning* of the first year, or at the point 0 in the Figure.

The second year's taxes are measured by the vertical distance BR (=AT). These, too, are assumed to be payable at the *end* of the second year, or at the point indicated as 2 on the horizontal axis. The second year's taxes are greater than the first year's taxes (excluding the qualification taxes) by an amount LT. This is accounted for entirely by the corporate income tax. The corporate income tax is lower in the first year because of the fact that the inclusion of a qualification tax provides a larger total deduction and hence a smaller income tax base. When the qualification taxes are included in the first year's measure of total taxes, the total is, of course, greater than that of the second year's taxes.

The pattern of Figure 1 thus shows a single payment of DQ (the qualification taxes) at the beginning of the first year; a single payment of AL at the end of the first year; and a perpetuity series with annual payments of BR. The first payment of the perpetuity series is made at the end of the second year (point B on the horizontal axis). The term of the perpetuity begins at the beginning of the second year (point A on the horizontal axis).

The present value of the irregular stream of tax payments represented by the line QDLTP on Figure 1 is the sum of three items, as follows:

1. the present value of a deferred perpetuity payable annually at the end of each interest period, with the term deferred for one year;
2. the present value of a single payment due in one year;
3. The amount of the single-payment qualification tax due now.

The present value of the deferred perpetuity item is found by computing the present value of a simple perpetuity at the end of the first year and then discounting this present value for one year to the present.

FIGURE 2. "VARIABLE-STATE" PATTERN
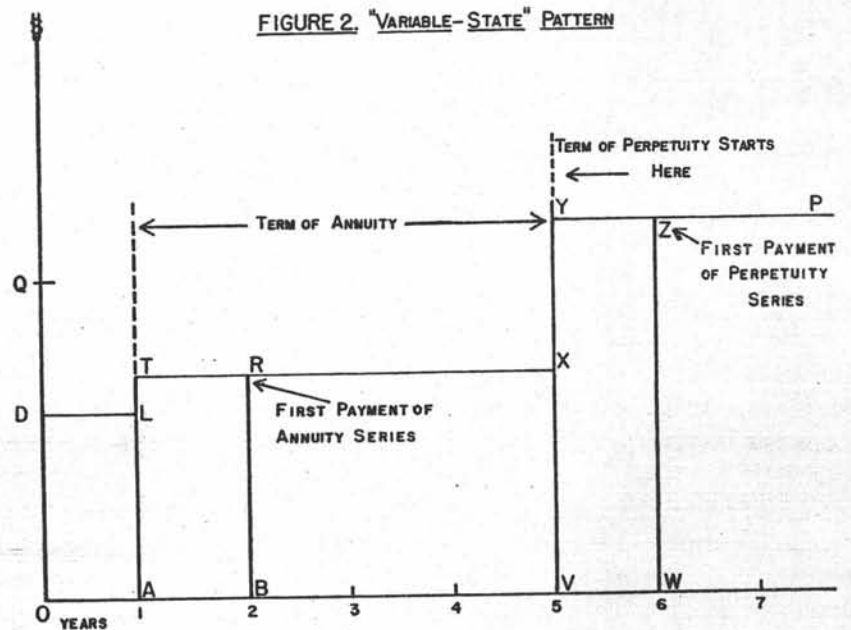
Figure 2 describes the pattern for a "variable-tax state," that
is, one permitting a property tax exemption (in this case, for five
years). The property tax exemption extends through the fifth
year, so that the first payment after the expiration of the ex-
emption period applies to year 6 and is due at the *end* of the
sixth year. The total tax bill of the corporation at the end of the
sixth year is shown by the vertical WZ (=VY). The fifth year's
taxes (as well as those for the second, third, and fourth years)
are shown by the vertical distance VX (=BR, =AT). The dif-
ference between the fifth year's taxes and the sixth year's taxes
(shown by the vertical distance XY) is explained by the addi-
tional property tax burden, partially offset by an income tax
reduction. Once again, the first year's taxes (excluding the quali-
fication taxes) are shown by the vertical distance AL (=OD).
The qualification tax itself is shown by the distance DQ, and the
total first year's tax is shown by the distance OQ.

The pattern of Figure 2 thus shows a single payment of DQ
(the qualification taxes) at the beginning of the first year; a
single payment of AL at the end of the first year; an annuity
series with annual payments of BR for four years payable at
the ends of years 2, 3, 4, and 5; and a perpetuity series with

annual payments of WZ. The first payment of the perpetuity series is made at the end of the sixth year (point W on the horizontal axis). The term of the perpetuity begins at the beginning of the sixth year (point V on the horizontal axis). The term of the annuity begins at the beginning of the second year and ends at the end of the fifth year (points A and V, respectively, on the horizontal axis).

The present value of the irregular stream of tax payments represented by the line QDLTXYP is the sum or four items, as follows:

1. the present value of a deferred perpetuity payable annually at the end of each interest period, with the term deferred for five years;
2. the present value of a deferred annuity payable annually at the end of each interest period, with the term deferred for one year and extending for four years;
3. the present value of a single payment due in one year;
4. the amount of the single-payment qualification tax due now.

As with the "constant-state" pattern, the easiest way to find the present value of the deferred perpetuity item is to find the present value of a simple perpetuity at the end of the fifth year and then discount this present value for five years to the present. Similarly, the easiest way to find the present value of the deferred annuity item is to find the present value of a simple annuity at the end of the first year and then to discount this present value to the present.

The algebra for the sets of calculations applicable to both the "constant-state" pattern and the "variable-state" pattern is as follows:

I.(a)   A=the deferred present value of a perpetuity
         R=the annual tax in the perpetuity series
         i=the rate of interest

$$A = \frac{R}{i} \qquad -(1)$$

(b)   P=the present value of a deferred perpetuity
       n=the number of interest periods from the present to the beginning of the term of the perpetuity

$$P = A(1+i)^{-n} \qquad -(2)$$

II. (a)   for "constant-tax" states
           V = the present value of a single payment due
               at the end of the first year
           B = the payment due at the end of the first
               year
           n = 1
$$V = B(1+i)^{-n} \qquad —(3)$$

(b)   for "variable-tax" states
       (1)
       L = the deferred present value of an annuity
       C = the annual tax in the annuity series
       n = the term of the annuity

$$a_n \text{ at } i = \frac{1-(1+i)^{-n}}{i}$$

$$L = C(a_n \text{ at } i) \qquad —(4)$$

       (2)
       S = the present value of a deferred annuity
       n = the number of interest periods from the
           present to the beginning of the term of
           the annuity

$$S = L(1+i)^{-n} \qquad —(5)$$

       (3)
       X = the present value of a single payment due
           at the end of the first year
       E = the payment due at the end of the first
           year
       n = 1

$$X = E(1+i)^{-n} \qquad —(6)$$

III.   Q = qualification tax, payable at the beginning
            of the first year

IV.   T = total present value of a stream of irreg-
            ular tax payments
        (a) for "constant-tax" states

$$T = P+V+Q \qquad —(7)$$

        (b) for "variable-tax" states

$$T = P+S+X+Q \qquad —(8)$$

When the streams of tax payments for the group of "constant-tax" states and the streams of tax payments for the several groups of "variable-tax" states had been reduced to present value terms by these methods, the results were fully comparable. The comparison was made by listing the total "present-value" tax bills for all of the eleven Southeastern states and ranking the states according to the size of these bills, with the highest tax-bill state shown as number 1 and the lowest as number 11.

Finally, a simple index number was constructed with the "present-value" tax bill of North Carolina equal to 100. All other states in the comparison were then related to this base figure for an easy comparison of the magnitude of the differences between the states.[25]

As can be seen from the two patterns illustrated in Figures 1 and 2, the calculations are based upon the assumption that the "unpredictable" burdens of the future are the same as the burdens computed for the current year. The only changes over time that are admitted are those that can be "predicted" from an observation of *present* laws and practices. In effect, it is assumed that, with the exception of these predictable changes, the present pattern of tax burdens provides the best available estimate of the future pattern of tax burdens. This, of course, is the assumption implicit in most analyses of comparative tax burdens by the hypothetical corporation method.

The objection may still be raised, however, that one "predictable" element has been omitted. This has to do with the depreciation schedule assumed for the property of the hypothetical corporations. If we were to imagine the calculations of future taxes to apply only to the property in existence at the beginning of the first year, it would be necessary to illustrate a declining book value as the property is gradually depreciated. To do so would, of course, require an assumption that at some time the book value would be zero or that the property of the enterprise would be sold when the book value reached an arbitrary "scrap value". Under these assumptions, the patterns in Figures 1 and 2 would be much more complicated, for annual depreciation charges and book value of property enter into the calculations of many taxes in an interdependent fashion. Thus, a gradually declining book value should (other things being equal) result in a gradually declining assessed value and a gradually declining property tax bill. This, in turn, would produce a gradually increasing income tax, for the property tax deduction would be diminishing year by year. In addition, however, the allocation ratio would have to be computed annually in many states, so that the depreciation schedule would exert another kind of influence on the income tax bill over time. Furthermore, the book value and assessed value of property are often used as alternative bases for the franchise tax, business licenses, and

25. See Chapter VII, below, for these comparisons.

other taxes, so that these, too, would have to be annually computed. Finally, the pattern would not be that of a perpetuity, but would have a time period to correspond to the assumed life of the property.

The impossibility of making such detailed and elaborate calculations in a study such as this would seem to provide sufficient justification for the simplified analysis adopted for present purposes. But further justification comes from the fact that we are concerned not with the taxes associated with the exisiting *property* of the corporation, but with the taxes associated with the abstract thing which is the corporation itself, as represented in the domestic state by the plant in question. While the assumption that all property will be replaced in perpetuity (in terms of dollar amounts) as it is depreciated on the books of the corporation is unquestionably unrealistic, it probably commits no greater error than the assumption that none of it will be replaced until the entire structure finally collapses to the ground.

The treatment accorded the three hypothetical corporations may, however, somewhat overstate the property tax burdens in the temporary exemption states. All of these states provide an initial exemption for property newly constructed. But they also provided a *continuing* exemption for any property added to the existing structure. The assumption of perpetual replacement would thus mean that the corporations were able to obtain exemption for the new property added every year. This refinement was not, however, incorporated into the calculations. To this extent the property tax bills for Alabama, Louisiana, Mississippi and South Carolina may be slightly overstated in the third period.

It must also be mentioned that the interest rate used for the present value calculations was arbitrarily set at 5 percent. In theory, the rate of interest in this situation should represent the earnings associated with the use of $1.00 in capital funds, or, conversely, the earnings foregone as a result of having to pay out $1.00 in taxes. No attempt was made to calculate this interest rate on a realistic basis for each of the hypothetical corporations. The rate of 5 percent should thus be thought of as illustrative and probably conservative (that is, low). It was, of course, uniformly applied in all cases.

METHODOLOGICAL CONCLUSIONS

The results of applying the hypothetical corporation approach to the tax structures of the eleven Southeastern states are shown in the following chapter. These results are, to say the least, dramatic. But the drama of the results should not be permitted to obscure the limitations of the analysis. Although there are a number of such limitations, perhaps the most important of them consists of the treatment accorded the property tax element of the total tax bills. The problems of property tax analysis have always presented the greatest hazards for the hypothetical corporation approach and they probably always will until complete and dependable assessment information is made available for all taxing jurisdictions.

This and other limitations make it necessary to emphasize, once again, the fact that the tax bills shown for each of the three hypothetical corporations in each of the eleven Southeastern states may or may not be the tax bills that would actually be presented to a new firm if it chose one of the locations selected for the present analysis. *But in the hypothetical corporation approach the significant problems are considered to be concerned with the appearance of the tax structure before the firm locates its new plant rather than with the fact of the tax structure after the firm locates its new plant.* If the techniques developed in the present study are reasonably accurate facsimiles of the techniques pursued by many businesses, who must, with some exceptions, be faced with the same data limitations, the answers exhibited in the following chapter may be interpreted as the tax components of an industrial location decision.

CHAPTER VII

THE HYPOTHETICAL CORPORATION APPROACH— THE RESULTS

In this description of the results of the hypothetical corporation approach, an attempt has been made to develop each of the three cases in a parallel fashion. Each begins with a brief description of the hypothetical corporation and its hypothetical plant. Part of this description consists of a list of the locations selected for each of the plants in each of the eleven Southeastern states. The rest of the explanation for each corporation is arranged around a series of eight tables. These tables do, indeed, carry the burden of the narrative. The tables are divided into two groups, the first three forming one series and the next five forming a second series. The first group might be called the "exclamatory tables", for it is in these that the final results of the interstate comparison are displayed. The second group might be called the "explanatory tables", for it is with the help of these that the reasons for the differences are explored and analyzed.

It would, of course, be impossible to document every detail of the extensive calculations required to arrive at the answers displayed in the present chapter. The calculations themselves are shown, in sufficient detail to permit reworking, in Appendix B. Where possible, the source of the information is attached to the calculations. In most cases, the source was the law itself and the explanatory material published in Commerce Clearing House, *State Tax Reporter*.[1] The most important omission in the documentation is a reference to the source of the assessed value information that served as the foundation of the property tax calculations. In some instances it was found that the information would not be provided, at least with the candor expected, without the assurance of anonymity. In general, however, such information was obtained from local assessors, state assessment agencies, state research agencies, university research bureaus, local banks, published analyses of assessment ratios, and individuals . known to be familiar with property tax processes in the locality in question.

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1. The calculations were made during December of 1955 and the first six months of 1956. They naturally reflect the information available during this period. An attempt was made to adjust all calculations to embody changes made up to July 1, 1956, although some of the minor changes instituted by the 1956 sessions of some state legislatures may very well have been missed.

The methods of the hypothetical corporation analysis are described, in considerable detail, in Chapter VI. This explanatory material should be considered an integral part of the expository material of the present chapter. No attempt is made in the present chapter to re-explore the techniques of analysis or to redevelop the limitations to which the analysis is subject.

The exposition of the sources of interstate variation is, for Hypothetical Corporation A, as exhaustive as possible. An attempt is made to carry the explanation back to the tax laws of the several states as well as to the instructions and regulations which form a part of the tax structures of these states. Since many of these sources of variation have the same effects upon all three hypothetical corporations, the same detailed explanation is not offered for Hypothetical Corporations B and C as is offered for Hypothetical Corporation A. For Corporations B and C the explanation is restricted to the relatively important elements and to those factors that act upon the taxpayers differently than in the case of the Hypothetical Corporation A. In this sense, Hypothetical Corporation A may be considered to be an explanatory model.

HYPOTHETICAL CORPORATION A

The corporation and its plants

Hypothetical Corporation A is an enterprise engaged in the manufacture of metal products for home and industry. The total assets of the corporation amount to $22,500,000, with $8,325,000 of this represented by inventories, and with fixed assets (net of depreciation) amounting to $6,075,000.[2] Inventories comprise 50.685 percent of the corporation's current assets. The gross sales of the corporation amount to $18,139,636, with cost of sales of $13,501,893. The net profit before all taxes is $2,988,864.

The company's selling operations are conducted by salesmen who work from the company's main plant and executive offices located in a state outside the area of the eleven Southeastern states, and by orders received directly from customers at the head office. Sales are nationwide and are, for the most part, to retail outlets. The company satisfies some industrial demand. All salesmen are employees of Corporation A.

It is assumed that just prior to the beginning of the 1955 tax year Corporation A began manufacturing operations in a newly-

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2. A full statistical description of Hypothetical Corporation A is found in Exhibits 1-8, inclusive, Appendix B.

constructed plant, alternatively located in each of the eleven Southeastern states, specializing in the manufacture of one of the company's products. It is assumed, further, that the company operates only two plants: the old plant outside the area of analysis, and the new plant inside the area of analysis. The old plant was constructed before 1900, so that, in spite of additions and improvements, the "foreign" real property of Corporation A is heavily depreciated on the books of the enterprise. In contrast, of course, the new plant shows only one year of depreciation at the end of 1955.

Orders are received at the new plant by direct teletype from the head office. The goods are then shipped directly from the inventories maintained at the plant. The company maintains no warehousing facilities other than those at the manufacturing locations. No sales offices are maintained other than those that are part of the head office.

In terms of the relationship between the new plant and the total enterprise, the company shows a disproportionately heavy concentration of property at the new plant. Since inventories are directly related to output and sales, the heavy allocation of the total book value of property to the new plant is not explained by the inventory element. It is, rather, a product of the depreciation policy of the company with respect to its fixed assets and of the fact that there is a wide difference in the ages of the new plant and the old plant. Approximately 23 percent of the total book value of the company is located at the new plant, although year-end inventory at the new plant is only about 8 percent of total inventory. In view of the fact that the company is able to make use of relatively low-wage labor at the new plant as compared with that at the old plant (partially as a result of the skills required and partially as a result of prevailing wage rate differentials), the payroll associated with the new plant is only approximately 6 percent of the total payroll. This differential, naturally, is reflected in manufacturing costs, which are, at the new plant, just under 10 percent of total manufacturing costs. Since the company maintains no sales organization other than that at its head office, the sales that could be allocated to the state containing the new plant on the basis of the location of sales offices would, of course, be zero. In terms of the *destination* of the company's sales, however (by which is meant the location of the company's customers), approximately 5 percent of the

total sales might be allocated to the state containing the new plant. If, finally, sales are defined according to the point of manufacture of the products involved, approximately 11 percent of total sales of $18,139,636 might be allocated to the "domestic" state.[3]

The specific locations selected for the new plant of Hypothetical Corporation A in the eleven Southeastern states are as follows:

North Carolina:	Moore County, 2 to 10 miles southwest of Southern Pines, in the general vicinity of U. S. Highway 1;
Alabama:	Houston County, 2 to 10 miles west of Dothan, in the general vicinity of U. S. Highway 84;
Arkansas:	Garland County, 2 to 10 miles southwest of Hot Springs, in the general vicinity of U. S. Highway 270;
Florida:	Orange County, 2 to 10 miles west of Orlando, in the general vicinity of State Highway 50;
Georgia:	Thomas County, 2 to 10 miles east of Thomasville, in the general vicinity of U. S. Highway 84;
Kentucky:	Fayette County, 2 to 10 miles north of Lexington, in the general vicinity of U. S. Highway 25;
Louisiana:	Caddo Parish, 2 to 10 miles west of Shreveport, in the general vicinity of U. S. Highway 79-80;
Mississippi:	Adams County, 2 to 10 miles south of Natchez, in the general vicinity of U. S. Highway 61-65;
South Carolina:	Marion County, 2 to 10 miles west of Marion, in the general vicinity of U. S. Highway 76;
Tennessee:	Madison County, 2 to 10 miles northeast of Jackson, in the general vicinity of U. S. Highway 70;

3. In the future, the state containing the new plant (which might be any one of the eleven Southeastern states) will be labeled "the domestic state", and the state containing the old plant will be labeled "the foreign state."

Virginia: Albemarle County, 2 to 10 miles east of
                          Charlottesville, in the general vicinity of
                          U. S. Highway 250.

None of the locations is inside the boundaries of these or other
incorporated municipalities.

Hypothetical taxes—total.

Table 1 shows the total taxes paid by Hypothetical Corpora-
tion A in each of the eleven Southeastern states, for three
periods, under the assumptions which define the hypothetical
corporation approach. *It also shows that the tax bills for North
Carolina are substantially higher than those for any other state
in the comparison.* The interstate differences are particularly
striking in the first two periods, reflecting, among other things,
the effects of temporary property tax exemptions in some of the
states. The first period includes qualification taxes and other
"once-and-for-all" levies. In this year, a high of $64,308 for
North Carolina is matched by a low of $19,717 for Alabama. The
Virginia burdens come closest to those of North Carolina,
appearing as $50,668. The differences in total annual tax bills are
somewhat less staggering for the third period—the period after
all temporary property tax exemptions have expired. For this
period, North Carolina's tax bill of $63,813 is almost the same
as Mississippi's tax bill of $63,100. From this level, however,
the tax bills of the remaining states fall off rapidly, with Ala-
bama still enjoying the low position on the list with a tax bill
of only $23,346.

In Table 2 the tax bills of these three periods are reduced to
a single present value by techniques described in the preceding
chapter, and the values expressed as an index with North Caro-
lina equal to 100. Column 3 of Table 2 shows the rank of each
state on the list, with the number 1 rank assigned to the highest
tax state and the number 11 rank assigned to the lowest tax
state.

Table 2 shows North Carolina in undisputed first position. The
tax burden on Hypothetical Corporation A in Mississippi, the
second-ranking state on the list, is just 90 percent of that in
North Carolina. As compared with states other than North
Carolina, Mississippi itself is relatively high, for the state that
is third on the list (Virginia) shows an index of only 78.

TABLE 1

HYPOTHETICAL CORPORATION A

TOTAL TAXES IN ELEVEN SOUTHEASTERN STATES FOR THREE PERIODS

States	First Period[1]		Second Period[2]		Third Period[3]	
	Total Taxes (1)	Rank for Column (1) (2)	Total Taxes (3)	Rank for Column (3) (4)	Total Taxes (5)	Rank for Column (5) (6)
NORTH CAROLINA......	$64,308	1	$63,813	1	$63,813	1
Alabama.................	19,717	11	16,409	11	23,346	11
Arkansas................	28,641	9	28,530	9	28,530	10
Florida.................	31,384	7	30,985	7	30,985	8
Georgia.................	38,201	5	38,191	4	38,191	7
Kentucky...............	29,224	8	29,189	8	29,189	9
Louisiana...............	22,191	10	21,630	10	51,536	3
Mississippi.............	38,405	4	37,930	5	63,100	2
South Carolina..........	37,371	6	37,322	6	40,687	6
Tennessee...............	46,320	3	46,001	3	46,001	5
Virginia................	50,668	2	49,677	2	49,677	4

NOTES: [1]First year in domestic state. Taxes include qualification taxes and other "once-and-for-all" levies.
[2]After the first year and until the expiration of temporary property tax exemptions, if any.
[3]After the expiration of temporary property tax exemptions, if any.

TABLE 2

HYPOTHETICAL CORPORATION A

PRESENT VALUE OF TOTAL TAXES IN ELEVEN SOUTHEASTERN STATES

States	Total Present Value[1] (1)	Total Present Value as an Index (North Carolina =100) (2)	Rank for Column (2) (3)
NORTH CAROLINA.......	$1,276,756	100.0	1
Alabama....................	416,662	32.6	11
Arkansas...................	71,224	44.7	10
Florida....................	620,099	48.6	8
Georgia....................	763,830	59.8	7
Kentucky...................	583,815	45.7	9
Louisiana..................	800,355	62.7	5
Mississippi................	1,153,503	90.3	2
South Carolina.............	799,080	62.6	6
Tennessee..................	920,340	72.1	4
Virginia...................	994,532	77.9	3

NOTES: [1]Present value of all taxes for three periods.

When all taxes are considered, and when all temporary ex-
emptions are taken into account, Alabama appears to extract
the smallest number of tax dollars from Corporation A. Its
present value measure is only about 33 percent of that for North
Carolina. It should be noted, however, that *four* states (Florida,
Kentucky, Arkansas, and Alabama) impose tax burdens that are
less than half those levied by North Carolina.

Table 3 presents the interstate comparison in a slightly differ-
ent way. The total tax bills for each state for the third period
of the analysis are related to five tax burden measures. Since the

TABLE 3

HYPOTHETICAL CORPORATION A

TOTAL TAXES[1] IN ELEVEN SOUTHEASTERN STATES AS A PERCENT OF VARIOUS
MEASURES OF TAX BURDENS

States	Total Taxes as a Percent of Gross Receipts[2] (1)	Total Taxes as a Percent of Total Payroll[3] (2)	Total Taxes as a Percent of Total Property[4] (3)	Total Taxes as a Percent of Manufac- turing Costs[5] (4)	Total Taxes as a Percent of Allocated Taxable Net Profits[6] (5)
NORTH CAROLINA	6.5	20.3	2.0	4.8	26.5
Alabama	2.4	7.4	.7	1.7	9.7
Arkansas	2.9	9.1	.9	2.1	11.6
Florida	3.1	9.8	1.0	2.3	—
Georgia	3.9	12.1	1.2	2.9	15.8
Kentucky	3.0	9.3	.9	2.2	12.0
Louisiana	5.2	16.4	1.6	3.9	21.5
Mississippi	6.4	20.0	2.0	4.7	25.9
South Carolina	4.1	12.9	1.3	3.0	16.6
Tennessee	4.7	14.6	1.4	3.4	19.6
Virginia	5.0	15.8	1.5	3.7	19.3

NOTES: [1]Third Period only
[2]Gross receipts from sales according to the location of the customers ("destination" definition) in domestic state.
[3]Payroll includes salaries and wages of "direct" and "indirect" labor associated with manufacturing at domestic plant.
[4]Property includes book value of land, depreciable property, and year-end inventory at domestic plant.
[5]Manufacturing costs include material bought for manufacture, salaries and wages, and other manufacturing costs at domestic plant.
[6]Total net profit before state income tax and before federal income tax allocated to domestic state by the application of the arithmetical average of the "property-ratio" (year-end inventory), the "payroll-ratio", and the "sales-ratio" (by "point of-origin" definition).

peripatetic plant of Corporation A is assumed to have identical characteristics in each of the eleven Southeastern states, the measures themselves are, of course, perfectly comparable. The table merely provides another means of expressing the differences that are described in column 5 of Table 1. As such, it adds little to the description of interstate tax burdens. Its main usefulness, in conjunction with the comparable tables for Corporations B and C, is in the analysis of differences in the burdens between the three hypothetical corporations *within* any of the eleven states in the study. Only in the case of the last of the measures shown in Table 3 (column 5—total taxes as a percent of allocated taxable net profits) is a significant addition made to the interstate analysis. In this column, total taxes are expressed as a percent of the net income that *would be* taxable under the income tax laws of each of the states if each state made use of an allocation formula approximating the so-called "Massachusetts formula". If it may be assumed, for purposes of this analysis, that the Massachusetts formula is the "correct" formula for the allocation of interstate income, the burden measurement of column 5, Table 3 may be assumed to be based

upon an accurate representation of the net profits of the corporation associated with its activities in the domestic state.[4]

From Table 3 it can be seen that North Carolina, at the top of the scale, extracts in taxes approximately 6.5 percent of the North Carolina gross receipts of Corporation A; Alabama, at the bottom of the scale, extracts approximately 2.4 percent of the Alabama gross receipts. The median state (in this case, South Carolina), extracts approximately 4.1 percent of the gross receipts in that state.

Hypothetical taxes—by type

For a corporation with the characteristics of Hypothetical Corporation A there can be no doubt about the severity of the burdens imposed by the North Carolina tax structure. An understanding of the reasons for this relative severity requires, as a first step, the separation of the individual taxes that go to make up the total tax burdens in each of the states. This separation is shown in Table 4 for each of the three periods.[5] For North Carolina, surprisingly, the ad valorem property tax is the largest single tax paid by Corporation A, accounting for 54 percent of the total state and local tax bill in the second and third periods. Income and property taxes combined account for over 92 percent of the North Carolina total.

As compared with the other states, however, the percentage of the total tax bill accounted for by ad valorem property taxes is not uncommonly high. All states except Alabama and Kentucky impose state and local property taxes that account for more than half of the total tax bills. In Alabama the property tax accounts for approximately 42 percent of the total tax, and in Kentucky for approximately 49 percent. In both Alabama and Kentucky, however, the property tax is still the largest single tax paid by the corporation. In Virginia, the local property tax accounts for 41 percent of the total levy, but the state tax on "capital not otherwise taxed" is, in reality, a property tax. When the state levy is added to the local levy, the Virginia property tax burden amounts to 53 percent of the total. In the Louis-

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4. The assumption of the "correctness" of the Massachusetts formula is advanced here for calculation purposes only, to provide a common standard of net profit measurement for each state. It is maintained throughout this report that there is no such thing as the "correct" formula. It is, in fact, maintained that debate on these grounds is futile, in view of the fact that the allocation of something which is, by nature, unitary is a logical impossibility.

5. Two types of states are represented in Table 4: those making use of temporary property tax exemptions (the so-called "variable tax" states) and those not making use of temporary property tax exemptions (the so-called "constant tax" states). Alabama is an example of the former; North Carolina is an example of the latter.

TABLE 4

HYPOTHETICAL CORPORATION A

TOTAL TAXES IN ELEVEN SOUTHEASTERN STATES BY TYPE OF TAX, FOR
THREE PERIODS

States and Type of Tax	Period One[1]		Period Two[2]		Period Three[3]	
	Tax (1)	Percent of Total Tax (2)	Tax (3)	Percent of Total Tax (4)	Tax (5)	Percent of Total Tax (6)
NORTH CAROLINA[4]						
1. Qualification	$ 500	0.8				
2. Franchise	4,953	7.7	$ 4,953	7.8	$ 4,953	7.8
3. Intangibles	32	0.1	32	0.1	32	0.1
4. Property	34,553	53.7	34,553	54.1	34,553	54.1
5. Income	24,270	37.7	24,275	38.0	24,275	38.0
Total	$ 64,308	100.0	$ 63,813	100.0	$ 63,813	100.0
ALABAMA[5]						
1. Qualification	$ 3,305	16.8				
2. Filing Fee	10	0.1				
3. Corporation Permit	100	0.5	$ 100	0.6	$ 100	0.4
4. Business Licenses	300	1.5	300	1.8	300	1.3
5. Franchise	8,091	41.0	8,091	49.3	8,091	34.7
6. Property	2,917	14.8	2,917	17.8	9,868	42.3
7. Income	4,994	25.3	5,001	30.5	4,987	21.4
Total	$ 19,717	100.0	$ 16,409	100.0	$ 23,346	100.1
ARKANSAS[4]						
1. Qualification	$ 111	0.4				
2. Franchise	980	3.4	$ 980	3.4	$ 980	3.4
3. Property	16,048	56.0	16,048	56.3	16,048	56.3
4. Income	11,502	40.2	11,502	40.3	11,502	40.3
Total	$ 28,641	100.0	$ 28,530	100.0	$ 28,530	100.0
FLORIDA[4]						
1. Charter Fee	$ 399	1.3				
2. Business Licenses	150	0.5	$ 150	0.5	$ 150	0.5
3. Franchise	750	2.4	750	2.4	750	2.4
4. Intangibles	1	0.0	1	0.0	1	0.0
5. Property	30,084	95.9	30,084	97.1	30,804	97.1
Total	$ 31,384	100.1	$ 30,985	100.0	$ 30,985	100.0
GEORGIA[4]						
1. Qualification	$ 10	0.0				
2. Franchise	1,000	2.6	$ 1,000	2.6	$ 1,000	2.6
3. Intangibles	3	0.0	3	0.0	3	0.0
4. Property	30,733	80.5	30,733	80.5	30,733	80.5
5. Income	6,455	16.9	6,455	16.9	6,455	16.9
Total	$ 38,201	100.0	$ 38,191	100.0	$ 38,191	100.0
KENTUCKY[4]						
1. Qualification	$ 35	0.1				
2. Intangibles	33	0.1	$ 33	0.1	$ 33	0.1
3. Franchise	4,048	13.9	4,048	13.9	4,048	13.9
4. Property	14,274	48.8	14,274	48.9	14,274	48.9
5. Income	10,834	37.1	10,834	37.1	10,834	37.1
Total	$ 29,224	100.0	$ 29,189	100.0	$ 29,189	100.0
LOUISIANA[5]						
1. Capital Stock	$ 562	2.5				
2. Franchise	2,951	13.3	$ 2,951	13.6	$ 2,951	5.7
3. Property	13,382	60.3	13,382	61.9	43,355	84.1
4. Income	5,296	23.9	5,297	24.5	5,230	10.1
Total	$ 22,191	100.0	$ 21,630	100.0	$ 51,536	99.9

TABLE 4 (continued)

States and Type of Tax	Period One[1]		Period Two[2]		Period Three[3]	
	Tax (1)	Percent of Total Tax (2)	Tax (3)	Percent of Total Tax (4)	Tax (5)	Percent of Total Tax (6)
MISSISSIPPI[5]						
1. Qualification	$ 500	1.3			$	
2. Factory Inspection Fees	200	0.5	$ 200	0.5	200	0.3
3. Franchise	5,246	13.7	5,246	13.8	5,246	8.3
4. Property	7,551	19.7	7,551	19.9	32,981	52.3
5. Income	24,908	64.9	24,933	65.7	24,673	39.1
Total	$ 38,405	100.1	$ 37,930	99.9	$ 63,100	100.0
SOUTH CAROLINA[5]						
1. Qualification	$ 50	0.1			$	
2. Annual Filing Fee	10	0.0	$ 10	0.0	10	0.0
3. Franchise	1,077	2.9	1,077	2.9	1,077	2.6
4. Property	21,317	57.0	21,317	57.1	24,694	60.7
5. Income	14,917	39.9	14,918	40.0	14,897	36.6
Total	$ 37,371	99.9	$ 37,322	100.0	$ 40,678	99.9
TENNESSEE[4]						
1. Qualification	$ 320	0.7			$	
2. Annual Reporting Fees	150	0.3	$ 150	0.3	150	0.3
3. Franchise	4,954	10.7	4,954	10.8	4,954	10.8
4. Property	29,309	63.3	29,309	63.7	29,309	63.7
5. Excise	11,587	25.0	11,588	25.2	11,588	25.2
Total	$ 46,320	100.0	$ 46,001	100.0	$ 46,001	100.0
VIRGINIA[4]						
1. Entrance Fee	$ 1,000	2.0			$	
2. Annual Registration	25	0.0	$ 25	0.1	25	0.1
3. Local Property	20,476	40.4	20,476	41.2	20,476	41.2
4. Capital Not Otherwise Taxed	5,905	11.7	5,905	11.9	5,905	11.9
5. Income	23,262	45.9	23,271	46.8	26,271	46.8
Total	$ 50,668	100.0	$ 49,677	100.0	$ 49,677	100.0

NOTES: [1] First year of location in domestic state. Taxes include "once-and-for-all" Qualification levies.
[2] Period after first year of location in domestic state. Includes temporary property tax exemption, if any.
[3] Period after expiration of temporary property tax exemption.
[4] "Constant-tax" state
[5] "Variable-tax" state

iana structure, the property tax has an 84 percent importance for Corporation A. Georgia is only slightly below this, with a property tax that accounts for 80 percent of the corporation's Georgia taxes. The highest state in this respect is, of course, Florida. Since Florida levies no state income tax, the property tax accounts for 97 percent of the total tax bill of Hypothetical Corporation A.

For all states but Florida and Alabama, the income tax stands second in importance to the property tax in the magnitude of the burdens which it imposes. In Alabama the franchise tax paid by Corporation A is larger than the income tax. For the other states the percentage of total tax represented by income taxes range from 10 percent in Louisiana to 40 percent in Arkansas.

In North Carolina, the income tax paid by Corporation A represents 38 percent of its total tax burden.

Franchise taxes play an important role in Alabama, at least with respect to the burdens imposed upon Corporation A, for they represent 35 percent of the total tax. Kentucky and Tennessee stand next on this list, levying franchise taxes that account for 13 and 11 percent, respectively, of the total taxes. North Carolina and Mississippi occupy the next step, each imposing franchise taxes that are 8 percent of the total. The Arkansas franchise tax accounts for 4 percent of the Arkansas total, and in Florida, Georgia, and South Carolina the franchise tax accounts for approximately 3 percent of the total. The Virginia franchise tax is levied on domestic corporations only, so that Hypothetical Corporation A pays no franchise tax in that State.

It is clear that the primary responsibility for any differences that exist between the tax burdens imposed by these eleven states must be placed upon either the property tax or the income tax. Taken together, these two taxes account for more than 85 percent of the total tax burdens imposed by all of the states, with Alabama as the single exception. Indeed, in all but three states, they represent more than 90 percent of the total tax. In North Carolina the property tax and the income tax combined represent 92 percent of the total tax paid by Corporation A.

(a) *Income taxes*

In Table 5 the corporate net income tax is singled out for detailed examination. The table is designed to show the origins of the most important differences in the income tax burdens as between the ten states concerned. The income tax payments of Corporation A, shown in column 1, are collected from the data of column 5 of Table 4. The ranks shown in column 2 indicate that North Carolina imposes upon this corporation the second highest income taxes of the ten states. The three highest states (Mississippi, North Carolina, and Virginia) are very similar with respect to the income tax obligations they impose upon Corporation A. From this high plateau the values fall off rapidly, for the income tax of the fourth ranking state (South Carolina) is well below that of the third. Alabama occupies the lowest position, with an income tax of $4,987. This tax compares with Mississippi's tax of $24,673 and North Carolina's tax of $24,275, and indicates the extreme variability of the tax burdens imposed by the income tax statutes of the Southeastern states.

In the determination of state income tax liability for a corporation of the type considered here, there are three major factors that are likely to create differences between the states. The first of these is the method by which the income of the entire corporation is allocated to the taxing state. The second is the deductions allowed from gross income. And the third is the tax rate. All three of these factors are represented in Table 5.

Of the three high-tax states (Mississippi, North Carolina, and Virginia), the highest allocation ratio for a corporation such as Hypothetical Corporation A is that produced by the Virginia law. By the Virginia formula, approximately 17.8 percent of the total taxable net income of the Corporation is subject to the Virginia income tax. This figure compares with 17.0 percent in Mississippi, and 16.6 percent in North Carolina. At the other extreme are Arkansas, with a ratio of 9.6 percent, and Georgia, with a ratio of 6.6 percent.

It must be remembered that Corporation A is exactly the same in each of the eleven states. In spite of the fact that Corporation A is assumed to sell the same quantity of its product in each of the states, and in spite of the fact that it is assumed to have constructed the same plant, with the same productive capacity, the same costs, and the same investment in each of the states, Virginia law declares that 17.8 percent of the corporate net profits should be associated with the plant, while Georgia law declares that only 6.6 percent of the corporate net profits should be associated with the plant. With a variation as extreme as this, it is impossible not to feel that some states of the Southeast consider the allocation ratio as a revenue-collecting device, whereas others think of it as an excellent means of attracting industrial enterprises. In any event, the importance of the allocation ratio as a source of variation in income tax burdens can hardly be denied.

In this interpretation, the effects of the Virginia allocation formula are particularly interesting. For Corporation A, Virginia manages to make use of the most demanding allocation formula of any of the Southeastern states.[6] The formula is a two-factor thing, based upon the distribution of the corporation's

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6. This statement is true only upon the assumptions which lie behind the present calculations. In Virginia law, an allocation by separate accounting is preferred (Section 58-131.1, Code of Virginia). To this extent, Virginia's allocation approach would be more liberal than many other states. For purposes of these examples, however, it was assumed that separate accounting was impossible, and that the formula method would have to be applied in all cases.

TABLE 5

HYPOTHETICAL CORPORATION A

INCOME TAX DATA[1] FOR ELEVEN SOUTHEASTERN STATES

State	Tax	Rank for Column (1)	Allocation Ratio (In Percent)	Rank for Column (3)	Allocated Net Income	Rank for Column (5)	Tax Rate (In Percent)	Federal Income Tax Deduction Allowed
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NORTH CAROLINA	$24,275	2	16.5557	3	$404,589	3	6	No
Alabama	4,987	10	14.5961	4	166,224	7	3	Yes
Arkansas	11,502	6	9.5880	9	239,041	6	1 to 5	No
Florida[2]								No
Georgia	6,455	8	6.5820	10	161,365	9	4	No
Kentucky	10,834	7	14.1803	5	161,920	8	5 and 7	Yes
Louisiana	5,230	9	11.6473	8	130,759	10	4	Yes
Mississippi	24,673	1	17.0013	2	420,391	2	2 to 6	No
South Carolina	14,897	4	11.9523	7	297,984	5	5	No
Tennessee	11,588	5	12.8037	6	309,022	4	3.75	No
Virginia	23,271	3	17.7689	1	465,423	1	5	No

NOTES: [1] For third period only
[2] No income tax levied

property and upon the distribution of the corporation's gross receipts. The allocation ratio is computed with the following data:

> ". . . the tax imposed by this chapter shall be on such proportion of the entire net income of such corporation as the fair market value of the real estate and other physical assets in this State on the date of the close of the taxable year and the amount of the gross receipts in this State during that year, of such corporation, bears to the total fair market value of all the real estate and other physical assets within and without this State on the date of the close of the taxable year and the amount of the total gross receipts within and without the State during that year, of such corporation. . . ."[7]

Most of the states in this study have included a property factor in their allocation formulae. *In all cases in which this property factor appears in the allocation formula for Corporation A there is a tendency for the allocation ratio to be high.* This effect, of course, results, from the nature of the corporation itself and the relationship between its new plant and its old plant.

The fact that Virginia's property factor is stated in terms of the "fair market value" of property may help to ease the burden of the property factor for an enterprise such as Corporation A. This fact may also mean that the allocation ratio shown for Virginia in Table 5 is slightly overstated. It may reasonably be assumed that the book value of Corporation A for the new plant in Virginia is approximately equal to the fair market value of that property. It may *not* reasonably be assumed that the book value of the old plant in the foreign state is approximately equal to the fair market value of that property. For the old property, the book value undoubtedly understates the fair market value of the property. In the present calculations, however, no attempt was made to estimate the fair market value of the property of Corporation A, since this would have been a major undertaking in itself. Instead, the book value was assumed to reflect the fair market value as required by Virginia law and as practiced in Virginia administration.[8] To this extent, the Virginia ratio for Corporation A may be somewhat higher than it should be.

Most of the allocation formulae of the states studied include at least one factor that has the effect of tempering the inflating

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7. Section 58-131.1, Code of Virginia.
8. This construction appears to be justified by *Thornhill Wagon Co. v. Virginia*, ('26), 144 Va. 194, 131 S. E. 455, in which it was held that the book value may be presumed to reflect market value if the books of the corporation are accurately maintained. The presumption was held to be rebuttable.

effects of the property factor. In many cases, this is a sales or a gross receipts factor. For Virginia, however, these tempering effects are reduced by the *definition* of gross receipts in the Virginia law. It is held that gross receipts

". . . shall include all receipts from persons, firms, corporations, partnerships and associations, who or which are in this state, wherever paid, *and all receipts from sales, wherever made, of goods, wares and merchandise manufactured, or which originated, in this State.*"[9]

This means that, for Corporation A, the gross receipts assigned to Virginia include all those receipts from sales to Virginia customers (the "destination" definition) and all those receipts from the sale of goods manufactured in Virginia, *wherever they are sold.*[10] If the "destination" definition had been used without adjustment, the gross receipts element in the formula would have been approximately 5.4 percent. With the additional allocation by "point of manufacture", the gross receipts element is increased to approximately 13.5 percent.[11] The effects of the high property ratio are thus partially offset by the effects of the lower gross receipts ratio, but not by as much as they would have been if the gross receipts factor had been normally defined.

In spite of the fact that the Mississippi allocation formula is a three-factor formula (property, payroll, and sales), while the North Carolina formula is only a two-factor formula (property and manufacturing costs), the Mississippi formula yields a slightly higher allocation ratio than does the North Carolina formula.

The Mississippi approach is statutorily declared in Section 9220-12 (1) (c) of the Code of Mississippi, which states that, in the case of multi-state income ". . . the portion of such taxable income attributed to sources within the state may be determined by processes or formulas of general apportionment, prescribed by the commissioner, with the approval of the governor." Article 247, State of Mississippi, *Income Tax Law and Regulations,* as amended November 31, 1954, specifies the three-factor formula. In the definitions of the three factors, *the specific exclusion of inventories* from the property factor does most to

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9. Section 58-131.1, Code of Virginia. Italics added.

10. The sales of the second part of this definition must, of course, be adjusted to delete the sales made in Virginia from the Virginia plant, since these are already included in the "destination" part of the definition.

11. The formula does not consist of an arithmetical average of the gross receipts and the property ratios. Virginia gross receipts are added to the Virginia property for the numerator of the ratio; and total gross receipts are added to total property for the denominator of the ratio.

inflate the allocation ratio for Corporation A. This exclusion has the net effect of restricting the property factor to the *real* property of Corporation A, the type of property that is heavily represented in the domestic state and lightly represented in the foreign state. This element is only slightly offset by the fact that the property factor is defined to include a capitalized rental element (annual rent multiplied by 8), all of which is assignable to the foreign state for Corporation A.

The Mississippi sales factor is, basically, defined according to the "point of origin" approach. The language used is as follows: ". . . gross receipts shall be assigned to that office, agency or place of business at which a binding sale, or agreement to sell, first occurs".[12] By this definition, the sales factor for Corporation A would be zero, since no office or agency is maintained in the domestic state. The allocation ratio for Mississippi would thus be much lower than it actually is. But the definition contains a proviso, as follows:

> ". . . provided that, when goods are shipped or delivered from a place of business, warehouse or inventory within one state to a customer within the same state, the gross receipts from said sale shall be assigned to that state regardless of the situs of the agreement to sell."[13]

Thus, the sales factor for Mississippi is enlarged by the assignment to Mississippi of all of those sales made in Mississippi from the Mississippi plant. While these are not large, they do prevent this factor from falling to zero for Corporation A.

The reasons for the obvious severity of the North Carolina allocation formula have, in effect, already been explained. The very high property factor for this corporation (approximately 23.5 percent) is only partially offset by a relatively low manufacturing cost factor (approximately 9.6 percent). As has already been explained, the manufacturing cost factor is relatively low because of the influence of the payroll element and the fact that payrolls are substantially lower in the domestic state than in the foreign state. As compared with the other states, North Carolina's allocation formula yields a relatively high ratio primarily because it does not include a sales factor for this manufacturing corporation. Of the ten states levying an income tax in the Southeast, only North Carolina, South Carolina, and Arkansas do not make any provisions for the inclusion of a sales or gross

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12. Article 247, State of Mississippi, Income Tax Law and Regulations, as amended November 30, 1954.
13. loc. cit.

receipts factor in their allocation formulae. With any of the possible definitions of sales or gross receipts the inclusion of this factor for an enterprise such as Corporation A exerts a downward pull to the property factor.

The two states with the lowest allocation ratios are Arkansas (approximately 9.6 percent) and Georgia (approximately 6.6 percent). As compared with the North Carolina formula, both of these are obviously extremely lenient.

The Arkansas formula is more than a little indefinite in its language. The relevant statutory language is as follows:

> ". . . the portion of such taxable income attributable to sources within the state may be determined by processes or formulas of general apportionment prescribed by the Commissioner with the approval of the Governor."[14]

The prescribed formula appears in the instructions attached to the corporate income tax return. Two sections of these instructions appear to be relevant to Corporation A. The first reads as follows:

> "When income of a foreign corporation is derived from the sale of personal property produced within and sold without the State, . . . the net income from sources within the State will be determined by taking that portion of the total net income that the cost of production within the State of Arkansas bears to the total cost of production."

By this instruction, the allocation ratio for Corporation A would consist of the single factor of manufacturing costs. However, another section of the instructions requires the use of "gross sales . . . when it is impossible to determine the amount of income of a foreign corporation derived from within the state." Either of these sections could apply to Hypothetical Corporation A. On the assumption that the special case takes precedence over the general case, the present calculations were based upon the former section. The allocation ratio was, in other words, assumed to be the single ratio of manufacturing costs. If the gross receipts ratio had been used (however this might be defined), the allocation ratio for Arkansas would have been even smaller than that actually used in the calculations.

Section 92-3113, of the Code of Georgia indicates that the allocation formula must consist of the three factors of property, payroll, and sales, although these are not the terms employed in the law. The property factor, however, is not the high property factor of the North Carolina law and of the laws of most other

14. Section 84-2020 (3 (a), Arkansas Statutes.

states. It is, in fact, restricted to *inventory*, measured as the average of the monthly inventories. It is, in other words, just the reverse of the Mississippi property factor, which specifically excludes inventory. The Georgia formula thus consists of the three very low factors for Corporation A: the inventory ratio of approximately 8.2 percent; the gross receipts (in this case, "sales by destination") ratio of approximately 5.4 percent; and the payroll ratio of approximately 6.1 percent.

The only other state that requires particular mention with respect to its allocation formula is South Carolina. The formula for South Carolina is almost the same as that for North Carolina. Both formulae consist of the two factors of property and manufacturing costs. Yet, as can be seen in Table 5, North Carolina ranks third in the severity of its allocation formula, while South Carolina ranks only seventh. The reason for this difference of rank must, obviously, lie in the *definitions* of the factors that make up the formulae.

The most important difference lies in the definitions of the *property* factor and, in particular, in the definition of the *value* of property to be used in the calculations. In this respect the North Carolina law reads as follows:

> "the word 'value' as applied to property other than inventories shall mean original cost plus additions and improvements *less reserve for depreciation.*"[15]

The contrasting language for the South Carolina law is as follows:

> "Tangible property shall be taken at its actual value which, in the case of property valued or appraised for purpose of inventory, depreciation, depletion or other purposes, shall be the highest amount at which it has been so valued or appraised and which in other cases shall be deemed to be its *book value without any deduction for depreciation, depletion, or obsolescence* . . ."[16]

In North Carolina, property is valued at book value *after* the deduction of depreciation reserve. In South Carolina, property is valued at book value *before* the deduction of depreciation reserve. For Corporation A it is precisely this element of depreciation that describes the most important difference between the new plant in the domestic state and the old plant in the foreign state. In the calculation of the North Carolina property factor, the slightly depreciated plant in North Carolina appears as the

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15. Section 105-134, II, 1 (a) (ii), North Carolina General Statutes, italics added.
16. Section 65-232, Code of South Carolina, italics added.

numerator, and the heavily depreciated plant in the foreign state appears as part of the denominator. In adding back the depreciation reserves to move from the North Carolina formula to the South Carolina formula, a larger amount is added to the denominator than is added to the numerator. The South Carolina property factor is thus bound to be smaller than the North Carolina property factor. The North Carolina property factor is 23.5234 percent, while the South Carolina property factor is only 14.3166 percent. In other respects the two formulae are identical, so that this difference is carried into the final allocation ratios, where North Carolina's ratio appears as 16.5557 percent and South Carolina's as 11.9523 percent. It is clear that even a small difference in the specific definitions of the factors that comprise the formulae can create large differences in the results.

There is no need to describe in detail the allocation formulae of the remaining states. These might, however, be summarized as follows. The terms used are those adopted as shorthand descriptions for purposes of the present study rather than those which appear in the laws. Where the terms are identical for two or more states, the figures entering into the calculations are also identical.

Alabama makes use of a three-factor formula consisting of property (measured as an annual average), manufacturing costs, and sales allocated to the point of manufacture. The resulting Alabama ratio is 14.5961 percent.

Kentucky makes use of a three-factor formula consisting of property (measured as an annual average), manufacturing costs, and sales allocated to the point of origin of the sales. If one of the factors is zero (as is the sales factor in the present case), the sum of the remaining factors is divided by the number of factors remaining. The resulting Kentucky ratio is 14.1803 percent.

Louisiana makes use of a three-factor formula consisting of property (measured at year-end), payroll, and sales allocated to the point of destination of the sale. The resulting Louisiana ratio is 11.6473 percent.

Tennessee makes use of a three-factor formula consisting of property (measured at year-end), manufacturing costs, and sales allocated to the point of destination of the sale. The resulting Tennessee ratio is 12.8037 percent.

Column 5 of Table 5 shows the results of applying the appropriate allocation ratio to the total net income of the corporation to derive the final tax base. It is to these figures that the tax rates are applied.

Table 5 also indicates those states that permit the deduction of federal income taxes in the derivation of the state tax base. If Corporation A were to locate a plant in Alabama, it would pay a total income tax of $1,326,156, of which $166,224 would be allowed as a deduction for purposes of computing Alabama state income tax liability. In Louisiana, the federal income tax would amount to $1,311,497, of which $152,754 would be allowed as a deduction for purposes of the Louisiana income tax. In Kentucky, the federal income tax would be $1,323,117. Of this, $187,622 would be permitted as a Kentucky state income tax deduction. It is interesting to note that Alabama imposes the lowest income tax of the ten states considered. Louisiana imposes the second lowest income tax. And Kentucky imposes the fourth lowest income tax. *The allowance of the federal income tax deduction is undoubtedly of great importance in establishing the low tax status of these states.*

There are, of course, many other differences between the income tax laws of the ten Southeastern states that make use of this tax. The great majority of these differences were felt to be of minor importance for a manufacturing corporation and were, for the most part, removed from consideration by means of simplifying assumptions about the characteristics of the hypothetical corporation. One other item of some importance was considered. This was the statutory treatment given to the amortization of emergency facilities. The states are evenly divided in this respect, in that five states permit the deduction of so-called "rapid amortization" in the same manner as does the federal law, whereas five states do not permit this deduction. The states granting the deduction, either by statute or by administrative interpretation, are North Carolina, Kentucky, Virginia, Georgia and Alabama. The states not granting this deduction are South Carolina, Mississippi, Tennessee, Arkansas, and Louisiana. For Hypothetical Corporation A, the rapid amortization item amounts to approximately $27,000.

Finally, Table 5 shows the tax *rates* levied by each of the ten income tax states of the Southeast. *It can readily be seen that, except for Kentucky, North Carolina imposes a higher income tax*

rate than any other state of the Southeast. In Kentucky the rate
is a two-step progression, with 5 percent imposed upon the first
$25,000 of taxable net income, and 7 percent imposed upon in-
come in excess of $25,000. With the exception of the "graduated-
rate" states, the lowest income tax rate of the group is the 3
percent levy imposed by Alabama. The Mississippi tax rates are
graduated upward from 2 percent on the first $5,000 of taxable
net income to 6 percent on all taxable net income in excess of
$10,000. For a corporation such as Corporation A, the top rate
bracket is, of course, the most important. The allocated, taxable
net income of Corporation A in Mississippi is $420,391. $25,000
of this is taxable at rates ranging from 2 percent to 5 percent.
But $395,391 is taxable at the maximum 6 percent rate, to pro-
duce an *effective* rate of almost 5.9 percent. For corporations
with large taxable net income, the effective rate is, of necessity,
close to the maximum rate. It may thus be maintained that, for
Corporation A, Mississippi's tax rate is almost the same as
North Carolina's. The same thing may be said about the Ken-
tucky tax rate system, although only two rates are involved in
the progression. For Corporation A the 5 percent rate is levied
on the first $25,000 of taxable income, while the 7 percent rate
is levied on the remaining $136,920 of taxable income. These
levies produce an effective rate of approximately 6.70 percent.
By this calculation, Kentucky levies a *higher* rate than does
North Carolina. Arkansas' graduated scale ranges from 1 per-
cent to 5 percent, with the 5 percent rate applied to $214,041 of
the total taxable income of $239,041. The effective rate imposed
by Arkansas is thus about 4.8 percent.

*North Carolina's position as second highest income tax state
in the Southeast for Hypothetical Corporation A is thus to be
explained as the result of (1) an allocation formula that is
heavily weighted with the property element; (2) a high tax
rate; and (3) for comparison with some other states, the absence
of a federal income tax deduction. It is, in other words, the result
of a conspiracy of all of the basic elements of a state income tax
structure.*

(b) *Property taxes*

Table 6 provided a limited amount of analytical material for
the ad valorem property taxes paid by Hypothetical Corporation
A in the eleven Southeastern states. As in the case of the cor-
porate net income tax, North Carolina stands in second position

for the property tax burdens imposed upon Corporation A. This time, however, it is Louisiana that is in first position. Mississippi and Virginia, both high income tax states, are in third and eighth positions, respectively, in the property tax rankings. Louisiana is substantially higher than North Carolina in the property tax listing, but the ninth position ranking of the former on the income tax listing makes this understandable. It is also important to note that the data of Table 6 relate to *the third period only*, representing the property tax burdens of each state *after the expiration of all temporary property tax exemptions*. Louisiana has, of course, been a leading exponent of temporary property tax exemptions as a device to attract new industry to the state. For the year after the expiration of this temporary exemption, the property tax in Louisiana is $43,355, as compared with North Carolina's property tax burden of $34,553. For the ten years during which the property tax exemption is in effect, however, the North Carolina burden of $34,553 must be compared with the Louisiana burden of only $13,382.[17]

There are two main parts to every property tax burden: the assessed valuation and the aggregate tax rate. North Carolina's position in both of these rankings is dramatic. Of the eleven states represented, North Carolina has by far the highest assessed valuation for Hypothetical Corporation A. But, with the exception of Kentucky, North Carolina has by far the lowest aggregate tax rate levied upon Corporation A. Kentucky imposes a series of different rates on different types of property, but the effective rate for the third period is approximately 15.5 mills, or a little lower than the aggregate rate for North Carolina.

The figures of column 3, Table 6 are, in turn, a blend of two factors: the assessment ratio and the pattern of exemptions. Column 9 shows the ratio of assessed value to book value for each of the states, at the location selected for the manufacturing plant of Hypothetical Corporation A. In many cases, of course, a different assessment ratio is applied to different types of property. The ratios shown in column 9 are the effective ratios which apply to total taxable property in the third period. Column 11 shows the book value base of the tax for each of the states. These are the figures to which the several assessment ratios are applied to derive the assessed values shown in column

17. Similar comparisons may be made for each of the states from the data of Table 4. The property tax figures for period three should be compared with the property tax figures for periods one or two.

TABLE 6

HYPOTHETICAL CORPORATION A

AD VALOREM PROPERTY TAX DATA[1] FOR ELEVEN SOUTHEASTERN STATES

State	Tax (1)	Rank for Column (1) (2)	Assessed Valuation[2] (3)	Rank for Column (3) (4)	Aggregate Tax Rate[3] (In Mills) (5)	Rank for Column (5) (6)	State Tax Rate (In Mills) (7)	Temporary Exemption (8)	Ratio of Assessed Value to Book Value (In Percent) (9)	Rank for Column (9) (10)	Book Value of Taxable Property (11)
NORTH CAROLINA..	$34,553	2	$2,094,111	1	16.50	10	None	None	65.208	1	$3,211,454
Alabama...............	9,868	11	394,718	10	25.00	9	6.50	10 Years	15.000	10	2,631,452
Arkansas.............	16,048	9	305,681	11	52.50	2	None	None	9.445	11	3,236,454
Florida...............	30,084	5	791,689	7	38.00	6	None	None	24.911	7	3,178,153
Georgia..............	30,733	4	803,478	5	38.25	5	0.25	None	25,019	5	3,211,454
Kentucky.............	14,274	10	921,849[4]	4	15.48[5]	11	5:00[6]	None	38.705[7]	4	3,211,454[8]
Louisiana............	43,355	1	1,700,213	2	25.50	8	5.75	10 Years	53.497	2	3,178,153
Mississippi...........	32,981	3	802,863	6	41.08	3	4.00	5 Years	25.000	6	3,211,454
South Carolina.........	24,694	7	422,126	9	58.50	1	None	5 Years	16.800	9	2,512,656
Tennessee............	29,309	6	960,946	3	30.50	7	None	None	30.000	3	3,203,153
Virginia..............	20,476	8	518,378	8	39.50	4	None	None	21.170	8	2,449,133

NOTES: [1]For third period only.
[2]Excludes intangible personal property if intangibles tax separately levied.
[3]Includes tax rate for state (if any), county, school district (if any), and other special districts (if any).
[4]For state levy only. Assessed valuation for county=$480,858.
[5]Effective rate. (Total state and local tax divided by state-levy assessed valuation) multiplied by 1000.
[6]Rate applies to all property but land and improvements, and intangible personal property. State tax on land and improvements=.50 mills.
   State tax on cash on hand=2.50 mills. State tax on bank balances=1.00 mill.
[7](Total state-levy assessed value divided by total book value) multiplied by 100.
[8]Subject to taxation by state.

3. Differences between the figures of column 11 thus indicate the differences in the policies of the eleven states as to the kind of property considered to be taxable under the general property tax levy.

As was to be expected, the variations in assessment ratios are extreme.[18] They range from North Carolina's high of about 65 percent to Arkansas' low of about 9 percent.[19] The two high states (North Carolina and Louisiana) are *very* high. Most of the states fall between the 20 percent and the 30 percent levels. Although the correlation is by no means perfect, a comparison of the ranks in column 10 with the ranks in column 6 shows that those states with high assessment ratios tend to have low aggregate tax rates. Alabama is a disturbing element, in that it stands low in both rankings. A rough indication of the importance of variations in the assessment ratios in determining the variations in the assessed valuation base of the property tax is given by a comparison of columns 10 and 4 of Table 6. This comparison shows that the ranks of the states are not changed by the exemption pattern implied by column 11. In other words, the ranks of the eleven states in terms of assessment *ratios* are the same as the ranks of the eleven states in terms of assessed *valuations*. If the ranks had been different, the differences could have been attributed to the only other thing that determines the assessed valuations: the book value of taxable property shown in column 11.

Differences in the basic book value of taxable property come primarily from differences in statutory exemptions, although in some cases they come from differences in administrative practices not justified by statutory construction. Most of these differences are, for Corporation A, easily explained by the treatment accorded intangible personal property and the method of valuing inventories. There are, in this sense, four basic book values for Corporation A. The first results from the valuation of inventory

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18. The term "assessment ratio" is usually taken to mean the ratio of assessed value to market value. In this case, however, it is taken to mean the ratio of assessed value to book value, on the assumption that for a plant as new as that of the hypothetical model the book value is reasonably close to the market value. Although this assumption is not technically valid, the fact that it is uniformly applied to all states tends to minimize the distortion.

19. The assessment ratio for Arkansas is probably not on a par with that for North Carolina, in terms of the confidence with which it may be accepted. The estimate was obtained from *Arkansas Ratio Study*, Report of Committee to Study Ratio of 1955 Arkansas Ad Valorem Property Assessments to 1954 Real Estate Sales, 1956, mimeo., Schedule III, p. 1. The estimates themselves are probably accurate enough. Unfortunately, however, they refer only to real property. Since it was impossible to obtain assessment ratio estimates from other sources to Arkansas, it was necessary to assume that the real property ratios were equally applicable to personal property.

at its year-end figure, combined with an exemption of intangible personal property. This treatment is represented by Georgia, Kentucky, Mississippi, and North Carolina. The second basic book value results from the valuation of inventory at its year-end figure, but with no exemption permitted for intangible personal property. This treatment is represented by Arkansas. The third basic book value results from the valuation of inventory at an average level throughout the year,[20] combined with an exemption of intangible personal property. This treatment is represented by Florida and Louisiana. The fourth basic book value results from the valuation of inventory at an average level throughout the year, but with no exemption permitted for intangible personal property. This treatment is represented by Tennessee. Since, in this case, year-end inventories are larger than average inventories, the book value of taxable property is highest for the second of these calculations. And since the difference between average inventories and year-end inventories exceeds the intangibles exemption, the second highest book value results from the first of these calculations. North Carolina is thus in the group of states falling into the second-highest category of the four. Hypothetical Corporation A receives no exemptions from Arkansas and Tennessee. Because intangibles are exempted from the general property tax laws only so that they may be subjected to separate ad valorem levy in Georgia, Kentucky, North Carolina, and Florida, the Corporation receives no final exemption in any of these states. Of those mentioned, only Louisiana and Mississippi levy no tax on intangible personal property.

The remaining states—Alabama, South Carolina, and Virginia —do have statutory or administrative exemptions that apply to Hypothetical Corporation A. Section 2 (m) of Title 51 of the Code of Alabama provides that "all manufactured articles . . . in the hands of the producer or manufacturer thereof, when stored at or near the place of manufacture or within the county where same was manufactured or produced, shall be exempt for twelve months after its production or manufacture." For Corporation A, this provision has the effect of exempting all of the work in process and 80 percent of the finished goods inventory.

20. In the present analysis the term "average inventory" was taken to mean inventory at the beginning of the year plus inventory at the end of the year, the total divided by 2. This assumption was maintained for simplification purposes even where the law specifically required a monthly or other periodic average of inventory.

In addition, Section 2 (1) of Title 51 of the Code of Alabama provides that "All raw material . . . produced during the current calendar year, when stocked at any plant or furnace, for manufacturing purposes in Alabama" shall be exempt from ad valorem property taxation. This provision has the effect of exempting 60 percent of the raw materials inventory of Corporation A.

South Carolina does not have any statutory provisions for permanent exemptions that would apply to Corporation A. It is nevertheless apparent, from published material[21] and from private declarations by administrative officials that, for all practical purposes, manufacturing inventory is exempt. All calculations were made on this assumption.

The Virginia treatment does not produce a true exemption for Corporation A. The base of the local property tax (in book value terms) is $2,449,133. If the base of the state levy on "Capital not otherwise taxed" is added to this general property tax base, the result is $3,236,454. Considering both levies, it is clear that Virginia is in the same class as Arkansas with respect to the definition of the book value base of the ad valorem property tax. This Virginia treatment is something of a curiosity in property taxation. It begins with the constitutional provision that "No State property tax for State purposes shall be levied on real estate or tangible personal property, except the rolling stock of public service corporations."[22] Faced with this prohibition, the Virginia Legislature has indulged in semantic manipulation to levy a State tax on, principally, inventories and intangible personal property. This deed is accomplished, in part, by the following provision:

> "All capital of any trade or business of any person, firm or corporation, except the capital of any trade or business which is otherwise specifically taxed or specifically exempt from taxation, shall be deemed to be intangible personal property."[23]

Section 58-829 of the Code of Virginia defines tangible personal property and lists 15 items embraced by the definition. Manufacturer's inventories and intangibles are not included on the list, so that, by indirection, these are declared to be intangible personal property and available for the levy of a state tax. In the

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21. Griffenhagen and Associates, op. cit., p. 10.
22. Section 171, Article XIII, Virginia Constitution.
23. Section 58-410, Code of Virginia.

present analysis, however, this tax has been treated as a separate levy and has not been classified with taxes on intangible personal property.

It thus appears that the only states of the Southeast granting substantial permanent exemptions to a manufacturing corporation of the type represented by Hypothetical Corporation A are Alabama and South Carolina. The partial, statutory exemption of inventories in Alabama, and the total, non-statutory exemption of inventories in South Carolina are the only significant sources of differences in the book value base of the property tax as illustrated in column 11 of Table 6.[24]

Four of the eleven states of the Southeast permit temporary exemptions from property taxation for a new manufacturing plant of the type represented by Corporation A. The four states are Alabama, Louisiana, Mississippi, and South Carolina. The first two grant temporary exemptions for a ten-year period after the construction of the new plant, while the last two grant five-year exemptions. In no case does the exemption apply to all property taxes.

The most sweeping of these temporary exemptions is provided by the Louisiana Constitution, as follows:

"The State Board of Commerce and Industry with the approval of the Governor may contract with the owner of any new manufacturing establishment in the State . . . for the exemption from taxation of any such new manufacturing establishment . . . upon such terms and conditions as said Board with the approval of the Governor may deem to the best interest of the state . . . . No exemption from taxes shall be granted under the authority of this paragraph for a longer initial period than five (5) calendar years succeeding the date of any such contract; provided, that upon application within ninety (90) days before the expiration of the initial period of five (5) years, and upon proper showing of a full compliance with the contract of exemption by the contractee, any exemption granted under the authority of this paragraph shall be renewed for an additional period of five (5) calendar years."[25]

This constitutional provision would, of course, exempt *all* property of a qualifying enterprise from *all* property taxation. But by rules of the State Board of Commerce and Industry this constitutional largess has been somewhat tempered. Rule 4 states

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24. It must be remembered that this statement applies only to Hypothetical Corporation A. The pattern of exemptions for other types of enterprises among the eleven states is a much more heterogeneous one than that shown here.

25. Section 4, Article X, Louisiana Constitution.

that "The owner will not be granted exemption as to the land on which plants are located." And Rule 5 states that "Raw materials in course of manufacture will not be exempted. Stocks of finished products will not be exempted." The exemption, however, does apply to all levels of government in Louisiana.

The temporary exemption granted by Mississippi, on the other hand, applies only to counties and municipalities. It does not apply to the State levy of 4 mills. The exemption provision is as follows:

> "County boards of supervisors . . . are hereby authorized and empowered, in their discretion, to grant exemptions from ad valorem taxation, except state ad valorem taxation, on all tangible property used in, or necessary to the operation of the manufacturers . . . hereinafter enumerated by classes, but not upon the products thereof . . . for a period not to exceed five (5) years . . ."[26]

There follows a long list of enterprises for which this exemption is available, one of which describes the character of Hypothetical Corporation A. Thus, the Mississippi temporary property tax exemption does not apply to state taxes, and it does not apply to the products of the firms receiving the exemption.

The ten-year Alabama exemption is also restricted, but in a different way. The language of the statute is as follows:

> "For the purpose of developing a market for Alabama pine and other trees and the products thereof, and of encouraging the construction, extension and operation of plants, industries and factories in the State of Alabama for the manufacture or production of pulp, paper . . . and for the manufacture, production or processing of any trade or commercial articles, materials or supplies whether or not such articles, materials or supplies are specifically named herein; . . . the department of revenue is hereby authorized and empowered to exempt from all ad valorem taxes for state purposes, and to remit any and all such taxes which are, or may be assessed thereon, each such factory and plant . . . for a period of not exceeding ten years from the date of completion of such factory or plant . . . but in no event the land on which such plant or factory shall be located . . . ."[27]

This provision applies to the State 6.5 mill levy only. But Section 3, Title 51 of the Code of Alabama makes the same provisions with respect to "taxes assessed for all county and municipal purposes, except for any schools and school district purposes . . . ." In other words, for the five-year period of this exemp-

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26. Section 9703, Code of Mississippi.
27. Section 6, Title 51, Code of Alabama.

tion, Corporation A is subject to State tax only on the value of its land. It is likewise subject to general county tax only on the value of its land. It is subject to a county levy for school district purposes on all of its property (less the permanent exemptions referred to above). And it is subject to school district levy on *all* of its property (less the same exemptions).

The temporary exemption in South Carolina is the result of a large number of separate enactments designed to apply to individual counties. Hypothetical Corporation A, in South Carolina, is located in Marion County, the relevant provisions are as follows:

> "All new manufacturing establishments located in any of the counties named in this section shall be exempt from all county taxes, except for school purposes, for five years from the time of their establishment provided such establishments: (1) have a capital of . . . (c) one hundred thousand dollars in *Greenwood* and *Marion* Counties. . . ."[28]

The South Carolina exemption is somewhat more cautious than the exemptions of the other three states. It is, to be sure, a total exemption in the sense that all types of property are included. But it is a five-year exemption only, and it does not apply to levies for school purposes.

The net annual tax saving (for state and local purposes) produced by these temporary exemptions is, in some cases, substantial. The following figures represent the difference between the total tax bills of the second and third periods for the states involved, so that the effects of the property tax upon the income tax are taken into account in the calculations. For Alabama, the net annual saving is $6,937 for a ten-year period. For Louisiana, the net annual saving is $29,906 for a ten-year period. For Mississippi, the net annual saving is $25,170 for a five-year period. And for South Carolina, the net annual saving is $3,356 for a five-year period. For convenience, these annual savings were reduced to present values, by the calculation, in each case, of the present value of an annuity for the time period involved, at an assumed rate of interest of 5 percent. This restatement would tend to indicate the present meaning of the temporary exemptions to Corporation A as it contemplated location in one of these states. For Alabama, the present value of the temporary property tax exemption is $53,566. For Louisiana, the present

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28. Section 65-1524, Code of South Carolina.

value is $230,926. For Mississippi, the present value is $108,973. And for South Carolina, the present value is $14,530.

With the possible exception of South Carolina, these temporary exemptions are thus worthy of serious consideration by a corporation contemplating location in one of the Southeastern states. Expressed in this fashion, of course, the savings are not fully comparable on an interstate basis. The amount of the annual saving is largely a function of the tax rates and assessment practices in the states involved. The annual saving is based only upon what the corporation *would have paid* if, under the prevailing rates and assessment practices, it had not been able to obtain the exemption. But it must be noted that the exemptions themselves may be instrumental in determining the tax rate and, perhaps, the level of the assessment ratio. With the permanent fractionalization of the property tax base which these temporary exemptions imply, it may be that the taxing jurisdictions must make up the lost revenue by increasing the ad valorem tax *rates*. This possibility in itself would make the exemption appear larger. If this is the case, and if the high rates are assumed to continue into the period when the exemptions no longer apply to a *particular corporation,* the corporation receiving the exemption may find its early economic advantage soon whittled away by high tax rates and high assessment ratios. This may, in part, be the reason for the extremely large jump in the property tax bill of Corporation A as between period two and period three in Louisiana. It may, in others words, illustrate the fact that Corporation A is paying for its own tax exemption. The fact that the property tax bill in Louisiana is increased *more than three times* upon the expiration of the exemption period is undoubtedly due, in part, to the fact that the exemption has eroded the tax base and made necessary unusually high tax rates. To the extent that these higher rates apply to other taxpayers not so fortunately situated, there would still be a saving for the exempt corporation. But this saving may be much less than the handbills would suggest.

(c) *Franchise Taxes*

Table 7 gives information to explain the differences in franchise tax burdens as between the eleven Southeastern states. In this listing, Alabama takes the first position. In a field of ten (Virginia levies a franchise tax on domestic corporations only),

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North Carolina stands in fourth position. However, with only
a $1.00 difference in Corporation A's franchise tax as between
North Carolina and Tennessee, the third and fourth positions
might be considered to be the same. Florida, Arkansas, Georgia,
and South Carolina are grouped at the bottom of the scale,
significantly below the next highest state.

Column 3 of Table 7 describes the variations in the base of
the franchise tax before an allocation ratio is applied. With the
exception of Alabama, which does not make use of an allocation
formula for franchise tax purposes, the states of the Southeast
appear to make use of four kinds of franchise tax measures.
Kentucky stands alone at the top of the list in this respect, with
a "before-allocation" base of $30,257,500. The Kentucky cor-
poration license (franchise) tax is based upon the value of the
capital stock of the subject corporation, as, indeed, are the taxes
of a number of other states.[29] Administratively, however, the
"value of capital stock" is taken, by Kentucky Regulation CO-5,
to be *market* value. The market value (estimated) of the capital
stock of Corporation A is, of course substantially higher than
the par value of the stock.

North Carolina, Georgia, Louisiana, Mississippi, and Ten-
nessee are grouped at the second level, each defining the base of
the tax in such a way as to point to the net worth of Hypotheti-
cal Corporation A. In almost all of these cases the law requires
that the tax be based upon issued and outstanding capital stock,
surplus, and undivided profits.[30] Tennessee includes borrowed
capital with these items. However, Corporation A was assumed
to have no borrowed capital.

The base of the annual license fee (franchise tax) in South
Carolina is a variation on the net worth theme. Section 65-604
of the Code of South Carolina, specifies the base of the tax as
capital stock and paid-in surplus. As such, the tax base is smaller
than the net worth measure by the amount of earned surplus
and surplus reserve accounts. This specification makes a good
deal of difference to the size of the base. The South Carolina
definition of the "before-allocation" base yields a figure that is
approximately half that produced by the North Carolina net
worth definition.

29. Section 137.070, Kentucky Revised Statutes.
30. Section 105-22 (2), North Carolina General Statutes; Section 92-307, Code of Georgia;
     Section 47:602, Louisiana Revised Statutes; Section 9317, Code of Mississippi; Section
     1248.22, Code of Tennessee.

TABLE 7

HYPOTHETICAL CORPORATION A

FRANCHISE TAX DATA[1] FOR ELEVEN SOUTHEASTERN STATES

State	Tax (1)	Rank for Column (1) (2)	Base Before Allocation (3)	Allocation Ratio (In Percent) (4)	Rank for Column (4) (5)	Base After Allocation (6)	Rank for Column (6) (7)	Tax Rate (In Percent) (8)
NORTH CAROLINA	$4,953	4	$20,025,000[3]	16.5557[3]	3	$3,315,279	2	.15
Alabama	8,091	1		14.8291	[3]	8,236,454	4	.25
Arkansas	980	9	6,007,500	23.3986	5	890,858	10	.11
Florida	750	10	6,007,500		1	1,405,671	8	[4]
Georgia	1,000	8	20,025,000	13.1665	6	2,636,604	5	[5]
Kentucky	4,048	5	30,257,500	19.1105	2	5,782,375	1	.07
Louisiana	2,951	6	20,025,000	9.8248	9	1,967,416	7	.15
Mississippi	5,246	2	20,025,000	13.0995	7	2,628,175	6	.20
South Carolina	1,077	7	9,007,500	11.9623	8	1,076,608	9	.10
Tennessee	4,954	3	20,025,000	16.4993	4	3,302,783	3	.15
Virginia[2]								

NOTES: [1]For third period only.
[2]Franchise tax on domestic corporations only.
[3]Actual amount of capital employed in Alabama—no allocation by formula.
[4]Scheduled from $10 for base not over $10,000; to $1,000 for base over $2,000,000.
[5]Scheduled from $10 for base not over $10,000; to $5,000 for base over $22,000,000.

Arkansas and Florida statutes agree that the franchise base should be measured by the par value of outstanding capital stock.[31] In further eliminating net worth items these states naturally place themselves lower on the list of the rankings which relate to the "before-allocation" base. In these cases the base is approximately one-third that of North Carolina.

All states but Alabama have designed their franchise tax laws to include a formula allocation of the total corporate base. In the definitions of what constitutes a proper method of allocation there is much less uniformity than in the definitions of the base itself. In the rankings of the allocation ratios (column 4, Table 7), North Carolina stands third, behind Kentucky and Florida. Louisiana's ratio, of about 10 percent, stands at the bottom of the list.

Most states use two-factor formulae for the allocation of the franchise base, as contrasted with the common three-factor formulae of income tax allocation. And in almost all cases, these allocation percentages are higher for the franchise tax than they are for the income tax. North Carolina and South Carolina make use of the same property-manufacturing cost formulae for franchise tax purposes as for income tax purposes, so that the allocation ratios for both taxes are the same: 16.5557 percent for North Carolina, and 11.9523 percent for South Carolina. Once again, the difference between the states is explained by the fact that the South Carolina property factor is defined as *gross* property—that is, before the deduction of depreciation reserve—while North Carolina's property factor is defined as *net* property. Tennessee also makes use of a property-manufacturing cost formula. The ratio is slightly lower than North Carolina's, however, because the North Carolina property ratio is based upon average inventories, whereas the Tennessee ratio is based upon year-end inventories.[32] The Tennessee franchise tax ratio is, however, higher than the Tennessee income tax ratio. Georgia, Mississippi, and Arkansas also impose franchise tax allocation ratios that are higher than the corresponding income tax ratios. Arkansas is a "one-factor" state, basing its allocation on property alone. The Arkansas ratio is lower than the

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31. Section 84-1801.2, Arkansas Statutes; and Section 608.33, Florida Statutes.
32. While average inventories in the domestic state are smaller than year-end inventories in the domestic state, they are not as much smaller in the domestic state as they are for the company as a whole. As a result, the average-inventory *ratio* is higher than the year-end inventory *ratio*.

North Carolina ratio, in spite of the inflating effect of the property factor, because the Arkansas "formula" calls for an allocation by the distribution of "real *and personal* property".[33] Georgia combines property and "business done" (assumed to mean "sales by destination"), while Mississippi combines gross receipts and property. The Louisiana formula makes use of sales and total assets. This formula produces an allocation ratio for the franchise tax that is lower than that produced for the income tax.

Kentucky has the dubious honor of having the most complicated allocation formula for franchise tax purposes, although the statutory language is more obtuse than it needs to be. The Kentucky formula consists of two factors: a "business" factor and a property factor. The business factor is determined by adding sales, purchases, and payrolls, and dividing the total by 2. The dollar amount of property is added to the amount so obtained. This figuring is done separately for the company's domestic operations and for the company as a whole. The final allocation ratio is obtained by dividing the Kentucky total by the total for the entire company. By this devious route, Kentucky produces the second highest allocation ratio for Corporation A. The Florida franchise tax law makes no provision for an allocation of the base, but it is clear that some allocation must be permitted. The formula is apparently administratively determined to fit each case, but there is some indication that a property base is preferred for manufacturing corporations. This base was used in the present calculations.

The North Carolina franchise tax law provides for a credit against the tax due of the amount of the intangibles tax paid during the preceding franchise tax year.[34] In all cases it was assumed that the intangibles tax paid during the year for which the calculations were made was the same as that paid during the preceding year. For Hypothetical Corporation A the intangibles tax and, consequently, the franchise tax credit, amounts to $32.

Column 6 of Table 7 shows the franchise tax base just before the application of the tax rates. The fact that there is more uniformity to these figures than to the "before-allocation" figures indicates that the difference in allocation ratios tend to offset the differences in the "before-allocation" figures.

33. Section 84-1801.2, Arkansas Statutes.
34. Section 105-122 (4), North Carolina General Statutes.

For the most part, the significance of the figures of column 8, the franchise tax rates, is obvious. Two states use graduated rates. The Florida rates range from $10 to $1,000, depending upon the size of the base. For Hypothetical Corporation A the levy was $750. The Georgia rates range from $10 to $5,000. For Hypothetical Corporation A the levy was $1,000. The highest percentage levy is imposed by Alabama. North Carolina stands in third position in this respect, along with Louisiana and Tennessee.

(d) Miscellaneous levies

Table 8 shows a number of miscellaneous taxes and fees paid by Hypothetical Corporation A. All states levy a qualification or entrance fee as a prerequisite to doing business in the domestic state. These are, of course, "once-and-for-all" levies. Alabama imposes the only severe tax in this area. The base of the Alabama qualification tax is the same as that for the franchise tax with rates graduated from 25 percent of the first $100 of base to 1/10 of 1 percent of the amount of the base in excess of $1,000. In column 5 of Table 8, Alabama is shown to levy $400 of "other taxes". These consist of an annual corporation permit of $100, and annual business licenses of $300. The latter amount is split two ways, with $200 going to the State of Alabama and $100 going to Houston County. Alabama's filing fee is a "once-and-for-all" levy and accompanies the filing of qualification documents. Florida's business licenses resemble Alabama's in that the amount is split two ways. In this case, $100 goes to the State of Florida, and $50 goes to Orange County. Alabama and Florida are the only two states levying business licenses on a manufacturing plant. The $200 item shown for Mississippi is an annual factory inspection fee, imposed upon manufacturing enterprises with more than 300 employees. Tennessee imposes an annual reporting fee, based upon the authorized capital stock of the enterprise. In this case, the tax is at the maximum level of $150. The $25 item shown for Virginia is an annual registration fee. The larger item shown for Virginia, in column 5, has already been described. It is the levy on "capital not otherwise taxed" and is, in reality, a property tax levied by the State. Although it has a legal resemblance to an intangibles tax, it is, in fact a tax upon inventories and other items of tangible personal property as well as upon intangible personal property.

TABLE 8

HYPOTHETICAL CORPORATION A

MISCELLANEOUS TAXES FOR ELEVEN SOUTHEASTERN STATES

State	Qualification Taxes[1] (1)	Rank for Column (1) (2)	Intangibles Taxes (3)	Filing Fees (4)	Other Taxes (5)
NORTH CAROLINA......	$ 500	4	$32	$10	$ 400[2]
Alabama.................	3,305	1	....	....	....
Arkansas................	111	8	1	....	150[3]
Florida..................	399	6	3	....	....
Georgia.................	10	11	33	....	....
Kentucky................	35	10	....	....	....
Louisiana...............	562	3	....	....	200[4]
Mississippi..............	500.	5	....	....	....
South Carolina..........	50	9	....	10	....
Tennessee...............	320	7	....	150	....
Virginia.................	1,000	2	....	25	5,905[5]

NOTES: [1] First period only
        [2] Corporation permit=$100
           Business licenses=$300
        [3] Business licenses
        [4] Factory inspection fee
        [5] Capital not otherwise taxed

Conclusions for Hypothetical Corporation A

The characteristics of Hypothetical Corporation A are such that the North Carolina tax structure imposes burdens that are significantly heavier than those imposed by any other Southeastern state. As might be expected from the broad outlines of the North Carolina tax structure, this comparative position is determined, to a considerable extent, by the North Carolina corporate income tax, and, in particular, by the manner in which the statutory formula for the allocation of the income of multistate corporations impinges upon an enterprise with disportionately large amounts of its property in North Carolina.

But the whole burden of guilt cannot be placed upon the corporate net income tax. The ad valorem property tax must certainly share a good portion of the blame. Contrary to the usual theory, the property tax burdens imposed upon Hypothetical Corporation A, far from compensating for the high burdens associated with the North Carolina income tax, actually add to these burdens and force North Carolina farther away from the other states of the Southeast. The results of the Hypothetical Corporation A analysis clearly do not support the common contention that North Carolina property tax burdens are relatively low because of the centralization of governmental functions and because of the emphasis upon state level taxes which this centralization produces.

No one factor may be singled out as *the* cause of North Carolina's unfavorable standing with respect to the statutory burdens imposed upon an enterprise of the type represented by Corporation A. North Carolina does not, by any means, stand at the top of the rankings for every element that contributes to the total impact of state and local taxes. But in those cases in which North Carolina falls to more agreeable levels, it does not, in most cases, fall very far. Furthermore, in such cases, North Carolina tends to relinquish its position at the top of the scale to states that are close to the bottom of the scale for other elements in the tax structure. For example, the property tax burdens in Louisiana, in the third period, exceed those of North Carolina. But Louisiana's income tax is the second lowest among the ten states, while North Carolina's income tax is the second highest. Mississippi levies income taxes that are slightly higher than those levied by North Carolina. But Mississippi compensates by levying property and franchise taxes that are substantially lower than those levied by North Carolina. Virginia's income allocation formula is more severe than that of North Carolina. But North Carolina's higher income tax *rate* more than compensates for the allocation formula advantage.

In terms of the total tax burdens imposed upon Hypothetical Corporation A, North Carolina stands with Mississippi and Louisiana as a relatively high tax state. South Carolina, Tennessee, and Virginia are located on the second level, but considerably below that of the three high states. Albama, Arkansas, Florida, Georgia, and Kentucky are grouped on the lowest level. With the exception of Georgia, all of the states in this lowest group have total tax burdens which are less than half those imposed by North Carolina. In the face of this evidence, and on the assumptions which are an inherent part of the hypothetical corporation approach, it seems clear that Hypothetical Corporation A could find, in the states of the Southeast, a more benign tax atmosphere than that offered by the State of North Carolina.

HYPOTHETICAL CORPORATION B

The Corporation and its plants

Hypothetical Corporation B is an enterprise engaged in the manufacture of many kinds of electrical products for use in home and industry. The corporation is one of a small number of

large firms producing competitive products in specialized plants in many states of the United States. The total assets of the corporation amount to $750,000,000, with $205,725,000 represented by inventories, and with fixed assets (net of depreciation) amounting to $234,900,000. The gross sales of the corporation amount to $1,064,334,929, with cost of sales of $770,888,481. The net profit before all taxes is $143,325,323.

The company's selling operations are highly decentralized and take a different form for each of the company's major types of products. Company salesmen are attached to district sales offices which are widely dispersed across the United States. For some products, all sales are made through distributors who are otherwise unconnected with Hypothetical Corporation B.

It is assumed that just prior to the beginning of the 1955 tax year Corporation B began manufacturing operations in a newly-constructed plant, alternatively located in each of the eleven Southeastern states, specializing in the manufacture of one of the company's many products. Although Corporation B operates many plants in many states, it is assumed that the hypothetical new plant in question is the only manufacturing plant in each of the eleven Southeastern states. The selling operations in each of the states are, of course, assumed to reflect the sales *of the entire corporation* and not merely the sales of the product manufactured in the domestic state.

Of the company's total property, approximately 1.2 percent is located at the newly-constructed plant in the domestic state. Contrary to the pattern exhibited by Corporation A, however, the inventory ratio for Corporation B is almost the same as the total property ratio. In the present case, even more than in the earlier case, the corporation is able to make use of domestic labor at wages significantly below those paid at other plants operated by Corporation B. This wage pattern is due, in part, to the fact that the product requires the use of only a minimum amount of skilled labor, a larger amount of semi-skilled labor, and a great deal of unskilled labor; and, in part, to the inter-regional wage differentials for the same grades of labor. In terms of the relationship between the characteristics of the company and its state and local tax bill in each of the Southeastern states, this wage factor is undoubtedly the most important single feature of the case. It produces a relatively low (about .09 percent) payroll ratio in the domestic state (that is, domestic

payroll as a percent of total payroll), and a low (about .23 percent) manufacturing cost ratio in the domestic state.

Although selling may not be considered to be the company's principal business in the domestic state, it does conduct domestic sales activities by almost any definition of the term "sales". In terms of the "destination" definition, Corporation B conducts approximately 1.2 percent of its total sales in the domestic state. In terms of the "point-of-origin" definition, Corporation B conducts approximately .48 percent of its total sales in the domestic state. And in terms of the "point-of-manufacture" definition, Corporation B "sells" approximately .26 percent of its product in the domestic state. These sales statistics are extremely important in an interpretation of comparative tax burdens for Corporation B.

The specific locations selected for the new plant of Hypothetical Corporation B in the eleven Southeastern states are as follows:

North Carolina:	Columbus County, 2 to 10 miles south of Whiteville, in the general vicinity of U. S. Highway 701;
Alabama:	Butler County, 2 to 10 miles southwest of Greenville, in the general vicinity of U. S. Highway 31;
Arkansas:	Jefferson County, 2 to 10 miles northeast of Pine Bluff, in the general vicinity of U. S. Highway 79;
Florida:	Alachua County, 2 to 10 miles north of Gainesville, in the general vicinity of U. S. Highway 441;
Georgia:	Ware County, 2 to 10 miles west of Waycross, in the general vicinity of U. S. Highway 82;
Kentucky:	Warren County, 2 to 10 miles southeast of Bowling Green, in the general vicinity of U. S. Highway 231;
Louisiana:	Ouachita Parish, 2 to 10 miles south of Monroe, in the general vicinity of U. S. Highway 165;
Mississippi:	Lauderdale County, 2 to 10 miles west of Meridian, in the general vicinity of U. S. Highway 80;

South Carolina:	Orangeburg County, 2 to 10 miles southeast of Orangeburg, in the general vicinity of U. S. Highway 178;
Tennessee:	Montgomery County, 2 to 10 miles south of Clarksville, in the general vicinity of State Highway 48;
Virginia:	Frederick County, 2 to 10 miles north of Winchester, in the general vicinity of U. S. Highway 522.

None of the locations is inside the boundaries of these or other incorporated municipalities.

Hypothetical taxes—total

Table 9 shows the total taxes that would be paid by Hypothetical Corporation B in each of the eleven Southeastern states for three periods, under the assumptions which define the hypothetical approach. *Table 9 also shows that, for periods 1 and 2, three states (Virginia, Louisiana, and Georgia) impose heavier tax burdens upon Corporation B than does North Carolina. In the third period, these three states are joined by Mississippi, to place North Carolina in fifth position in the rankings.*

In terms of the total third period taxes imposed upon Hypothetical Corporation B, the eleven Southeastern states fall into three clearly defined groups. The first of the groups, consisting of Virginia, Louisiana, and Mississippi, includes the high-tax states. The second of the groups, consisting of Georgia, North Carolina, and Tennessee, includes the medium-tax states. And the third of the groups, consisting of Florida, Kentucky, South Carolina, Arkansas, and Alabama, includes the low-tax states. If allowances are made for the inadequacies of the raw materials of the analysis, the differences between the states in each group may, with some exceptions at the two extremes, be considered to be insignificant. But the differences between the groups do appear to be significant and can hardly be said to be the result of possible methodological inadequacies. For Corporation B, North Carolina appears to be unequivocally in the second tier.

In Table 10 the tax bills of the three periods are expressed as a series of present values, calculated by techniques described in the preceding chapter. The present values are expressed as an index with North Carolina equal to 100. Column 3 of Table 10

shows the rank of each state on the list, with the number 1 rank assigned to the highest tax state and the number 11 rank assigned to the lowest tax state.

The present value index of Table 10 shows that North Carolina imposes very much lower tax burdens on Corporation B than does Virginia, the highest-tax state on the list. The Virginia burdens are, in fact, nearly half as large again as those of North Carolina. Louisiana burdens are approximately 128 percent of those of North Carolina, and the Mississippi burdens are almost 120 percent of those of North Carolina. At the other end of the scale, the Alabama burdens are just over one third

TABLE 9

HYPOTHETICAL CORPORATION B

TOTAL TAXES IN ELEVEN SOUTHEASTERN STATES FOR THREE PERIODS

States	First Period[1]		Second Period[2]		Third Period[3]	
	Total Taxes (1)	Rank for Column (1) (2)	Total Taxes (3)	Rank for Column (3) (4)	Total Taxes (5)	Rank for Column (5) (6)
NORTH CAROLINA	$ 81,296	4	$ 80,796	4	$ 80,796	5
Alabama	30,959	11	25,882	11	31,703	11
Arkansas	46,287	9	46,090	9	46,090	10
Florida	56,355	7	55,326	7	55,326	7
Georgia	84,286	3	84,276	3	84,276	4
Kentucky	54,390	8	54,355	8	54,355	8
Louisiana	89,398	2	88,838	2	112,822	2
Mississippi	72,630	6	72,130	6	103,378	3
South Carolina	45,169	10	45,119	10	48,050	9
Tennessee	80,562	5	80,242	5	80,242	6
Virginia	125,540	1	120,544	1	120,544	1

NOTES: [1]First year in domestic state. Taxes include qualification taxes and other "once-and-for-all" levies.
[2]After the first year and until the expiration of temporary property tax exemptions, if any.
[3]After the expiration of temporary property tax exemptions, if any.

TABLE 10

HYPOTHETICAL CORPORATION B

PRESENT VALUE OF TOTAL TAXES IN ELEVEN SOUTHEASTERN STATES

States	Total Present Value[1] (1)	Total Present Value as an Index (North Carolina =100) (2)	Rank for Column (2) (3)
NORTH CAROLINA	$1,616,420	100.0	5
Alabama	594,190	36.8	11
Arkansas	921,997	57.0	10
Florida	1,107,530	68.5	7
Georgia	1,685,530	104.3	4
Kentucky	1,087,135	67.3	8
Louisiana	2,071,818	128.2	2
Mississippi	1,932,772	119.6	3
South Carolina	948,513	58.7	9
Tennessee	1,605,160	99.3	6
Virginia	2,415,876	149.5	1

NOTES: [1]Present value of all taxes for three periods.

those imposed by North Carolina, while the Arkansas and South Carolina burdens are about 57 percent and 59 percent, respectively, of those imposed by North Carolina. In this case, Tennessee is the median state. The North Carolina present value index is just a little higher than the median index value.

Table 11 completes the description of the impact of total taxes in the eleven Southeastern states. It expresses, in a different way, the same comparisons contained in Table 10.

It will be immediately apparent that there are some important differences between the impact of taxes upon Hypothetical Corporation A and the impact of taxes upon Hypothetical Corporation B. The North Carolina tax structure clearly appears in a much more favorable light in the Corporation B comparison than it did in the Corporation A comparison, although it is still true that more states had tax burdens lower than those of North Carolina than had tax burdens higher than those of North Carolina. The reasons for the results displayed in Tables 9, 10, and 11, as well as the reasons for the shifts of ranks as between Corporation A and Corporation B, are developed in Tables 12 to 16, inclusive, and in the accompanying text.

TABLE 11

HYPOTHETICAL CORPORATION B

TOTAL TAXES[1] IN ELEVEN SOUTHEASTERN STATES AS A PERCENT OF VARIOUS
MEASURES OF TAX BURDENS

States	Total Taxes as a Percent of Gross Receipts[2] (1)	Total Taxes as a Percent of Total Payroll[3] (2)	Total Taxes as a Percent of Total Property[4] (3)	Total Taxes as a Percent of Manufacturing Costs[5] (4)	Total Taxes as a Percent of Allocated Taxable Net Profits[6] (5)
NORTH CAROLINA	0.6	39.9	1.7	4.4	11.4
Alabama	0.2	15.6	0.6	1.7	4.5
Arkansas	0.4	22.7	0.9	2.5	6.2
Florida	0.4	27.3	1.1	3.0	—
Georgia	0.7	41.6	1.7	4.6	11.9
Kentucky	0.4	26.8	1.1	3.0	7.7
Louisiana	0.9	55.7	2.3	6.1	0.1
Mississippi	0.9	51.0	2.1	5.6	13.8
South Carolina	0.4	23.7	1.0	2.6	6.4
Tennessee	0.6	39.6	1.6	4.4	11.6
Virginia	0.9	59.5	2.5	6.6	15.9

NOTES: [1]Third period only.
  [2]Gross receipts from sales according to the location of the customers ("destination" definition) in domestic state.
  [3]Payroll includes salaries and wages of "direct" and "indirect" labor associated with manufacturing at domestic plant.
  [4]Property includes book value of land, depreciable property, and year-end inventory at domestic plant.
  [5]Manufacturing costs include material bought for manufacture, salaries and wages, and other manufacturing costs at domestic plant.
  [6]Total net profit before state income tax and before federal income tax allocated to domestic state by the application of the arithmetical average of the "property-ratio" (year-end inventory), the "payroll-ratio", and the "sales-ratio" (by "point of-origin" definition).

Hypothetical taxes—by type

As the first step in the development of an explanation of the pattern of interstate tax burdens imposed upon Corporation B, Table 12 shows the individual taxes that go to make up the total burdens in each state for each of the tax periods, together with the percentage of each tax to the total tax for that period. For Corporation B the roles of the property tax and the income tax in North Carolina are just the reverse of those for Corporation A. For Corporation A the property tax represented 54 percent of the total North Carolina burden, and the income tax represented 38 percent of the total burden. For Corporation B, however, the property tax represents only 35 percent of the North Carolina burden, whereas the income tax represents 60 percent of the North Carolina burden.

For most of the eleven Southeastern states the ad valorem property tax remains the most important source of state and local tax burdens. As usual, Florida leads the field in this respect, with approximately 98 percent of the total burden represented by property tax levies. Louisiana is also high on the list, with 79 percent of its total burden in the form of property taxes. In addition to Florida and Louisiana, Arkansas, Georgia, Kentucky, and Mississippi also levy property taxes that are larger than any other levy. In this respect all six of the states repeat the pattern of Hypothetical Corporation A. Only Georgia changes its position significantly. For Corporation A the Georgia property tax represented 80 percent of the total tax, while for Corporation B, the Georgia property tax represent only 51 percent of the total.

For all of the remaining states except Alabama the income tax is the largest single levy. The three highest states in this percentage comparison are Virginia, with 73 percent of the total represented by income taxes; South Carolina, with 67 percent of its total represented by income taxes; and North Carolina, with 60 percent of its total represented by income taxes. Florida, of course, levies no income tax. For Corporation B as for Corporation A, Alabama emphasizes the franchise tax.

Considering the eleven Southeastern states as a whole, it is clear that there is an important shift in emphasis as between Corporation A and Corporation B. For almost every state the percentage of total taxes represented by the corporate net income tax is *higher* for Corporation B than for Corporation A. And for almost every state the percentage of total taxes rep-

TABLE 12

HYPOTHETICAL CORPORATION B

TOTAL TAXES IN ELEVEN SOUTHEASTERN STATES BY TYPE OF TAX, FOR THREE PERIODS

States and Type of Tax	Period One[1]		Period Two[2]		Period Three[3]	
	Tax (1)	Percent of Total Tax (2)	Tax (3)	Percent of Total Tax (4)	Tax (5)	Percent of Total Tax (6)
NORTH CAROLINA[4]						
1. Qualification	$ 500	.6	....	....	$ 4,204	5.2
2. Franchise	4,204	5.2	$ 4,204	5.2	4,204	5.2
3. Intangibles	112	.1	112	.1	112	.1
4. Property	27,933	34.4	27,933	34.6	27,933	34.6
5. Income	48,547	59.7	48,547	60.1	48,547	60.1
Total	$ 81,296	100.0	$ 80,796	100.0	$ 80,796	100.0
ALABAMA[5]						
1. Qualification	$ 5,067	16.4	....	....	....	....
2. Filing Fee	10	.0			100	.3
3. Corporation Permit	100	.3	$ 100	.1	100	.9
4. Business Licenses	300	1.0	300	1.2	300	39.4
5. Franchise	12,495	40.4	12,495	48.3	12,495	31.8
6. Property	4,251	13.7	4,251	16.4	10,072	27.6
7. Income	8,736	28.2	8,736	33.8	8,736	
Total	$ 30,959	100.0	$ 25,882	100.1	$ 31,703	100.0
ARKANSAS[4]						
1. Qualification	$ 197	.4	....	....	$ 1,208	2.6
2. Franchise	1,208	2.6	$ 1,208	2.6	1,208	2.6
3. Property	30,364	65.6	30,364	65.9	30,364	65.9
4. Income	14,518	31.4	14,518	31.5	14,518	31.5
Total	$ 46,287	100.0	$ 46,090	100.0	$ 46,090	100.0
FLORIDA[4]						
1. Charter Fee	$ 1,029	1.8	....	....	....	....
2. Business Licenses	150	.3	$ 150	.3	$ 150	.3
3. Franchise	750	1.3	750	1.4	750	1.4
4. Intangibles	5	.0	5	.0	5	.0
5. Property	54,421	96.6	54,421	98.4	54,421	98.4
Total	$ 56,355	100.0	$ 55,326	100.0	$ 55,326	1,00.0
GEORGIA[4]						
1. Qualification	$ 10	.0	....	....	....	....
2. Franchise	1,250	1.5	$ 1,250	1.5	$ 1,250	1.5
3. Intangibles	11	.0	11	.0	11	.0
4. Property	43,118	51.2	43,118	51.2	43,118	51.2
5. Income	39,897	47.3	39,897	47.3	39,897	47.3
Total	$ 84,286	100.0	$ 84,276	100.0	$ 84,276	100.0
KENTUCKY[4]						
1. Qualification	$ 35	.1	....	....	....	....
2. Intangibles	113	.2	$ 113	.2	$ 113	.2
3. Franchise	5,643	10.4	5,643	10.4	5,643	10.4
4. Property	27,779	51.1	27,779	51.1	27,779	51.1
5. Income	20,820	38.3	20,820	38.3	20,820	38.3
Total	$ 54,390	100.01	$ 54,355	100.1	$ 54,355	100.0
LOUISIANA[5]						
1. Capital Stock	$ 912	1.0	....	....	....	....
2. Franchise	6,187	6.9	$ 6,187	7.0	$ 6,187	5.5
3. Property	64,765	72.4	64,765	72.9	89,105	79.0
4. Income	17,534	19.6	17,886	20.1	17,530	15.5
Total	$ 89,398	99.9	$ 88,838	100.0	$ 112,822	100.0

TABLE 12 (continued)

States and Type of Tax	Period One[1]		Period Two[2]		Period Three[3]	
	Tax (1)	Percent of Total Tax (2)	Tax (3)	Percent of Total Tax (4)	Tax (5)	Percent of Total Tax (6)
MISSISSIPPI[5]						
1. Qualification............	$ 500	.7	$ 200	.3	$ 200	.2
2. Factory Inspection Fees.	200	.3				
3. Franchise..............	10,202	14.0	10,202	14.1	10,202	9.9
4. Property..............	23,359	32.2	23,359	32.4	54,617	52.8
5. Income...............	38,369	52.8	38,369	53.2	38,359	37.1
Total........	$ 72,630	100.0	$ 72,130	100.0	$ 103,378	100.0
SOUTH CAROLINA[5]						
1. Qualification...........	$ 50	.1	$ 10	.0	$ 10	.0
2. Annual Filing Fee......	10	.0				
3. Franchise..............	1,129	2.5	1,129	2.5	1,129	2.4
4. Property..............	11,724	26.0	11,724	26.0	14,655	30.5
5. Income...............	32,256	71.4	32,256	71.5	32,256	67.1
Total........	$ 45,169	100.0	$ 45,119	100.0	$ 48,050	100.0
TENNESSEE[4]						
1. Qualification...........	$ 320	.4	$ 150	.2	$ 150	.2
2. Reporting Fee..........	150	.2				
3. Franchise..............	7,339	9.1	7,339	9.1	7,339	9.1
4. Property..............	31,837	39.5	31,837	39.7	31,837	39.7
5. Income...............	40,916	50.8	40,916	51.0	40,916	51.0
Total........	$ 80,562	100.0	$ 80,242	100.0	$ 80,242	100.0
VIRGINIA[4]						
1. Entrance Fee..........	$ 5,000	4.0	$ 25	.0	$ 25	.0
2. Annual Registration Fee	25	.0				
3. Property.............	11,146	8.9	11,146	9.2	11,146	9.2
4. Capital Not Otherwise Taxed.............	21,460	17.1	21,460	17.8	21,460	17.8
5. Income...............	87,909	70.0	87,913	72.9	87,913	72.9
Total........	$ 125,540	100.0	$ 120,544	99.9	$ 120,544	99.9

NOTES: [1]First year of location in domestic state. Taxes include "once-and-for-all" Qualification levies.
[2]Period after first year of location in domestic state. Includes temporary property tax exemption, if any.
[3]Period after expiration of temporary property tax exemption.
[4]"Constant-tax" state.
[5]"Variable-tax" state.

resented by the ad valorem property tax is *lower* for Corporation B than for Corporation A. In some states this shift is extremely important, as, for example, in Virginia, where the income tax representation shifts from 47 percent for Corporation A to 73 percent for Corporation B while the property tax representation shifts from 53 percent for Corporation A to 28 percent for Corporation B. In some other states the shift is of little importance.

In those cases in which the shift in emphasis from the property tax to the income tax is very large, the explanation for the shift must be advanced, in large part, in terms of the effects of the allocation formulae and the assessment ratios. But in every case part of the explanation lies in the fact that *Corporation B is a somewhat different enterprise than Corporation A.*

For Corporation A the ratio of gross sales to net property is 350.524 percent. For Corporation B the same ratio is 504.663 percent. For Corporation A the ratio of gross sales to total assets is 80.621 percent. For Corporation B the same ratio is 141.911 percent. For Corporation A the ratio of net income to total assets is 7.133 percent. For Corporation B the same ratio is 10.033 percent. All of these comparative ratios indicate that Corporation A is characterized by relatively heavy concentrations of *property*, while Corporation B is characterized by relatively high *earnings*. For B the income tax base tends to be expanded at the expense of the property tax base.

In any event, the responsibility for interstate differences in total tax burdens must still be explained largely in terms of the effects of the income tax and the property tax.

(a) *Income taxes*

Table 13 provides the necessary data for an interpretation of the effects of the corporate net income taxes of ten Southeastern states upon Hypothetical Corporation B. In Table 13, North Carolina's position in this comparison can be seen at a glance. North Carolina imposes the second highest income tax burden on Corporation B, in spite of the fact that the North Carolina allocation ratio is exceeded by the allocation ratios of four other states. North Carolina's income tax is, with the exception of the graduated rate structure of Kentucky, the highest of the ten states imposing net income taxes.

The position of Virginia in the income tax tabulation is particularly striking. The income tax burden in Virginia is almost 80 per cent higher than the income tax burden in North Carolina, in spite of the fact that the Virginia income tax *rate* is only five percent as compared with the North Carolina rate of 6 per cent. The Virginia income tax is 10 times larger than the income tax imposed by Alabama. Although the North Carolina tax stands well above its nearest rival (Tennessee), the Virginia levy is truly formidable.

A comparison of North Carolina and Virginia in the derivation of their respective income tax bases for Corporation B produces a clear answer to the question of why Virginia's income tax on Corporation B is so much higher than North Carolina's. The total gross income for Corporation B is identical for each state—$302,204,642. The total deductions are almost the same in each state. The Virginia deductions are, in fact, a little higher

TABLE 18

HYPOTHETICAL CORPORATION B

INCOME TAX DATA[1] FOR ELEVEN SOUTHEASTERN STATES

State	Tax (1)	Rank for Column (1) (2)	Allocation Ratio (In Percent) (3)	Rank for Column (3) (4)	Allocated Net Income (5)	Rank for Column (5) (6)	Tax Rate (In Percent) (7)	Federal Income Tax Deduction Allowed (8)
NORTH CAROLINA	$48,547	2	0.6686	5	$ 809,113	4	6	No
Alabama	8,736	10	0.5813	7	219,196	10	3	Yes
Arkansas	14,518	9	0.2344	10	299,365	9	1 to 5	No
Florida[2]	.....	.....	.....	.....	.....	.....	.....	.....
Georgia	39,897	4	0.8243	3	997,435	3	4	No
Kentucky	20,820	7	0.5557	6	304,576	8	5 and 7	Yes
Louisiana	17,530	8	0.8001	4	438,255	7	4	Yes
Mississippi	38,359	5	0.5054	8	648,488	5	2 to 6	No
South Carolina	32,256	6	0.4976	9	645,112	6	5	No
Tennessee	40,916	3	0.8709	2	1,091,098	2	3.75	No
Virginia	87,913	1	1.3649	1	1,758,255	1	5	No

NOTES: [1]For third period only   [2]No income tax levied

than the North Carolina deductions, simply because the deductible taxes paid in Virginia are somewhat higher than those paid in North Carolina. In North Carolina the net income figure is $129,774,242. In Virginia the net income figure is $129,773,860. From the North Carolina figure is deducted non-unitary income of $8,758,194, to give a figure for unitary net income of $121,016,048. No such deduction is permitted in the Virginia calculation, in view of the fact that the allocation formula contains a gross income factor.[35] The North Carolina total net income is thus a little smaller than the Virginia total net income. The large differences arise, however, in the determination of that portion of total net income considered to be taxable in each state. North Carolina, on the basis of its property-manufacturing cost formula, assumes that .66860 percent of the total net income of Corporation B is taxable in North Carolina. Virginia assumes that 1.35486 percent of the total net income is taxable in Virginia. For Corporation A Virginia's allocation formula was the most demanding of any of the allocation formulae of the Southeastern states. For Corporation B the same thing is true to an even greater extent.

In the Virginia allocation formula the gross receipts element operates with particular severity in the case of Corporation B. Corporation B sells 1.2039 percent of its total product to customers in Virginia. This is the largest of the individual "sales factors" for this corporation, and it is part of the Virginia formula. But the Virginia formula adds to these sales all of the sales made from the products manufactured at the Virginia plant (except for those already accounted for as sales within Virginia), wherever the customers are located or wherever the sales are consummated.[36]

It might be thought that North Carolina's allocation ratio would be larger than the allocation ratios of those states making use of the three-factor formula of property, payroll (or manufacturing costs), and sales. Tennessee, however, makes use of such a three-factor formula, yet its allocation ratio is higher than that of North Carolina. The Tennessee ratio is composed of the following three factors:

35. This treatment seems to be justified by the language of Virginia's "Instructions for Preparing Form 400, Corporation Income Tax Return for 1955", item 34. ". . . the tax imposed shall be on such proportion of the *entire* net income of such corporation . . . ." Italics added.

36. Once again, it must be pointed out that Virginia law permits separate accounting, so that the use of the allocation formula in these examples may somewhat overstate the Virginia income tax payment.

1. Tangible property (year-end inventory) .. 1.1744 percent
2. Manufacturing Costs .... .2344 percent
3. Gross sales ("destination" definition) .... 1.2039 percent

The arithmetical average of these three factors is .8709 percent. The North Carolina formula, on the other hand, is composed of the following two factors:

1. Tangible Property (average inventory) ....1.1028 percent
2. Manufacturing Costs.................... .2344 percent

The arithmetical average of these two factors is .6686 percent. *In other words, in this case the addition of the sales factor actually serves to increase the allocation ratio.* This feature of Hypothetical Corporation B is extremely important in interpreting the variation of tax burdens between the states *and particularly in interpreting North Carolina's position in the rankings.*

Hypothetical Corporation B is a very large, nation-wide enterprise. If it is assumed that only one of its many plants is to be located in North Carolina (and the other states of the comparison), it may very well be that the particular sales ratio exceeds a particular manufacturing cost ratio or a particular property ratio. *It may also be that this would be considered sufficient evidence in North Carolina to justify the assumption that the principal business of Hypothetical Corporation B in the domestic state is selling rather than manufacturing.* There is apparently no clear formula in the North Carolina practice for the determination of the principal business of the taxpayer, but it must be assumed that Hypothetical Corporation B is a marginal case. If it were classified as a selling corporation, the allocation formula would consist of the arithmetical average of property (1.1028 percent) and sales by the "point-of-origin" definition (.4823 percent). The arithmetical average of these ratios would be .79255 percent, or considerably higher than that which resulted from the assumption that the corporation's principal business in North Carolina is manufacturing. If this higher ratio were, in fact, the proper ratio, the North Carolina income tax for the third period would be $57,547 instead of the $48,547 shown in Table 13. The total tax for North Carolina would be $89,796. North Carolina's position in the interstate ranking would be changed from fifth to fourth, while Georgia's would be changed from fourth to fifth.

As shown in Table 13, North Carolina has the fifth highest allocation ratio. *In every case, the higher ratios in Georgia,*

Louisiana, Tennessee, and Virginia are explained by the fact that these states include a sales factor of some sort in their allocation formulae.

(b) *Property taxes*

The property tax comparison is shown in Table 14. North Carolina's position in seventh place in the third-period property tax rankings is accounted for primarily by the fact that the tax rate imposed upon Corporation B is the lowest of any in the eleven Southeastern states. This low rate is partially offset by a relatively high assessed valuation (the third highest in the third period).

The temporary property tax exemptions permitted by Alabama, Louisiana, Mississippi, and South Carolina are, once again, of considerable importance, in terms of the total dollar savings which each involves. In Alabama, the exemption provides a net annual saving of $5,821 for a ten-year period. The present value of the annuity formed by these savings, if a five percent rate of interest is assumed, amounts to $44,948. The Louisiana law provides an exemption that amounts to a net saving of $23,984 per year for a ten-year period, for a present value of $185,198. The five-year property exemption in Mississippi amounts to a net annual saving of $31,248. The present value of the Mississippi saving is $135,287. The smaller exemption in South Carolina amounts to only $2,931 in net annual savings. Over a period of five years the South Carolina exemption has a present value of $12,690. Aside from (or perhaps because of) the exemptions, Louisiana and Mississippi are high property tax states, standing first and second, respectively, in the rankings. For Corporation B South Carolina and Alabama are low property tax states, primarily because of the liberal permanent exemptions provided by each.

It is clear that the picture of property taxation for Hypothetical Corporation B *does* support the theory that low North Carolina property taxes tend to compensate for high North Carolina income taxes. Of the four states with higher total taxes than North Carolina (on the present value index of Table 10), three of them impose lower income taxes on Corporation B than does North Carolina. The same three states, however, impose much higher property taxes on Corporation B than does North Carolina. Only in the case of Virginia does the theory fail to receive support. Virginia's property tax levy is a good deal lower

TABLE 14

HYPOTHETICAL CORPORATION B

AD VALOREM PROPERTY TAX DATA[1] FOR ELEVEN SOUTHEASTERN STATES

State	Tax (1)	Rank for Column (1) (2)	Assessed Valuation[2] (3)	Rank for Column (3) (4)	Aggregate Tax Rate[3] (In Mills) (5)	Rank for Column (5) (6)	State Tax Rate (In Mills) (7)	Temporary Exemption (8)	Ratio of Assessed Value to Book Value (In Percent) (9)	Rank for Column (9) (10)	Book Value of Taxable Property (11)
NORTH CAROLINA..	$27,933	7	$1,470,140	3	19.0	10	None	None	30.057	3	$4,892,865
Alabama.............	10,072	11	479,624	9	21.0	9	6.50	10 Years	21.000	9	2,283,921
Arkansas............	30,364	6	740,583	8	41.0	2	None	None	14.818	11	4,997,865
Florida.............	54,421	3	1,327,349	4	41.0	2	None	None	29.306	4	4,525,929
Georgia.............	48,118	4	1,228,216	5	35.25	5	0.25	None	25.000	5	4,892,865
Kentucky...........	27,779	8	1,614,645[4]	2	17.20[5]	11	5.00[6]	None	33.000[7]	2	4,892,865[8]
Louisiana...........	89,105	1	2,576,547	1	34.583	6	5.75	10 Years	59.980	1	4,525,892
Mississippi..........	54,617	2	1,228,216	5	44.65	1	4.00	5 Years	25.000	5	4,892,865
South Carolina.......	14,655	9	366,885	11	40.00	4	None	5 Years	16.800	10	2,180,865
Tennessee...........	31,837	5	1,157,707	7	27.5	7	None	None	25.000	5	4,630,829
Virginia.............	11,146	10	464,896	10	24.0	8	None	None	21.737	8	2,136,467

NOTES: [1]For third period only.
[2]Excludes intangible personal property if intangibles tax separately levied.
[3]Includes tax rate for state (if any), county, school district (if any), and other special districts (if any).
[4]For state levy only. Assessed valuation for county=$994,592.
[5]Effective rate. (Total state and local tax divided by state-levy assessed valuation) multiplied by 1000.
[6]Rate applies to all property but land and improvements, and intangible personal property. State tax on land and improvements=.50 mills.
   State tax on cash on hand=2.50 mills. State tax on bank balances=1.00 mill.
[7](Total state-levy assessed valuation divided by total book value) multiplied by 100.
[8]Subject to taxation by state.

TABLE 15

HYPOTHETICAL CORPORATION B

FRANCHISE TAX DATA[1] FOR ELEVEN SOUTHEASTERN STATES

State	Tax (1)	Rank for Column (1) (2)	Base Before Allocation (3)	Allocation Ratio (In Percent) (4)	Rank for Column (4) (5)	Base After Allocation (6)	Rank for Column (6) (7)	Tax Rate (In Percent) (8)
NORTH CAROLINA	$ 4,204	6	$429,175,000	0.6686	6	$2,869,464	7	0.15
Alabama	12,495	1	159,462,000[3]	............[3]	..[3]	4,997,865	4	0.25
Arkansas	1,208	8	159,462,000	0.6684	7	1,097,736	10	0.11
Florida	750	10	429,175,000	1.1744	3	1,872,722	8	....[4]
Georgia	1,250	7	1,229,013,500	1.1956	1	5,131,216	2	....[5]
Kentucky	5,643	5	579,175,000	0.6559	8	8,060,792	1	0.07
Louisiana	6,187	4	429,175,000	0.7122	4	4,124,884	6	0.15
Mississippi	10,202	2	226,835,572	1.1886	2	5,101,174	3	0.20
South Carolina	1,129	9	............[6]	0.4976	9	1,128,734	9	0.10
Tennessee	7,339	3		0.7044	5	4,892,865	5	0.15
Virginia[2]								

NOTES: [1]For third period only.
[2]Franchise tax on domestic corporations only.
[3]Actual amount of capital employed in Alabama—no allocation by formula.
[4]Scheduled from $10 for base not over $10,000; to $1,000 for base over $2,000,000.
[5]Scheduled from $10 for base not over $10,000; to $5,000 for base over $22,000,000.
[6]Alternative "property" base used.

than that of North Carolina, but the Virginia income tax is much higher. These results are, of course, the opposite of those found for Hypothetical Corporation A.

(c) *Franchise tax*

Table 15 shows the origins of the interstate variation in franchise taxes imposed upon Hypothetical Corporation B. As was the case for Corporation A, Alabama levies the highest franchise tax of any of the eleven Southeastern states, even though it does not make use of the largest franchise tax base. The highest base belongs to Kentucky, largely because the Kentucky tax assumes the value of the franchise to be defined by the market value of the capital stock of the corporation.

The only feature of Table 15 that is different from Table 7 (the franchise tax table for Corporation A) is the calculation of the Tennessee franchise tax payment. The Tennessee law provides that ". . . the measure of the tax hereby imposed shall in no case be less than the value of the real and tangible personal property owned or used by such corporation in the state . . ."[37] If the Tennessee allocation formula had been applied to the net worth of Corporation B, the base of the tax would have been $3,023,109. The alternative property base is $4,892,865. The requirement that the larger of the two be selected as the base of the franchise tax means, for Corporation B, the abandonment of the allocation method and the application of the rate of $.15 per $100 to the property base.[38]

(d) *Miscellaneous levies*

It is not unusual for states to place maximum limits on many of the miscellaneous taxes which they levy. This is especially true of such items as business licenses, qualification taxes, and fees of various kinds. Table 16 shows a number of these miscellaneous levies for Hypothetical Corporation B. The fact that many of the tax payments are exactly the same as those for Hypothetical Corporation A is the result, mainly of the effects of statutory maximum provisions. Of the eleven states imposing qualification taxes, for example, six states levy the same tax on

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37. Section 1248.22, Code of Tennessee.

38. Others of the eleven Southeastern states provide for alternative methods of determining the tax base for franchise tax purposes. Most of these specify that the base shall in no case be less than the assessed valuation of the taxpayer's property in the state in question. In all cases for Corporation B, however, the assessed valuation is considerably less than the franchise tax base as determined by the use of the appropriate allocation formula. Section 105-122 of the North Carolina General Statutes provides, in subsection (4), for a third eventuality. It is held that the base shall not be ". . . less than its total actual investment in tangible property in this State. . . ." In this case, too, the allocated base is greater than the book value of tangible property after the deduction of mortgages.

Corporation B as on Corporation A. These are North Carolina, Georgia, Kentucky, Mississippi, South Carolina, and Tennessee. The same thing is true of the business licenses paid to Alabama and Florida as well as to all of the filing fees and factory inspection fees. The fact that the total taxes for Corporation B are higher than the total taxes for Corporation A makes these "constant" levies less important, percentagewise, for B than for A.

Conclusions for Hypothetical Corporation B

The results for Hypothetical Corporation B are different from the results for Hypothetical Corporation A for two reasons. In the first place, Hypothetical Corporation B has different corporate characteristics than does Hypothetical Corporation A. In the second place, Hypothetical Corporation B is placed in different locations in the eleven Southeastern states than is Hypothetical Corporation A.

The most important difference between Corporation A and Corporation B, aside from the difference in the sizes of the two enterprises, is the higher ratio of earnings to investment for Corporation B than for Corporation A. This difference shows up in many of the results, but is of primary importance in the calculation of income tax allocation ratios. Since North Carolina's allocation formula (for manufacturing enterprises) does not include a sales factor, and since domestic sales were very small for Corporation A (by any of the definitions), North Car-

TABLE 16

HYPOTHETICAL CORPORATION B

MISCELLANEOUS TAXES FOR ELEVEN SOUTHEASTERN STATES

State	Qualification Taxes[1] (1)	Rank for Column (1) (2)	Intangibles Taxes (3)	Filing Fees (4)	Other Taxes (5)
NORTH CAROLINA	$ 500	5	$ 112	$ 10[1]	$ 400[2]
Alabama	5,067	1	....	....	....
Arkansas	197	8	....	....	150[3]
Florida	1,029	3	5	....	....
Georgia	10	11	11	....	....
Kentucky	35	10	113	....	....
Louisiana	912	4	....	....	200[4]
Mississippi	500	5	....	....	....
South Carolina	50	9	....	10	....
Tennessee	320	7	....	150	....
Virginia	5,000	2	....	25	21,460[5]

NOTES: [1] First period only
[2] Corporation permit=$100
Business licenses=$300
[3] Business licenses
[4] Factory inspection fee
[5] Capital not otherwise taxed

olina was placed at a severe disadvantage in the comparisons. For Corporation B, however, the absence of a sales factor operated to North Carolina's advantage. Corporation B sells products from its many plants in North Carolina but, under the assumptions of the case, produces only one product in North Carolina. Thus, the sales factor tends to be relatively large and, in many cases at least, exerts an *upward* pull to the other factors in the allocation formula.

As pointed out above, however, this apparent advantage of North Carolina must be interpreted with caution. At same point, presumably, the sales activity of a corporation in North Carolina exceeds the manufacturing activity of the corporation to such an extent that there must be a switch from the "manufacturer's" formula to the "seller's" formula. Whether this point is reached in the case of Corporation B is not known. In any event, the use of the "point-of-origin" definition in the North Carolina law would provide a considerably lighter burden than would the use of the "destination" definition.

The relevance of the separate accounting provisions to the interstate comparison of tax burdens for Corporation B must also be reiterated. All other states of the Southeast, with the single exception of Tennessee, permit the use of separate accounting techniques in the determination of the tax base for income tax purposes. North Carolina, by the provisions of Section 105-134 of the General Statutes, permits the use of separate accounting only for purposes of granting relief and only upon a successful persuasion of the North Carolina Tax Review Board. If it were possible for Hypothetical Corporation B to maintain its records in such a way as to satisfy the tax administrators of the other Southeastern states of the "accuracy" of the allocation, the allocation formula utilized in the present calculations would not apply. In every case the income tax burdens would be less (in some cases, *substantially* less) than those included in the present calculations.

The importance of the specific location of the manufacturing plant and the relationship between this location and the property tax liability of the corporation are brought into sharp focus by the comparison of the results of the Corporation A and Corporation B analyses. Although North Carolina still finds it difficult to compete, in property tax levies, with states granting liberal permanent exemptions (notably, Alabama and South Carolina), and although North Carolina still finds it difficult to

compete, in *total* taxes levied, with states granting an income tax deduction for federal income taxes and with states making use of extremely low income tax rates, the low North Carolina property tax for Corporation B does go a long way towards making North Carolina's position more palatable than that shown for Corporation A.

HYPOTHETICAL CORPORATION C

The corporation and its plants

Hypothetical Corporation C is an enterprise engaged in the manufacture and sale of electronic products for use in home and industry. The total assets of the corporation amount to $15,000,000 with $4,399,875 represented by inventories, and with fixed assets (net of depreciation) amounting to $5,124,375. The gross sales of the corporation amount to $25,129,829, with cost of sales of $17,231,151. The net profit before all taxes is $2,185,917.

The corporation's selling operations are arranged around the following:

(1) a sales department at the main plant and executive offices in the foreign state;

(2) a sales manager attached to the manufacturing plant in the domestic state and similar sales managers attached to other manufacturing plants in other foreign states;

(3) sales offices in a middle western state and a far western state for regional sales;

(4) manufacturer's agents operating in various geographical areas of the United States.

The distinction between the sales jurisdiction of the manufacturer's agents and that of the company's staff is almost entirely geographical. All of the Southeastern states are served by an agent working from an office maintained just outside the geographical confines of the eleven Southeastern states. The products of Hypothetical Corporation C are sold primarily to manufacturers of electrical and electronic equipment and to local jobbers of replacement parts. Orders are received by the several plants and shipments are made from inventories held at the plants (or from goods made to specifications). Shipments are made directly to customers. Approximately 20 percent of

the goods produced in the domestic state are shipped to ware
houses owned by Corporation C at its home plant and in th
middlewest.

It is assumed that just prior to the beginning of the 195
tax year Corporation C began manufacturing operations in
newly-constructed plant, alternatively located in each of th
eleven Southeastern states, specializing in the manufacture of
small number of the company's many products. The compan
operates two plants in foreign states and one plant in the domes
tic state.

Approximately 16.6 percent of the company's total propert
is located at the domestic plant. The land and improvements a
one of the foreign plants are leased rather than owned by Hypo
thetical Corporation C. The inventory ratio is slightly lowe
than the total property ratio. Inventories at the domestic plan
represent approximately 13 percent of total inventories. Cor
poration C is similar to Corporations A and B in that it is able
to take full advantage of lower wage rates and an abundance
of unskilled and semi-skilled labor in the domestic state. The
payroll ratio for Corporation C is thus well below the severa
property ratios. Domestic payrolls account for only approxi
mately 8.5 percent of total payrolls. Manufacturing costs at the
domestic plant are 11.3 percent of total manufacturing costs
Sales in the domestic state are very small. The company main
tains no sales office in the eleven Southeastern states, so tha
the measure of sales according to the "point-of-origin" defini
tion is zero. Sales measured by the "destination" definition are
also small, consisting almost entirely of sales to jobbers of re
placement parts. Approximately .07 percent of Corporation
C's total sales are allocable to the domestic state by the "desti
nation" definition. Sales defined according to the "point-of
manufacture" definition are, naturally, somewhat larger, re
flecting the manufacturing activity in the domestic state. Ap
proximately 11.3 per cent of total sales are allocable to the do
mestic state by this "point-of-manufacture" definition.

The specific locations selected for the new plant of Hypothet
ical Corporation C in the eleven Southeastern states are as fol
lows:

North Carolina: Avery County, 2 to 10 miles south of New-
land, in the general vicinity of U. S. High-
way 194;

Alabama: Marengo County, 2 to 10 miles south of
                        Demopolis, in the general vicinity of U. S.
                        Highway 43;

Arkansas: Faulkner County, 2 to 10 miles south of
                        Conway, in the general vicinity of U. S.
                        Highway 65;

Florida: Columbia County, 2 to 10 miles northwest
                        of Lake City, in the general vicinity of
                        U. S. Highway 90;

Georgia: Gilmer County, 2 to 10 miles south of Elli-
                        jay, in the general vicinity of State High-
                        way 5;

Kentucky: Montgomery County, 2 to 10 miles north-
                        west of Mount Sterling, in the general
                        vicinity of U. S. Highway 460;

Louisiana: Lincoln County, 2 to 10 miles south of
                        Ruston, in the general vicinity of U. S.
                        Highway 167;

Mississippi: Carroll County, 2 to 10 miles east of Green-
                        wood, in the general vicinity of U. S. High-
                        way 82;

South Carolina: Florence County, 2 to 10 miles north of
                        Lake City, in the general vicinity of U. S.
                        Highway 52;

Tennessee: Wilson County, 2 to 10 miles west of Leb-
                        anon, in the general vicinity of U. S. High-
                        way 70 North;

Virginia: Appomattox County, 2 to 10 miles west of
                        Appomattox, in the general vicinity of
                        U. S. Highway 460.

None of the locations is inside the boundaries of these or other
incorporated municipalities.

Hypothetical taxes—total

Table 17 shows the total taxes paid by Hypothetical Corpo-
ration C in each of the eleven Southeastern states for three pe-
riods, under the assumptions which define the hypothetical cor-
poration approach. Table 17 shows, as in the earlier examples,
the total taxes paid by the corporation in the three periods of
the analysis. In the third period North Carolina's total tax bur-
den is exceeded by the tax burdens of Virginia and Mississippi.
It should be noted, however, that in the first and second periods

the Mississippi tax is very low. For the third period, after the expiration of all temporary property tax exemptions, there is obviously little to choose between the three high-tax states, Virginia, Mississippi, and North Carolina. The interstate variation for Hypothetical Corporation C is hardly as great as that for Hypothetical Corporations A or B. The state with the lowest third-period tax bill is Florida, with a total burden approximately half that imposed by North Carolina. Alabama is in approximately the same position as Florida in this third period.

TABLE 17

HYPOTHETICAL CORPORATION C

TOTAL TAXES IN ELEVEN SOUTHEASTERN STATES FOR THREE PERIODS

States	First Period[1]		Second Period[2]		Third Period[3]	
	Total Taxes (1)	Rank for Column (1) (2)	Total Taxes (3)	Rank for Column (3) (4)	Total Taxes (5)	Rank for Column (5) (6)
NORTH CAROLINA	$25,613	2	$25,117	2	$25,117	3
Alabama	10,945	10	9,205	11	11,530	10
Arkansas	17,104	6	17,068	6	17,068	8
Florida	11,339	9	11,032	9	11,032	11
Georgia	21,123	3	21,113	3	21,113	5
Kentucky	13,948	7	13,913	7	13,913	9
Louisiana	10,157	11	9,931	10	21,994	4
Mississippi	13,108	8	12,610	8	26,962	1
South Carolina	18,469	5	18,420	5	20,432	6
Tennessee	20,365	4	20,047	4	20,047	7
Virginia	27,126	1	26,132	1	26,132	2

NOTES: [1]First year in domestic state. Taxes include qualification taxes and other "once-and-for-all" levies.
[2]After the first year and until the expiration of temporary property tax exemptions, if any.
[3]After the expiration of temporary property tax exemptions, if any.

TABLE 18

HYPOTHETICAL CORPORATION C

PRESENT VALUE OF TOTAL TAXES IN ELEVEN SOUTHEASTERN STATES

States	Total Present Value[1] (1)	Total Present Value as an Index (North Carolina =100) (2)	Rank (3)
NORTH CAROLINA	$502,836	100.0	2
Alabama	214,395	42.6	11
Arkansas	341,366	67.9	8
Florida	220,947	43.9	10
Georgia	422,270	84.0	4
Kentucky	278,295	55.3	9
Louisiana	346,959	69.0	7
Mississippi	477,602	95.0	3
South Carolina	399,978	79.5	6
Tennessee	401,258	79.8	5
Virginia	523,634	104.1	1

NOTES: [1]Present value of all taxes for three periods.

The annual taxes shown in Table 17 are collected and expressed as a series of present value figures in Table 18. The ranking of Mississippi in this table is particularly interesting. With an index of 94.982, Mississippi is the third ranking state, with total tax burdens almost the same as those of North Carolina. In Table 17, however, Mississippi exhibits the highest third period taxes. This shift of position from first to third is due entirely to the temporary property tax exemption granted by the Mississippi law. Even though Hypothetical Corporation C could expect to pay the State of Mississippi $26,962 in total taxes every year in perpetuity, the schedule of such payments does not begin until five years after the location in the new state. During the five-year period (and after the first year), Hypothetical Corporation C would pay annual taxes to Mississippi of only $12,610. This advantage in the early years is enough to place Mississippi below North Carolina and Virginia, both "non-exemption" states, in the long-run present value measure. At the other end of the scale approximately the same thing is true for Alabama and Florida. Florida enjoys the advantage for the third-period comparison (Table 17), but the temporary exemptions granted by Alabama for the first ten years of the plant's location serve to place Alabama in the low position in terms of the present value index.

With the Virginia index only 4 percent above the North Carolina index, North Carolina might reasonably be assumed to stand in first or second position for Hypothetical Corporation C. The margin of error associated with the estimation of property tax burdens could certainly account for the difference between these two states. The same would be true for Mississippi, so that all three states can, for these purposes, be considered in joint occupancy of first place. From the Mississippi index number there is a sharp break to the next level, occupied by Georgia, Tennessee, South Carolina, and Louisiana. None of these states can, however, be counted as serious competitors for the dubious honor of the number one position in the rankings. Arkansas stands on a step by itself in this comparison, with a total tax burden about two-thirds as large as that of North Carolina. The lowest step is occupied, not unexpectedly, by Alabama, Florida, and Kentucky. For Hypothetical Corporation C the median state is South Carolina, with a total tax burden about 80 percent as large as that of North Carolina. The high tax

TABLE 19

HYPOTHETICAL CORPORATION C

TOTAL TAXES[1] IN ELEVEN SOUTHEASTERN STATES AS A PERCENT OF VARIOU
MEASURES OF TAX BURDENS

States	Total Taxes as a Percent of Gross Receipts[2] (1)	Total Taxes as a Percent of Total Payroll[3] (2)	Total Taxes as a Percent of Total Property[4] (3)	Total Taxes as a Percent of Manufacturing Costs[5] (4)	Total Taxes as a Percent of Allocated Taxable Ne Profits[6] (5)
NORTH CAROLINA	153.3	2.1	1.6	1.2	18.1
Alabama	70.4	1.0	0.7	0.6	8.3
Arkansas	104.2	1.5	1.1	0.8	12.3
Florida	67.3	0.9	0.7	0.5	—
Georgia	128.9	1.8	1.3	1.0	15.2
Kentucky	84.9	1.2	0.9	0.7	10.2
Louisiana	134.2	1.9	1.4	1.1	15.9
Mississippi	164.6	2.3	1.7	1.3	19.5
South Carolina	124.7	1.7	1.3	1.0	14.6
Tennessee	122.4	1.7	1.3	1.0	15.4
Virginia	159.5	2.2	1.6	1.3	18.4

NOTES: [1]Third Period only.

     [2]Gross receipts from sales according to the location of the customers ("destination" definition) in domestic state.

     [3]Payroll includes salaries and wages of "direct" and "indirect" labor associated with manufacturing at domestic plant.

     [4]Property includes book value of land; depreciable property, and year-end inventory at domestic plant.

     [5]Manufacturing costs include material bought for manufacture, salaries and wages, and other manufacturing costs at domestic plant.

     [6]Total net profit before state income tax and before federal income tax allocated to domestic state by the application of the arithmetical average of the "property-ratio" (year-end inventory), the "payroll-ratio", and the "sales-ratio" (by "point of-origin" definition).

position of North Carolina, established for Hypothetical Corporation A, is emphatically confirmed for Hypothetical Corporation C.

Table 19 shows the total taxes imposed by each state as a percent of five figures that are often used to measure tax burdens. Since the measures are perfectly comparable (with the exception of the net profit measure), the rankings implied by Table 19 are identical with those shown for the third period in Table 17.

Hypothetical taxes—by type

The breakdown of total taxes shown in Table 20 is especially important as an aid to understanding the position of North Carolina in the rankings. *With respect to the relative impor-tance of property taxes and income taxes, North Carolina's status for Corporation C is exactly the reverse of that shown for Corporation A.* For Corporation A the property tax repre-sented 54 percent of the total tax, and the income tax repre-sented 38 percent. For Corporation C the property tax repre-sents 38 percent of the total tax, and the income tax represents 54 percent of the total tax. This Corporation C pattern is, fur-

thermore, unique among the eleven states. No other state of the Southeast levies income tax burdens that are, in this proportional sense, as high as those of North Carolina. Arkansas comes closest, with a 52 percent representation for the income tax and a 45 percent representation for the property tax. And in only one additional state (Kentucky) does the income tax imposed upon Corporation C exceed the property tax imposed upon Corporation C. Louisiana, for example, collects 83 percent of its total tax from Corporation C in the form of property taxes (in the third period). Georgia collects 78 percent in the form of property taxes. Mississippi collects 74 percent in the form of property taxes. Florida, of course, collects 94 percent of its total tax from Corporation C in the form of property taxes.

On the surface, this distribution of tax burdens between income and property taxes for the eleven (or, omitting Florida, ten) Southeastern states appears to provide excellent support for the theory that North Carolina levies low property taxes to offset its high income taxes. But North Carolina's position close to the top of the rankings in terms of total tax burdens clearly indicates that the offset is not great enough. Furthermore, as will be shown in detail presently, the fact that North Carolina's property taxes account for a relatively small percentage of the North Carolina total tax is not an indication that the North Carolina property tax is an insignificant levy as compared with the property tax levies *of other states. In any event, it is clear that the reasons for North Carolina's high total tax levies upon Hypothetical Corporation C must be somewhat different from the reasons for the high levies upon Hypothetical Corporation A.*

(a) *Income taxes*

The corporate income tax imposed by North Carolina is by far the highest of any imposed upon Hypothetical Corporation C by the ten Southeastern states. The second highest income tax levy belongs to Virginia, but this is only about 80 percent as severe as the North Carolina tax. Six out of the ten states levy income taxes that are less than half those levied by North Carolina upon Corporation C. Two states (Louisiana and Alabama) extract less than 25 percent as much as North Carolina by means of this tax.

TABLE 20

HYPOTHETICAL CORPORATION C

TOTAL TAXES IN ELEVEN SOUTHEASTERN STATES BY TYPE OF TAX, FOR THREE PERIODS

States and Type of Tax	Period One[1]		Period Two[2]		Period Three[3]	
	Tax (1)	Percent of Total Tax (2)	Tax (3)	Percent of Total Tax (4)	Tax (5)	Percent of Total Tax (6)
NORTH CAROLINA[4]						
1. Qualification	$ 500	2.0				
2. Franchise	2,035	7.9	$ 2,035	8.1	$ 2,035	8.1
3. Intangibles	11	.0	11	.0	11	.0
4. Property	9,554	37.3	9,554	38.0	9,554	38.0
5. Income	13,513	52.8	13,517	53.8	13,517	53.8
Total	$ 25,613	100.0	$ 25,117	99.9	$ 25,117	99.9
ALABAMA[5]						
1. Qualification	$ 1,743	15.9				
2. Filing Fee	10	.1				
3. Corporation Permit	100	.9	$ 100	1.1	$ 100	.9
4. Business Licenses	300	2.7	300	3.3	300	2.6
5. Franchise	4,185	38.2	4,185	45.5	4,185	36.3
6. Property	1,386	12.7	1,386	15.1	3,716	32.2
7. Income	3,230	29.5	3,234	35.1	3,229	28.0
Total	$ 10,954	100.0	$ 9,205	100.1	$ 11,530	100.0
ARKANSAS[4]						
1. Qualification	$ 36	.2				
2. Franchise	454	2.7	$ 454	2.7	$ 454	2.7
3. Property	7,703	45.0	7,703	45.1	7,703	45.1
4. Income	8,911	52.1	8,911	52.2	8,911	52.2
Total	$ 17,104	100.0	$ 17,068	100.0	$ 17,068	100.0
FLORIDA[4]						
1. Charter Fee	$ 307	2.7				
2. Business Licenses	150	1.3	$ 150	1.4	$ 150	1.4
3. Franchise	500	4.4	500	4.5	500	4.5
4. Intangibles						
5. Property	10,382	91.6	10,382	94.1	10,382	94.1
Total	$ 11,339	100.0	$ 11,032	100.0	$ 11,032	100.0
GEORGIA[4]						
1. Qualification	$ 10	.0				
2. Franchise	250	1.2	$ 250	1.2	$ 250	1.2
3. Intangibles	1	.0	1	.0	1	.0
4. Property	16,498	78.1	16,498	78.1	16,498	78.1
5. Income	4,364	20.7	4,364	20.7	4,364	20.7
Total	$ 21,123	100.0	$ 21,113	100.0	$ 21,113	100.0
KENTUCKY[4]						
1. Qualification	$ 35	.3				
2. Intangibles	11	.1	$ 11	.1	$ 11	.1
3. Franchise	6,067	43.5	6,067	43.6	6,067	43.6
4. Property	1,125	8.1	1,125	8.1	1,125	8.1
5. Income	6,710	48.0	6,710	48.2	6,710	48.2
Total	$ 13,948	100.0	$ 13,913	100.0	$ 13,913	100.0
LOUISIANA[5]						
1. Capital Stock	$ 226	2.2				
2. Franchise	959	9.4	$ 959	9.7	$ 959	4.4
3. Property	6,157	60.6	6,157	62.0	18,239	82.9
4. Income	2,815	27.7	2,815	28.3	2,796	12.7
Total	$ 10,157	99.9	$ 9,931	100.0	$ 21,994	100.0

TABLE 20 (continued)

States and Type of Tax	Period One[1]		Period Two[2]		Period Three[3]	
	Tax (1)	Percent of Total Tax (2)	Tax (3)	Percent of Total Tax (4)	Tax (5)	Percent of Total Tax (6)
MISSISSIPPI[5]						
1. Qualification	$ 500	3.8			$ 200	.7
2. Factory Inspection Fee	200	1.5	$ 200	1.6	200	.7
3. Franchise	928	7.1	928	7.4	928	3.4
4. Property	5,468	41.7	5,468	43.4	19,877	73.7
5. Income	6,012	45.9	6,014	47.7	5,957	22.1
Total	$ 13,108	100.0	$ 12,610	100.1	$ 26,962	99.9
SOUTH CAROLINA[5]						
1. Qualification	$ 50	.3			$ 10	.0
2. Annual Filing Fee	10	.1	$ 10	.1	10	.0
3. Franchise	580	3.1	580	3.1	580	2.8
4. Property	7,927	42.9	7,927	43.0	9,951	48.7
5. Income	9,902	53.6	9,903	53.8	9,891	48.4
Total	$ 18,469	100.0	$ 18,420	100.0	$ 20,432	99.9
TENNESSEE[4]						
1. Qualification	$ 320	1.6			82	.4
2. Reporting Fee	82	.4	$ 82	.4	82	.4
3. Franchise	2,391	11.7	2,391	11.9	2,391	11.9
4. Property	12,163	59.7	12,163	60.7	12,163	60.7
5. Income	5,409	26.6	5,411	27.0	5,411	27.0
Total	$ 20,365	100.0	$ 20,047	100.0	$ 20,047	100.0
VIRGINIA[4]						
1. Entrance Fee	$ 1,000	3.7			$ 25	.1
2. Annual Registration Fee	25	.1	$ 25	.1	25	.1
3. Property	10,662	39.3	10,662	40.8	10,662	40.8
4. Capital Not Otherwise Taxed	4,648	17.1	4,648	17.8	4,648	17.8
5. Income	10,791	39.8	10,797	41.3	10,797	41.3
Total	$ 27,126	100.0	$ 26,132	100.0	$ 26,132	100.0

NOTES: [1]First year of location in domestic state. Taxes include "once-and-for-all" Qualification levies.
[2]Period after first year of location in domestic state. Includes temporary property tax exemption, if any.
[3]Period after expiration of temporary property tax exemption.
[4]"Constant-tax" state
[5]"Variable-tax" state

Table 21 presents a detailed analysis of the income taxes levied by the ten income-tax states of the Southeast. The reasons for North Carolina's pre-eminence in this field are quite clear. The first reason is that North Carolina has designed an allocation formula for multi-state corporations of the type represented by Corporation C that assigns more of the total corporate income to the domestic state than does the allocation formula of any other Southeastern state. The second reason is that North Carolina makes use of the highest income tax rate of any state of the Southeast, with the single exception of Kentucky, whose graduated rate structure produces an effective income tax rate of approximately 6.5 percent. The third reason may be applied only to the comparison of North Carolina with Alabama, Kentucky, and Louisiana. In each of these cases the

TABLE 21

HYPOTHETICAL CORPORATION C

INCOME TAX DATA[1] FOR ELEVEN SOUTHEASTERN STATES

State	Tax	Rank for Column (1)	Allocation Ratio (In Percent)	Rank for Column (3)	Allocated Net Income	Rank for Column (5)	Tax Rate (In Percent)	Federal Income Tax Deduction Allowed
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NORTH CAROLINA	$13,517	1	13.5779	1	$225,285	1	6	No
Alabama	3,229	9	12.8039	2	107,643	8	3	Yes
Arkansas	8,911	4	11.2600	6	187,214	4	1 to 5	No
Florida[2]								No
Georgia	4,864	8	6.5954	9	109,091	6	4	No
Kentucky	6,710	5	12.2172	4	102,996	9	5 and 7	Yes
Louisiana	2,796	10	8.3986	8	69,898	10	4	Yes
Mississippi	5,957	6	6.5740	10	108,458	7	2 to 6	No
South Carolina	9,891	3	11.8148	5	197,814	3	5	No
Tennessee	5,411	7	9.3058	7	144,283	5	3.75	No
Virginia	10,797	2	12.7561	3	215,942	2	5	No

NOTES: [1]For third period only
[2]No income tax levied

allowance of a deduction for federal income taxes substantially widens the gaps between each of the states and North Carolina.

North Carolina's two-factor allocation formula works a particular hardship (in the interstate comparison) upon Hypothetical Corporation C because of the absence of a sales factor. Because Corporation C is a manufacturer with, primarily, an *industrial* demand, and because the bulk of the company's sales are to customers *outside* the Southeastern states, and because the company maintains, no sales organization *within* the Southeast, the sales factor must have a diminishing effect upon any' allocation formula. Even the definition of sales based upon the location of the manufacturing activity cannot offset the advantages of a "true" sales factor, for the company produces, in the domestic state, a product with a relatively low value and a relatively low mark-up. Significantly, even Virginia's rather acquisitive use of the sales factor in a two-factor allocation' formula cannot match the failure of the North Carolina formula to permit the inclusion of a sales factor.

The absence of a sales factor is not, of course the only source of inequality in the income allocation formula. South Carolina's formula is the same as North Carolina's, in that it consists of a property factor and a manufacturing cost factor. But, as in the other cases, the fact that South Carolina's formula is based upon *gross* property rather than *net* property gives the South Carolina formula the advantage through the property factor. Kentucky's formula consists of the three factors of sales (by "point of origin"), property, and payroll. But since the sales factor is zero in this case, and since Kentucky insists that in such cases only those factors showing positive values may be used in the formula, the sales factor is, in effect, of no importance. But the Kentucky formula achieves its advantage over the North Carolina formula by the substitution of a *payroll* factor (8.5385 percent) for a *manufacturing cost* factor (11.2600 percent). Alabama's formula results in a similar ratio to that determined by the North Carolina formula. Alabama makes use of property and manufacturing costs (both of which are in the North Carolina formula) and adds sales measured by the location of the manufacturing establishment. In the Alabama formula the sales factor is thus the highest of the three sales factors commonly used in allocation formulae. It is, in fact, almost exactly the same as the manufacturing cost factor. But Alabama includes two low factors and one high factor (prop-

erty) and divides the total of the three ratios by *three*. North Carolina allows only one low factor to offset the high factor and divides the total of the two ratios by *two*. Thus, although other elements conspire to provide North Carolina with a high allocation ratio for Hypothetical Corporation C, the absence of the sales factor in the North Carolina formula is undoubtedly the most important cause of the interstate differences exhibited in Table 21.

(b) *Property taxes*

In conjunction with Table 21, Table 22 shows the extent to which the North Carolina theory of "compensating property taxes" may be said to apply to Hypothetical Corporation C. It is clear that if the theory applies at all it applies imperfectly and partially. In terms of total property tax burdens, in the third period, North Carolina does, indeed, appear to fare rather well in the comparison. At least North Carolina does not stand with the very high property tax states (Georgia, Louisiana, Mississippi, and, to a lesser extent, Tennessee). North Carolina, is, however, fairly clearly established on the second level with Florida, South Carolina, and Virginia. The second level is located well above the low property tax level, on which are located Alabama, Arkansas, and Kentucky.

North Carolina's medium-level property taxes for Hypothetical Corporation C are the result, primarily, of a low aggregate tax rate. This rate is just slightly below that of Tennessee and somewhat above the effective Kentucky rate of 12.28 mills. But it is well below the aggregate rates in the majority of states. Not unexpectedly, however, these low property tax rates are opposed by relatively high assessment ratios. For Hypothetical Corporation C only Tennessee and Virginia assess at higher ratios than does North Carolina.

In the comparative property tax bills of Hypothetical Corporation C there are thus some elements that suggest the validity of the "compensation" theory. But it is also clear that these compensating elements are not sufficient to offset the large differences created by the corporate net income tax.

The temporary property tax exemptions permitted by four of the eleven states seem particularly important in the case of Corporation C. Alabama's exemption produces a net annual saving of $2,325 for a ten-year period. This stream of annual exemptions has a present value of $17,953. In Louisiana the property tax exemption produces a net annual saving of $12,063 for

TABLE 22

HYPOTHETICAL CORPORATION C

AD VALOREM PROPERTY TAX DATA[1] FOR ELEVEN SOUTHEASTERN STATES

State	Tax (1)	Rank for Column (1) (2)	Assessed Valuation[2] (3)	Rank for Column (3) (4)	Aggregate Tax Rate[3] (In Mills) (5)	Rank for Column (5) (6)	State Tax Rate (In Mills) (7)	Temporary Exemption (8)	Ratio of Assessed Value to Book Value (In Percent) (9)	Rank for Column (9) (10)	Book Value of Taxable Property (11)
NORTH CAROLINA..	$ 9,554	8	$530,793	2	18.0	10	None	None	33.333	3	$1,593,974
Alabama.............	8,716	11	176,939	9	21.0	8	6.50	10 Years	17.000	9	1,081,050
Arkansas.............	7,703	9	157,196	11	49.0	4	None	None	9.813	11	1,601,974
Florida..............	10,382	6	305,341	8	34.0	6	None	None	21.470	7	1,422,156
Georgia.............	16,498	3	318,795	7	51.75	2	0.25	None	20.000	8	1,593,974
Kentucky...........	6,067	10	494,123[4]	3	12.28[5]	11	5.00[6]	None	31.000[7]	4	1,593,974[8]
Louisiana...........	18,239	2	426,647	4	42.75	5	5.75	10 Years	30.000	5	1,422,156
Mississippi.........	19,877	1	398,494	6	49.88	3	4.00	5 Years	25.000	6	1,593,974
South Carolina......	9,951	7	168,664	10	59.0	1	None	5 Years	16.800	10	1,003,951
Tennessee...........	12,163	4	643,570	1	18.9	9	None	None	45.000	1	1,430,156
Virginia.............	10,662	5	426,482	5	25.0	7	None	None	43.417	2	982,285

NOTES: [1]For third period only.
[2]Excludes intangible personal property if intangibles tax separately levied.
[3]Includes tax rate for state (if any), county, school district (if any), and other special districts (if any).
[4]For state levy only. Assessed valuation for county=$267,079.
[5]Effective rate. (Total state and local tax divided by state-levy assessed valuation) multiplied by 1000.
[6]Rate applies to all property but land and improvements, and intangible personal property. State tax on land and improvements=.50 mills.
    State tax on cash on hand=2.50 mills. State tax on bank balances=1.00 mill.
[7](Total state-levy assessed valuation divided by total book value) multiplied by 100.
[8]Subject to taxation by state.

TABLE 23

HYPOTHETICAL CORPORATION C

FRANCHISE TAX DATA[1] FOR ELEVEN SOUTHEASTERN STATES

State	Tax (1)	Rank for Column (1) (2)	Base Before Allocation (3)	Allocation Ratio (In Percent) (4)	Rank for Column (4) (5)	Base After Allocation (6)	Rank for Column (6) (7)	Tax Rate (In Percent) (8)
NORTH CAROLINA	$2,035	3	$10,023,500	13.5779	4	$1,360,981	4	.15
Alabama	4,185	1	..........[3]	..........[3]	..[3]	1,673,974	1	.25
Arkansas	454	9	3,808,930	10.8238	6	412,271	10	.11
Florida	500	8	3,808,930	16.5922	1	631,985	6	....[4]
Georgia	250	10	10,023,500	4.6359	8	464,679	8	....[5]
Kentucky	1,125	4	11,577,142	13.8865	3	1,607,644	2	.07
Louisiana	959	5	11,962,500	5.3458	7	639,491	5	.15
Mississippi	928	6	10,023,500	4.6309	9	464,178	9	.20
South Carolina	580	7	4,912,925	11.8148	5	580,452	7	.10
Tennessee	2,391	2	10,023,500	13.9261	2	1,593,974	3	.15
Virginia[2]	...	...	...	...	...	...	...	...

NOTES: [1]For third period only.
[2]Franchise tax on domestic corporations only.
[3]Actual amount of capital employed in Alabama—no allocation by formula.
[4]Scheduled from $10 for base not over $10,000; to $1,000 for base over $2,000,000.
[5]Scheduled from $10 for base not over $10,000; to $5,000 for base over $22,000,000.

ten years. Expressed in terms of its present value, this saving amounts to $93,147. The net annual saving from the Mississippi exemption is $14,352 for five years, or a present value of $62,136. The South Carolina treatment provides a net annual saving of $2,012 for five years, with a present value of $8,710.

(c) *Franchise tax*

The franchise tax bills of Corporation C, as described in Table 23, do not constitute a major burden on the Corporation. In some cases, however, they are far from inconsequential. North Carolina's franchise tax burdens are exceeded only by those of Alabama and Tennessee, and of these, only the Alabama burdens are significantly greater.

The most interesting and revealing part of Table 23 is column 3, showing the franchise tax allocation ratios for nine states. For North Carolina the allocation ratio for franchise tax purposes is the same as the allocation ratio for income tax purposes. Most other states, however, drop the three-factor formulae of the income tax and make use of two-factor formulae for the allocation of the franchise tax base. The result is that three other states (Florida, Kentucky, and Tennessee) construct higher allocation ratios than does North Carolina.

(d) *Miscellaneous levies*

The levies shown in Table 24 are of the same type as those shown in Tables 8 and 16 for Corporations A and B, respectively. No further discussion of these taxes and fees seems necessary at this point.

Conclusions for Hypothetical Corporation C

There can be no question of the fact that North Carolina is a high-tax state for an enterprise such as Hypothetical Corporation C. In a somewhat less dramatic way, the example of Corporation C has this feature in common with the example of Corporation A.

Although the high tax status of North Carolina for Hypothetical Corporation C is the result of all of the elements that enter into the determination of a statutory tax bill, the greatest responsibility may undoubtedly be placed upon the method used to determine the portion of the total income of the corporation which is considered to have been earned within North Carolina. More specifically, the responsibility may be placed upon the failure of the North Carolina allocation formula to include

TABLE 24

HYPOTHETICAL CORPORATION C

MISCELLANEOUS TAXES FOR ELEVEN SOUTHEASTERN STATES

State	Qualification Taxes[1] (1)	Rank for Column (1) (2)	Intangibles Taxes (3)	Filing Fees (4)	Other Taxes (5)
NORTH CAROLINA......	$ 500	3	$ 11	....	....
Alabama.................	1,743	1	....	$ 10[1]	$ 400[2]
Arkansas................	36	9	....	....	....
Florida.................	307	6	....	....	150[3]
Georgia.................	10	11	1	....	....
Kentucky...............	35	10	11	....	....
Louisiana..............	226	7	....	....	....
Mississippi............	500	3	....	....	200[4]
South Carolina........	50	8	....	10	....
Tennessee.............	320	5	....	82	....
Virginia................	1,000	2	....	25	4,648[5]

NOTES: [1]First period only
[2]Corporation permit=$100
Business licenses=$300
[3]Business licenses
[4]Factory inspection fee
[5]Capital not otherwise taxed

a sales factor. This is the one outstanding conclusion of the third example of the hypothetical corporation approach.

Although it is true that North Carolina collects a relatively small percentage of the total tax in the form of ad valorem property taxes, the excessive burden of the income tax quite overcomes whatever liberalizing effects are associated with the property tax. Furthermore, the absolute amount of property taxes paid by Corporation C in North Carolina is by no means small. Even neglecting the temporary property tax exemptions allowed by four of the eleven states, North Carolina's property tax burdens are higher than those of five other states of the Southeast. The results of the analysis of Hypothetical Corporation C confirm those of the analysis of Hypothetical Corporation A in showing that it is not enough to base the claim of low property tax burdens upon a hasty observation of the property tax *rates*. For both corporations these rates are comparatively low. The North Carolina practice of assessing at relatively high levels, however, tends to prevent the property tax from fulfilling its errand of mercy in the North Carolina tax structure.

SIGNIFICANCE OF THE FINDINGS

The results of the preceding analysis show that the state and local tax structure of North Carolina appears, in comparison with the tax structures of other Southeastern states, to weigh heavily upon the kinds of enterprises towards which North Car-

olina should, from the point of view of industrial development, exhibit acquisitive tendencies. Although the results of the Hypothetical Corporation B analysis seem to modify this conclusion somewhat, it is necessary to guard against the complacency which such relatively comfortable results might induce. To the extent that the position of North Carolina is determined by the methods of allocating unitary income for purposes of the corporate income tax, the calculations have two important features which, when subjected to closer scrutiny, tend to disturb the tranquillity which often accompanies the discovery of medium-intensity tax burdens. Although these features apply to all of the examples selected for the present analysis, they are particularly significant for the Hypothetical Corporation B comparison. Both of these disturbing features come from assumptions made about the relationship between the subject corporations and the tax laws of the Southeastern states.

The first of these assumptions is that it is impossible to adapt the accounting methods of the corporations to a system of separate accounting in order to determine the income earned in a given state. The assumption was made, not so much on the basis of a realistic interpretation of corporate accounting practices and possibilities, but on the basis of a desire to test the effects of statutory allocation formulae and on the feeling that it would be impossible to know whether separate accounting techniques would be given the approval of administrative authorities. If this assumption is unrealistic, the tax bills of virtually all of the income-taxing states except North Carolina and Tennessee must be held to be overstated. North Carolina and Tennessee do not permit the use of separate accounting techniques for manufacturing enterprises unless the application of the allocation formulae produces gross inaccuracies and demonstrable injustices. In view of the peculiarly extravagant demands placed upon Corporation B by the Virginia allocation formula (for example), there is certainly every reason to expect that the *desire* for separate accounting is indeed strong.

The second of these assumptions is that the principal business of each of the hypothetical corporations in each of the Southeastern states is *manufacturing*. This assumption is probably safe enough for Corporations A and C, although it may or may not fit the character of Corporation B. North Carolina, South Carolina, and Tennessee are the states that would be significantly affected by the distinction between manufacturing and

selling. With the present assumptions, North Carolina imposes
the heaviest burdens of these three states upon Corporation B.
With the assumption that Corporation B is a selling corpora-
tion, North Carolina's burdens would be increased.

There is one further reason why the results of the Hypothet-
ical Corporation B analysis should be subjected to further
scrutiny and, perhaps, to qualitative amendment. As stated in
the preamble to the analysis, Corporation B is a large, nation-
wide concern with manufacturing plants in many states of the
Union. It would not be unreasonable to expect, and certainly
not unreasonable to hope, that an enterprise such as this would
construct *two or more* plants in any one of the Southeastern
states. If this were done, and if no comparable changes in local
sales occurred, the corporation would clearly become a manu-
facturing enterprise in the domestic state. Furthermore, the
enlargement of the plant accounts and the other accounts asso-
ciated with manufacturing activity would increase the impor-
tance of the sales factor as a modifying influence in the income
allocation formula. In the preceding calculations North Caro-
lina was not especially damaged by the absence of a sales factor
for Corporation B, for the simple reason that the sales factor
was relatively large. But an expansion of the "manufacturing"
factors would tend to restore the sales factor as a liberalizing
element and place North Carolina at a disadvantage as com-
pared with those states which include sales factors in their allo-
cation formulae. If, because of North Carolina's "medium-tax"
status, North Carolina were able to persuade Corporation B of
the desirability (in terms of taxes) of a *first* location, it might
find it difficult to persuade the corporation of the desirability
of a *second* location. To put it another way, Corporation B may
decide, if taxes are of significant concern to a corporation such
as this, to exercise keen corporate foresight and locate *both*
plants in another state. Thus, the results of the Corporation B
analysis are not as unlike those of the Corporation A and the
Corporation C analyses as they might at first appear. Because
Corporation B is a much larger enterprise, and because it manu-
factures and sells on a national scale, it requires larger invest-
ments in plant and equipment in the domestic state to produce
the kinds of answers shown for the two smaller subjects of this
hypothetical analysis.

The importance of the corporation income tax allocation for-
mula for each of the three hypothetical corporations is indicated

in Tables 25 and 26 and in the accompanying text. The tables were constructed on the assumption that taxable income in North Carolina is determined by means of a formula approximating that of the so-called "Massachusetts formula". The formula is made up of a property factor (with values determined at the end of the fiscal year), a payroll factor, and a sales factor (with the location of the sale determined by the location of the office or agency administering the sale). Thus, the formula differs from the North Carolina formula in three respects: (1) it includes, for manufacturers, a sales factor; (2) it substitutes a payroll factor for a manufacturing cost factor; and (3) it measures property values at a year-end figure rather than at an annual average figure.

Table 25 shows the income taxes and the total taxes that the three hypothetical corporations *would* pay in North Carolina if income were allocated by the Massachusetts formula. For Corporation A the shift from the 16.5557 percent allocation ratio of the present two-factor formula to the 9.8391 percent allocation ratio of the Massachusetts formula would reduce the corporation's income tax by $9,848, or by approximately 40.6 per cent. *This drop in the income tax bill for Corporation A would be the equivalent of a decrease in the income tax rate from the present 6 percent level to a level of 3.5658 percent.*

For Corporation B the shift from the present North Carolina allocation ratio of .6686 percent to the Massachusetts formula allocation ratio of .5834 percent would reduce the corporation's income tax by $6,187, or by approximately 12.7 percent.[39] *This drop in the income tax bill for Corporation B would be the equivalent of a decrease in the income tax rate from the present 6 percent level to a level of 5.2354 percent.*

For Corporation C the shift from the present North Carolina allocation ratio of 13.5779 percent to the Massachusetts formula allocation ratio of 8.3769 percent would reduce the corporation's income tax by $5,178 or by approximately 38.3 percent. *This drop in the income tax bill for Corporation C would be the equivalent of a decrease in the income tax rate from the present 6 percent level to a level of 3.7018 percent.*

The income taxes calculated by means of the Massachusetts formula were added to the other taxes paid by the three corporations in North Carolina and new present values determined.

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39. The addition of a sales factor for Corporation B reduces the allocation ratio in North Carolina only because it is the "point-of-origin" definition that is used. If the "destination" definition had been used, the ratio would have been *increased*.

On the assumption that there were no changes in the tax burdens imposed by other Southeastern states, a new present value index was calculated for each hypothetical corporation. These index numbers are shown in Table 26.

For Hypothetical Corporation A the shift from the present statutory formula in North Carolina to the Massachusetts formula would move North Carolina from a high first position in the rankings to a solid second position. North Carolina's total tax burdens would lie between those of Mississippi and Virginia. Mississippi's tax burdens would be approximately 7 percent higher than those of North Carolina, and Virginia's tax burdens would be approximately 8 percent lower. By the present statutory formula, however, Mississippi's tax burdens are approximately 10 percent lower than those of North Carolina, and Virginia's tax burdens are approximately 22 percent lower. All other states would, of course, be moved up in the present value index by comparable amounts. In the rankings, North Carolina would exchange places with Mississippi. All other ranks would remain the same. Thus, although North Carolina would still have to be considered a high-tax state for Hypothetical Corporation A, the shift to a Massachusetts formula for the allocation of the corporation's net income would substantially reduce the severity of the North Carolina levies as compared with those of the other Southeastern states.

For Hypothetical Corporation B the shift from the statutory formula to the Massachusetts formula would cause North Carolina to change positions with Tennessee in the present value rankings. Tennessee would move from sixth position to fifth position and North Carolina would move from fifth position to sixth position. From a position of virtual equality, Tennessee would move to a position approximately 8 percent above that of North Carolina. The other states would retain their ranks but would increase their present value index numbers as shown by the difference between column 5 and 6 of Table 26.

The most spectacular effects of the shift from the statutory formula to the Massachusetts formula would be associated with Hypothetical Corporation C. In this case North Carolina would fall from second position (and very close to first position) to sixth position. Under the statutory formula only Virginia imposes heavier burdens on Corporation C than does North Carolina. Under the Massachusetts formula, Virginia, Mississippi, Georgia, Tennessee, and South Carolina would impose heavier

TABLE 25

NORTH CAROLINA ALLOCATION RATIO, INCOME TAX, AND TOTAL TAXES FOR THREE HYPOTHETICAL CORPORATIONS BY STATUTORY ALLOCATION FORMULA AND BY "MASSACHUSETTS FORMULA", FOR THIRD PERIOD

Item	Hypothetical Corporation A		Hypothetical Corporation B		Hypothetical Corporation C	
	Statutory Formula (1)	"Massachusetts Formula" (2)	Statutory Formula (3)	"Massachusetts Formula" (4)	Statutory Formula (5)	"Massachusetts Formula" (6)
Allocation Ratio (In Percent)..................	16.5557	9.8891	.6686	.5834	13.5779	8.3769
Income Tax.......................................	$24,275.	$14,427.	$48,547.	$42,860.	$18,517.	$ 8,339.
Total Tax...	$63,813.	$53,965.	$80,796.	$74,609.	$25,117.	$19,939.

TABLE 26

PRESENT VALUE INDEX[1] AND RANK FOR THREE HYPOTHETICAL CORPORATIONS IN ELEVEN SOUTHEASTERN STATES, INCOME TAX DETERMINED BY MEANS OF STATUTORY FORMULA AND "MASSACHUSETTS FORMULA"

States	Hypothetical Corporation A				Hypothetical Corporation B				Hypothetical Corporation C			
	Present Value Index		Rank		Present Value Index		Rank		Present Value Index		Rank	
	Statutory Formula (1)	"Massachusetts Formula" (2)	Statutory Formula (3)	"Massachusetts Formula" (4)	Statutory Formula (5)	"Massachusetts Formula" (6)	Statutory Formula (7)	"Massachusetts Formula" (8)	Statutory Formula (9)	"Massachusetts Formula" (10)	Statutory Formula (11)	"Massachusetts Formula" (12)
NORTH CAROLINA.........	100.000	100.000	1	2	100.000	100.000	5	6	100.000	100.000	2	6
Alabama.....................	32.684	38.587	11	11	36.760	39.807	11	11	42.637	53.696	11	11
Arkansas....................	44.740	52.901	10	10	57.039	61.768	10	10	67.888	85.496	8	8
Florida......................	48.568	57.427	8	8	68.517	74.197	7	7	48.940	55.337	10	10
Georgia.....................	59.826	70.738	7	7	104.275	112.920	4	4	83.978	105.758	4	3
Kentucky...................	45.726	54.067	9	9	67.256	72.831	8	8	55.345	69.700	9	9
Louisiana...................	62.687	74.121	5	5	128.173	138.799	2	2	69.000	93.662	7	7
Mississippi.................	90.346	106.826	2	1	119.571	129.483	3	3	94.982	119.616	3	2
South Carolina.............	62.587	74.003	6	6	58.680	63.544	9	9	79.544	100.175	6	5
Tennessee...................	72.084	85.233	4	4	99.303	107.535	6	5	79.799	100.496	5	4
Virginia.....................	77.895	92.104	3	3	149.458	161.848	1	1	104.136	131.145	1	1

NOTES: [1]North Carolina=100.

burdens on Corporation C than would North Carolina. The Louisiana burdens would be approximately 6 percent lower than the North Carolina burdens. At the low end of the scale, of course, Alabama would still impose only about half the burden imposed by North Carolina.

But the significance of the results of the hypothetical corporation analysis is not restricted to the corporate net income tax. The role of the property tax is an extremely important one for all three hypothetical corporations. In general terms, and on the basis of other evidence, it may be concluded that while property taxation in North Carolina may comprise a relatively small part of the total state and local tax structure (as compared with other Southeastern states), *it does not necessarily follow that all taxpayers receive equal benefits from this distribution of the total tax burdens.* On the contrary, the analysis of the three hypothetical corporations tends to show that, *for these particular corporations and for the particular locations selected,* North Carolina appears to be a relatively high property tax state. This conclusion does not destroy the argument that total burdens (for all taxpayers taken as a unit) de-emphasize property taxes and other local levies. And it certainly does not suggest the undesirability of North Carolina's unique system of centralized revenue collection. But it does tend to weaken the argument of the offsetting effects of income taxes and property taxes as this argument is presented to particular business enterprises.

It would, of course, be folly to claim that the locations selected for each of the hypothetical enterprises, either in North Carolina or any other Southeastern state, are "representative" of the countless property tax burdens that might be found in any one state. It would, undoubtedly, be possible to discover many North Carolina locations for which the property tax burdens would be substantially *lighter* than those shown for the three corporations. And it would, undoubtedly, be possible to find locations in each of the other Southeastern states for which the property tax burdens would be substantially *heavier* than those shown for the three corporations. But it is proper to insist that the property tax burdens illustrated in the preceding analysis are those which might very easily be discovered by an enterprise exploring locational possibilities in the Southeastern states. Based upon the admittedly extreme assumption that *specific* locational decisions tend to be based upon factors not immediately

concerned with property tax burdens, the analysis purports to be a reasonably faithful reproduction of the photographs that would be developed in such locational explorations.

The results of the hypothetical corporation approach show quite conclusively that if North Carolina is interested in providing a set of facial features for its state and local tax system that will enable it to compete effectively with other states of the Southeast it must attempt to match the gratuities provided by other states. As compared with the North Carolina structure, these gratuities consist, in the ad valorem property tax, of such things as low assessment ratios; permanent exemptions applying specifically to manufacturers, such as exemptions of inventories held at the plant less than one year, or, in some cases, all inventories; and temporary property tax exemptions of the sort provided by Alabama, Louisiana, Mississippi, and South Carolina. In the field of income taxation the gratuities consist of such things as low tax rates, the allowance of federal income tax deductions, flat dollar exemptions, and the use of sales or gross receipts factors in the allocation formula, the substitution of a payroll factor for a manufacturing cost factor in the allocation formula, and the definition of the property factor as gross property rather than net property. Some opportunities for competition exist in the area of franchise taxation, although these possibilities must be considered to be relatively unimportant. The list is, of course, far from exhaustive.

It must be clear, too, that the problems of engaging in a beauty contest with states such as Virginia, Mississippi, and, in some cases, Georgia, are quite different from the problems of engaging in a contest with states such as Alabama, Arkansas, Florida, and Kentucky. The differences between North Carolina and the latter group of states are so severe as to require extensive plastic surgery to produce approximately equal tax attractions. But the differences between North Carolina and other relatively high-tax states would seem to require little more than an adjustment of the make-up and, perhaps, a change of perfume.

CHAPTER VIII
THE ACTUAL CORPORATION APPROACH
THE METHOD

The actual corporation approach was designed to serve as a supplement to the hypothetical corporation approach and to offer additional evidence of interstate differences in tax burdens within the Southeastern states. But while the hypothetical corporation approach was aimed at the problems that would face a corporation contemplating the location of a new branch plant in one of the Southeastern states, the actual corporation approach was aimed at the problems facing enterprises long-established in North Carolina and with branch plants in one or more of the other Southeastern states.

As in the case of the hypothetical corporation approach, the techniques of the actual corporation approach are highly selective in character. They are, in fact, selective in two dimensions: with respect to the types of enterprises studied and with respect to the particular states involved in the analysis. Because of the high selectivity of the approach it is not possible to use the answers obtained as the basis of free generalization. On the contrary, the answers are relevant only for enterprises whose characteristics closely approximate those of the corporation subjected to analysis. Even small differences in corporate characteristics may, under certain circumstances, appreciably change the results.

One of the most important features of the actual corporation approach which serves to establish the uniqueness of the results is its realistic foundation. The approach is "actual" in two senses. In the first place, it is based upon an examination of actual corporations. In the second place, it attempts to discover and to analyze the taxes actually paid by the subject corporations. The fact that all such figures must be disguised to preserve the precious anonymity of the corporations does not disturb this essential realism, for the disguise must be uniformly applied to preserve the basic statistical relationships.

It has already been pointed out in other portions of this report that the final determination of a tax payment depends upon the workings of the total tax system, from the passage of the law to the administrative act of collection. At least one of these steps in the functioning of the total system involves a pinpoint-

ing of the individual taxpayer, by which the subject is given special treatment and by which a tax liability is, so to speak, tailor-made for the case. The results of such specal treatment may be favorable or unfavorable for the taxpayer, but it is clear that the action cannot serve as the basis of precedent and cannot be analyzed within the strict confines of the written law.

Such special treatment may take the form of a detailed audit by the administrative agency, by which the taxpayer is placed under a microscope and, it is to be hoped, subjected to intensive investigation by the techniques of dissection and assay that are the working tools of the tax auditor. The administrative impossibility of conducting such detailed audits for any large number of taxpayers every year means that those not subjected to examination are able, for a time, to evade the statutory requirements. The mere possibility of such examination may, of course, have some effect upon the incidence of evasion, but in view of the typical success of audit programs as revenue-collecting devices, it is difficult to believe that the "fear" of examination is a substantial deterrent for all corporate taxpayers.

The specal treatment may also take the form of a successful plea by the taxpayer for a special interpretation of the law. Such a plea may be based upon the conviction that the letter of the law cannot be made to apply in every detail to the characteristics of a unique enterprise. In such cases, it is the function of the administrator to come as close as possible to the intent of the law as it might be applied to a situation not envisaged in the legislative processes. Nevertheless, the results are likely to apply only to the firm in question or to a very small number of similar firms.

Finally, the special treatment may take the form of action outside the law or under those sections of the law providing for unspecified exceptions to the general rule. Decisions by the administrator or quasi-administrative agency to grant large tax reductions to some corporations may be made on the basis of certain assumptions about the desirability of having the enterprise locate a manufacturing plant or sales outlet within the taxing jurisdiction in question or they may be made for other, less defensible, reasons. Although it is impossible to chronicle these cases in any complete way, they undoubtedly occur with considerable frequency, especially within those states that consider themselves hungry for the sweet meats of industrial location.

In all of these cases of special treatment, the determination of a tax burden becomes an *ad hoc* action, applying to one taxpayer and to one tax liability only. Certainly the advantages or disadvantages of special treatment do not accrue equally to all corporations. Corporate audit programs are generally directed to the relatively large corporations from whom the largest dollar gains might be expected.[1] A plea to the administrator for a special interpretation of the law depends, for its success, upon satisfactory proof of uniqueness, and such proof, of course, is available to only a few corporate enterprises. Pleas for special treatment outside the law are likely to be successful only if the corporation has something important to offer to the economy of the state or locality, and if it is able to capitalize on a strong bargaining position. The further fact that such pleas often require lengthy and elaborate preparation tends to increase the bias in the direction of the relatively large corporation.

The actual corporation approach, based, as it is, upon taxes actually and finally paid, automatically takes into account all of these elements of special consideration whenever they are present. Thus, if the corporations selected for analysis have been fortunate (or unfortunate) enough to become the recipients of a personalized tax bill, the assumption that the answers apply to all or many other firms can be dangerously misleading. The actual corporation approach is not well equipped to cope with this difficulty. In this sense, it is the obverse of the hypothetical corporation approach, which is ill-equipped to cope with anything but the strict application of the tax laws.[2]

The selection of sample corporations

In the selection of enterprises for treatment by the actual corporation approach little attention was paid to any special administrative treatment accorded the enterprises considered. It was restricted to a consideration of those firms which had been subjected to an audit by the North Carolina Department of Revenue sometime during the preceding five years. This was done purely in an attempt to minimize the work of corroboration by the Tax Study Commission. No exploration was made of

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1. Although this practice is probably more common than is generally admitted, it can hardly be defended as sound administrative policy. Certainly the audit program should be spread over as many types of enterprises as possible, and its purpose should be just as much the relief of those overpaying their taxes as the detection of those underpaying. The concentration upon revenue-producing audits is, of course, the inevitable accompaniment of a common unwillingness to provide the necessary funds for the total administrative job.

2. The representative sample approach stands with the actual corporation approach in this matter. Indeed, the representative sample approach is nothing more than the actual corporation approach made respectable by the random selection of a large sample.

the possibility that the firms had received other forms of relief available to them in North Carolina or in the other states of their operations.

Because of the selective character of the actual corporation approach, it is extremely important to choose enterprises that illustrate a significant problem in North Carolina's tax structure and that have not been adequately treated in other portions of the study. One of the important factors considered in the selection of the corporations for the present study was, of course, the possible connection between tax burdens and industrial location. In this respect, too, the purpose of the approach might be compared with that of the hypothetical corporation approach. In the present case, however, the analysis was aimed at the contention that unless North Carolina tax burdens are revised it will be necessary for some enterprises which have long been a part of the North Carolina economy to move out of the state, or at least to plan new construction in other, less burdensome states, while permitting North Carolina facilities to die the natural death of depreciation and obsolescence.

On the surface, it is as difficult to appraise these arguments containing the implicit or explicit threat of exodus as it is to appraise the arguments containing the threat of non-entrance. It is to be expected that a firm with an established location should make strenuous attempts to reduce its total tax payments as one of its largest expense items. The threat of relocation is merely one of the many weapons in the corporate arsenal that might be directed to this problem. It may or may not have real substance. But it is likely to be an effective weapon, if it is possible to present a convincing case to show that tax burdens in North Carolina are significantly heavier than those of other states with equal locational advantages. An enterprise that is firmly established in a particular community can do irreparable damage to the economy of that community with a sudden decision to cease operations in favor of another site. The bargaining power of an existing enterprise can thus be great, even though it may not be the kind of operation considered to be most desirable from the point of view of a well-balanced and growing economy. It may be that the enterprise is not the type that would be ardently wooed if it were considering a *new* location in North Carolina. But the fact remains that the enterprise is there and that it is an integral part of the economic and social structure of the community. The community does have legiti-

mate grounds for anxiety when the threat of relocation is pre-
sented. This threat is likely to be even more potent when the
industrial pattern of the state is one of great dispersion into a
number of "one- or two-company towns", in which the economy
of the local community is heavily dependent upon the prosperity
of the dominant industry. This, of course, does tend to be the
character of North Carolina's industrial structure.

But the threat of relocation is not necessarily to be equated
with the danger of relocation. There are many deterrents to the,
removal of a large and complex business enterprise. In many
cases these must be offset by very substantial tax advantages
if the threat is to become a reality. Not the least of these de-
terrents is the cost of transporting inventory and the probable
loss of value in the sale of fixed assets, to say nothing of the
difficulty and expense of training a new labor force and estab-
lishing new lines of supply. The strength of the deterrents will,
of course, depend upon the kind of enterprise involved and upon
the age and condition of the existing facilities. It will also de-
pend upon the advantages to be gained by the possible exploita-
tion of new techniques requiring the construction of new facili-
ties and the use of different types of labor.[3] Whether these
deterrents should be judged sufficient to justify a clearly exces-
sive tax burden, however, is largely a question of equity rather
than a problem of industrial location.

The necessity of relocating all or part of existing North Caro-
lina facilities as a result of significant and continuing interstate
tax differentials has been strongly argued by members of the
tobacco and textile industries in North Carolina, as well as by
the representatives of many other industries that are, perhaps,
less important in the total economy of the State. Clearly, if the
dangers are real, they must be of considerable interest to those
concerned with the tax policies of the State. Even though these
industries do not appear to be able to support the required eco-
nomic expansion of North Carolina, the loss of any significant
portion of either industry would be an economic tragedy of
major proportions.

For these reasons, an early interest was expressed in adapting
the actual corporation approach of the present study to these

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3. It may be that tax differentials will operate as a trigger mechanism in this regard.
In a search for a more favorable tax climate the corporation may discover other advan-
tages of a non-tax variety that will hasten the relocation. Tax burdens may even
stimulate the discovery of new production techniques that will make the sacrifice of the
old plant less important. Such was the effect of the eighteenth-century tax on whiskey
distillers, cited in Seligman, op. cit., Introduction.

arguments, in an attempt to test the validity of the contentions that significant tax differentials do exist between those states representing comparable locational opportunities for these industries. It was soon found, however, that it would be impossible to make use of the tobacco industry as the source of information for an actual corporation analysis. The problems were purely those of disguise. As is well known, the industry is characterized by a relatively small number of large manufacturers. For this reason alone, disguise would be extremely difficult. In addition, the practices of the major producers of tobacco products differ in some important respects, particularly in the manner in which tobacco is dried and processed before the manufacturing operation begins. Here, too, the selection of a particular illustration would help to disguise the identity of the co-operating enterprise. Finally, disguise would be made impossible by the fact that the major companies manufacture in a limited number of states other than North Carolina, so that the mere designation of the states to be compared with North Carolina would immediately point to the actual corporation involved. It would, presumably, be possible to disguise the statistics while revealing the identity of the corporation without doing a great disservice to the subject, but the disguise would have to be so thick as to disturb the basic relationships and vitiate the entire actual corporation approach.[4]

The textile industry, on the other hand, appeared to be well suited to the disguise requirements of the actual corporation approach. The industry shows a much greater diversity of products produced in specialized plants than does the tobacco industry. And in spite of recent trends toward consolidation, the industry contains a relatively large number of firms operating in several of the Southeastern states. Thus, because of the ease with which the enterprises could be disguised, and because of the importance of the industry in North Carolina's economy, a number of textile manufacturing corporations were tested, on a preliminary basis, for possible inclusion in this portion of the impact study. In a number of cases, the preliminary investigation indicated that the enterprises did not have plants in North Carolina and other Southeastern states that would satisfy the fairly rigid comparative standards estab-

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4. In Joe Summers Floyd, op. cit., passim, there is a comparative analysis of tax burdens imposed upon a tobacco company, treated as a hypothetical corporation, in a number of locations in four Southeastern states. As between Tennessee, Kentucky, Virginia, and North Carolina, the hypothetical tax bills for North Carolina showed up as the highest (pp. 80 and 85).

lished for this actual corporation approach. Two textile corporations were selected from the group, however, to provide a tax burden comparison, for this type of enterprise, between North Carolina and two other Southeastern states. Both of the enterprises selected are domestic corporations.

An attempt was made to include a number of furniture manufacturers. in this portion of the impact study. Once again, the motive was to measure interstate tax differentials for an industry that has been extremely important in the historical development of the North Carolina economy. In the short space of time available for this portion of the study it was impossible to find a corporation operating a plant in North Carolina that was similar to other plants operated by the same corporation in other states of the Southeast. The furniture industry is not strongly represented in most of the other Southeastern states, at least to anything like the extent of its representation in North Carolina. The present study is, of course, limited to this geographical area, so that no further attempt was made to include this industry in the actual corporation approach. It should be noted, however, that an opportunity exists for a later analysis by these methods, since all of the other analytical requirements appeared to be fulfilled in a number of cases for the furniture industry.

As the study progressed, it became apparent that it would be desirable to have further information on the impact of taxes on retail establishments in the eleven Southeastern states. The reasons for this interest were clearly unconnected with the problems of industrial location. Retail establishments (particularly of the type selected for this study) must locate close to or in the middle of the markets they are designed to serve, and although a particular corporation might be influenced by the apparently burdensome tax impositions of a particular locality, it is not likely that markets will long go unserved because of the nature of the tax burdens placed upon commercial establishments. The interest in this comparative analysis stemmed, rather, from the restricted scope of the hypothetical corporation approach. The hypothetical models were all models of manufacturing enterprises. As a result of that analysis, some major tax differentials were exposed. The question arose, then, as to whether the same differentials might be associated with the taxation of retail establishments as a business type at the opposite end of the scale from manufacturing enterprises. Such informa-

tion would, it was felt, be useful in analyzing the *sources* of the differentials associated with the tax burdens on manufacturing enterprises, so that it would be possible, with some rather sweeping assumptions, to find out whether the differentials were generally descriptive of differentials in business taxation, or whether they were uniquely associated with manufacturing operations. Obviously, the consideration of retail establishments alone could provide only the gentlest sort of hint, but it was felt that the hint might be suggestive of other lines of inquiry.

The best approach to this problem would have involved the construction of an additional hypothetical corporation to represent the kind of retail corporation for which a test was desired. Unfortunately, however, the decision to consider the retail case came too late to permit the elaborate machinations that comprise the hypothetical corporation approach. As an alternative, then, an exploration was made, in the present approach, of a number of retail establishments that were known to have operations in other states. The final selection was based, primarily, on the number of states included in the operating area of the enterprise. As wide a coverage as possible was desired in order to provide a more reasonable comparison with the findings of the hypothetical corporation approach. Even so, of course, the methods of the two approaches are somewhat different, so that a direct and unqualified comparison of the results is dangerous.

Finally, an attempt was made to consider a relatively small enterprise of the machine shop variety. It has frequently been stated that the development of heavy and medium industry requires the supporting development of a machine shop industry, to permit ready access to repair and maintenance facilities. It is probably true that this type of enterprise tends to follow any significant industrial development, in much the same way that retail establishments follow the growth of market areas. Nevertheless, it was thought to be desirable to test the effects of the tax laws upon such enterprises, if only to explore the tax content of the survival problems which many such firms experience in new locations or in the early years of their existence. Two such enterprises were examined in some detail, and the necessary calculations carried to completion in the case of one of them. Regrettably, however, the case studies could not be presented with the kind of rigor necessary in a study of this kind, so that both were removed from the list of corporations considered in the actual corporation approach.

In the methods used in the present study the selection of corporations and the selection of plants to represent those corporations were simultaneous acts. The basic purpose of the approach, of course, was to compare the tax burdens imposed upon different *plants* of the same *corporation*, when the plants were located in different states of the Southeast. To this extent, the purpose of the actual corporation approach closely resembles that of the representative sample approach, in those cases in which the latter is concerned with an interstate comparison. But the difference between the two approaches is a very important one. Because the sample approach was based upon a random selection of corporations, the comparison of tax burdens between states for a given corporation was often a comparison of very unlike activities. In some cases, for example, the comparisons of the representative sample approach were based upon the tax burdens on the manufacturing activity of the corporation in one state, the distributive activities of the same corporation in another state, and the retail selling activities of the same corporation in another state. In other cases, the interstate comparison for a given corporation was a comparison of one kind of manufacturing in one state with a very different kind of manufacturing in another state. It was these wide differences between the things being compared that made it difficult to apply the usual measures of tax burdens to the plants (and to the corporations) involved in the representative sample approach. The loose construction of the yardstick itself, as applied to different kinds of situations, was, indeed, the greatest single limitation of the representative sample approach.

The actual corporation approach was designed to solve some of these problems of measurement. The technique required the selection of similar plants in the several states being compared, so that the measures could be expected to mean approximately the same thing in each case. The plants were required to be of similar size, to produce the same kinds of products, to be of approximately the same age, and to be similar in practically all important characteristics except the taxes paid for each. The only other requirement was that one of the plants be located in North Carolina. The specific selections were necessarily made on a trial and error basis, with the incidence of "error" being rather high.

The states considered

The selection of the corporations and plants automatically involved the selection of the states for which tax burdens would be calculated. Thus, Actual Corporation L, the first of the textile manufacturers illustrated in the ensuing analysis, produced a simple, two-state comparison. The actual corporation studied operates a number of textile plants in these and other states. The two plants selected were those in North Carolina and Alabama. The comparison for Actual Corporation M, the other guinea pig from the textile industry, was also a two-state comparison. In this case, the two states were North Carolina and South Carolina. Corporation N is the retail corporation. The corporation holds a foreign charter and operates retail outlets of the variety chain store type in many states of the United States. Of those operated in the eleven Southeastern states of the present study, it was possible to analyze the tax burdens for selected stores in ten states. The one state for which an analysis was impossible was Arkansas.

The relatively small number of states represented in the actual corporation approach (at least for the textile examples) can be justified if it can be shown that a relocation of existing facilities or a location of new facilities is likely to gravitate to a state in which the corporation now has a plant and which it has found to possess an invigorating tax atmosphere. Naturally, such a proposition cannot be proved, but it is by no means improbable. It is certainly clear that location in such states is *possible,* for the evidence of the operating plant is almost irrefutable. And although the corporation is not likely to restrict its consideration to the states in which it is currently operating, it is still true that the evidence, on all subjects pertaining to plant location, is likely to be more readily available in a larger volume for a state in which the corporation has had some extensive industrial experience.

The taxes considered

In the actual corporation approach it was possible to be a little more flexible than in the hypothetical corporation approach with respect to the taxes considered, although, in general, the same restrictions were found to apply. For example, it was found to be possible to include all taxes—state, local, and federal—for Corporation N, the retail corporation. The only exception was in the case of sales and use taxes. These were found

to be included in the cost of goods purchased and were unavailable as a segregated item without extensive searching. In any event, these taxes would be relatively small for the firm in question. (Sales taxes paid by the corporation on its *sales* were not included as part of the measure of the corporation's tax burdens on the assumption that all or part of the amount would be passed on to the purchasers.)[5] The measure of total taxes did, however, include payroll taxes and federal income taxes, both of which were omitted from the hypothetical analysis and from the representative sample analysis. In order to permit a comparison of the results of the actual with the results of the hypothetical, however, the measurements are shown both ways for Corporation N—with payroll and federal income taxes, and without them.

It was possible to consider federal taxes for Corporation N because, after detailed examination, it was found that the corporation maintains its records separately for each store in its system, with head office expenses and federal income taxes spread back over the many stores in the system by thoroughly respectable accounting practices. The corporation has an incentive to exercise proper care in its internal allocation system partly because the manager of each store is paid a commission based upon the year's performance as indicated by net profits. This adequate system of separate accounting, plus the fact that all stores operate in essentially the same way and sell essentially the same items, made it possible to rely upon the corporation's own allocation of federal income taxes (and other head office items) to the individual stores in the comparison.

It was not possible to follow this method in the case of the two textile corporations. In neither instance was a separate accounting system deemed adequate for the determination of a net profit figure and a federal income tax figure to be associated with each manufacturing plant under examination. It would have been extremely difficult (in pure theory, impossible) to allocate the federal income tax to the several *states* in which the corporations operate, let alone to allocate the federal income tax to the individual plants in the system. Consequently, the taxes considered for the two textile corporations were the same as those considered in the hypothetical and representative sample approaches. These were state income taxes, state franchise taxes, state and local property taxes, intangibles taxes, business

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5. See Chapter I, above, for further remarks on this subject.

licenses of all kinds, and miscellaneous reporting fees. No quali-
fication taxes were involved, since both corporations had been
operating in both states for some time prior to the analysis.

The collection of the data

In view of the fact that the corporations selected for analysis
were asked to do most of the work, the labor of collecting the
necessary data was minimized in the present approach. It was
also made easy by the fact that all of the corporations offered
and gave their fullest co-operation to the Tax Study Commis-
sion in the actual corporation project.

The process of data collection began with lengthy discussions
of the project with officials of each of the corporations.[6] In one
case these discussions had to be conducted by correspondence,
but in both of the others they were by direct conversation. With
these preliminary discussions it was possible to devise a separate
questionnaire for each corporation, to apply to the particular
characteristics of the plants being compared. The information
requested on these questionnaires fell into three broad cate-
gories, with the first two overlapping somewhat in their intent.
By the first set of questions an attempt was made to develop
statistics that would indicate the comparability of the plants in
question. In the two textile cases these questions included such
items as the age of the plants, the amount of depreciable prop-
erty at each plant (measured both gross and net of deprecia-
tion), the number of employees at each plant, the floor space of
each plant, the number of units produced per year at each
plant, and so on.

The second set of questions requested a number of operating
statistics for purposes of constructing the measures of tax
burden. Since the plants were not identical, it was, of course,
impossible to compare the total dollars of taxes paid for one
plant with the total dollars of taxes paid for another. It was, in
other words, necessary to develop the same kind of ratios used
in the representative sample approach. The figures useful for
this purpose could also be used to establish the comparability of
the two plants, so that to this extent there was an overlapping
of the two categories of questions. The corporations were asked
to answer both of these categories of questions for the plants
used in the comparison and for the total activities of the cor-
porations in the states in which the plants were located. This

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6. A number of preliminary discussions were held in the process of selecting the corpora-
tions for inclusion in the study and in the process of choosing the individual plants of
each corporation for the comparison.

request was designed to facilitate the allocation of state-wide taxes to the individual plants in the analysis. Since this allocation was not necessary for Corporation N (the retail corporation), these dual figures were not requested for this corporation.

The third set of questions concerned the taxes paid by the corporations. In both of the textile cases it was necessary to break this tax information down into two sub-categories, the first to show those taxes that could be directly associated with the plants in question (property taxes, business licenses, etcetera), and the second to show those taxes that could not be directly associated with the plants in question (state-wide levies such as income and franchise taxes). In the case of the retail corporation this breakdown was not necessary, since it was possible to accept, for all taxes, the separate accounting system devised by the corporation itself.

Each of the corporations was asked to prepare answers to the questionnaires for three separate years. In each case these were the three most recently completed fiscal years. As indicated above, this comparison over time is particularly important in the case of the actual corporation approach, for a single year might be quite unrepresentative. It might, for example include an extra assessment applying to a number of previous years of the corporation's operations, or it might include a refund applying to the same period. It would have been desirable, of course, to have had figures for a five-year period, or even longer, but it was felt that the imposition upon the guinea-pig corporations was already severe enough. With the three-year data it was possible to detect any major irregularities in the tax figures and to track them down with reasonable success.

The final step in the data-collection phase of the actual corporation approach involved a careful check of the questionnaire replies against the several tax returns filed by the corporations with the North Carolina Department of Revenue. Since the detail of the questionnaires was much more elaborate than the detail of the tax returns, the check could serve only to establish the reasonableness of the questionnaire replies and to assist in picking out any inconsistencies in the state-wide figures. The few inconsistencies that did appear were insignificant. They were, however, resolved by further correspondence with the subject companies.

The techniques of calculation

The calculation of tax burden measures was, by the nature of the material, somewhat different for each of the corporations in the study, although the methods were similar for the two textile corporations. The first step in each case involved the application of a "disguise factor" to all of the figures reported on the questionnaires. The factor used was different for each of the corporations, but it was uniformly applied to each of the figures provided by each of the corporations.

The only unusual feature of the calculations for the two textile corporations was the computation of an "apportionment ratio" for each of the states in which the plants were located. This apportionment ratio was applied to the so-called "non-direct" taxes —those taxes not directly associated with the plants in question —so that the tax burden associated with *individual plants* could be constructed from data that related to the total operations for the corporation in each of the states. The ratio was constructed from an unweighted average of property (including land, depreciable assets net of depreciation, and inventories measured as a monthly average through the year), number of employees, total annual payroll, sales value of product produced, and cost of manufacturing. Each of these figures was given separately for the plant and for the entire state containing the plant, so that separate ratios for each could be computed. These individual ratios were then added, and the total was divided by the number of individual ratios. Since most of the individual ratios were similar for both textile corporations, the resulting average ratio is probably fairly accurate as a representation of the role played by the individual plants in the total activities of the corporations in each of the states. In one case (Actual Corporation L) the operations in the foreign state (Alabama) were limited to the plant involved in the comparison. The apportionment ratio in this case was, of course, 100 percent. In neither case did the corporation conduct selling operations in the state in question, so that it was not necessary to adjust the ratios for the effects of such operations in the "non-direct" tax liability of the corporations. The object, of course, was not to calculate a "proper" method of allocating interstate income for corporate income tax purposes, but to allocate the income and franchise taxes actually paid in a given state (through whatever allocation formulae were involved in such payment) to the individual plants in the state system. It was assumed that the influence

of total sales upon this intrastate apportionment was reflected in the sales value of the product produced.

Finally, for the two textile corporations, the "direct" taxes were added to the apportioned "non-direct" taxes and the total was related to several measures of tax burden. For these corporations the ratios constructed were total taxes divided by the number of units of the product produced, total taxes as a percent of the book value of physical property, total taxes as a percent of total annual payroll, total taxes as a percent of sales value of product produced, and total taxes as a percent of manufacturing costs. These ratio measures of tax burden were then expressed as an index, with the North Carolina measure assumed equal to 100.

For Actual Corporation N, the calculations were necessarily somewhat different. As has already been mentioned, it was not necessary to distinguish between "direct" and "non-direct" taxes, so that no intrastate apportionment of state-wide taxes was necessary. There were, however, two categories of "total" taxes: total state and local taxes (omitting, however, state payroll taxes), and total (all) taxes. Separate calculations were made for each category. Each of the measures of total taxes was related, for each of the ten stores in the comparison, to five separate measurement bases. There were gross profits, salaries and wages, net profits before taxes (before *all* taxes in the measurement of total tax burdens, and before *all state and local taxes* in the measurement of state and local tax burdens), unadjusted book value of physical property, and adjusted book value of physical property. The property adjustment was designed to account for the fact that the corporation leases all of the stores included in the present analysis. The adjustment consisted simply of multiplying the annual rental charge for each store by 8.[7] The ratios resulting from these calculations were expressed as an index series, with the North Carolina ratio expressed as 100. For easy comparison, these index numbers were ranked, with the highest state shown as 1 and the lowest shown as 10.

For all of these actual corporations the calculations were carried out separately for each of the three years for which the data were submitted. A fourth set of calculations was then made to represent the entire three-year period. In this set the

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7. This method of "capitalizing" rentals to arrive at an estimated value is commonly used by those states requiring the inclusion of a capitalized rental figure in their income allocation formulae. It is, of course, strictly an approximation, but it was deemed satisfactory for present purposes.

average taxes paid over the period were expressed as a percent
of the average of the three-year values for the several denomi-
nators. These results, too, are shown in index form.

THE RESULTS

The results of the calculations made in the actual corporation
approach are shown separately for each of the three corpora-
tions.

Actual Corporation L

Actual Corporation L is a textile manufacturing corporation
producing a variety of textile products in a number of South-
eastern states. It is chartered in North Carolina. The taxes
analyzed in the present study are those which apply to the
corporation's manufacturing plant in Alabama (Plant II in
State Y) and to one of the corporation's manufacturing plants
in North Carolina (Plant I in State X). Table 1 shows selected
plant statistics for both Plant I and Plant II for the calendar
year ending December 31, 1953. Tables 2 and 3 show similar
statistics for the years 1954 and 1955, respectively.

From Table 1 it can be seen that the North Carolina plant and
the Alabama plant are similar in the size of their operations. In
terms of the book value of real property, to be sure, the North

TABLE 1

ACTUAL CORPORATION L

GENERAL STATISTICS FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND
ALABAMA—FOR THE YEAR ENDING DECEMBER 31, 1953

Items	Plant I in State X[1] (1)	Plant II in State Y[2] (2)	Plant I as a Percent of Total in State X (3)	Plant II as a Percent of Total in State Y (4)	Plant II as a Percent of Plant I (5)
1. Land...................	$ 220,402	$ 29,804	16.6	100.0	13.5
2. Depreciable Assets—Gross.........	$17,691,318	$11,719,641	20.7	100.0	66.2
3. Depreciation Reserve....	$ 9,856,102	$ 6,081,763	25.2	100.0	61.7
4. Depreciable Assets—Net..........	$ 7,835,217	$ 5,637,879	16.4	100.0	72.0
5. Average Inventories[3]....	$ 2,295,337	$ 2,454,691	9.6	100.0	106.9
6. Number of Employees...	2,942	2,913	20.8	100.0	99.0
7. Total Annual Payroll....	$ 7,606,002	$ 7,661,444	19.4	100.0	100.7
8. Units of Product Produced (in yards).......	89,428,066	78,652,724	....	.....	88.0
9. Sales Value of Product Produced.............	$36,555,139	$33,978,517	24.7	100.0	93.0
10. Cost of Manufacturing...	$32,019,825	$20,891,998	25.0	100.0	96.5
11. Floor Space (in Square Feet).......	1,248,450	1,200,317	....	.....	96.1

NOTES: [1]State X: North Carolina
         [2]State Y: Alabama
         [3]Average of monthly figures

TABLE 2

ACTUAL CORPORATION L

GENERAL STATISTICS FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND
ALABAMA—FOR THE YEAR ENDING DECEMBER 31, 1954

Items	Plant I in State X[1] (1)	Plant II in State Y[2] (2)	Plant I as a Percent of Total in State X (3)	Plant II as a Percent of Total in State Y (4)	Plant II as a Percent of Plant I (5)
1. Land	$ 212,049	$ 29,804	16.5	100.0	14.1
2. Depreciable Assets—Gross	$18,469,258	$11,651,731	20.4	100.0	63.1
3. Depreciation Reserve	$ 9,475,905	$ 6,302,149	22.4	100.0	66.5
4. Depreciable Assets—Net	$ 8,993,353	$ 5,349,582	18.7	100.0	59.5
5. Average Inventories[3]	$ 2,391,024	$ 3,309,016	10.1	100.0	138.4
6. Number of Employees	2,699	2,984	20.7	100.0	110.6
7. Total Annual Payroll	$ 6,490,707	$ 7,086,577	$ 19.2	100.0	109.2
8. Units of Product Produced (in yards)	73,310,058	68,365,033	....	.....	93.3
9. Sales Value of Product Produced	$27,911,775	$29,551,406	23.3	100.0	105.9
10. Cost of Manufacturing	$26,625,277	$29,252,967	23.9	100.0	109.9
11. Floor Space (in Square Feet)	1,248,450	1,200,317	....	.....	96.1

NOTES: [1]State X: North Carolina
           [2]State Y: Alabama
           [3]Average of monthly figures

TABLE 3

ACTUAL CORPORATION L

GENERAL STATISTICS FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND
ALABAMA—FOR THE YEAR ENDING DECEMBER 31, 1955

Items	Plant I in State X[1] (1)	Plant II in State Y[2] (2)	Plant I as a Percent of Total in State X (3)	Plant II as a Percent of Total in State Y (4)	Plant II as a Percent of Plant I (5)
1. Land	$ 198,132	$ 22,468	21.7	100.0	11.3
2. Depreciable Assets—Gross	$18,526,541	$11,827,631	20.5	100.0	63.8
3. Depreciation Reserve	$ 9,421,061	$ 6,504,898	22.2	100.0	69.0
4. Depreciable Assets—Net	$ 9,105,480	$ 5,322,733	19.1	100.0	58.5
5. Average Inventories[3]	$ 2,143,598	$ 3,445,733	9.0	100.0	160.7
6. Number of Employees	2,699	2,984	20.6	100.0	110.6
7. Total Annual Payroll	$ 5,990,465	$ 8,123,828	16.1	100.0	135.6
8. Units of Product Produced (in yards)	65,096,551	73,730,580	....	.....	113.3
9. Sales Value of Product Produced	$27,497,304	$31,227,104	19.1	100.0	113.6
10. Cost of Manufacturing	$26,823,765	$30,062,831	18.6	100.0	112.1
11. Floor Space (in Square Feet)	1,248,450	1,200,317	....	.....	96.1

NOTES: [1]State X: North Carolina
           [2]State Y: Alabama
           [3]Average of monthly figures

Carolina plant is considerably larger. In land value, especially, the criterion of similarity is not maintained, although relatively small values are involved in both cases.

Table 4 shows the taxes paid by Corporation L in North Carolina and in Alabama as these are related to the operations of Plants I and II. The ratios used to apportion the total "non-direct" taxes to each of the plants were calculated from the figures of Tables 1 to 3, inclusive, as the arithmetic average of lines 1, 2, 3, 4, 5, 6, 7, 8, and 10, columns 3 and 4. The total taxes related to the operation of Plant I in North Carolina thus amounted to $434,065 in 1953. The comparable tax figure for Plant II in Alabama is $103,844. Similar differences are illustrated for the later years.

The total tax bills for the North Carolina site are approximately four times larger than the total tax bills for the Alabama site. It is clear that this difference is not explained by differences in the size of the plants. Table 5 shows the total tax bills for the three years, for each of the plants, expressed as percentages of various plant statistics. From these measures it can be seen that the tax burden imposed by Alabama is from 25 percent to 30 percent of that imposed by North Carolina in 1953. In 1954, the Alabama tax burden is from 24 percent to 35 percent of the North Carolina burden. And in 1955, the burden measurements range from 18 percent to 31 percent—once again, in favor of Alabama.

The same pattern is described in Tables 6, 7, and 8, describing the average tax burdens for the three year period 1953-1955, inclusive. In this case, the five measures of tax burdens show the impositions of Alabama to be between 22 percent and 32 percent of those of North Carolina. In view of the peculiarities of the book value figures in this case, it is probably safe to say *that the tax burden upon this Corporation in Alabama is about 25 percent (plus or minus 2 percentage points) of that in North Carolina.*

Unfortunately, the actual corporation approach is not well suited to a detailed explanation of the reasons for these differences, but one or two general observations may be made. It is clear, for example, that the differences do not arise in the business license group or the "other 'non-direct' taxes" group, for these two levies are almost completely offsetting in their effects. Similarly, it is apparent that the differences do not come from the franchise tax levies, for these are, to all intents and pur-

poses, identical in the burdens which they impose. The differences clearly arise in the areas of the corporate net income tax and the ad valorem property taxes.

For the three-year period of the present analysis, the average sales value of the product produced at the Alabama plant was 103 percent of that at the North Carolina plant. The value of the total product was, in other words, just a little higher in Alabama than in North Carolina. Over the same period the average state income tax payment to North Carolina was almost five times that of the average state income tax payment to Alabama. Although it is difficult to quantify the factors responsible for this extreme difference in income tax burdens, the factors themselves are only too obvious. In North Carolina Corporation L is a domestic corporation. As such, it is subject to the provisions of North Carolina General Statutes, Section 105-134, to the effect that "Every corporation organized under the laws of this State shall pay annually an income tax equivalent to six percent of the entire net income, as herein defined, received by such corporation during the income year." Unlike a foreign corporation, Actual Corporation L cannot, under North Carolina law, determine that portion of its total net income assumed to be earned within North Carolina and use this as the base to which the six percent corporate income tax rate is applied. It is also subject to the provisions of North Carolina General Statutes, Section 105-146 which provides that a corporation such as this may deduct the net income taxed under an income tax levied by the state in which corporate business or property is located. As a result, Corporation L is able to deduct all of the income subject to income taxation in other states in developing the figure for taxable net income in North Carolina. The same section also states, however, that "In all cases a domestic corporation which has an established business or investment in property in another State which does not levy an income tax shall treat any income or loss from such business or investment as though it occurred from a business or investment in North Carolina." Thus, all income earned by Actual Corporation L and associated with its activities in states not levying an income tax is fully taxable in North Carolina as North Carolina income. Actual Corporation L operates in several such states.

In the 1955 session of the North Carolina General Assembly an addition was made to Section 105-147 of the General Statutes. This provision substantially liberalized the treatment of

TABLE 4

ACTUAL CORPORATION L

TAXES PAID FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND ALABAMA, YEARS ENDING DECEMBER 31, 1953, 1954, AND 1955.

Type of Tax	1953		1954		1955	
	Plant I in State X[1] (1)	Plant II in State Y[2] (2)	Plant I in State X[1] (3)	Plant II in State Y[2] (4)	Plant I in State X[1] (5)	Plant II in State Y[2] (6)
"DIRECT" TAXES						
1 Total Property Taxes.....................	$ 246,455	$ 45,930	$ 235,429	$ 45,930	$ 248,095	$ 45,346
2 Business Licenses, etc..................	....	3,834	....	4,912	....	3,835
3 TOTAL "DIRECT" TAXES.............	$ 246,455	$ 49,764	$ 235,429	$ 50,842	$ 248,095	$ 49,181
"NON-DIRECT" TAXES[3]						
4 State Income Taxes......................	$ 916,989	$ 32,070	$ 306,365	$ 12,064	$ 453,700	$ 16,455
5 State Franchise Taxes................	127,588	22,010	135,498	21,629	136,063	19,801
6 Other "Non-Direct" Taxes................	21,889	....	17,919	....	26,127	....
7 TOTAL "NON-DIRECT" TAXES........	$ 1,065,966	$ 54,080	$ 459,782	$ 33,693	$ 615,890	$ 36,256
"NON-DIRECT" TAXES APPORTIONED[4]						
8 State Income Taxes.......................	$ 161,890	$ 32,070	$ 57,903	$ 12,064	$ 80,305	$ 16,455
9 State Franchise Taxes................	22,456	22,010	25,609	21,629	24,083	19,801
10 Other "Non-Direct" Taxes................	3,764	....	3,386	....	4,624	....
11 TOTAL "NON-DIRECT" TAXES APPORTIONED......................	$ 187,610	$ 54,080	$ 86,898	$ 33,693	$ 109,012	$ 36,256
12 TOTAL ALL TAXES................... (Line 3 plus Line 11)	$ 434,065	$ 103,844	$ 322,327	$ 84,535	$ 357,107	$ 85,437

NOTES: [1]State X: North Carolina
[2]State Y: Alabama
[3]Total taxes for States X and Y applicable to all business done in each state.
[4]Apportionment ratios for State X: 1953—17.6%; 1954—18.9%; 1955—17.7%
Apportionment ratios for State Y: 100.0% for all years.

TABLE 5

ACTUAL CORPORATION L

COMPARATIVE ANALYSIS OF TAXES PAID FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND ALABAMA, FOR THE YEARS ENDING DECEMBER 31, 1953, 1954, AND 1955.

Measure	Year Ending December 31, 1953			Year Ending December 31, 1954			Year Ending December 31, 1955		
	State X[2] (1)	State Y[3] (2)	Column (2) as an Index (N.C.=100) (3)	State X[2] (4)	State Y[3] (5)	Column (5) as an Index (N.C.=100) (6)	State X[2] (7)	State Y[3] (8)	Column (8) as an Index (N.C.=100) (9)
Total taxes divided by units of product produced (in thousands of yards)	$4.853	$1.320	27.200	$4.40	$1.24	28.128	$5.49	$1.16	21.129
Total taxes as a percent of sales value of product produced	1.187	.806	25.780	1.155	.286	24.762	1.299	.274	21.093
Total taxes as a percent of cost of manufacturing	1.356	.336	24.779	1.211	.289	23.865	1.331	.284	21.337
Total taxes as a percent of property[1]	4.193	1.279	30.503	2.780	.973	35.000	3.120	.972	31.154
Total taxes as a percent of annual payroll	5.707	1.355	23.748	4.966	1.193	24.023	5.961	1.052	17.648

NOTES: [1]Depreciable assets, plus land, plus average inventories
[2]State X: North Carolina
[3]State Y: Alabama

income earned in a foreign state by a domestic corporation. Prior to 1955 a North Carolina corporation operating in Alabama (for example) was permitted to deduct, for North Carolina income tax purposes, only that amount of income subject to taxation in Alabama. Since Alabama permits the deduction of federal income taxes, the amount of income represented by the federal income tax was not "subject to taxation" in Alabama. This income was not, therefore, permitted as a deduction in the derivation of North Carolina taxable net income. The significant language added in 1955 is as follows: All of said net

TABLE 6

ACTUAL CORPORATION L

GENERAL STATISTICS FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND ALABAMA: AVERAGE FOR THREE YEARS ENDING DECEMBER 31, 1953, 1954, AND 1955.

Items	Plant I in State X[1] (1)	Plant II in State Y[2] (2)	Plant II as a Percent of Plant I (3)
1 Land	$ 210,194	$ 27,359	13.0
2 Depreciable Assets—Net	$ 8,644,683	$ 5,436,731	62.9
3 Average Inventories	$ 2,276,653	$ 3,069,813	134.8
4 Number of Employees	2,780	2,960	106.5
5 Total Annual Payroll	$ 6,695,725	$ 7,623,950	113.9
6 Units of Product Produced (yards)	75,944,892	73,582,779	96.9
7 Sales Value of Product Produced	$30,654,739	$31,585,676	103.0
8 Cost of Manufacturing	$28,489,622	$30,069,265	105.5

NOTES: [1]State X: North Carolina
[2]State Y: Alabama
[3]Three-year average of annual averages of monthly figures

TABLE 7

ACTUAL CORPORATION L

TAXES PAID FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND ALABAMA AVERAGE FOR THREE YEARS ENDING DECEMBER 31, 1953, 1954, AND 1955.

Items	Plant I in State X[1] (1)	Plant II in State Y[2] (2)
"DIRECT" TAXES		
1 Total Property Taxes	$ 243,326	$ 45,735
2 Business Licenses, etc.	....	4,194
3 Total "Direct" Taxes	$ 243,326	$ 49,929
"NON-DIRECT" TAXES—APPORTIONED		
4 State Income Tax	$ 99,866	$ 20,196
5 State Franchise Tax	24,049	21,147
6 Other "Non-Direct" Taxes	3,925	....
7 Total "Non-Direct" Taxes	$ 127,840	$ 41,343
8 TOTAL ALL TAXES	$ 371,166	$ 91,272

NOTES: [1]State X: North Carolina
[2]State Y: Alabama

TABLE 8

ACTUAL CORPORATION L

COMPARATIVE ANALYSIS OF TAXES PAID FOR TWO TEXTILE PLANTS, IN NORTH
CAROLINA AND ALABAMA: AVERAGE FOR THREE YEARS ENDING
DECEMBER 31, 1953, 1954, AND 1955.

Measure	Plant I in State X[1] (1)	Plant II in State Y[2] (2)	Column (2) as an Index (N.C.=100) (3)
1 Total taxes divided by units of product produced (in thousands of yards)........................	$ 488.73	$ 124.04	25.380
2 Total taxes as a percent of sales value of product produced.......................................	1.211	.290	23.947
3 Total taxes as a percent of cost of manufacturing.....	1.303	.304	23.331
4 Total taxes as a percent of property[3]................	3.337	1.070	32.065
5 Total taxes as a percent of annual payroll............	5.543	1.197	21.595

NOTES: [1]State X: North Carolina
    [2]State Y: Alabama
    [3]Depreciable assets, plus land, plus average inventories

income from such business or property in another state shall be
deemed taxed in such other state if any income tax is levied
thereon by such other state, regardles of any deductions, exemp-
tions or credits allowed or allowable under the laws of such
other state in computing the tax due to it." This provision was
made to apply to a taxpayer's taxable year beginning after De-
cember 31, 1954, so that the calculations for the present study
reflect the new provision for one of the three years.

In Alabama Actual Corporation L is a foreign corporation. As
such, it is taxable, under Alabama law, only upon that portion
of its total net income assumed to have been earned in Alabama.
This portion must be determined, if possible, by a system of
separate accounting.[8] If this is not possible, the determination
is made by the application of an allocation formula which is
the arithmetic average of (1) the ratio of the property owned
by the corporation in Alabama to the property owned by the
corporation everywhere; (2) the ratio of manufacturing costs
incurred in Alabama to manufacturing costs incurred every-
where; and (3) the ratio of the corporation's sales made from
warehouses, stock or inventories located within Alabama to the
corporation's sales everywhere.[9] The formula itself is a fairly
common one and is not the source of great liberality in the Ala-
bama tax structure (although the fact that a sales factor is in-
cluded for a manufacturing corporation makes the allocation
formula much more liberal than the North Carolina formula
applied to foreign manufacturers). The important point is that

8. Alabama Income Tax Regulations 398.2.
9. loc. cit.

whether the allocation is made by formula or by separate accounting it is clear in its attempts to permit a tax levy only upon that portion of the total net income assumed to have been earned in Alabama. To this extent, the *base* of the North Carolina income tax on Corporation L is much wider than the *base* of the Alabama income tax.

The base of the North Carolina income tax is wider in one other important respect. The Alabama law permits the deduction of the federal net income tax in the determination of the taxable net income in Alabama (in this case, of course, a portion of the total federal income tax assumed to be related to the income earned in Alabama).[10] The North Carolina law does not permit this deduction. The magnitude of the present-day federal income tax makes this an extremely important element in the explanation of the differences between the North Carolina and Alabama total tax burdens upon Actual Corporation L.

Finally, the income tax burden in North Carolina is significantly heavier than that in Alabama because of the differences in tax *rates*. North Carolina levies a tax of six percent on the taxable net income, while Alabama levies a tax of only three percent on the taxable net income.[11]

As is well known, the North Carolina state and local revenue structure tends to emphasize taxes levied at the state level. Since the ad valorem property tax is, in most states, predominantly a local levy, it might be thought that Actual Corporation L would find a partial offset for its relatively high North Carolina income taxes (as compared with those of Alabama) in relatively low property tax levies. *This was definitely not the case.* For the three-year period 1953-1955, inclusive, average annual property taxes paid in North Carolina by Corporation L for Plant I were $243,326. In Alabama for the same period the average annual property taxes (state and local) were $45,735. Part of this differential can be explained, of course, by the fact that the book value of the important taxable items (land, depreciable assets, and inventories) was somewhat higher in North Carolina than in Alabama. But this cannot explain all of the differential. On the three-year average basis, the property taxes paid by Corporation L in North Carolina amounted to 2.186 percent of the book value of land, depreciable assets, and inventory (measured as a three-year average of annual monthly average inventories).

10. Section 402, Title 51, Code of Alabama.
11. North Carolina General Statutes, Section 105-234, Section 398, Title 51, Code of Alabama.

On the same basis, the property taxes paid by Corporation L in Alabama amounted to only .536 percent of book value. Approximately the same relationship prevails for each of the three years analyzed.

These relatively high North Carolina property tax burdens are not the result of higher property tax *rates* in North Carolina. In 1953, for example, the aggregate property tax rate in North Carolina for Actual Corporation L, as applied to the property associated with Plant I, was $21.43 per $1,000 of assessed value. In Alabama, the aggregate tax rate for the Corporation's property at Plant II was $36.00 per $1,000 of assessed value. In 1954 the North Carolina rate was $19.57 per $1,000 of assessed value; in Alabama, the rate was $39.85 per $1,000 of assessed value. In 1955, the North Carolina rate was $21.78 per $1,000 of assessed value; in Alabama the rate was $36.00 per $1,000 of assessed value. In other words, the Alabama property tax rates applied to the property of Plant II were consistently *higher* than the North Carolina property tax rates applied to the property of Plant I. In spite of this, the Alabama property tax payments were substantially *lower* than those in North Carolina.

The property tax component of the total tax differential is thus to be explained entirely by differences in the property tax *base*. Unfortunately, it was not possible, in this actual corporation approach, to distinguish, in any quantitative way, between the effects of assessment practices and the effects of the exemption structure. But it should certainly be noted that the Alabama structure does contain significant exemptions for a corporation such as Actual Corporation L. In particular, Section 2(m) of Title 51 of the Code of Alabama provides that "All manufactured articles . . . in the hands of the producer or manufacturer thereof, when stored at or near the place of manufacture or within the county where same was manufactured or produced, shall be exempt for twelve months after its production or manufacture." In addition, Alabama law provides that "All cotton or agricultural products which have been raised or grown in the State of Alabama, and which remain in the hands of the producer thereof . . . *and for a period of one year in the hands of the purchaser or the manufacturer*" shall be exempt from taxation. [12]

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12. Section 2(h), Title 51, Code of Alabama, italics added.

In the North Carolina law there are a number of provisions of somewhat uncertain effect relating to the ad valorem taxation of cotton. Section 105-298 (b) of the North Carolina General Statutes provides that "... from the total value of cotton stored in this State there may be deducted by the owner thereof all bona fide indebtedness incurred directly for the purchase of said cotton and for the payment of which the cotton so purchased is pledged as collateral." In addition, section 105-297 (15) of the North Carolina General Statutes exempts "all cotton while subject to transit privileges under Interstate Commerce Commission Tariffs." Since the latter provision was inserted only in the 1955 session of the General Assembly, its full effects are not yet known. It is not, of course, reflected in the calculations of the present study. The combined effects of these two statutory provisions could, however, substantially reduce the ad valorem property tax liability associated with the cotton inventories of many textile manufacturers in North Carolina.[13]

Actual Corporation M

Actual Corporation M is the second textile corporation analyzed in the actual corporation approach. It, too, is a domestic corporation producing a wide variety of textile products in a number of plants spread throughout the Southeastern states. The taxes analyzed in the present study are those which apply to one of the Corporation's manufacturing plants in North Carolina (Plant I in State X) and to one of the Corporation's manufacturing plants in South Carolina (Plant II in State Y). The tabular representation of general plant statistics and tax analysis is similar to that shown above for Actual Corporation L. Thus, Table 9 shows selected plant statistics for both Plant I and Plant II for the calendar year ending December 31, 1953, while Tables 10 and 11 show the same information for years 1954 and 1955.

As can be seen from Tables 9, 10, and 11, the two plants selected for analysis are slightly less comparable, in terms of the size of their operations, than were the plants of Actual Corporation L. They do, however, produce comparable products. In general, it may be said that Plant II in South Carolina is somewhat smaller than Plant I in North Carolina, although this clearly does not apply to the several figures concerned with the book value of the assets at each location. The book value figures

13. In addition, Section 105-189 of the North Carolina General Statutes provides a one-year exemption of cotton and other farm products *owned by the original producer.*

(except for inventory) are somewhat higher for Plant II in South Carolina, while the production figures are somewhat higher for Plant I in North Carolina. It is not felt, however, that these differences are sufficient to destroy the comparability of the tax burdens for each plant.

Table 12 shows the taxes paid by Corporation M as related to Plant I and Plant II in all three years of the present analysis.

TABLE 9

ACTUAL CORPORATION M

GENERAL STATISTICS FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND
SOUTH CAROLINA, YEAR ENDING DECEMBER 31, 1953.

Items	Plant I in State X[1] (1)	Plant II in State Y[2] (2)	Plant I as a Percent of Total in State X (3)	Plant II as a Percent of Total in State Y (4)	Plant II as a Percent of Plant I (5)
1 Depreciable Assets— Gross	$ 7,275,151	$ 7,791,354	7.4	61.2	107.2
2 Depreciation Reserve	$ 3,037,684	$ 829,480	6.7	29.4	27.3
3 Depreciable Assets— Net	$ 4,237,467	$ 6,961,873	8.0	70.3	164.3
4 Average Inventories[3]	$ 1,616,015	$ 1,094,684	6.1	50.3	67.7
5 Number of Employees	1,193	1,193	7.5	58.4	100.0
6 Total Annual Payroll	$ 3,791,776	$ 3,488,649	9.4	58.4	92.0
7 Units of Product Produced (yards)	182,490,154	123,566,230	....	....	67.7
8 Sales Value of Product Produced	$12,023,115	$11,637,297	7.3	52.9	96.8
9 Cost of Manufacturing	$10,456,245	$ 9,931,783	7.3	53.0	95.0
10 Floor Space (square feet)	426,168	569,750	....	....	133.7

NOTES: [1]State X: North Carolina
           [2]State Y: South Carolina
           [3]Average of Monthly Figures

TABLE 10

ACTUAL CORPORATION M

GENERAL STATISTICS FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND
SOUTH CAROLINA, YEAR ENDING DECEMBER 31, 1954.

Items	Plant I in State X[1] (1)	Plant II in State Y[2] (2)	Plant I as a Percent of Total in State X (3)	Plant II as a Percent of Total in State Y (4)	Plant II as a Percent of Plant I (5)
1 Depreciable Assets— Gross	$ 7,481,854	$ 7,969,920	7.4	60.6	106.5
2 Depreciation Reserve	$ 3,346,991	$ 1,327,311	7.1	36.6	39.7
3 Depreciable Assets— Net	$ 4,134,863	$ 6,642,609	7.7	69.8	160.6
4 Average Inventories[3]	$ 1,414,801	$ 1,210,817	5.3	69.9	85.6
5 Number of Employees	994	1,093	6.8	55.6	110.0
6 Total Annual Payroll	$ 3,482,963	$ 3,304,672	9.2	54.8	94.9
7 Units of Product Produced (yards)	156,167,214	104,543,302	....	....	66.9
8 Sales Value of Product Produced	$11,038,582	$ 8,996,191	7.1	45.7	81.5
9 Cost of Manufacturing	$ 9,823,332	$ 8,210,975	7.9	45.9	83.6
10 Floor Space (square feet)	426,168	569,750	....	....	133.7

NOTES: [1]State X: North Carolina
           [2]State Y: South Carolina
           [3]Average of Monthly Figures

TABLE 11

ACTUAL CORPORATION M

GENERAL STATISTICS FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND SOUTH CAROLINA, YEAR ENDING DECEMBER 31, 1955.

Items	Plant I in State X[1] (1)	Plant II in State Y[2] (2)	Plant I as a Percent of Total in State X (3)	Plant II as a Percent of Total in State Y (4)	Plant II as a Percent of Plant I (5)
1 Depreciable Assets — Gross..............	$ 7,408,450	$ 8,613,714	7.4	58.7	116.3
2 Depreciation Reserve....	$ 3,188,291	$ 1,800,715	6.7	41.1	56.5
3 Depreciable Assets— Net..............	$ 4,220,160	$ 6,812,999	7.9	66.2	161.4
4 Average Inventories[3].....	$ 1,243,099	$ 2,182,086	3.8	82.9	175.6
5 Number of Employees....	1,193	1,193	8.2	57.0	100.0
6 Total Annual Payroll....	$ 4,130,999	$ 4,136,263	9.9	63.7	100.1
7 Units of Product Produced (yards).........	183,282,828	144,713,148	....	....	79.0
8 Sales Value of Product Produced.............	$12,857,619	$12,263,283	8.0	60.5	95.4
9 Cost of Manufacturing...	$10,809,727	$ 9,684,329	7.3	56.7	80.3
10 Floor Space (square feet).	426,168	569,750	....	....	133.7

NOTES: [1]State X: North Carolina
             [2]State Y: South Carolina
             [3]Average of Monthly Figures

In each year the total North Carolina taxes and the total South Carolina taxes were almost exactly the same. Total taxes were a fraction lower in North Carolina in each year.

When the total tax bills are related to the several statistical measures of tax burdens, the differences between the two states are somewhat enlarged. The results of these comparisons are shown in Table 13. With the exception of the property measures, the tax burdens show up as higher in South Carolina than in North Carolina. In 1953, the South Carolina tax burden was from 4 percent to 48 percent higher than in North Carolina, depending upon the measure selected. In 1954, South Carolina taxes were from 8 percent to 53 percent higher. And in 1955, South Carolina taxes were from 1 percent to 28 percent higher.

The same general pattern is exhibited in Tables 14, 15, and 16, all of which relate to average taxes and average plant statistics over the three-period 1953-1955, inclusive. Once again, if the property measure is excluded, the South Carolina tax burdens imposed upon Plant II show up as somewhat higher than the North Carolina tax burdens imposed upon Plant I. In this case, the burdens range from a low of 5 percent higher to a high of 42 percent higher.

In all such cases as this, when the several measures selected to represent tax burdens do not agree, the problem arises as to which of the measures come closest to telling the best story

TABLE 12

ACTUAL CORPORATION M

TAXES PAID FOR TWO TEXTILE PLANTS IN NORTH CAROLINA AND SOUTH CAROLINA,
YEARS ENDING DECEMBER 31, 1953, 1954, AND 1955

Type of Tax	Year Ending December 31, 1953		Year Ending December 31, 1954		Year Ending December 31, 1955	
	Plant I in State X [1]	Plant II in State Y [2]	Plant I in State X [1]	Plant II in State Y [2]	Plant I in State X [1]	Plant II in State Y [2]
"DIRECT" TAXES						
1 Total Property Taxes....................	$ 98,544	$ 107,146	$ 92,434	$ 111,840	$ 94,249	$ 115,447
2 Business Licenses, etc......................	....	....	....	....	....	....
3 Total "Direct" Taxes....................	$ 98,544	$ 107,146	$ 92,434	$ 111,840	$ 94,249	$ 115,447
"NON-DIRECT" TAXES [3]						
4 State Income Taxes.........................	$ 1,021,876	$ 126,756	$ 341,407	$ 22,722	$ 505,595	$ 42,588
5 State Franchise Taxes......................	142,181	16,772	150,997	14,563	151,759	5,875
6 Other "Non-Direct" Taxes.................	23,835	....	19,969	....	28,585	....
7 Total "Non-Direct" Taxes.................	$ 1,187,892	$ 143,528	$ 512,373	$ 37,285	$ 685,939	$ 48,463
"NON-DIRECT" TAXES—APPORTIONED						
8 State Income Taxes.........................	$ 77,663	$ 72,504	$ 24,923	$ 12,929	$ 37,920	$ 27,469
9 State Franchise Taxes......................	10,806	9,594	11,023	8,287	11,382	3,789
10 Other "Non-Direct" Taxes.................	1,811	....	1,457	....	2,144	....
11 Total "Non-Direct" Taxes Apportioned.....	$ 90,280	$ 82,098	$ 37,403	$ 21,216	$ 51,446	$ 31,258
12 Total All Taxes (line 3, plus line 11).........	$ 188,824	$ 189,244	$ 129,837	$ 133,056	$ 145,695	$ 146,705

NOTES: [1] State X: North Carolina
[2] State Y: South Carolina
[3] Total taxes for states X and Y applicable to all business done in each state
[4] Apportionment ratios for state X: 1953—7.6%; 1954—7.3%; 1955—7.5%
Apportionment ratios for state Y: 1953—57.2%; 1954—56.9%; 1955—64.5%

TABLE 13

ACTUAL CORPORATION M

COMPARATIVE ANALYSIS OF TAXES PAID FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND SOUTH CAROLINA, FOR YEARS ENDING DECEMBER 31, 1953, 1954, AND 1955.

Measure	Year Ending December 31, 1953			Year Ending December 31, 1954			Year Ending December 31, 1955		
	State X[2] (1)	State Y[3] (2)	Column (2) as an Index (N.C.=100) (3)	State X[2] (4)	State Y[3] (5)	Column (5) as an Index (N.C.=100) (6)	State X[2] (7)	State Y[3] (8)	Column (8) as an Index (N.C.=100) (9)
Total taxes divided by units of product produced (in thousands of yards)	$1.035	$1.532	148.019	$ .83	$1.27	153.012	$ .79	$1.01	127.848
Total taxes as a percent of sales value of product produced	1.570	1.626	103.567	1.176	1.479	125.766	1.133	1.196	105.560
Total taxes as a percent of cost of manufacturing	1.806	1.905	105.482	1.322	1.620	122.542	1.348	1.515	112.389
Total taxes as a percent of property[1]	3.226	2.349	72.815	2.340	1.694	72.393	2.667	1.631	61.155
Total taxes as a percent of annual payroll	4.980	5.425	108.936	3.728	4.026	107.994	3.527	3.547	100.567

NOTES: [1] Depreciable assets, plus land, plus average inventories
[2] State X: North Carolina
[3] State Y: South Carolina

about the relative burdens of taxation. In the present case, there are reasons for supposing that the book value measures are not truly representative of property values or of the ability to pay taxes. If this measure is excluded, there can be no question about the fact that South Carolina levied higher taxes on Actual Corporation M than did North Carolina for the period under consideration. Three of the remaining indicators are relatively consistent, while the fourth (total taxes divided by units of the product produced) amplifies the difference in the tax burdens between the two states. Although the products of the plants are of the same type, it is apparent that those of Plant II in South

TABLE 14

ACTUAL CORPORATION M

GENERAL STATISTICS FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND SOUTH CAROLINA: AVERAGE FOR THREE YEARS ENDING DECEMBER 31, 1953, 1954, AND 1955.

	Items	Plant I in State X[1] (1)	Plant II in State Y[2] (2)	Plant II as a Percent of Plant I (3)
1	Depreciable Assets—Net	$ 4,308,300	$ 6,805,827	158.0
2	Average Inventories[3]	$ 1,424,638	$ 1,495,862	105.0
3	Number of Employees	1,127	1,160	102.9
4	Total Annual Payroll	$ 3,801,913	$ 3,643,195	95.8
5	Units of Product Produced (yards)	173,980,065	124,274,227	71.4
6	Sales Value of Product Produced	$11,973,105	$10,965,590	91.6
7	Cost of Manufacturing	$10,363,101	$ 9,275,696	89.5

NOTES: [1]State X: North Carolina
[2]State Y: South Carolina
[3]Three-year average of annual averages of monthly figures.

TABLE 15

ACTUAL CORPORATION M

TAXES PAID FOR TWO TEXTILE PLANTS, IN NORTH CAROLINA AND SOUTH CAROLINA: AVERAGE FOR THREE YEARS ENDING DECEMBER 31, 1953, 1954, AND 1955

	Items	Plant I in State X[1] (1)	Plant II in State Y[2] (2)
	"DIRECT" TAXES		
1	Total Property Taxes	$ 95,076	$111,478
2	Business Licenses, etc.	....	....
3	Total "Direct" Taxes	$ 95,076	$111,478
	"NON-DIRECT" TAXES—APPORTIONED		
4	State Income Tax	$ 46,837	$ 37,634
5	State Franchise Tax	11,070	7,223
6	Other "Non-Direct" Taxes	1,804	....
7	Total "Non-Direct" Taxes	$ 59,711	$ 44,857
8	TOTAL ALL TAXES	$154,787	$156,335

NOTES: [1]State X: North Carolina
[2]State Y: South Carolina

TABLE 16

ACTUAL CORPORATION M

COMPARATIVE ANALYSIS OF TAXES PAID FOR TWO TEXTILE PLANTS, IN NORTH
CAROLINA AND SOUTH CAROLINA: AVERAGE FOR THREE YEARS ENDING
DECEMBER 31, 1953, 1954, AND 1955.

Measure	Plant I in State X[1] (1)	Plant II in State Y[2] (2)	Column (2) as an Index(N.C.=100) (3)
1 Total taxes divided by units of product produced (in thousands of yards).....	$ .89	$1.26	141.573
2 Total taxes as a percent of sales value of product produced.................	1.293	1.426	110.286
3 Total taxes as a percent of cost of manufacturing.....................	1.494	1.685	112.784
4 Total taxes as a percent of property[3]....	2.700	1.883	69.741
5 Total taxes as a percent of annual payroll...........................	4.071	4.291	105.404

NOTES: [1]State X: North Carolina
　　　　 [2]State Y: South Carolina
　　　　 [3]Depreciable assets, plus average inventories

Carolina are of a relatively high value. This is indicated by the
fact that while the North Carolina plant produced a larger num-
ber of units of the product, the output gap between the two
plants was narrowed when expressed in terms of the sales value
of the products produced. For this reason, then, it would seem
to be proper to give less weight to the yardage measure of out-
put than to the dollar measure of output. With this deletion the
results would show that *the tax burden imposed upon Actual
Corporation M by South Carolina was approximately 10 percent
(plus or minus five percentage points) higher than that imposed
by North Carolina.*

The pattern of tax burdens imposed upon Actual Corporation
M by North Carolina and South Carolina is much closer to that
which would be expected from an examination of the total tax
systems of each state than it was in the analysis of Corporation
L. Table 15 shows clearly that North Carolina tax levies are
relatively heavy for state-level taxes and are relatively light for
local-level taxes. For the three-year period 1953-1955, inclusive,
Corporation M paid corporate net income taxes for Plant I in
North Carolina of $46,837, or nearly .40 percent of the average
sales value of the product produced at the plant. Over the same
period, the corporation paid corporate net income taxes for
Plant II in South Carolina of $37,634, or approximately .34
percent of the average sales value of the product produced at
Plant II. The property taxes associated with Plant I were, how-
ever, considerably smaller than those associated with Plant II.
For the three-year period the property taxes averaged $95,076

for North Carolina, or about .80 percent of the average sales value of the product; for South Carolina they averaged $111,478 or about 1.00 percent of the average sales value of the product. In this case, then, the relative centralization of functions and of revenue instruments in North Carolina does produce the expected pattern in the tax burdens of Actual Corporation M. *It is interesting to note, however, that the ad valorem property tax is the highest tax paid in both states.*

The effects of comparing the North Carolina income tax and the South Carolina income tax are not nearly as dramatic as were those associated with the North Carolina-Alabama comparison, if only because the results of the present analysis are much closer together. For the same reason, it is more difficult to pinpoint the reasons for the differences that do exist. Undoubtedly, one of the most important factors making for higher income tax burdens in North Carolina than in South Carolina is the difference in tax *rates*. For all but the last year in the analysis the corporate income tax rate in South Carolina was 4.5 percent.[14] For 1955 the South Carolina rate was 5 percent.[15] For all three years, the North Carolina rate was, of course, 6 percent.

Neither state permits the deduction of the federal income tax in the derivation of taxable net income. In fact, all of the provisions with respect to allowable deductions are much the same in both states, with the exception of those provisions in the North Carolina law, that, for Corporation M, take the place of the allocation formula.

Once again, however, it is necessary to emphasize the effects of the definition of the income tax *base* as this relates to the income considered to be taxable by each of the states. In this case, too, the corporation under examination is a domestic corporation in North Carolina and a foreign corporation in South Carolina. Once again, the corporation is subject to tax in North Carolina on all of its income, wherever earned, with a deduction allowed for income taxable under income tax statutes in other states; whereas in South Carolina only that portion of the total net income considered to have been earned in South Carolina is subject to income taxation. The differences are not as great as

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14. Section 65-222, Code of South Carolina.
15. H. B. 1304, Laws of 1955, changed the corporate income tax rate from 4.5 percent to 5 percent, effective for accounting periods ending after June 30, 1955. The accounting period for Corporation M ends December 31. The 4.5 percent rate is, of course, reflected in the earlier years. If the answers are applied to present-day experience, then, the income tax advantage of South Carolina must be understood to be somewhat smaller than that shown in the present analysis. Similarly, the total tax burden differential between North Carolina and South Carolina must be widened slightly.

with Corporation L, however, partly because the South Carolina allocation formula is not as liberal as that of Alabama. The South Carolina formula is much the same as the North Carolina formula, in that, for a manufacturing corporation, it does not contain a sales factor. It consists of the arithmetic average of (1) the ratio of the corporation's property in South Carolina to the corporation's property everywhere; and (2) the ratio of the manufacturing costs incurred by the corporation in South Carolina to the manufacturing costs incurred by the corporation everywhere.[16] Even so, as applied to Corporation M the South Carolina formula is more liberal than the North Carolina law, since the latter does not permit the application of an allocation formula to *the income of a domestic corporation*.[17]

The most important reason for the relatively high ad valorem property tax levies of South Carolina was undoubtedly the high level of the property tax *rates*. The aggregate levy applied to the assessed value of the property at Plant I in North Carolina in 1953 was $22.05 per $1,000 of assessed value; The South Carolina rate was $100.07 per $1,000 of assessed value. In 1954 the North Carolina rate was $21.58 per $1,000 of assessed value; the South Carolina rate was $98.00 per $1,000 of assessed value. In 1955 the North Carolina rate was $22.01 per $1,000 of assessed value; the South Carolina rate was $101.50 per $1,000 of assessed value.

It is to be expected that part of the property tax differential is accounted for by differences in assessment practices and by differences in the exemption structures of the two taxing jurisdictions. But without much more analysis it is impossible to say how much of the difference should be attributed to these elements of the property tax base. Perhaps the most important statutory exemption in South Carolina as applied to Actual Corporation M is that granting exemption to "all agricultural products in this State".[18] And although the law itself makes no provision for the exemption of manufacturers' inventories, the practice seems to be one of almost complete administrative exemption.[19]

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16. Section 65-232, Code of South Carolina.
17. The North Carolina law requires the application of the allocation formula to a domestic corporation in order to determine the *maximum* deduction for income earned and taxed in other states. North Carolina General Statutes section 105-147.
18. Section 65-1593, et. seq., with a reciprocity provision for agricultural products from outside the State of South Carolina.
19. Griffenhagen and Associates, *A Report to the State of South Carolina State Tax Commission*, 1956, p. 10.

Actual Corporation N

The third of the corporations selected for analysis in the actual corporation approach is the retail corporation, holding a foreign charter, and operating a large number of stores in many states of the United States. Each of the stores is, to all intents and purposes, an independent unit for which separate accounts are kept and for which a separate net profit figure is calculated. The manager of each store receives a commission based upon the profit record of the store for the preceding period. The taxes subjected to analysis here are those associated with selected stores in the following ten Southeastern states: Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia. Of the eleven states selected for analysis in the impact study, only Arkansas is missing from the list of states studied in the actual corporation approach.

Because of the confidence which it was possible to place in the system of separate accounting practiced by Actual Corporation N, it was possible to include within the scope of the analysis all taxes paid by the Corporation except sales and use taxes. However, so that the scope of the actual corporation approach may be compared with that of the other quantitative approaches of the present study, the results of the analysis are shown separately for (1) all taxes, and (2) all state and local taxes (excluding payroll taxes and sales and use taxes). Because of the large volume of tabular material associated with this multistate corporation, only the final results are shown below.[20]

Tables 17, 18, and 19 show, in index number form, the state and local tax burdens imposed upon the individual stores of Actual Corporation N in the 10 states selected for analysis. To arrive at these index numbers, the total state and local taxes paid by each of the stores was related to a series of figures selected as measurement bases. In this way, a set of ratios was derived to represent the state and local tax burden of each of the stores. These ratios were then expressed as index numbers (with the North Carolina ratios assumed equal to 100) by dividing each of the ratios by the corresponding North Carolina ratio and multiplying the result by 100. The rank of each state is shown to the right of each index column.

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20. Detailed figures for this case are shown in Appendix C.

TABLE 17

ACTUAL CORPORATION N

TOTAL STATE AND LOCAL TAXES[1] AS A PERCENT OF VARIOUS CORPORATE FIGURES,
EXPRESSED AS AN INDEX (NORTH CAROLINA=100), FOR RETAIL STORES IN TEN SOUTHEASTERN STATES,
FOR THE YEAR ENDING JANUARY 31, 1954

States	Gross Profit (1)	Rank for Column (1) (2)	Salaries and Wages (3)	Rank for Column (3) (4)	Net Profit Before State and Local Taxes (5)	Rank for Column (5) (6)	Adjusted Book Value[2] (7)	Rank for Column (7) (8)	Unadjusted Book Value[3] (9)	Rank for Column (9) (10)
NORTH CAROLINA	100.0	6	100.0	5	100.0	9	100.0	5	100.0	1
Alabama	77.2	9	60.7	9	109.2	8	77.6	10	64.0	3
Florida	94.4	8	63.4	8	256.0	1	92.9	8	47.5	9
Georgia	119.8	4	112.1	4	141.5	5	112.9	4	50.1	8
Kentucky	70.4	10	55.3	10	77.0	10	98.8	6	53.1	6
Louisiana	102.5	5	98.2	6	139.4	6	88.2	9	43.5	10
Mississippi	139.5	3	125.7	2	210.9	2	124.7	3	52.9	7
South Carolina	148.8	1	130.7	1	127.3	7	294.1	1	70.3	2
Tennessee	96.9	7	67.3	7	147.1	4	96.5	7	54.8	5
Virginia	143.8	2	117.7	3	180.6	3	144.7	2	58.2	4

NOTES: [1]Excluding Payroll Taxes
[2]Average Inventory, plus physical assets other than inventory, plus annual rent multiplied by eight.
[3]Average Inventory, plus physical assets other than inventory.

TABLE 18

ACTUAL CORPORATION N

TOTAL STATE AND LOCAL TAXES[1] AS A PERCENT OF VARIOUS CORPORATE FIGURES,
EXPRESSED AS AN INDEX (NORTH CAROLINA=100), FOR RETAIL STORES IN TEN SOUTHEASTERN STATES,
FOR THE YEAR ENDING JANUARY 31, 1955

States	Gross Profit (1)	Rank for Column (1) (2)	Salaries and Wages (3)	Rank for Column (3) (4)	Net Profit Before State and Local Taxes (5)	Rank for Column (5) (6)	Adjusted Book Value[2] (7)	Rank for Column (7) (8)	Unadjusted Book Value[3] (9)	Rank for Column (9) (10)
NORTH CAROLINA	100.0	1	100.0	1	100.0	4	100.0	2	100.0	4
Alabama	46.6	9	39.2	8	61.2	9	48.2	10	99.4	5
Florida	49.6	8	36.3	9	153.2	2	53.2	8	77.0	9
Georgia	68.7	5	67.5	4	78.7	6	69.1	5	80.1	8
Kentucky	38.8	10	30.6	10	45.8	10	51.8	9	103.5	3
Louisiana	62.7	7	63.4	5	77.3	7	58.3	6	67.4	10
Mississippi	74.6	2	71.5	2	103.9	3	71.9	4	93.3	6
South Carolina	73.9	3	68.4	3	61.8	8	127.3	1	180.6	1
Tennessee	66.0	6	44.9	7	184.1	1	56.1	7	80.3	7
Virginia	69.4	4	61.8	6	82.2	5	74.8	3	105.0	2

NOTES: [1]Excluding Payroll Taxes
[2]Average Inventory, plus physical assets other than inventory, plus annual rent multiplied by eight.
[3]Average Inventory, plus physical assets other than inventory.

TABLE 19

ACTUAL CORPORATION N

TOTAL STATE AND LOCAL TAXES[1] AS A PERCENT OF VARIOUS CORPORATE FIGURES,
EXPRESSED AS AN INDEX (NORTH CAROLINA=100), FOR RETAIL STORES IN TEN SOUTHEASTERN STATES,
FOR THE YEAR ENDING JANUARY 31, 1956.

States	Gross Profit (1)	Rank for Column (1) (2)	Salaries and Wages (3)	Rank for Column (3) (4)	Net Profit Before State and Local Taxes (5)	Rank for Column (5) (6)	Adjusted Book Value[2] (7)	Rank for Column (7) (8)	Unadjusted Book Value[3] (9)	Rank for Column (9) (10)
NORTH CAROLINA	100.0	1	100.0	1	100.0	8	100.0	3	100.0	1
Alabama	60.8	9	46.5	9	112.8	5	53.5	9	58.5	7
Florida	90.5	4	65.3	7	247.8	2	89.4	4	73.0	5
Georgia	86.3	6	84.4	4	100.3	7	86.6	6	62.2	6
Kentucky	41.8	10	26.9	10	120.1	4	43.7	10	50.6	8
Louisiana	68.1	8	68.1	6	96.6	9	60.6	7	43.5	10
Mississippi	90.1	5	72.6	5	229.6	3	88.0	5	74.2	4
South Carolina	97.7	2	88.5	2	87.4	10	154.9	1	84.4	2
Tennessee	78.8	7	47.6	8	290.6	1	54.9	8	48.7	9
Virginia	95.1	3	85.9	3	108.8	6	104.2	2	81.5	3

NOTES: [1]Excluding Payroll Taxes
[2]Average Inventory, plus physical assets other than inventory, plus annual rent multiplied by eight.
[3]Average Inventory, plus physical assets other than inventory.

TABLE 20

ACTUAL CORPORATION N

TOTAL STATE AND LOCAL TAXES[1] AS A PERCENT OF VARIOUS CORPORATE FIGURES,
EXPRESSED AS AN INDEX (NORTH CAROLINA=100), FOR RETAIL STORES IN TEN SOUTHEASTERN STATES,
AVERAGE FOR THREE YEARS ENDING JANUARY 31, 1954, 1955, AND 1956

States	Gross Profit (1)	Rank for Column (1) (2)	Salaries and Wages (3)	Rank for Column (3) (4)	Net Profit Before State and Local Taxes (5)	Rank for Column (5) (6)	Adjusted Book Value[2] (7)	Rank for Column (7) (8)	Unadjusted Book Value[3] (9)	Rank for Column (9) (10)
NORTH CAROLINA	100.0	2	100.0	1	100.0	5	100.0	3	100.0	1
Alabama	58.5	9	46.8	9	84.3	9	57.3	10	70.1	4
Florida	76.6	6	54.2	7	224.4	1	77.7	6	65.4	6
Georgia	87.7	5	84.5	5	99.7	6	86.0	5	61.7	8
Kentucky	47.5	10	35.1	10	62.6	10	59.8	9	63.9	7
Louisiana	74.3	8	73.4	6	97.9	7	66.2	7	49.1	10
Mississippi	95.7	4	84.9	3	162.2	3	90.1	4	68.7	5
South Carolina	100.4	1	90.8	2	85.7	8	176.3	1	99.7	2
Tennessee	76.2	7	51.3	8	173.1	2	65.0	8	58.3	9
Virginia	97.6	3	84.7	4	115.9	4	103.1	2	78.5	3

NOTES: [1]Excluding Payroll Taxes
[2]Average Inventory, plus physical assets other than inventory, plus annual rent multiplied by eight.
[3]Average Inventory, plus physical assets other than inventory.

From Table 19 it is clear that North Carolina must be ranked with the relatively high tax states from the point of view of the kind of retail enterprises represented by Actual Corporation N. In terms of the gross profit measure, North Carolina was the highest taxing state of the group. South Carolina was next in line, approximately two percentage points behind North Carolina. Kentucky was the lowest taxing state in these calculations, imposing a tax burden (measured by gross profit) considerably less than half that imposed by North Carolina. In the year ending January 31, 1956, North Carolina extracted 2.63 percent of the sample store's gross profits, while Kentucky, at the other end of the burden scale, extracted only 1.10 percent.

Much the same pattern is shown by the other measures of tax burden, with the exception of that based upon net profits before taxes. Particular note should be taken of column 9 of Table 19 showing the total state and local taxes paid as a percent of the book value of the corporation's investment in each of the stores. Although the rankings of other states are somewhat different from those indicated by the gross profits measure, North Carolina is still at the top of the list. There is, however, a large gap between North Carolina and South Carolina, the State occupying second position in the rankings.

When this measure of the book value of property was adjusted to include a casually capitalized rental value, North Carolina's position was somewhat improved. In column 7 of Table 19 it can be seen that both South Carolina and Virginia imposed heavier taxes upon Corporation N than did North Carolina. This change of rank from the unadjusted book value list to the adjusted book value list means, of course, that rent for the North Carolina store was higher, relative to book value, than was the rent for the Virginia and the South Carolina stores. If these were "pure" rental charges, the adjustment of the book value figures would add refinement to the tax burden measure. It is dangerous to assume, however, that the higher rental charges in some states were the result solely of more desirable premises or locations. *They may, in fact, have been due to higher property taxes in these states, in which case, of course, the denominator of the ratio fraction would be enlarged by a tax item that should, more accurately, be placed in the numerator.* Thus, to the extent that differences in the rental factor are to be accounted for by differences in the property tax burden, the effect on the distributions of tax burdens as between these ten states should be less

severe than that indicated by the movement from column 9 to column 7. In terms of the measurements of burdens (as distinct from the index number expressions and the rank figures), the results probably should be assumed to lie somewhere between those represented by the figures of column 9 and those of column 7 of Table 19.

In all three tables representing annual state and local tax burdens the column illustrating total state and local taxes as a percent of net profit before state and local taxes appears to be perverse. It appears, in other words, to show quite different results from all of the other columns. In the present case this relationship results from the fact that there is a tendency for the ratio of net profit before taxes to book value to decrease as the book value increases. In other words, the percentage return on investment, before taxes, seems to decline as the investment increases. The pattern is by no means uniform, but the tendency is clear. Much the same thing is true of the relationship between gross profit and net profit. As gross profit increases, the ratio of net profit to gross profit tends to decline. Where this tendency does exist, there is also a tendency for the states involved to reverse their positions on the ranking scale, so that those which appear relatively high on the scale of the gross profit and the book value measures appear relatively low on the scale of the net profit measure. Unfortunately, it was impossible to extend the requirement of comparability to the net earnings ratios of the individual stores, but it is clear that the lack of such comparability seriously impairs the usefulness of the net profit measurement of tax burdens in the present case. It should also be noted, as a further indication of the weakness of the net profit measure in this case, that the rankings of the individual states show rather violent changes from year to year on the net profit scale, thus indicating the variability of net profits computed on an annual basis.

The fact that North Carolina appears as a rather low tax state by the net profit analysis makes the net profit figures an extremely attractive measuring device if self-satisfaction and complacency are to be the guiding principles of tax analysis. Unfortunately, however, these provide rather thin justification for the use of this measure in the present case. In theory, the book value measure is much to be preferred to the net profit measure, as long as it can reasonably be maintained that the book value figures are comparable for the several units being

compared. The preference for an asset measurement such as this comes, of course, from the fact that it is much more closely related to the concept of financial ability to pay taxes than is an annual (or even a three-year average) net profit figure. For Corporation N, it is believed that the book value figures show a high degree of comparability. The problems of depreciation are minimized by the fact that the land and buildings are leased in every case and, in part, by the fact that the largest single asset value is inventory. Inventory valuation is centralized and uniform for each of the stores. Furthermore, it must be supposed that variety store inventory exhibits considerable uniformity with respect to volume (as related to sales) and type for the several stores in a chain store system. Variations could exist in the valuation of leasehold improvements, because of the depreciation element, but it should be noted that Corporation N began the operations of all but three of the ten stores at approximately the same time, so that, with uniform accounting practices applied to all, the differences in book value resulting from the character of the depreciation policy are likely to be rather small. The North Carolina store, incidentally, was among the majority in this respect.

There is a further reason for preferring the book value measure over the net profit measure in a case such as this. This reason relates to the probable attitude of businessmen. In the consideration of tax burdens, the calculus is much more likely to be in terms of "how much is the return on my investment reduced by these taxes" than of "how much are these taxes going to reduce my net profits". When the managers of an enterprise such as that of Corporation N contemplate a new operation in a given location they undoubtedly give primary consideration to the percentage return they may expect on their investment. If they think of taxes at all, they think of them in the sense of reducing this return. If this is the correct interpretation, the calculation for each state should begin with the determination of the relationship (expressed as a ratio) between the net profit before all taxes for each store and the total investment for that store. The calculation should then proceed to show how the tax structure of each state *reduces* the profit ratio. This, of course, is exactly the same thing as calculating the ratio of state and local taxes to the book value of the property at each store (assuming the latter properly to represent "investment").

The objection might still be raised that it is possible for the corporation to reduce its asset figure by increasing its annual expenses. This reduction would be accomplished by reducing the corporation's *ownership* of assets and increasing its *rental* of assets. While this is admittedly a danger in the unqualified acceptance of the "investment" measure of tax burdens, it is not believed to be of great importance in the present case. All of the real assets of each store are rented by Actual Corporation N. The principal assets owned by the corporation are leasehold improvements and inventory, with the latter being the much larger dollar figure of the two. The stores are thus comparable with respect to the relationship between the *kind* of property owned and the *kind* of property rented. If differences still exist in the *quantity* or *quality* of things rented, the analytical shift should be from the unadjusted book value measure to the adjusted book value measure. But there is just as great a chance that differences in rental expenses come from property tax differentials as from other value-influencing differentials. If property tax differentials are significant components of the rental figures, the shift should be *away from* the adjusted book value figures toward the unadjusted book value figures.

Thus, although neither the book value measure nor the net profit measure is perfectly satisfactory, there is much to commend the former and little to commend the latter. If net profits could be examined over a five- or ten-year period, the value of the measure might, for this corporation, approximate that of the book value measure, although many problems would still remain. As it is, preference must be given to the unadjusted book value measure of tax burdens, with supplementary attention given to the adjusted book value measure. The gross profit and the salaries and wages measures are useful as supporting evidence. All five measures are, however, presented in the tabular material.

In only one of the three years for which data were collected did North Carolina rank lower than first in this ten-state comparison of unadjusted book value measurements of tax burdens.[21] For the year ending January 31, 1955, North Carolina ranked fourth, falling well behind South Carolina and slightly behind Virginia and Kentucky. For the whole period, the North Carolina burden upon Corporation N was measured as 3.678 percent of unadjusted book value. The South Carolina burden was

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21. To repeat, the measures are ranked from highest to lowest, with the dubious honor of first place going to the state with the highest measured tax burdens on the list.

virtually the same—3.668 percent. The lowest of the 10 states was Louisiana, with a measurement of 1.807 percent of unadjusted book value, or almost exactly half that shown for North Carolina.

Similarly, in only one of the three years (1954) did North Carolina rank lower than first in the gross profit and the salaries and wages measures. In the year ending January 31, 1954, North Carolina ranked sixth on the gross profit schedule and fifth on the salaries and wages schedule. *The average measurements of burden for the three-year period show North Carolina as first in both of these schedules.* Although the rankings of other states are somewhat different for each of these measures, the evidence does seem to support that of the unadjusted book value calculations.

Tables 21 to 24, inclusive, show the same kind of data for *total* taxes (except sales and use taxes). The major additions to the list of taxes considered are the federal income tax and payroll taxes, although small amounts of miscellaneous federal taxes are included for some of the stores. The first three of these tables show, in index form, the positions of the several states with respect to North Carolina, as determined by five separate measures of tax burdens, for each of the three years ending January 31, 1954, 1955, and 1956. The last of the tables shows, by the same tabular techniques, the average tax burdens over the three-year period.

In this comparison, North Carolina fares a little better as a host to retail establishments of the kind illustrated by Actual Corporation N. By the preferred unadjusted book value measurement, North Carolina ranked fourth in 1954 (behind Kentucky, South Carolina, and, surprisingly, Alabama). In 1955, North Carolina ranked third (behind South Carolina and Kentucky). And in 1956, North Carolina ranked first, with South Carolina ranked as a close second. *For the entire three-year period North Carolina ranked third, with Kentucky in second position, approximately 2 percent higher, and with South Carolina first, approximately 16 percent higher.*

With respect to North Carolina and, in broad outline at least, with respect to the other states in the comparison, these results are borne out by the gross profits and the salaries and wages measures. With these measures, North Carolina ranked a consistent second behind South Carolina's consistent first. Florida

TABLE 21

ACTUAL CORPORATION N

TOTAL TAXES AS A PERCENT OF VARIOUS CORPORATE FIGURES,
EXPRESSED AS AN INDEX (NORTH CAROLINA=100), FOR RETAIL STORES IN TEN SOUTHEASTERN STATES,
FOR THE YEAR ENDING JANUARY 31, 1954

States	Gross Profit (1)	Rank for Column (1) (2)	Salaries and Wages (3)	Rank for Column (3) (4)	Net Profit Before All Taxes (5)	Rank for Column (5) (6)	Adjusted Book Value[1] (7)	Rank for Column (7) (8)	Unadjusted Book Value[2] (9)	Rank for Column (9) (10)
NORTH CAROLINA	100.0	2	100.0	2	100.0	10	100.0	3	100.0	4
Alabama	73.6	7	58.1	8	102.4	7	74.6	6	107.1	3
Florida	39.5	10	26.6	10	111.3	1	39.0	10	34.8	10
Georgia	89.6	4	83.6	3	104.6	5	84.4	4	66.2	6
Kentucky	94.5	3	74.1	4	100.4	9	132.2	2	117.4	1
Louisiana	76.3	6	73.0	5	103.5	6	65.6	8	56.7	7
Mississippi	69.9	9	68.0	7	108.2	2	62.6	9	52.7	8
South Carolina	119.4	1	105.0	1	102.3	8	236.8	1	113.7	2
Tennessee	70.5	8	48.8	9	105.2	3	70.1	7	34.9	9
Virginia	81.8	5	66.8	6	105.1	4	81.9	5	71.7	5

NOTES: [1] Average inventory, plus physical assets other than inventory, plus annual rent multiplied by eight.
[2] Average inventory, plus physical assets other than inventory.

TABLE 22

ACTUAL CORPORATION N

TOTAL TAXES AS A PERCENT OF VARIOUS CORPORATE FIGURES,
EXPRESSED AS AN INDEX (NORTH CAROLINA=100), FOR RETAIL STORES IN TEN SOUTHEASTERN STATES,
FOR THE YEAR ENDING JANUARY 31, 1955.

States	Gross Profit (1)	Rank for Column (1) (2)	Salaries and Wages (3)	Rank for Column (3) (4)	Net Profit Before All Taxes (5)	Rank for Column (5) (6)	Adjusted Book Value[1] (7)	Rank for Column (7) (8)	Unadjusted Book Value[2] (9)	Rank for Column (9) (10)
NORTH CAROLINA	100.0	2	100.0	2	100.0	4	100.0	3	100.0	3
Alabama	77.9	7	65.6	8	97.9	8	81.0	6	94.9	4
Florida	36.5	10	26.5	10	109.6	2	39.0	9	32.2	10
Georgia	90.9	3	89.0	3	99.9	5	90.8	5	59.8	5
Kentucky	86.3	4	67.6	7	96.2	10	114.4	2	138.8	2
Louisiana	81.7	6	82.7	4	98.5	7	75.9	7	50.1	8
Mississippi	74.7	8	71.8	6	101.9	3	72.0	8	46.7	9
South Carolina	119.6	1	110.6	1	96.7	9	205.9	1	144.9	1
Tennessee	42.2	9	28.6	9	114.4	1	35.8	10	58.1	7
Virginia	85.5	5	75.7	5	98.8	6	91.5	4	59.5	6

NOTES: [1]Average inventory, plus physical assets other than inventory, plus annual rent multiplied by eight.
[2]Average inventory, plus physical assets other than inventory.

TABLE 23

ACTUAL CORPORATION N

TOTAL TAXES AS A PERCENT OF VARIOUS CORPORATE FIGURES,
EXPRESSED AS AN INDEX (NORTH CAROLINA=100), FOR RETAIL STORES IN TEN SOUTHEASTERN STATES,
FOR THE YEAR ENDING JANUARY 31, 1956

States	Gross Profit (1)	Rank for Column (1) (2)	Salaries and Wages (3)	Rank for Column (3) (4)	Net Profit Before All Taxes (5)	Rank for Column (5) (6)	Adjusted Book Value[1] (7)	Rank for Column (7) (8)	Unadjusted Book Value[2] (9)	Rank for Column (9) (10)
NORTH CAROLINA	100.0	2	100.0	2	100.0	9	100.0	2	100.0	1
Alabama	57.2	6	43.7	6	103.6	5	50.4	6	54.6	5
Florida	38.9	9	28.1	8	115.4	3	38.5	9	31.2	9
Georgia	88.9	3	87.1	3	101.6	6	89.0	4	63.9	4
Kentucky	40.5	8	26.0	9	108.3	4	42.7	8	48.8	6
Louisiana	71.9	5	72.0	5	100.7	7	63.8	5	45.8	7
Mississippi	44.1	7	35.6	7	115.9	2	43.1	7	36.1	8
South Carolina	110.8	1	100.5	1	98.7	10	176.1	1	95.8	2
Tennessee	32.5	10	21.0	10	126.8	1	24.1	10	21.8	10
Virginia	87.2	4	78.7	4	100.5	8	95.4	3	74.2	3

NOTES: [1]Average inventory, plus physical assets other than inventory, plus annual rent multiplied by eight.
[2]Average inventory, plus physical assets other than inventory.

TABLE 24

ACTUAL CORPORATION N

TOTAL TAXES AS A PERCENT OF VARIOUS CORPORATE FIGURES,
EXPRESSED AS AN INDEX (NORTH CAROLINA=100), FOR RETAIL STORES IN TEN SOUTHEASTERN STATES,
AVERAGE FOR THREE YEARS ENDING JANUARY 31, 1954, 1955, AND 1956.

States	Gross Profit (1)	Rank for Column (1) (2)	Salaries and Wages (3)	Rank for Column (3) (4)	Net Profit Before All Taxes (5)	Rank for Column (5) (6)	Adjusted Book Value[1] (7)	Rank for Column (7) (8)	Unadjusted Book Value[2] (9)	Rank for Column (9) (10)
NORTH CAROLINA........	100.0	2	100.0	2	100.0	10	100.0	2	100.0	3
Alabama.....................	69.9	7	56.0	7	103.9	6	68.5	6	83.9	4
Florida.....................	38.3	10	27.1	10	108.4	2	38.9	10	32.7	10
Georgia.....................	89.7	3	86.5	3	104.3	4	87.9	5	101.7	2
Kentucky.....................	75.6	6	55.8	8	104.0	5	95.1	3	50.7	7
Louisiana.....................	76.5	5	75.7	4	102.2	7	68.2	7	45.3	8
Mississippi..................	63.1	8	105.2	1	106.0	3	59.5	8	115.6	1
South Carolina..............	116.3	1	56.0	6	100.4	9	204.2	1	37.4	9
Tennessee...................	48.8	9	32.8	9	112.9	1	41.7	9	68.8	5
Virginia.....................	85.2	4	74.1	5	110.9	8	90.2	4		6

NOTES: [1] Average inventory, plus physical assets other than inventory, plus annual rent multiplied by eight.
[2] Average inventory, plus physical assets other than inventory.

and Tennessee shared ninth and tenth positions at various times, with Florida not unexpectedly filling the last position for the three-year period.

In terms of the meaning of the burdens for the corporation in question, the *total* tax measure is undoubtedly more significant than the so-called state-and-local tax measure. But in terms of the comparability of the results with the other quantitative approaches in the present impact study, the state-and-local tax measure is the more significant. The fact that the federal income tax is uniformly applied in all of the states tends to place the burden of responsibility for changing the ranks as between the two levels of tax burdens upon the unemployment insurance taxes. Many of the index numbers under the state and local tax comparison were quite close, so that a relatively small difference in unemployment taxes could change the rankings under the total tax comparison. No attempt was made to explore this responsibility, however, in spite of the fact that the data would seem to warrant such exploration. The excuse, if it be such, was the ever-present time limitation.

Although the results of the application of the actual corporation techniques to Corporation N are far from definite and precise, there can be little question of the fact that North Carolina tax burdens upon the retail corporation analyzed are relatively heavy. By even the most liberal interpretations (excepting the perversities of the net profit measures), North Carolina stands among the top three or four states in the Southeast in the burdens it imposes upon enterprises of this kind. As far as the tax burdens of Corporation N are concerned, there is probably little to choose between North Carolina, South Carolina, and Kentucky, although South Carolina should probably be given the honor of first position. The other states, however, range from "fairly close" to "much lower", with Florida, Tennessee, Mississippi, and Louisiana generally falling into the latter category. This conclusion, at least, appears to be thoroughly defensible.

The results of the analysis of the selected stores of Corporation N seem to bear out, in a very rough way, the results of the hypothetical corporation approach. Considering only the rank of the several states, and with some allowances for the character of the data, it may be observed that North Carolina's position was quite consistent. For Hypothetical Corporation A, North Carolina occupied an undisputed first place among the states considered. For Hypothetical Corporation B, the position of North

Carolina could have been fourth, fifth, or sixth. And for Hypothetical Corporation C, North Carolina's position could have been either first, second, or third. For Actual Corporation N, considering state and local taxes only, North Carolina's position could be either first or second among the ten states included in the analysis.

The analysis of the three hypothetical corporations and the one actual corporation thus produces four separate rankings for the ten or eleven Southeastern states. In these four rankings, only Virginia and Mississippi are the constant companions of North Carolina in the first five ranks. These three states appear somewhere in the first five positions on the schedules for all four corporations. Tennessee, Louisiana, and Georgia join the group twice, and Alabama and South Carolina appear on the list once —in both cases, for Actual Corporation N. Alabama's position in this comparison of ranks appears to be the most unusual. For the three hypothetical manufacturing corporations, Alabama is in eleventh position twice and ninth position (out of ten states) once, thus qualifying as a state gentle in its treatment of manufacturing enterprises. In the case of the retail enterprise, however, Alabama "improves" its position by moving into fourth place, thus qualifying as a state somewhat harsh in its treatment of retail enterprises. South Carolina, too, is a consistent second division state for the manufacturing corporations (although marginally so in two cases), but achieves runner-up position for the retail corporation. Tennessee and Louisiana appear to impose significantly lighter burdens on the retail corporation than on the manufacturing corporations, at least in terms of their rankings with respect to other states. But it is impossible to say, on the basis of presently available evidence, whether these differences arise as a result of the distinction between retail and manufacturing enterprises, or as a result of the distinction between actual taxes and hypothetical taxes.

The data of Actual Corporation N do not provide clear evidence that the interstate differentials shown to exist for the three hypothetical corporations apply with equal force to the actual corporation. There is evidence of consistency for some of the states, particularly those at the top of the tax burden scale, but for others the evidence is less convincing. North Carolina, Virginia, and Mississippi appear to levy consistently high burdens upon both manufacturing and retail establishments. A

simple comparison of ranks is not, of course, enough to establish total consistency, but it is roughly indicative of the spread of the tax burdens within each state. Furthermore, when an attempt is made to cross both industry lines and methodological lines, it is about the only kind of comparison which the data will support.

CONCLUSIONS

The preceding analysis of the actual tax burdens of three actual corporations provides a reasonably clear picture of North Carolina's tax status. Although strict, quantitative interpretation must be rather narrowly circumscribed by the limitations of the approach, it is possible to draw from the three cases one or two conclusions which may have wider applicability. In this respect, too, the conclusions of the actual corporation approach support the conclusions of the hypothetical corporation approach.

Perhaps the most outstanding revelation relates to the ad valorem property tax. For the three states compared in the analysis of Actual Corporations L and M, two opposite situations are described, one of which disturbs the common theory that North Carolina's ad valorem property tax levies are comparatively low, and the other of which supports this theory. In the comparison of North Carolina and Alabama, the property tax advantage was found to lie clearly with the latter. In the comparison of North Carolina and South Carolina, the property tax advantage was found to lie with the former. It was also found, in both cases, that North Carolina can claim substantially lower aggregate property tax *rates* than those levied in the other states. In the comparison with South Carolina, these lower North Carolina rates were not offset by higher assessed values. In the comparison with Alabama, the lower North Carolina tax rates were more than offset by higher assessed values. Since the lower ad valorem rates in North Carolina tend to support the theory of relatively light property tax impositions, it is obviously necessary to emphasize the role of the assessed value base for a refutation (or a further support) of that theory.

Although it is not possible to offer evidence of the relative importance of the exemption structures and the assessment ratios, it is possible to observe that Alabama law contains more liberal exemptions for textile manufacturers than either North Carolina or South Carolina. It may also be that the same social and economic forces which provide the rationale for liberal statutory

exemptions also provide the rationale for liberal (but non-statutory) assessment practices. It is probable, indeed, that if a state has chosen, for one reason or another, to grant special treatment in its property tax laws to a particular kind of economic activity, the assessors will also find the same reasons persuasive in the administrative determination of an assessed valuation of whatever base remains in the law. This has, at least, proved to be the case in many other situations, in the absence of a strong, state-administered equalization program. Specific exemptions and assessment practices are thus often reinforcing rather than offsetting.

In any event, it is probably fair to conclude that whenever the exemption structure as applied to a particular type of enterprise is substantially more favorable than that of North Carolina, the theory of North Carolina's property tax supremacy is either questionable or completely invalid. It may be true that the property tax in Alabama represents a larger percentage of total state and local collections than it does in North Carolina. But if the schedule of exemptions is different, and if assessment practices tend to follow the lines of liberality indicated by the schedule of exemptions (as it is here maintained they often do), this fact may be meaningless for a particular firm. It is not here implied that North Carolina's competitive solution in these cases lies in the adoption of similar statutory exemptions or in the pursuit of non-statutory techniques in the assessment program. But that the existence of these practices in other states invalidates the theory of North Carolina's property tax supremacy *in many specific instances* is quite clearly indicated by the hypothetical corporation approach and by the supporting findings of the actual corporation approach.

In all three actual corporation cases the North Carolina income tax appeared as a relatively heavy instrument of taxation. For both textile corporations the North Carolina income tax was higher than that of the comparative state. The differences which were found to exist in the hypothetical corporation approach, for foreign corporations, were also found to exist in the actual corporation approach for a corporation domestic in North Carolina and foreign in Alabama and South Carolina. In all cases, the major factors creating these differences were the tax rate, the deductibility of the federal income tax, and the determination of the taxable portion of the net income of an interstate operation.

Finally, it may be concluded that the contentions advanced by some members of the textile industry in North Carolina that other areas exist in the Southeast which are agreeable to textile manufacture and that are blessed with substantially lower tax burdens than those imposed by North Carolina are supported in the case of Alabama. They are not supported, however, in the case of South Carolina. It is to be hoped that it will be possible to develop similar tests for other states and for other important industries of the Southeast at some later date.

CHAPTER IX

FINDINGS AND CONCLUSIONS

THE INTERSTATE COMPARISON

In an attempt to fulfill the legislative mandate expressed in Resolution Number 49 of the 1955 Session of the North Carolina General Assembly, emphasis was placed upon the hypothetical corporation method for an exploration of interstate differentials in tax burdens. By the application of the hypothetical corporation method an attempt was made to test the *appearance* of the tax structures of the eleven Southeastern states and to develop the kinds of answers that might be obtained by an energetic corporate official in the early stages of the calculus that lies behind a planned industrial location. In accordance with these motives, the results of the analysis were interpreted purely in terms of the *apparent* tax burdens rather than in terms of the *actual* tax burdens imposed by the eleven Southeastern states.

The results of the hypothetical corporation approach show that North Carolina stands with one or two other Southeastern states in imposing especially heavy statutory tax burdens upon manufacturing corporations of the type selected for analysis. For one of the three corporations analyzed the results are, to be sure, somewhat more favorable for North Carolina. But the assumptions behind the analysis introduce their own notes of disenchantment for this case. In particular, the assumption that methods of separate accounting are, for technical reasons, not available to the three hypothetical corporations in the determination of taxable net income for income tax purposes is the source of a possible overstatement of the tax burdens of all states except North Carolina and Tennessee. In addition, of course, the assumption that all of the corporations are principally engaged in *manufacturing* in the Southeastern states may be somewhat misleading. This assumption is probably safe enough for Corporations A and C, but it may not fit the character of Corporation B. Finally, the assumptions of the hypothetical corporation analysis which restrict each of the model corporations to a single plant in the domestic state may be particularly distorting in the case of Hypothetical Corporation B. Such a corporation might find North Carolina an attractive location

for a first plant, but any subsequent expansion of manufacturing operations would place North Carolina at a serious disadvantage in terms of the tax burden comparison for the eleven Southeastern states.

With these qualitative amendments the results of the hypothetical corporation analysis may be taken to be virtually unanimous in their declarations of the severity of the North Carolina tax burdens upon foreign manufacturing corporations.

Although the actual corporation method was based upon an analysis of somewhat different types of corporations than those designed for the hypothetical corporation method, the results do tend to support the conclusion that the interstate differences illustrated by the hypothetical analysis are *real* differences and not merely the *fancied* differences that can be produced by a myopic examination of the tax laws. The actual corporation results also tend to show that the position of North Carolina's tax structure in the rankings of the Southeastern states is at least as severe for large retail operations as for manufacturing enterprises.

Unfortunately, the evidence of the actual corporation method is highly selective and not perfectly consistent with the thesis of severity. For what they are worth, however, the interstate comparisons of the representative sample method, themselves based upon actual taxes rather than hypothetical taxes, tend further to support the findings of the hypothetical corporation analysis. The representative sample method was based upon a sample of all types of corporations with multi-state business, so that it is not, of course, perfectly comparable with the hypothetical corporation sample. Nevertheless, the indications are strong that North Carolina's tax structure falls heavily upon corporate business as compared with the tax structures of the other Southeastern states.

When all of these individually inadequate pieces of evidence are accumulated they provide as clear a portrait as it is possible to paint on the rough canvas of tax burden analysis. The portrait shows North Carolina's tax structure as one of the heaviest corporate tax impositions in the Southeast.

The methods of analysis adopted for the present study also offer imposing evidence of the *origins* of the severity of the North Carolina law. For all corporations the North Carolina income tax rate is, of course, a prime offender in this respect. Of the ten Southeastern states levying a corporate income tax

only Kentucky, with its two-step rate of 5 percent and 7 percent, makes use of an income tax rate that is as high as that of North Carolina.

For foreign corporations with multi-state income a chief cause of the unfortunate appearance of the North Carolina tax structure is the statutory allocation formula by which income tax liability is determined. For manufacturing corporations the absence of a sales factor produces a particular hardship—at least in terms of the statutory construction. For selling corporations the absence of a manufacturing cost or a payroll factor produces the same hardship. For both manufacturing and selling corporations the North Carolina approach to the problem of multistate income, whereby the formula is adjusted to the situation, must create the attitude that North Carolina attempts to live in the best of all possible worlds by extracting the constitutional maximum from foreign interstate corporations. The North Carolina allocation formula is not necessarily "more incorrect" than the formulae of other Southeastern states. All allocation formulae are "incorrect" in the sense that they are based upon an attempt to allocate something which cannot, by its very nature, be logically allocated. But there can be no question about the fact that North Carolina's allocation formula has a more demanding appearance than most of the allocation formulae employed by the Southeastern states. The few states which, for some corporations, make use of more demanding allocation formulae than does North Carolina also permit the taxpayer the alternative privilege of separate accounting—a privilege which can, in some cases, override all problems of statutory construction.

For domestic corporations the North Carolina treatment of multi-state income is equally forbidding in its appearance. Although it is true, in the legal sense, that businesses enjoy a corporate existence at the pleasure of the states from which they receive their charters, the exercise of the power of the chartering state to tax the income of the corporation wherever it is earned has the appearance of extreme injustice. North Carolina's permission of a deduction for income subject to income taxation in other states completely removes this injustice for many corporations. But for corporations operating in states without corporate income taxes the harsh appearance remains.

The effects of the ad valorem property tax are somewhat more difficult to determine. It is probably true that many corporations

contemplating plant location in one or another of the Southeastern states totally omit the property tax from their comparative calculations, or at least grossly under-estimate the effects of this tax upon corporate tax burdens. In view of the enormous difficulties associated with the attempt to obtain even remotely accurate information about assessment ratios, this omission is, of course, perfectly understandable. On the surface, this omission appears to operate to the disadvantage of North Carolina. The relative centralization of the North Carolina revenue structure tends to de-emphasize the property tax and other local levies in favor of the income tax and other state-level taxes. It is thus argued that if a business fails to make a complete survey of the *total* tax bill, including the property tax component, it tends to bias the results against North Carolina.

But the findings of the hypothetical corporation analysis and the actual corporation analysis tend to indicate that this comfortable assumption is a dangerous perversion of reality. *For some corporations it may be completely invalid.* North Carolina's relatively low property tax rates are, in some instances, offset by relatively high assessment ratios. Furthermore, it is difficult to persuade a potential North Carolina taxpayer that North Carolina's centralized tax system provides a more congenial tax atmosphere than does the system of a state that provides a total or a substantial *exemption.* What is true of taxpayers as a group may not be true of individual taxpayers. In view of the findings of the present study, North Carolina does itself a real disservice in assuming that the only problems of property taxation are the problems of advertising its comparative advantages in this field. For some corporations the North Carolina property tax burdens are not to be explained away so easily. This argument does not, of course, suggest that North Carolina's centralized revenue structure is in any sense unfortunate. On the contrary, it emphasizes the benefits to be gained from such centralization and suggests that such benefits be uniformly distributed to all taxpayers. The argument does, however, tend to disturb the comfortable contention that North Carolina's high income taxes are *always* offset by relatively low property tax levies.

INTRASTATE COMPARISON

The fact that manufacturing corporations are subjected to relatively heavy tax burdens in North Carolina as compared with those to which they are subjected in other Southeastern

states, should not be taken as automatic proof that manufacturing corporations in North Carolina are taxed more heavily *than other types of corporations within North Carolina. The results of the representative sample analysis tend to prove just the reverse.*

In the classification of business types provided by the North Carolina Department of Tax Research there are six primary classifications of manufacturing corporations. These six classifications are as follows:

1. Food and feed manufacturers
2. Forest products manufacturers
3. Mineral, chemical, and metals manufacturers
4. Textile manufacturers
5. Tobacco manufacturers
6. Other manufacturers.

With due consideration for all of the limitations of the method, it is still clear that these six types of corporations are, on the average, subjected to lighter burdens of state and local taxation than are other types of corporations in North Carolna. Of the six, only tobacco manufacturers and food and feed manufacturers seem able to claim slightly heavier taxes than other manufacturing corporations. The same claims cannot be supported, however, if these types are compared with most *non*-manufacturing corporations.

One or two members of the trade classification are the common companions of the manufacturing corporations in the relatively low-burden category. The clearest representatives of this group are the beverage, food, and drug corporations. Within this broad category are represented such trade corporations as beverage distributors, chain stores of both the drug and grocery types, drug and grocery wholesalers and jobbers, and so on. The beverage, food, and drug corporations are located, in the tax-burden scale, just below the so-called "equipment and supplies" group. This latter group includes corporations who trade in building materials and supplies; business and office equipment and supplies; electrical, heating, and plumbing equipment and supplies; industrial equipment and supplies; and so on.

The classifications subject to relatively high taxation in North Carolina are even more clearly positioned. The two groups that stand out in this respect are public ultilities and recreation and amusement corporations. The public utilities group is rather more broadly defined than it is in common usage. The group

includes gas and electric utilities, telephone companies, trucking companies, radio stations, and several others. In the basic classification the group also includes railway corporations, although, as explained above, railways were not included in the representative sample. The recreation and amusement category includes theatres, film distributors, and theatre equipment and supply companies, among others. These two primary categories are closely followed by a large group of service corporations. These include such enterprises as beauty shops, cafes and restaurants, co-ops, hotels, real estate and rental corporations, laundry and dry cleaning establishments, and other relatively small corporate enterprises.

The fact that some corporate groups are clearly established in relatively high or relatively low positions on the scale of corporate tax burdens within North Carolina is not, of course, proof that all of the individual corporations making up the classifications are similarly established. Some of the classifications contain a large number of sub-classifications and it may be that within a low-tax group some of these sub-groups tend to be subjected to relatively high taxation. It may also be that substantial variation exists within groups as between relatively small corporations and relatively large corporations. The probability that a concealed classification by size of business operations exists within the classification devised by the Department of Tax Research emphasizes the possibility that there is an important correlation between the size of the corporation and the size of the tax burdens. Nevertheless, the present analysis offers but scant support to either of these hypotheses, simply because it was aimed at the variations between the primary groups rather than at the reasons for variation within the groups. The analysis does, however, provide the raw material for many extremely fruitful studies in this direction.

From the point of view of North Carolina's industrial development the manufacturing case is undoubtedly the most significant. It is in this economic area that North Carolina must search for its new elements of economic advance and to which it must look for the fulfillment of its economic and social ambitions. It may be concluded that the burdens of North Carolina's tax structure upon such enterprises are generally greater than the burdens imposed by other Southeastern states. In some cases, indeed, the North Carolina burdens are *substantially* greater. But it may also be concluded that the North Carolina

tax structure treads with a relatively gentle step on manufacturing corporations as compared with other corporations within North Carolina. The analytical dilemma which these comparisons produce could probably be resolved by an analysis of the internal distribution of the tax structures of the other Southeastern states. Although it cannot be proved in any clear, quantitative way by the findings of the present study, there are strong indications that many of the other Southeastern states show even more favoritism to manufacturing corporations than does North Carolina. The policy dilemma which these comparisons create can be resolved only by means of a decision as to the legitimate functions of a state and local tax system.

THE OVERALL APPEARANCE OF THE NORTH CAROLINA TAX STRUCTURE

Although they do not lead to a comparison of actual tax burdens upon individual corporations, calculations of the overall pattern of taxation in states of potential industrial location must be assumed to play a considerable role in the locational decision. Indeed, in many cases they may represent the *entire* role of state and local taxes. Table 1 shows the first of such comparative analyses for the eleven Southeastern states.

The figures of Table 1 describe, in broad outline, the extent to which tax collections are centralized, i.e., the extent to which the tax-collecting function is concentrated in the state government as opposed to the local governments. Total state and local tax collections are shown in column 5. These total figures are broken down into those taxes collected at the state level (column 1) and those taxes collected at the local level (column 3). Column 2 shows the percentage of total state and local tax collections represented by state taxes. North Carolina's position in the rankings for column 2 indicates a relatively high degree of centralization. The Louisiana tax structure shows the highest degree of centralization, with approximately 76 percent of all state and local taxes being collected by the state government. South Carolina is in second position, with approximately 74 percent of all state and local tax collections being made by the state government. North Carolina is in third position. In North Carolina approximately 72 percent of all state and local tax collections are made by the state government. The least centralized of the eleven Southeastern states is Florida, where only 57 percent of all taxes are collected by the state government. The

TABLE 1

TOTAL STATE AND LOCAL TAX COLLECTIONS FOR ELEVEN SOUTHEASTERN STATES: 1953

(Dollar amounts in thousands)

States	Total State Tax Collections (1)	Total State Tax Collections as a percent of Total State and Local Tax Collections (2)	Total Local Tax Collections (3)	Total Local Tax Collections as a percent of Total State and Local Tax Collections (4)	Total State and Local Tax Collections (5)	Rank for Column (2) (6)
NORTH CAROLINA	$287,817	72.31	$110,205	27.69	$398,022	3
Alabama	158,963	69.22	70,702	30.78	229,665	5
Arkansas	102,492	71.76	40,332	28.24	142,824	4
Florida	252,485	57.25	188,538	42.75	441,023	11
Georgia	218,055	64.60	119,476	35.40	337,531	6
Kentucky	137,911	59.46	94,029	40.54	231,940	10
Louisiana	287,188	75.86	91,409	24.14	378,597	1
Mississippi	112,427	63.96	63,337	36.04	175,764	8
South Carolina	159,477	73.91	56,281	26.09	215,758	2
Tennessee	185,458	64.57	101,768	35.43	287,226	7
Virginia	188,654	59.83	126,662	40.17	315,316	9

Source: Bureau of the Census, *State and Local Government Revenue in 1953*, Table 2, pp. 10-13.

figures of Table 1 do not, of course, give any indication as to the degree of centralization of government *expenditure*. Many of the taxes collected by state governments are distributed to local governments for locally-determined expenditure. Other taxes are retained for expenditure by the state government. Although figures are not here introduced to illustrate the point, North Carolina shows up as an even more centralized fiscal structure in terms of expenditure than it does in terms of tax collections.

Table 2 shows the breakdown of state-collected taxes for the eleven Southeastern states, and Table 3 shows the percentage distribution of the state-collected taxes. It should be noted that Tables 2 and 3 are based on 1954 data, while Table 1 is based on 1953 data. The figures are thus not fully comparable. It is, however, the percentage distribution shown in Table 3 that is particularly important in the present study, so it was thought desirable to include the latest available figures for this comparison.

It is clearly the corporate net income taxes (and, in some states, the state-levied property taxes) which are most significant for the problem of industrial location. North Carolina's relative emphasis upon corporate income taxes in the total state tax system is indicated by the figures of column 5, Table 3. Approximately 12 percent of North Carolina's state tax collections come from the corporate net income tax. Virginia is a close competitor in this respect, with a percentage representation for the corporate net income tax of approximately 11 percent. Other states, however, are substantially below the level of these two states. The figures for Louisiana and Alabama are not comparable with those for the other Southeastern states with respect to personal and corporate income tax collections. Florida, of course, levies no corporate income tax.

Although about half of the North Carolina state tax collections are made up of sales and gross receipts taxes, North Carolina is in ninth position among the states of the Southeast in the extent to which these levies are employed in the revenue structure. Georgia collects over three-quarters of its state taxes from these sources. North Carolina's personal income taxes make up a large percentage of the State's total tax collections. In these percentage terms, North Carolina's personal income tax collections are exceeded by those of Virginia and Kentucky.

TABLE 2

STATE TAX COLLECTIONS BY SOURCE, FOR ELEVEN SOUTHEASTERN STATES: 1954[1]

(in thousands of dollars)

States	Total Taxes (1)	Sales and Gross Receipts Taxes (2)	Licenses (3)	Individual Income Taxes (4)	Corporation Income Taxes (5)	Property Taxes (6)	Death and Gift Taxes (7)	Severance Taxes (8)	Unemployment Compensation Taxes (9)	Other Taxes (10)
NORTH CAROLINA	$317,064	$164,905	$ 42,651	$ 38,832	$ 37,907	$ 5,852	$ 4,568	....	$ 22,293	$ 56
Alabama.............	172,908[3]	119,512	12,247	15,207[2]	1,036[2]	9,161	748	$ 1,022	13,018[3]	957
Arkansas............	112,338	74,170	14,904	3,933	8,114	286	174	4,156	6,601	......
Florida..............	276,951	203,545	51,607	....	....	6,196	2,090	55	9,185	4,273
Georgia.............	242,099	185,647	11,119	13,053	13,121	1,114	612	....	17,433	......
Kentucky............	157,551	78,121	15,620	20,493	8,343	12,024	2,798	187	19,423	542
Louisiana............	311,310	172,763	23,743	17,028[2]	........[2]	10,660	2,153	68,363	16,600	......
Mississippi...........	122,790	84,366	8,715	5,297	10,940	1,525	340	6,317	5,290	......
South Carolina......	169,009	115,647	11,105	12,504	14,305	1,859	738	....	11,990	861
Tennessee...........	218,515	142,175	31,012	3,446	16,266	25[4]	3,198	....	21,000	1,393
Virginia.............	203,372	85,976	32,067	39,282	21,958	10,954	2,005	200	7,334	3,596

NOTES: [1]Preliminary
[2]Combined corporation and individual income taxes for two states (Alabama and Louisiana) are included with individual income taxes. Amounts shown as corporation tax for Alabama represent collections for financial institutions only.
[3]Data for twelve-month period ending June 30, 1954; not strictly comparable.
[4]Back taxes.

SOURCE: The Tax Foundation, *Facts and Figures on Government Finance*, 1954-1955, Table 114, pp. 156-157.

TABLE 3

STATE TAX COLLECTIONS, BY SOURCE, AS A PERCENT OF TOTAL STATE TAX COLLECTIONS: 1954

States	Total Taxes (1)	Sales and Gross Receipts Taxes (2)	Licenses (3)	Individual Income Taxes (4)	Corporation Income Taxes (5)	Property Taxes (6)	Death and Gift Taxes (7)	Severance Taxes (8)	Unemployment Compensation Taxes (9)	Other Taxes (10)
NORTH CAROLINA	100.01	52.01	13.45	12.25	11.96	1.85	1.44	......	7.03	.02
Alabama	99.99	69.12	7.08	8.79	.60	5.30	.43	.59	7.53	.55
Arkansas	99.99	66.02	18.27	8.50	7.22	.25	.15	3.70	5.88	....
Florida	99.99	73.49	18.63	......	......	2.24	.75	.02	3.32	1.54
Georgia	99.99	76.68	4.59	5.39	5.42	.46	.25	......	7.20	.34
Kentucky	100.00	49.58	9.91	13.01	5.30	7.63	1.78	.12	12.33	....
Louisiana	100.00	55.50	7.63	5.47	......	3.42	.69	21.96	5.33	....
Mississippi	100.00	68.71	7.10	4.31	8.91	1.24	.28	5.14	4.31	.51
South Carolina	100.00	68.43	6.57	7.40	8.46	1.10	.44	......	7.09	.64
Tennessee	99.99	65.06	14.19	1.58	7.44	.01	1.46	......	9.61	1.77
Virginia	100.02	42.28	15.77	19.32	10.80	5.39	.99	.10	3.61	....

SOURCE: Table 2.

Table 4 provides the same kind of information for local taxes collected. Once again, the figures are for 1953. Property taxes represent the most important source of tax revenues for local governments in all of the eleven Southeastern states. But North Carolina is far ahead of the other states in the extent to which the property tax is used as a source of local government tax collections. Almost 95 percent of local government tax collections in North Carolina come from property taxes. South Carolina is in second position in this comparison. In South Carolina approximately 90 percent of the local tax collections are represented by the property tax. Alabama is in the lowest position in these rankings. Local governments in Alabama collect less than 66 percent of their total tax collections from property tax sources.

Thus, while it is true that North Carolina employs a relatively centralized revenue structure, in the sense that a relatively large percentage of total state and local tax collections are handled at the state level, the local revenue structure of the State strongly emphasizes property tax collections.

When all state and local taxes are combined and expressed as a percent of total population for each of the eleven Southeastern states, North Carolina tax burdens appear to be just higher than the median. This comparison is shown in Table 5. Per capita state and local tax collections in North Carolina are exceeded by those of four other Southeastern states: Florida, Louisiana, South Carolina, and Georgia.

If, as earlier analysis has tended to show, North Carolina levies relatively heavy *corporate* tax burdens, as compared with those levied by other Southeastern states, it may be maintained, as a very rough generalization, that such states as Florida, Georgia, Louisiana, South Carolina, Virginia and, perhaps, Tennessee tend to offset relatively low corporate levies with relatively high levies upon other taxpayers. It seems equally clear that Alabama, Arkansas, Kentucky, and Mississippi tend to compensate by indulging in relatively low expenditures, and, perhaps, by maintaining relatively low levels of governmental service.

Table 6 describes the level of taxes for each of the eleven Southeastern states for every $1,000 of resident individual income in 1953. In this comparison, as in the comparison of per capita tax collections, North Carolina stands in fifth position.

TABLE 4

LOCAL TAX COLLECTIONS FROM OWN SOURCES, BY SOURCE, AS A PERCENT OF TOTAL LOCAL TAX
COLLECTIONS FROM OWN SOURCES FOR ELEVEN SOUTHEASTERN STATES: 1953

(dollar amounts in thousands)

States	Total Taxes (1)	Total Percent (2)	Property Taxes (3)	Property Taxes as a Percent of Total Taxes (4)	Sales and Gross Receipts Taxes (5)	Sales and Gross Receipts Taxes as a Percent of Total Taxes (6)	Other Taxes (7)	Other Taxes as a Percent of Total Taxes (8)
NORTH CAROLINA........	$110,205	100.00	$104,256	94.60	$ 173	.16	$ 5,776	5.24
Alabama....................	70,702	100.00	46,466	65.72	9,103	12.88	15,133	21.40
Arkansas...................	40,332	100.00	35,371	87.70	409	1.01	4,552	11.29
Florida....................	188,538	100.00	146,727	77.82	26,356	13.98	15,455	8.20
Georgia....................	119,476	100.00	101,376	84.85	7,918	6.63	10,182	8.52
Kentucky..................	94,029	100.00	78,911	83.92	1,037	1.10	14,081	14.98
Louisiana..................	91,409	100.00	69,774	76.33	14,262	15.60	7,373	8.07
Mississippi................	63,337	100.00	53,480	84.44	2,635	4.16	7,222	11.40
South Carolina.............	56,281	100.00	50,577	89.87	113	.20	5,591	9.93
Tennessee.................	101,768	100.00	87,442	85.92	5,477	5.38	8,849	8.70
Virginia...................	126,662	100.00	99,317	78.41	6,990	5.52	20,355	16.07

SOURCE: Bureau of the Census, *State and Local Government Revenue in 1953*, Table 2, pp. 10-18 .

certain that the concessions would result in the early elevation of the low income status of much of the North Carolina population, there might be some justification for such shifting of the tax burdens within the North Carolina revenue structure. Under such circumstances, justification would be phrased in terms of the need for short-run sacrifices to permit long-run benefits. Unfortunately, this kind of selectivity is an elusive goal in the practical affairs of state and local taxation, and, unfortunately, it is not possible to be certain that the tax concessions would ultimately result in the economic elevation of North Carolina's distressed population. It is thus clear that North Carolina's tax attractions should *not* be such as to impose additional economic burdens upon those classes of the population who bear the present burdens of North Carolina's depressed condition.

If tax attractions are to be provided for those types of enterprises considered to be desirable industrial immigrants, it would be possible, of course, to shift part of the tax burdens to other types of corporations considered to be insensitive to tax burden differences or to be relatively undesirable from the economic point of view. But this policy, too, must be cautiously advanced. The present impact analysis has shown that many of the most desirable types of manufacturing enterprises are already subject to relatively light tax burdens within North Carolina, even though they may be more heavily taxed than similar corporations in other states of the Southeast. Any further shift in tax burdens would, of course, widen the equity gap in the North Carolina corporate tax structure. But the present analysis is by no means married to the conclusion that a tax system must be designed to achieve perfect uniformity of tax burdens at the expense of all other objectives. On the contrary, it is based upon the philosophy that a state tax system may, on technical and on legal grounds, be functionally used to achieve those purposes which the people, through their elected representatives, consider to be desirable. The equity analysis and the method of expression applied to the findings must not, therefore, be taken as implied disparagement. If the industrial development of North Carolina is considered to be a desirable objective, and if it is felt that the present North Carolina tax structure imposes burdens which tend to prevent or seriously delay industrial development, and if, in addition, there is general public agreement on the objectives, there is every justification for a revision of the tax structure no matter what the internal distribution of the

present structure happens to be. At the same time, of course, the findings of this impact study make it especially important that the revisions be made consciously, deliberately, and through legislative rather than administrative processes.

But aside entirely from the problems of equity and the problems of fiscal adequacy, there is nothing in the present report that would support an extravagant policy of large tax concessions to potential industrial immigrants. The rather uncertain relationship between industrial location and tax burden differentials indicates the need for caution in any revision aimed at the problem of economic development. It may be that a very small number of economically desirable enterprises would be attracted by any practicable tax attractions. Furthermore, although the tax burdens imposed upon corporate enterprises by North Carolina appear to be substantially larger than those imposed upon corporate enterprises by other Southeastern states, the fact that tax concessions are by no means the sole property of North Carolina and the probability that North Carolina's economic development cannot proceed far *at the expense of* the economic development of other Southeastern states raise an important question as to the justification for engaging in a serious tax competition with other Southeastern states.

Although the combination methodology utilized in the present study has tended to show that North Carolina's relatively heavy tax burdens are real rather than imaginary, there are still grounds for asserting that *for particular corporations* the North Carolina tax structure may be heavier in appearance than in fact. The three hypothetical corporations were constructed from real-life models. They were, furthermore, constructed from models *recently located in North Carolina. Thus, if the hypothetical tax bills were properly constructed, it is clear that these corporations selected a North Carolina location in spite of the relatively forbidding aspect of the North Carolina law.* One is tempted to suggest that this evidence indicates the inconsequential nature of the tax burden in determining industrial location. This may, indeed, be part of the answer. But it is also known that at least two of the real-life models for the three hypothetical corporations were able to receive substantial tax relief from both state and local levels of government in North Carolina before the locational decision was made. And for at least one of the models there are strong indications that a North Carolina location would not long have been considered if such relief from

statutory rigors had not been possible. In these cases, then, the apparent tax burdens were quite different from the tax burdens actually experienced.

Whether such administrative relief would be available in other states of the Southeast is not known. The probability is that other Southeastern states are at least competitive with North Carolina in this respect. But it is fair to conclude, aside from the dangerous precedents established and aside from the questionable justification of the practices on democratic grounds, that the method of industrial attraction by administrative taxation is ill-suited to the North Carolina economy and to the North Carolina tax structure.

It is evident that the first requirement of North Carolina in its attempts at new industrial growth is for the development of many relatively small or medium-size enterprises, able to take advantage of North Carolina's facilities for industrial dispersion and able to offer enlarged incomes to North Carolina's already dispersed population. It has been demonstrated many times that such enterprises are, on the whole, incapable of exploring all of the possibilities of administrative relief and unwilling to risk an often costly preparation when other, costless, opportunities are available. The models for the two hypothetical corporations referred to above did explore the possibilities, did seek such relief, and did locate in North Carolina. The number of enterprises, elements of potential strength in North Carolina's industrial economy, that examined the tax laws, that did *not* seek administrative relief, and that did *not* locate in North Carolina will never be known. But the hypothetical corporation analysis of the present study proves, as conclusively as possible, that North Carolina cannot afford to rely upon the device of administrative relief, whether sanctioned by law or not, as a method of attracting new industry that is forced into skepticism by the appearance of the North Carolina law.

At the state level, the most important administrative instrument of industrial attraction through tax adjustment is the North Carolina Tax Review Board. The primary statutory function of the Tax Review Board is defined in Section 105-134 of the North Carolina General Statutes. Although other duties have been assigned to this semi-administrative body, it is clear that its main statutory duties are concerned with problems of adjusting the necessarily general provisions of the law to the particular, and sometimes curious, circumstances of individual

corporations. These duties, in turn, are most importantly (although not solely) related to the statutory provisions for the allocation of multi-state income of foreign corporations in the determination of that portion of the total net income to be subjected to income taxation within North Carolina. Since these statutory provisions also contain that portion of the North Carolina corporate tax law which creates the most ill will in the business community and which is, perhaps, the largest contributor to the demanding appearance of the North Carolina tax structure, the functions of the North Carolina Tax Review Board are extremely significant.

There can be no question about the need for some such agency as the Tax Review Board. Nor can there be any question about the legitimacy of the functions of such an agency in dealing with the unusual situations that must arise in the allocation of multi-state income. But in this capacity the review agency must perform a purely *administrative* action and must assume none of the legislative prerogatives. The functions of the Tax Review Board must, in other words, be restricted to an interpretation of the law, and must be based upon the principle that the law cannot possibly be so arranged as to cover every conceivable situation in which individual taxpayers find themselves. Under the present North Carolina allocation formula questions might arise as to whether a corporation is legitimately classified as a manufacturing corporation or a selling corporation. Questions might arise as to the *meaning* of the so-called "sales by point-of-origin" definition as applied to certain types of selling corporations. Or questions might arise as to the *meaning* of the property definition or the manufacturing cost definition as applied to certain types of manufacturing corporations. The designation of an agency such as the Tax Review Board to review the first-level decisions of the tax administrator is perfectly proper and is recognized as being based upon sound administrative principles. It is even possible to justify, on the same grounds, the pre-determination of income (and other) tax burdens for corporations contemplating location within North Carolina. In this sense, of course, the functions of the review agency must be restricted to a determination of the *intent* of the legislature in the act of developing a general allocation statute.

But the moment the functions of the review agency are extended to permit the determination of a tax burden by the ap-

plication of a special allocation formula (for example) in place of the statutory allocation formula, a dangerous situation is created. It is not enough to say that the legislature itself has delegated its powers to the review agency by a statutory broadening of the scope of such agency beyond the purely interpretative activity. For when the legislature attempts to assign its own policy functions to an administrative agency it shirks its representative duties and constructs a government by men rather than a government by laws. However well-intentioned the men, and however beneficial the ultimate results, the principle cannot be justified as a democratic institution. Every favor granted a particular corporation by the permission of a "non-statutory" determination of tax burdens either reduces the total tax collections or shifts the burdens to other shoulders. It may be that such favors result in the acquisition of new industry and in the economic improvement of the state. But these ends are not justifications for the means, for they involve the frustration of those democratic principles which hold that the people be permitted to determine, through their *elected representatives*, their own tax burdens and their own economic destiny.

Nor is it enough to claim that legislative activities by an administrative body are necessary because the statutory allocation formula is incorrectly applied to particular corporations. It is often claimed, for example, that a particular formula does not represent the income attributable to the taxing state because of the unusual character of the taxpayer. Such claims are based upon a total misinterpretation of the purpose of an allocation formula. A formula which attempts to allocate so-called "unitary income" cannot be "correct" for *any* corporation, for unitary income, by its very nature, cannot be assigned to the individual portions of the operation which create the income. An allocation formula is never more than a thing of convenience, designed to meet the demands of an artificially designated political boundary, however often attempts may be made to justify a particular formula on rational grounds. If an allocation formula is always and of necessity "incorrect" in this sense, it is not possible to justify the claim that a particular formula is *more* incorrect for one type of corporation than another. If there is no concept of a perfect formula there can be no concept which involves the establishment of *degrees* of perfection. Such claims are thus little more than elaborate, and superficially plausible, attempts to justify greater convenience, or to permit adminis-

trative flexibility without fear of political objection. It is this belief in the possible *inaccuracy* of an allocation formula as applied to the particular corporation that has been the foundation of most such relief agencies. It is this belief that has been the statutory foundation of the North Carolina Tax Review Board through the language of Section 105-134 of the General Statutes:

"If any corporation believes that the method of allocation or apportionment hereinbefore described as administered by the Commissioner of Revenue has operated or will so operate as to subject it to taxation on a greater portion of its net income *than is reasonably attributable to business or earnings within the State,* it shall be entitled to file with the Tax Review Board a petition setting forth the facts upon which its belief is based and its argument with respect to the application of the allocation formula." (Italics added).

Such language creates the impression that the allocation formula accurately reflects the North Carolina portion of unitary multi-state income *in the majority of cases,* but that it may not be correct for a few peculiar corporations. In fact, however, it gives almost unlimited powers of tax burden determination to the Tax Review Board, since it can be shown on logical grounds that an allocation formula is *never* "correct".

But from the point of view of the present study, it is even more important to recognize that such "legislation by administrative agency" is probably quite *ineffective* in providing a significant tax attraction to any large number of potential industrial immigrants. However generous the tax concessions of the review agency, such concessions can never hope to compensate for a law that has a forbidding aspect. It is the law itself that is the observable instrument and that, supposedly, defines the character of a tax structure. For every corporation attracted to North Carolina by a favorable concession by the Tax Review Board, there may be hundreds which are turned aside by the first examination of the statutes.

The need for a clearer and more circumscribed definition of the area of responsibility of the North Carolina Tax Review Board would be even more apparent if the statutory formula for the allocation of multi-state income were relaxed. Such relaxation would unquestionably be supported by the findings of the present report. But such legislative action should also mean that fewer corporations would find it necessary to seek administrative relief through an appeal to the Tax Review Board. Un-

fortunately, it is not possible to be confident that a reduction in the number of requests for relief will automatically be associated with a relaxation of the allocation formula. Businesses have a natural motive to get the tax costs as low as possible, and this motive is not disturbed by a change in the statutory formula if an avenue of further relief remains. From the point of view of the stability of the fiscal structure of the State and from the point of view of the equity relationships in the North Carolina tax structure it would seem to be essential to limit the activities of the North Carolina Tax Review Board to those purely administrative functions of interpreting the law in specific instances not covered in detail by the language of the law. In addition, it is important that provisions be made for the publication of the actions taken by the Board. It may be, of course, that much of the supporting material presented by appealing corporations is of a private character and should not be available for public inspection. But the tax relief granted and the general reasons for the granting of the relief are matters of public concern affecting the purse of every taxpayer in the State. There can be no legitimate excuse for secrecy in such matters. There may, indeed, be excellent reason for candor, from the point of view of industrial attraction as well as from the point of view of a proper functioning of governmental institutions. North Carolina has everything to gain from a policy of revelation that will permit potential industrial immigrants to determine, in advance and without the need for early negotiation, the tax burdens to which they will be subjected. North Carolina has everything to gain from a policy of making the tax laws mean exactly what they say.

Similar problems exist in the area of property taxation in North Carolina. The difficulty of determining with reasonable accuracy the property tax burdens which a locating enterprise must look forward to must stand as a particular deterrent to a North Carolina location. This difficulty attaches to the assessment levels established by local officials rather than to the tax rates, although even the latter might be more effectively advertised. This study has not been directly concerned with a detailed examination of ad valorem property taxation in North Carolina. But it has been impossible to avoid the serious disparities that exist in many counties of the State with respect to assessment practices and assessment results. Once again, from an equity point of view as well as from the point of view of the

need for "certainty" in the tax structure, there is ample room for improvement, either through a state-supported, state-wide assessment study, or through the assumption of a larger share of the assessment function by the State government.

Finally, it is necessary to recall the policy emphasis of the present study. The study was designed to produce quantitative answers that would provide as sound a base as possible for policy action. Needless to say, many of the answers are scientifically unsatisfying. Such limitations were the inevitable companions of the raw materials available for the construction of a comparison of tax burdens within and without the State. It is felt, nevertheless, that the material of the present study represents the most comprehensive examination of the North Carolina tax structure from the corporate point of view and, in comparative terms, of the Southeastern states that has been compiled in recent years. It must also be recognized that a failure to take action to change an existing situation is just as surely based upon a policy decision as is an action to introduce sweeping changes to the tax structure. If inaction is rationalized by the conclusion that the available evidence is not scientifically perfect, it should be insisted that equally "perfect" evidence be submitted to "prove" the adequacy of the existing structure. If policy to introduce change in the state and local tax structure is made to wait upon the accumulation of scientifically perfect evidence in the nebulous area of tax burden analysis, it is likely that the status quo will be preserved for many years to come.
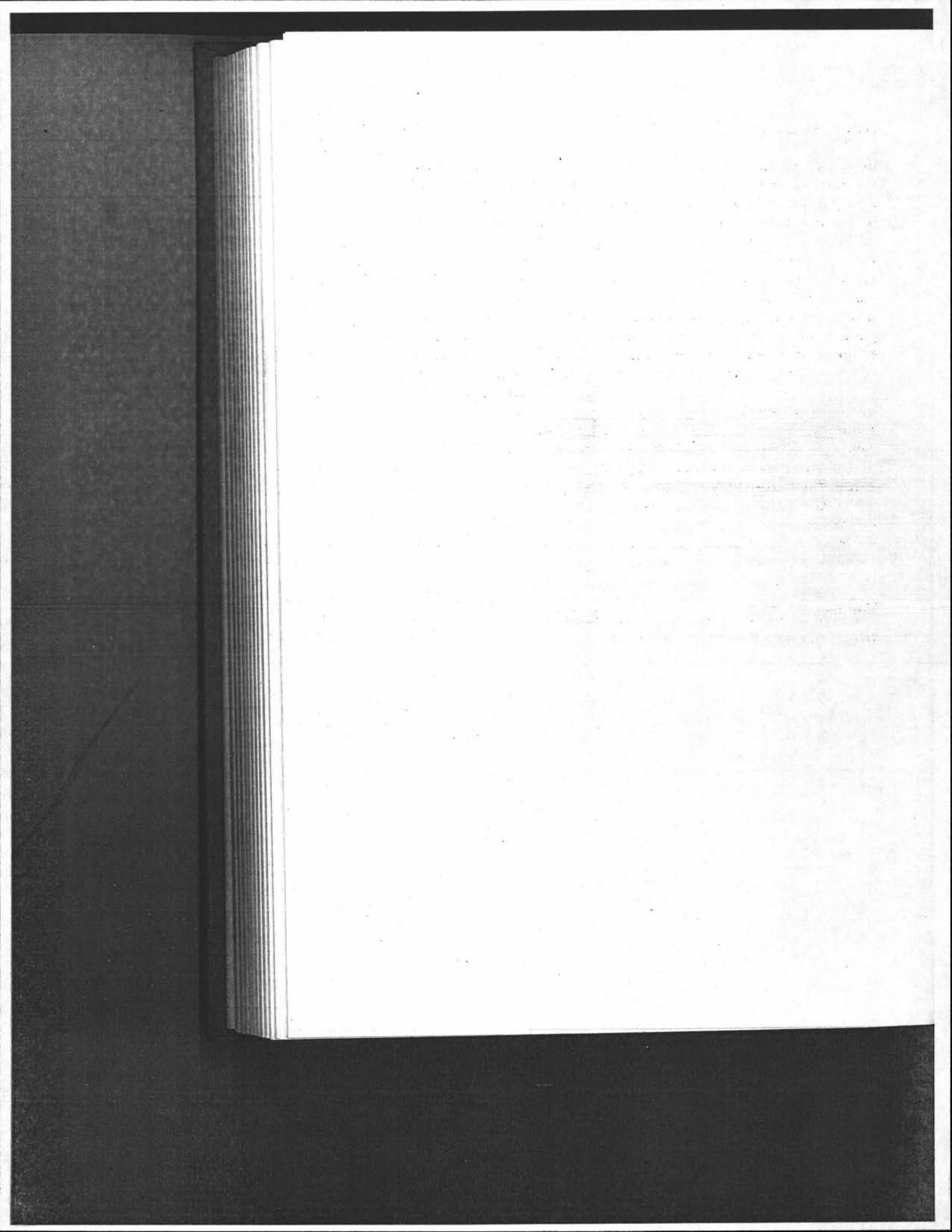
APPENDICES

APPENDIX A

Statistical Calculations

for Representative Sample.
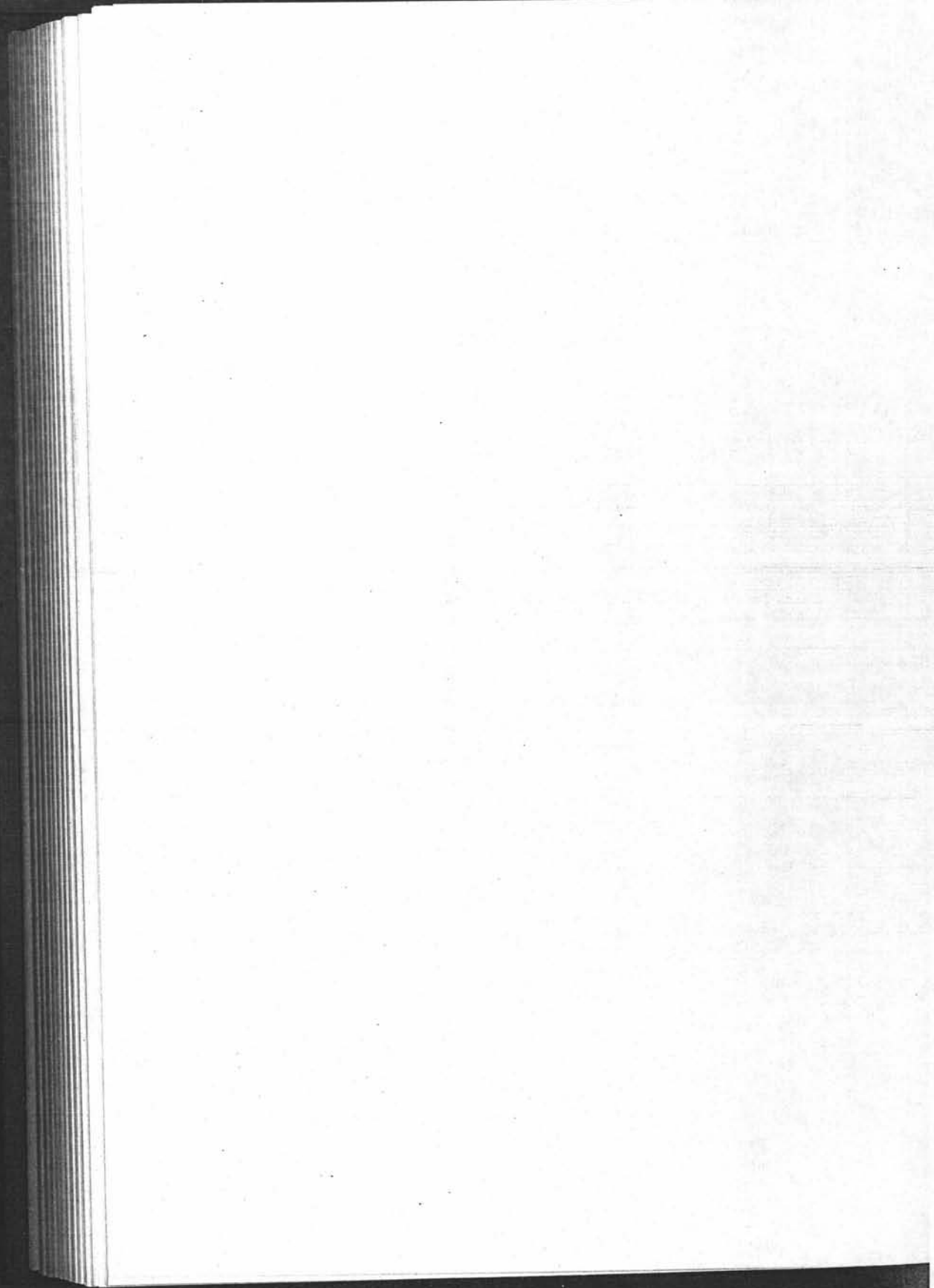
APPENDIX A

TABLE 1

CALCULATION OF ARITHMETIC MEAN, MEDIAN, STANDARD DEVIATION,
STANDARD ERROR OF THE MEANS, AND VALUE OF Z FOR TOTAL SAMPLE
OF TAX BURDENS IN NORTH CAROLINA BY THE BOOK VALUE MEASURE[1]

Type of Business	ΣX (1)	ΣX^2 (2)	$(\Sigma X)^2$ (3)	$\dfrac{(\Sigma X)^2}{N}$ (4)
A Agriculture and Extractive	187.45	3,959.4953	35,137.5025	509.2392
B Construction[2]	1,281.44	76,890.3056	1,642,088.4736	11,564.0033
C Finance[3]	5,562.45	762,631.4731	30,940,850.0025	159,488.9176
D Food and Feed	499.34	3,729.8168	249,340.4356	2,095.2978
E Forest Products	480.03	4,146.1931	230,428.8009	1,467.6994
F Mineral, Chemical, and Metals	333.27	3,521.3195	111,068.8929	1,220.5372
G Textile	683.57	20,871.5707	467,267.9449	2,104.8106
H Tobacco Manufacture	153.42	8,274.2800	23,537.6964	905.2960
I Other Manufacture	872.44	119,084.6964	761,151.5536	5,475.9105
J Miscellaneous	325.74	10,523.4500	106,106.5476	2,040.5105
K Public Utility	1,525.61	72,063.7549	2,327,485.8721	19,395.7156
L Recreation and Amusement	1,267.54	271,414.5644	1,606,657.6516	22,009.0089
M Service[4]	1,839.12	76,224.4274	3,382,362.3744	98,062.8597
N Automobile Trade[5]	1,543.42	75,227.9146	2,382,145.2964	8,130.1887
O Beverage, Food, and Drug	1,042.59	34,146.3003	1,086,993.9081	6,005.4912
P Equipment and Supplies	1,580.00	77,107.8590	2,496,400.0000	8,883.9858
Q General Merchandise[6]	1,622.46	110,017.4498	2,632,376.4516	7,436.0917
R Unclassified Trade[7]	2,374.83	467,141.1019	5,639,817.5289	30,159.4520
Total Sample	23,174.72	2,196,975.9728	....	386,955.0157

NOTES: [1]Total state and local taxes as a percent of the book value of tangible property.
        [2]Deletion : 1,247.62
        [3]Deletion : 1,160.00
        [4]Deletion : 1,040.91
        [5]Deletion : 2,241.94
        [6]Deletion : 1,362.79
        [7]Deletion : 1,780.00

CALCULATIONS

I. ARITHMETIC MEAN:

$$\overline{X} = \frac{\Sigma X}{N}$$

$$\frac{23174.72}{3044.} = \underline{\underline{7.61}}$$

II. MEDIAN:

$$\frac{N}{2} = \frac{3044}{2} = 1522$$

Med. (from array) $= \underline{\underline{2.43}}$

III. STANDARD DEVIATION:

$$\sigma = \sqrt{\frac{\Sigma X^2}{N} - \left(\frac{\Sigma X}{N}\right)^2}$$

$$= \sqrt{\frac{2,196,975.97}{3044} - \left(\frac{23174.72}{3044}\right)^2}$$

$$= \underline{\underline{25.7639}}$$

IV. STANDARD ERROR OF THE MEANS:

$$\frac{\sigma}{\sqrt{N-1}} = \frac{25.7639}{\sqrt{3044-1}}$$

$$= \underline{\underline{.467}}$$

V. CALCULATION OF z:

	Variation	Degrees of Freedom	Variance
Within groups	1,810,020.9571	3026	598.1563
Between groups	210,520.1777	17	12,383.5399
Total	2,020,541.1348	3043	....

$$z = 1.15129 \ \log_{10}\left(\frac{12,383.5399}{598.1563}\right)$$

$$= \underline{\underline{1.515}}$$

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APPENDIX A

TABLE 2

CALCULATION OF ARITHMETIC MEAN, MEDIAN, STANDARD DEVIATION,
STANDARD ERROR OF THE MEANS, AND VALUE OF Z FOR TOTAL SAMPLE OF
TAX BURDENS IN NORTH CAROLINA BY THE GROSS RECEIPTS MEASURE[1]

Type of Business	ΣX (1)	ΣX^2 (2)	$(\Sigma X)^2$ (3)	$\dfrac{(\Sigma X)^2}{N}$ (4)
A Agriculture and Extractive[2]	231.80	6,452.1534	53,731.2400	767.5891
B Construction	288.49	8,396.8949	83,226.4801	516.9347
C Finance	520.43	3,254.3705	270,847.3349	1,265.6420
D Food and Feed	132.76	326.8572	17,625.2176	149.3663
E Forest Products	206.42	4,946.0046	42,609.2164	271.3963
F Mineral, Chemical, and Metals	118.20	552.9376	13,971.2400	150.2283
G Textile[3]	250.76	2,834.0940	62,880.5776	292.4678
H Tobacco Manufacture	107.87	3,801.0127	11,635.9369	447.5360
I Other Manufacture[4]	153.89	394.5473	23,682.1321	171.6097
J Miscellaneous[5]	857.96	49,073.4962	736,095.3616	10,986.4979
K Public Utility	551.58	3,768.5916	304,240.4964	2,358.4535
L Recreation and Amusement	277.80	8,291.3574	77,172.8400	964.6605
M Service[6]	2,394.50	47,423.4122	5,733,630.2500	15,496.2980
N Automobile Trade	232.67	507.2871	54,135.3289	182.2738
O Beverage, Food, and Drug	116.79	345.0705	13,639.9041	72.5527
P Equipment and Supplies	352.26	15,821.4848	124,087.1076	430.8580
Q General Merchandise	437.48	12,512.8886	191,388.7504	528.6982
R Unclassified Trade	322.26	4,784.9356	103,851.5076	529.8543
Total Sample	7,553.92	173,487.3962	....	35,582.9171

NOTES: [1]Total state and local taxes as a percent of gross receipts.
[2]Deletion : 357.32
[3]Deletion : 1,052.87
[4]Deletion : 576.58
[5]Deletion : 377.27
[6]Deletion : 236.37

CALCULATIONS

I. ARITHMETIC MEAN:

$$\overline{X} = \frac{\Sigma X}{N}$$

$$\frac{7553.92}{3169} = 2.38$$

II. MEDIAN:

$$\frac{N}{2} = \frac{3169}{2} = 1584.5$$

Med. (from array) $= .720$

III. STANDARD DEVIATION:

$$\sigma = \sqrt{\frac{\Sigma X^2}{N} - \left(\frac{\Sigma X}{N}\right)^2}$$

$$= \sqrt{\frac{173,487.3962}{3169} - \left(\frac{7553.92}{3169}\right)^2}$$

$$= 7.0044$$

IV. STANDARD ERROR OF THE MEANS:

$$\frac{\sigma}{\sqrt{N-1}} = \frac{7.0044}{\sqrt{3169-1}}$$

$$= .124$$

V. CALCULATION OF Z:

	Variation	Degrees of Freedom	Variance
Within groups	137,904.4791	3151	43.7653
Between groups	17,576.6983	17	1033.9234
Total	155,481.1774	3168	....

$$z = 1.15129 \log_{10}\left(\frac{1,033.9234}{43.7653}\right)$$

$$= 1.581$$

APPENDIX A

TABLE 3

CALCULATION OF ARITHMETIC MEAN, MEDIAN, STANDARD DEVIATION,
STANDARD ERROR OF THE MEANS, AND VALUE OF Z FOR TOTAL SAMPLE OF
TAX BURDENS IN NORTH CAROLINA BY THE PAYROLL MEASURE[1]

Type of Business	ΣX (1)	ΣX^2 (2)	$(\Sigma X)^2$ (3)	$\dfrac{(\Sigma X)^2}{N}$ (4)
A Agriculture and Extractive[2]	531.58	15,199.3896	282,577.2964	4,281.4742
B Construction[3]	510.71	5,761.5713	260,824.7041	1,975.9447
C Finance	1,762.24	71,073.8698	3,105,489.8176	14,579.7644
D Food and Feed	665.33	66,564.4466	442,664.0089	3,719.8656
E Forest Products	411.92	2,187.7500	169,678.0864	1,116.3032
F Mineral, Chemical, and Metals	326.06	2,490.8718	106,315.1236	1,194.5520
G Textile	665.06	9,560.5793	442,304.8036	2,047.7074
H Tobacco Manufacture	151.25	1,642.4889	22,876.5625	879.8678
I Other Manufacture	355.53	6,974.6119	126,401.5809	922.6393
J Miscellaneous	508.69	37,112.8209	258,765.5161	7,610.7505
K Public Utility	1,183.60	60,836.8450	1,400,908.9600	11,118.3251
L Recreation and Amusement	666.54	14,464.7157	444,275.5716	6,085.9667
M Service[4]	9,480.53	880,624.3621	89,880,449.0809	323,310.9679
N Automobile Trade	2,047.11	61,150.5391	4,190,659.3521	14,450.5495
O Beverage, Food, and Drug	1,048.48	31,357.7612	1,099,310.3104	6,210.7927
P Equipment and Supplies	1,352.08	26,032.8407	1,828,120.3264	6,647.7103
Q General Merchandise	2,229.93	36,136.2626	4,972,587.8049	13,928.8174
R Unclassified Trade[5]	1,614.59	170,471.8089	2,606,900.8681	13,793.1263
Total Sample	25,511.23	1,499,643.5352	....	433,875.1250

NOTES: [1]Total state and local taxes as a percent of payroll.
        [2]Deletion :   429.33
        [3]Deletion :   434.06
        [4]Deletions: 557.89
                1,399.33
                3,103.33
        [5]Deletion : 1,374.00

CALCULATIONS

I. ARITHMETIC MEAN:

$$\overline{X} = \frac{\Sigma X}{N}$$

$$\frac{25,511.23}{2949} = \underline{\underline{8.65}}$$

II. MEDIAN:

$$\frac{N}{2} = \frac{2949}{2} = 1475$$

Med. (from array) $= \underline{\underline{3.63}}$

III. STANDARD DEVIATION:

$$\sigma = \sqrt{\frac{\Sigma X}{N} - \left(\frac{\Sigma X}{N}\right)^2}$$

$$= \sqrt{\frac{1,499,643.54}{2949} - \left(\frac{25,511.23}{2949}\right)^2}$$

$$= \underline{\underline{20.8252}}$$

IV. STANDARD ERROR OF THE MEANS:

$$\frac{\sigma}{\sqrt{N-1}} = \frac{20.8252}{\sqrt{2,949-1}}$$

$$= \underline{\underline{.383}}$$

V. CALCULATION OF z:

	Variation	Degrees of Freedom	Variance
Within groups	1,065,768.405	2,931	363.6194
Between groups	213,182.3966	17	12,540.1410
Total	1,278,950.8016	2,948	....

$$z = 1.15129 \, \log_{10} \left(\frac{12,540.1410}{363.6194}\right)$$

$$= \underline{\underline{1.770}}$$

APPENDIX A

TABLE 4

CALCULATION OF ARITHMETIC MEAN, MEDIAN, STANDARD DEVIATION, STANDARD ERROR OF THE MEANS, AND VALUE OF Z FOR TOTAL SAMPLE OF TAX BURDENS IN NORTH CAROLINA BY THE NET PROFIT MEASURE[1]

Type of Business	ΣX (1)	ΣX^2 (2)	$(\Sigma X)^2$ (3)	$\dfrac{(\Sigma X)^2}{N}$ (4)
A Agriculture and Extractive	1,873.50	320,124.4568	3,510,002.2500	92,368.4802
B Construction	3,685.32	314,356.0376	13,581,583.5024	116,081.9102
C Finance	4,860.22	584,925.2657	23,621,738.4484	136,541.8407
D Food and Feed	4,347.94	763,237.5541	18,904,582.2436	203,275.0770
E Forest Products	3,020.44	176,903.9166	9,123,057.7936	79,330.9373
F Mineral, Chemical, and Metals	2,688.26	251,436.6476	7,226,741.8276	90,334.2728
G Textile[2]	5,909.54	2,013,892.7351	34,922,663.0116	229,754.3619
H Tobacco Manufacture	511.42	29,414.9780	261,550.4164	10,897.9340
I Other Manufacture	2,144.61	91,659.7217	4,599,352.0521	43,803.3529
J Miscellaneous	1,624.81	380,125.9831	2,640,007.5361	56,170.3731
K Public Utility[3]	6,409.49	1,190,958.5465	41,081,562.0601	383,989.8323
L Recreation and Amusement	2,298.19	259,759.7653	5,281,677.2761	103,562.2995
M Service	12,903.77	2,010,745.1627	166,507,280.2129	607,690.8030
N Automotive Trade	8,923.92	2,009,098.4332	79,636,348.1664	370,401.6193
O Beverage, Food, and Drug	4,311.42	266,344.9310	18,588,342.4164	126,451.3089
P Equipment and Supplies[4]	6,965.86	727,414.4594	48,523,205.5396	228,883.0450
Q General Merchandise	12,070.03	1,730,996.7772	145,685,624.2009	527,846.4640
R Unclassified Trade[5]	4,782.56	534,167.3130	22,872,880.1536	149,495.9486
Total Sample	89,331.30	13,615,562.6846	....	3,556,829.8607

NOTES: [1]Total state and local taxes as a percent of the net profit allocated by the "Massachusetts formula."
       [2]Deletion : 3,002.80
       [3]Deletion : 1,638.53
       [4]Deletion : 1,650.00
       [5]Deletions: 1,025.93
               1,100.00

CALCULATIONS

I. ARITHMETIC MEAN:

$$\overline{X} = \frac{\Sigma X}{N}$$

$$\frac{89,331.30}{2379} = 37.55$$

II. MEDIAN:

$$\frac{N}{2} = \frac{2379}{2} = 1190$$

Med. (from array) $= 18.09$

III. STANDARD DEVIATION:

$$\sigma = \sqrt{\frac{\Sigma X^2}{N} - \left(\frac{\Sigma X}{N}\right)^2}$$

$$= \sqrt{\frac{13,615,562.68}{2379} - \left(\frac{89,331.30}{2379}\right)^2}$$

$$= 65.6752$$

IV. STANDARD ERROR OF THE MEANS:

$$\frac{\sigma}{\sqrt{N-1}} = \frac{65.6752}{\sqrt{2378}}$$

$$= 1.347$$

V. CALCULATION OF z:

	Variation	Degrees of Freedom	Variance
Within groups	10,058,732.8239	2361	4,260.3697
Between groups	202,445.1787	17	11,908.5399
Total	10,261,178.0026	2378	....

$$z = 1.15129 \, \log_{10}\left(\frac{11908.5399}{4260.3697}\right)$$

$$= .514$$

APPENDIX A

EXHIBIT 1

NORTH CAROLINA COMMISSION FOR THE STUDY OF
THE REVENUE STRUCTURE OF THE STATE
CORPORATION QUESTIONNAIRE—REVISED

Code :...

Corporation :...

Instructions:

Fill in the name of your corporation on the line above. The questionnaire should be completed for the corporation to which the covering letter is addressed.

If any of the questions does not relate to your corporation, or if your corporation does not operate in some of the states listed, indicate the fact by writing the word "none" in the appropriate space.

If your corporation operates in North Carolina only, indicate this in question number 1. *We would still like you to answer the remaining questions, however,* even though no figures will be shown for states other than North Carolina.

All figures shown should apply to the calendar year or to your fiscal year *ending* in the year indicated for each column. For example, a fiscal year ending June 30, 1954, or a fiscal year ending April 30, 1954, should be indicated in the columns headed "1954".

Taxes or other expense items applicable to prior years but paid during the years considered in this questionnaire should *not* be included in your answers. Income items applicable to prior years but received during the years considered in this questionnaire *should* be included in your answers.

Show all figures to the nearest dollar.

PLEASE RETURN THE QUESTIONNAIRE NOT LATER THAN FEBRUARY 10, 1956, TO
LESLIE E. CARBERT, DIRECTOR OF RESEARCH
TAX STUDY COMMISSION, ROOM 553, REVENUE BUILDING
RALEIGH, NORTH CAROLINA

1. What was the nature of your principal business in each of the following States in 1954? Describe product produced or service rendered and indicate whether principal business in each State was manufacturing, distribution, retail trade, etc.

NORTH CAROLINA
Alabama
Arkansas
Florida
Georgia
Kentucky
Louisiana
Mississippi
South Carolina
Tennessee
Virginia

2. Ad valorem property taxes paid or accrued

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

3. State corporation income taxes paid or accrued (Franchise taxes that are based on net income should be included here)

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

4. State and local franchise, or privilege taxes and business licenses paid or accrued

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

6. Taxes on intangibles, paid or accrued, not included in question number 2

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

7. Other state and local taxes paid or accrued (Include such as truck and auto licenses, severance taxes, etc. Do *not* include payroll taxes, or sales and use taxes)

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

8. Total state and local taxes paid or accrued
   (Sum of questions 2, 3, 4, 6, and 7 above)

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

9. Federal income taxes paid or accrued

	1953	1954

12. Book value of real and tangible personal
    property as of December 31 or end of fiscal
    year. (Include inventories, land, and net
    book value of depreciable assets.)

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

13. Gross Receipts. (Include income from sales,
    rents, royalties, interest, dividends, gain
    from sale of assets, etc., whether these items
    are taxable or not. Should be allocated by
    location of business done or service rendered,
    rather than by the point at which collections
    are made. Sales should be allocated by loca-
    tion of the office by or through which sales
    are made.)

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

15. Total Payroll. (Total payroll associated with the business done in respective states. Salaries of executive personnel should be included)

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

16. Total manufacturing costs, including costs of inventories used. If detail is not available, please estimate, and indicate with an asterisk which of the figures is so estimated.

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

18. Gross rental paid or accrued on real property

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

19. Gross rental paid or accrued on tangible personal property

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

20. Gross rental income from real property

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

21. Gross rental income from tangible personal property

	1953	1954
NORTH CAROLINA		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
South Carolina		
Tennessee		
Virginia		
All other States		
Total of all States		

22. Total selling costs, including advertising expenses, excluding cost of sales

1953	1954

23. Total expenses other than cost of sales

1953	1954

24. Total net profit (or loss) of the corporation before all taxes shown in questions 8 and 9 above. (Should be taxable net income on Federal income tax return, plus total of question 8, minus total of question 3, plus non-taxable income, minus unallowable deductions)

1953	1954

25. Did you engage in substantial expansion or relocation of facilities or operations (answer "yes" or "no")

1953	1954

26. If your answer to question number 25 was "yes", describe the expansion or relocation briefly.

27. Do you have any comments that would help to clarify your answers to any of the above questions? Please indicate the questions to which your comments apply. If additional space is needed, attach separate sheets.
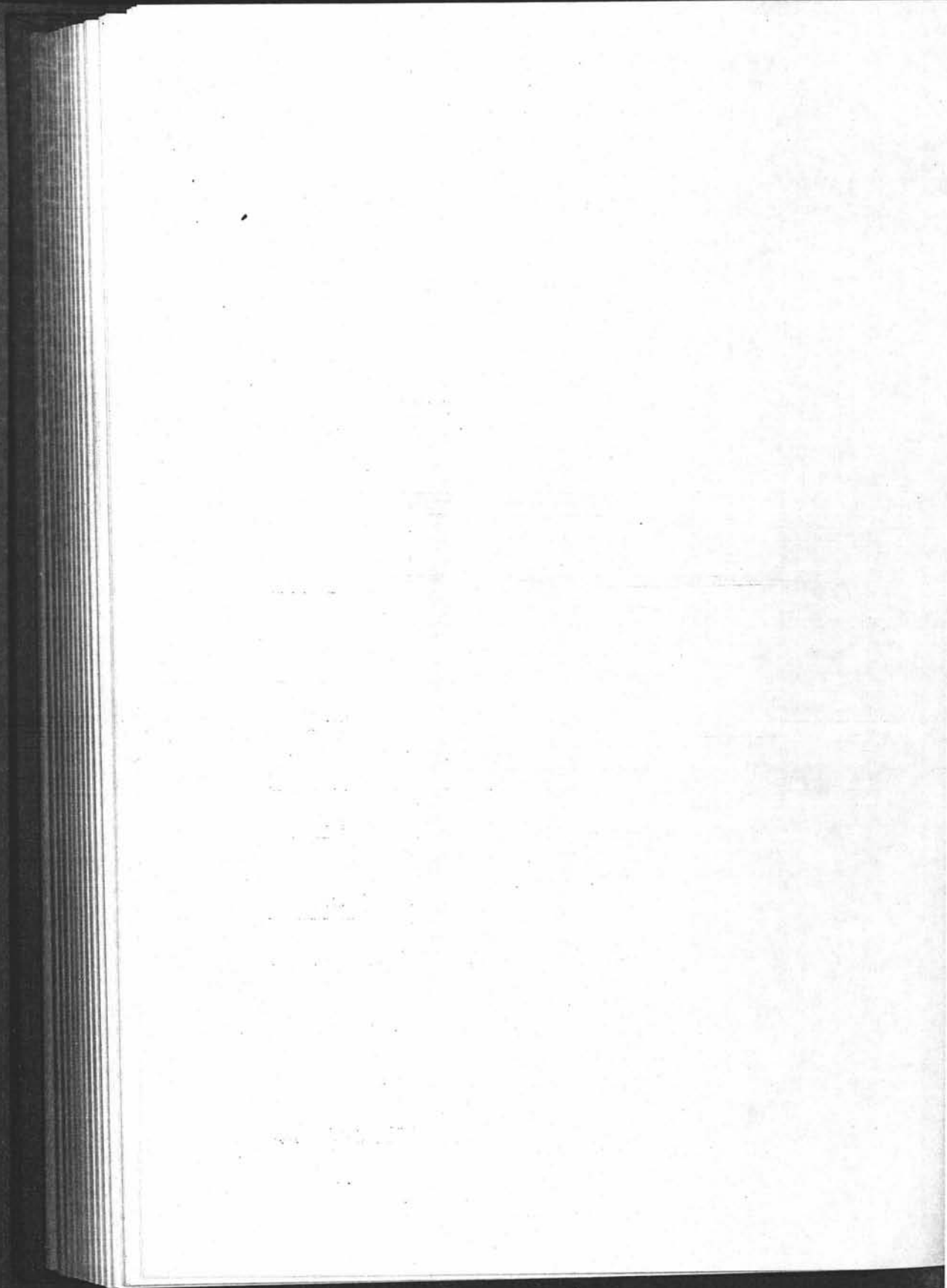
APPENDIX B

Calculations of Tax Burdens for Three Hypothetical

Corporations in Eleven Southeastern States.
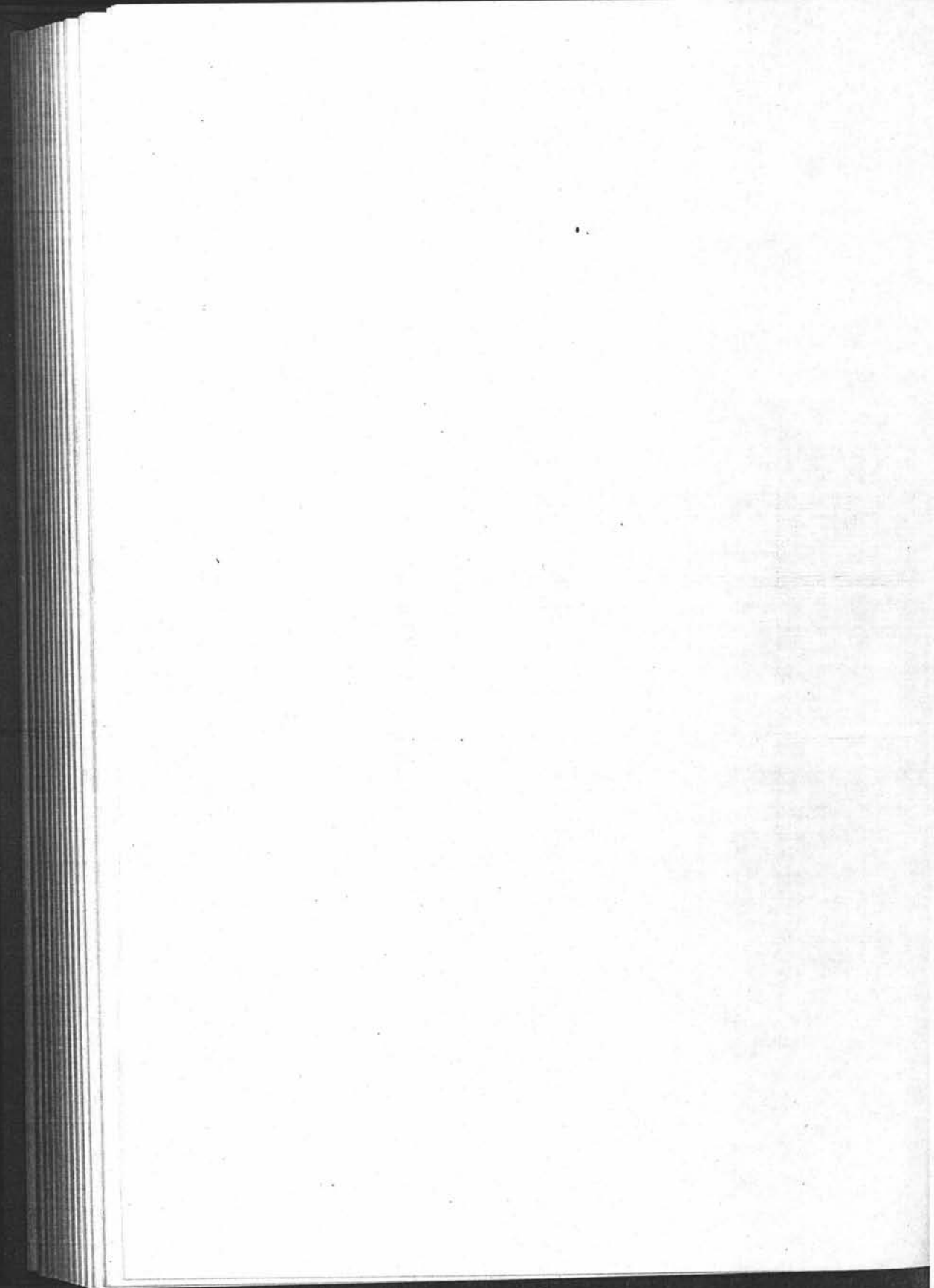
APPENDIX B-I

Tax Collections for

Hypothetical Corporation A

APPENDIX B-I

EXHIBIT 1

HYPOTHETICAL CORPORATION A

Balance Sheet, Year Ending December 31, 1955

ASSETS

Cash and Bank Balances		$ 2,025,000
Notes and Accounts Receivable	$ 4,320,000	
Less: Bad Debt Reserve	720,000	
Net Receivables		3,600,000
Inventories[b]		8,325,000
Investment in Government Obligations		2,250,000
Other Investments		225,000
Total Current Assets		$16,425,000

FIXED ASSETS

Land[c]		225,000
Total Depreciable Assets[a]	$14,000,000	
Less: Depreciation Reserves[a]	8,825,000	
Net Book Value[a]		5,175,000
Other Assets		675,000
TOTAL ASSETS		$22,500,000

LIABILITIES

Notes and Accounts Payable		$ 675,000
Accrued Federal Income Tax		950,000
Accrued State Income Taxes		400,000
Accrued Items—Other		450,000
Total Current Liabilities		$ 2,475,000

NET WORTH

Preferred Stock[de]		$ 2,007,500
Common Stock[de]		4,000,000
Earned Surplus		9,015,000
Paid in Surplus		3,000,000
Reserve for Contingencies		500,000
Other Surplus Reserves		1,502,500
Total Net Worth		$20,025,000
TOTAL LIABILITIES		$22,500,000

NOTES: [a]See Exhibit 2
       [b]See Exhibit 3
       [c]Land in Domestic State ....$ 57,000
           Land in Foreign State   168,000

           Total Land ....$ 225,000

       [d]Authorized Capital Stock ....$ 8,443,000
       [e]Estimated "Market Value" of Shares $30,257,500

APPENDIX B-I

EXHIBIT 2

HYPOTHETICAL CORPORATION A

Derivation of Net Book Value of Depreciable Assets, Year Ending December 31, 1955

Kind of Property	Cost or Other Basis as of Dec. 31, 1955 (1)	Normal Depreciation Allowed Prior to Jan. 1, 1955 (2)	Normal Depreciation Allowable in Year ending Dec. 31, 1955 (3)	Emergency Amortization to Jan. 1, 1955 (4)	Emergency Amortization for year ending Dec. 31, 1955 (5)	Accumulated Depreciation per Balance Sheet (6)	Net Book Value per Balance Sheet (7)
PLANT I—FOREIGN	$11,500,000	$8,380,548	$305,725	$67,567	$26,816	$8,780,656	$2,719,344
PLANT II—DOMESTIC							
Improvements	$ 53,000	None	$ 3,479	None	None	$ 3,479	$ 49,521
Buildings	1,011,000	"	12,753	"	"	12,753	998,247
Machinery and Equipment	975,000	"	17,006	"	"	17,006	957,994
Power Plant Equipment	113,000	"	3,872	"	"	3,872	109,128
Tools and Dies	282,000	"	4,757	"	"	4,757	277,243
Furniture and Fixtures	30,000	"	1,026	"	"	1,026	28,974
Automobiles	6,000	"	1,451	"	"	1,451	4,549
Construction Work in Progress	30,000	"	None	"	"	None	30,000
TOTAL: PLANT II	$2,500,000	None	$44,344	None	None	$44,344	$2,455,656
TOTAL: PLANTS I & II	$14,000,000	$8,380,548	$350,069	$67,567	$26,816	$8,825,000	$5,175,000

APPENDIX B-I

EXHIBIT 3

HYPOTHETICAL CORPORATION A

Inventory, Total and by States

Type of Inventory	Domestic Inventory			Foreign Inventory			Total Inventory		
	As of January 1, 1955 (1)	As of December 31, 1955 (2)	Average for Year Ending December 31, 1955 (3)	As of January 1, 1955 (4)	As of December 31, 1955 (5)	Average for Year Ending December 31, 1955 (6)	As of January 1, 1955 (7)	As of December 31, 1955 (8)	Average for Year Ending December 31, 1955 (9)
Finished Goods..............	$402,962	$468,195	$435,578	$4,630,081	$5,185,817	$4,907,949	$5,033,043	$5,654,012	$5,343,527
Work in Process..............	161,020	167,711	164,366	1,850,144	1,906,551	1,878,348	2,011,164	2,074,262	2,042,714
Raw Materials and Supplies......	68,214	62,892	65,553	783,787	533,834	658,810	852,001	596,726	724,363
TOTALS..................	$632,196	$698,798	$665,497	$7,264,012	$7,626,202	$7,445,107	$7,896,208	$8,325,000[1]	$8,110,604

NOTES: [1]To Balance Sheet—Exhibit 1

APPENDIX B-I

EXHIBIT 4

HYPOTHETICAL CORPORATION A

Income Statement, Year Ending December 31, 1955

1.	Gross Sales		$18,139,636
	Less: Cost of Sales		
	(a) Inventory January 1, 1955	$ 7,896,208	
	(b) Purchases for resale		
	(c) Cost of making product[c]	13,930,685	
	(d) Total: (a)+(b)+(c)	$21,826,893	
	(e) Less: Inventory December 31, 1955	8,325,000	13,501,893
2.	Gross Profit		$ 4,637,743
3.	Interest Received		40,840
4.	Royalties Received		
5.	Dividends Received from Subsidiaries		73,752
6.	Dividends Received—Other		14,259
7.	Discounts Earned		29,509
8.	Miscellaneous Income		4,745
9.	TOTAL GROSS INCOME		$ 4,800,848
	EXPENSES		
10.	Interest Expense	$ 967	
11.	Taxes[ad]	1,383,971	
12.	Rents	47,773	
13.	Officers' Salaries	182,553	
14.	Depreciation[b]	376,885	
15.	Salaries and Wages	294,692	
16.	Repairs	526,940	
17.	Casualty Losses	1,246	
18.	Contributions	9,686	
19.	Pensions	238,620	
20.	Other Expenses	132,622	
21.	Total Expenses		3,195,955
22.	NET PROFIT[d]		$ 1,604,893

NOTES: [a]see Exhibit 5
[b]see Exhibit 2, Col. (3) Col. (5)
[c]see Exhibit 6, Col. (3)
[d]Should be considered as tentative only, since "domestic" taxes will change as hypothetical corporation is moved from state to state.

APPENDIX B-I

EXHIBIT 5

HYPOTHETICAL CORPORATION A

Taxes Paid

Social Security		$ 242,179
Federal Income[a]		944,026
Taxes in Foreign State:		
Ad Valorem Property	$94,409	
State Income	62,223	
State Use	5,766	
Other	65	162,463
Taxes in Domestic State:[a]		
Ad Valorem Property	$19,187	
State Income	12,292	
State Use	328	
State Franchise	3,496	35,303
TOTAL TAXES		$1,383,971

NOTES: [a]Should be considered as tentative only, since "domestic" taxes will change as hypothetical plant is moved from state to state.

APPENDIX B-I

EXHIBIT 6

HYPOTHETICAL CORPORATION A

Manufacturing Costs, Total and by State, Year Ending December 31, 1955

Type of Cost	Plant I—Foreign States (1)	Plant II—Domestic State (2)	Total (3)	Plant I as Percent of Total (4)	Plant II as Percent of Total (5)
Material Bought for Manufacture..................	$ 7,045,830	$1,035,676	$ 8,081,506	12.815	87.185
Salaries and Wages:					
Direct Labor...............	1,987,867	109,725	2,097,592	5.231	94.769
Other Salaries and Wages...............	2,440,605	128,642	2,569,247	5.007	94.993
Other Costs per Books...............	1,511,930	79,325	1,591,255	4.985	95.015
TOTALS...............	$12,986,232	$1,353,368	$14,339,600	9.438	90.562
Less: Overhead Transferred to Plant and Expense Accounts........	391,225	17,690	408,915	4.326	95.674
TOTALS...............	$12,595,007	$1,335,678	$13,930,685[1]	9.588	90.412

NOTES: [1]To Exhibit 4 line 1(c).

APPENDIX B-I

EXHIBIT 7

HYPOTHETICAL CORPORATION A

Typical Allocation Factors

Factor	Domestic State (1)	Total (2)	Percent in Domestic State (3)
1. Payroll[a]	$ 314,746	$ 5,144,084	6.1186
2. Sales, by Origin[b]	0	18,139,636	0
3. Sales, by Destination[c]	984,021	18,139,636	5.4247
4. Sales, by point of Manufacture[d]	1,936,733	18,139,636	10.6768
5. Tangible Property:	....	....	....
6. Land	57,000	225,000	25.3333
7. Depreciable Assets[e]	2,455,656	5,175,000	47.4523
8. Total Land and Depreciable Assets	2,512,656	5,400,000	46.5307
9. Inventories—Year end	698,798	8,325,000	8.3940
10. Inventories—Average[f]	665,497	8,110,604	8.2052
11. Total Property—Year end Inventory[g]	3,211,454	13,725,000	23.3986
12. Total Property—Average Inventory[h]	3,178,153	13,510,604	23.5234
13. Manufacturing Costs	1,335,678	13,930,685	9.5880

NOTES: [a]The only payroll allocable to the domestic state is that assignable to manufacturing operations at Plant II.

[b]"Origin" should be taken to refer to the location of office or agency by or through which sale is made. It should *not* be taken to refer to the location of the physical inventories in warehouses or to the location of the manufacturing plant from which the sales are supplied.

[c]"Destination" should be taken to refer to the location of the purchase. Assume that the location of the purchase is the same as the residence of the purchaser and the state in which the product will be used by the purchaser.

[d]Sales made during the year from products manufactured or stored at Plant I in domestic state. Sales may have been made to purchasers anywhere.

[e]After deduction of depreciation reserves.

[f]Inventories on January 1, 1955 plus inventories on December 31, 1955 divided by 2. Where monthly or other periodic average inventories are required, assume this ratio to apply.

[g]Line 8 plus line 9.

[h]Line 8 plus line 10.

APPENDIX B-I

EXHIBIT 8

HYPOTHETICAL CORPORATION A

General Statistics

Current Assets % of Current Liabilities	6.636
Percent Cash and Securities to Current Assets	26.027
Percent Inventory to Current Assets	50.685
Percent Net Current Assets to Net Worth[a]	69.663
Percent Property Depreciated	63.036
Percent Annual Depreciation, etc., to Gross Property	2.692
Percent Long Term Debt	....
Percent Preferred Stock	10.025
Percent Common Stock and Surplus	89.975
Gross Sales % Inventory	2.179
Gross Sales % Receivables	5.039
Percent Sales to Net Property	350.524
Percent Sales to Total Assets	80.621
Percent Net Income to Total Assets	7.133
Percent Net Income to Net Worth	8.014

NOTES: [a]Net Current Assets=Current Assets—Current Liabilities=$16,425,000—$2,475,000=$13,950,000.

APPENDIX B-I

TAX CALCULATIONS FOR HYPOTHETICAL CORPORATION A

Exhibit 9—Alabama Tax Calculations

(a) Admission Tax (once only)

Base: Land			$ 57,000
Inventories			698,798
Net depreciable assets			2,455,656
Cash and bank balances			25,000
Total			$3,236,454

Tax: (1) 25% of first	$ 100 =		$ 25.00
(2) 5% of next	900 =		45.00
(3) 1/10 of 1% of next	3,235,454 =		3,235.45
Totals	$3,236,454		$3,305.45

(b) Filing Fee (once only) $10

(c) Business License Taxes (annual)

State license at statutory maximum	$200
County license at statutory maximum	100
Total	$300

(d) Corporation Permit (annual)

Tax at statutory maximum $100

(e) Franchise Tax

Base: Land	$ 57,000
Inventories	698,798
Net depreciable assets	2,455,656
Cash and bank balances	25,000
Total	$3,236,454

Tax at $2.50 per $1,000 = (3,236,454) (.0025) ...... = $8,091

Tax Calculations for Hypothetical Corporation A—(Continued)

(f) Property Taxes—(i) First through Tenth Years

Type of Property	Book Value	Ratio of Assessed Value to Book Value (in percent)	Assessed Value	State Tax Rate (in mills)	State Tax	Houston County						School District Tax Rate (in mills)	School District Tax	Total Tax
						Non-School Tax Rate (in mills)	School Tax Rate (in mills)	Total County Tax Rate (in mills)	Non-School Tax	School Tax	Total County Tax			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Land............	$ 57,000	15	$ 8,550	6.5	$ 55.58	11.5	4.0	15.5	$ 98.33	$ 34.20	$ 132.53	3.0	$ 25.65	$ 213.76
Improvements......	1,047,768	15	157,165	—	—	—	4.0	4.0	—	628.66	628.66	3.0	471.50	1,100.16
Machinery and Equipment.....	1,407,888	15	211,183	—	—	—	4.0	4.0	—	844.73	844.73	3.0	633.55	1,478.28
Inventories[1].......	118,796	15	17,819	—	—	—	4.0	4.0	—	71.28	71.28	3.0	53.46	124.74
TOTALS......	$2,631,452	15	$ 394,718	—	$ 55.58	—	4.0	—	$ 98.33	$1,578.87	$1,677.20	3.0	$1,184.16	$2,916.94

Total Tax $2,917

NOTES: [1]Inventory base calculated as follows:

Type of Property	Total	Assumed Exempt	Assumed Taxable
Finished Goods..........	$ 468,195	$ 374,556	$ 93,639
Work in Process.........	167,711	167,711	0
Raw Materials and Supplies............	62,892	37,735	25,157
TOTALS...........	$ 698,798	$ 580,002	$ 118,796

Tax Calculations for Hypothetical Corporation A —(Continued)

(f) Property Taxes—(ii) Eleventh and Subsequent Years

Base: Total Assessed Value .... $ 394,718

State tax at 6.5 mills:	(394,718)(.0065)	=	$2,565.67
County tax at 15.5 mills:	(394,718)(.0155)	=	6,118.13
School District tax at 3.0 mills:	(394,718)(.003)	=	1,184.15
Total tax at 25.0 mills:	(394,718)(.025)	=	$9,867.95

(g) Income Taxes—(i) Allocation Ratio

I. Property (average inventory)	23.5234%
II. Manufacturing costs	9.5880%
III. Sales (point of manufacture)	10.6768%
Total	43.7882%
Average Ratio	14.5961%

(g) Income Taxes—(ii) Formula Derivation

$$T = (.03)(.145961)(D-F)$$

$$\frac{T}{.03} = .145961(D-F)$$

$$\frac{33.33333T}{.145961} = D-F$$

$$228.3715056T = D-F$$

But: $F = .30(A-T) + .22(B-T)$

Therefore: $D-.30A+.30T-.22D+.22T = 228.3715056T$

$$D-.30A-.22B = 227.8515056T$$

$$\frac{D-.30A-.22B}{227.8515056} = T$$

(g) Income Taxes—(iii) First year

I. Alabama Basic Income[a]

Total gross income			$4,800,848
Deductions (excluding taxes)		$1,811,984	
Deductible taxes other than in Alabama[b]	$342,419		
Deductible taxes in Alabama[c]	14,723		
Total deductible taxes		357,142	
Total deductions			2,169,126
Net income			$2,631,722
Less: Non-unitary income			163,105
Unitary net income			$2,468,617

II. Federal Basic Income[a]

Total gross income			$4,800,848
Deductions (excluding taxes)		$1,811,984	
Deductible taxes other than in Alabama[b]	$404,642		
Deductible taxes in Alabama[c]	14,723		
Total deductible taxes		419,365	
Total deductions			2,231,349
Net income			$2,569,499

III. Tax

$D = \$2,468,617$

$A = \$2,569,499$

$B = \$2,569,499 - 25,000 = \$2,544,499$

$$T = \frac{D-.30A-.22B}{227.8515056}$$

$$= \frac{2,468,617-(.30)(2,569,499)-(.22)(2,544,499)}{227.8515056}$$

$$= \$4,994 \text{ State Tax}$$

Tax Calculations for Hypothetical Corporation A—(Continued)

(g) Income Taxes—(iv) Second through Tenth Years

I. Alabama Basic Income[a]

Total gross income			$4,800,848
Deductions (excluding taxes)		$1,811,984	
Deductible taxes other than in Alabama[b]	$342,419		
Deductible taxes in Alabama[c]	11,408		
Total deductible taxes		353,827	
Total deductions			2,165,811
Net income			$2,635,037
Less: Non-unitary net income			163,105
Unitary net income			$2,471,932

II. Federal Basic Income[a]

Total gross income			$4,800,848
Deductions (excluding taxes)		$1,811,984	
Deductible taxes other than in Alabama[b]	$404,642		
Deductible taxes in Alabama[c]	11,408		
Total deductible taxes		416,050	
Total deductions			2,228,034
Net income			$2,572,814

III. Tax

$D = \$2,471,932$

$A = \$2,572,814$

$B = \$2,572,814 - 25,000 = \$2,547,814$

$$T = \frac{D - .30A - .22B}{227.8515056}$$

$$= \frac{2,471,932 - (.30)(2,572,814) - (.22)(2,547,814)}{227.8515056}$$

$$= \$5,001 \text{ State Tax}$$

(g) Income Taxes—(v) Eleventh and Subsequent years

I. Alabama Basic Income[a]

Total gross income			$4,800,848
Deductions (excluding taxes)		$1,811,984	
Deductible taxes other than in Alabama[b]	$342,419		
Deductible taxes in Alabama[c]	18,359		
Total deductible taxes		360,778	
Total deductions			2,172,762
Net income			$2,628,086
Less: Non-unitary income			163,105
Unitary net income			$2,464,981

II. Federal Basic Income[a]

Total gross income			$4,800,848
Deductions (excluding taxes)		$1,811,984	
Deductible taxes other than in Alabama[b]	$404,642		
Deductible taxes in Alabama[c]	18,359		
Total deductible taxes		423,001	
Total deductions			2,234,985
Net income			$2,565,863

III. Tax

$D = \$2,464,981$

$A = \$2,565,863$

$B = \$2,565,863 - 25,000 = \$2,540,863$

$$T = \frac{D - .30A - .22B}{227.8515056}$$

$$= \frac{2,464,981 - (.30)(2,565,863) - (.22)(2,540,863)}{227.8515056}$$

$$= \$4,987 \text{ State Tax}$$

Tax Calculations for Hypothetical Corporation A—(Continued)

(g) Income Taxes—(vi) Notes
 [a]Before deduction of Federal or Alabama income taxes
 [b]Deductible taxes other than in Alabama:

Social Security	$242,179
Property	94,409
Use	5,766
Other	65
Total	$342,419*

[c]Deductible taxes in Alabama:

	First Year	Second Through Tenth Years	Eleventh and Subsequent Years
Admission Tax	$ 3,305	0	0
Filing Fee	10	0	0
Corporation Permit	100	$ 100	$ 100
Business Licenses	300	300	300
Franchise	8,091	8,091	8,091
Property	2,917	2,917	9,868
Totals	$14,723	$11,408	$18,359

*For Federal purposes add "other state income taxes" of $62,223=$404,642.

(h) Present Value Calculations[a]

I.(a) R=$23,346
   i=.05

$$A=\frac{R}{i}$$ —(1)
$$=\frac{23,346}{.05}$$
$$=\$466,920$$

(b) A=$466,920
   n=10
   i=.05

$$P=A(1+i)^{-n}$$ --(2)
$$=466,920(1.05)^{-10}$$
$$=(466,920)(.61391325)$$
$$=\$286,648$$

II.(b) (1) C=$16,409
   n=9
   i=.05

$$L=C(a_n \text{ at } i)$$ —(4)
$$=16,409(a_9 \text{ at } i)$$
$$=(16,409)(7.10782168)$$
$$=\$116,632$$

(2) L=$116.632
   n=1
   i=.05

$$S=L(1+i)^{-n}$$ —(5)
$$=116,632(1.05)^{-1}$$
$$=(116,632)(.95238095)$$
$$=\$111,078$$

(3) E=$16.402
   n=1
   i=.05

$$X=E(1+i)^{-n}$$ —(6)
$$=16,402(1.05)^{-1}$$
$$=(16,402)(.95238095)$$
$$=\$15,621$$

III. Q=$3,315

IV. P=$286,648
   S= 111,078
   X=   15,021
   Q=   3,315

$$T=P+S+X+Q$$ —(8)
$$=\$416,662$$

Note: [a]See Chapter VI for formula derivation, method, and meaning of symbols.

APPENDIX B-I

TAX CALCULATIONS FOR HYPOTHETICAL CORPORATION A

Exhibit 10—Arkansas Tax Calculations

(a) Qualification Fee (once only)

Allocation Ratio:

(1) Property (year-end inventory)	23.3986%
(2) Sales (destination)	5.4247%
Total	28.8333%
Average Ratio	14.4167%
Base: Authorized Capital Stock	$8,443,000
Allocated Base: (8,443,000)(.144167) ....≡	$1,217,202
Tax: $10+(.0001)(900,000)+(.0005)(217,201) ....≡	$111

(b) Franchise Tax

Allocation Ratio:	Arkansas	Total
Tangible Property	$3,211,454	$13,725,000
Net Receivables	0	3,600,000
Investment in Government Obligations	0	2,250,000
Other Investments	0	225,000
Cash and Bank Balances	25,000	2,025,000
Totals	$3,236,454	$21,825,000

Ratio: $\dfrac{3,236,454}{21,825,000} =$ 14.8291%

Base: Capital Stock Outstanding

Preferred	$2,007,500
Common	4,000,000
Total	$6,007,000
Allocated Base: (6,007,500)(.148291) ....≡	$890,858
Tax at 11/100 of 1%=(890,858)(.0011) ....≡	$979.94

(c) Property Taxes

Base:

Type of Property	Book Value	Ratio of Assessed to Market Value[a]	Assessed Value
Land	$ 57,000	8.47%	$ 4,982
Improvements	1,047,768	8.47%	91,575
Machinery and Equipment	1,407,888	8.47%	123,049
Inventories	698,798	8.47%	61,075
Cash	5,000	100.00%	5,000
Bank Balance	20,000	100.00%	20,000
Totals	$3,236,454	9.445%	$305,681

Tax Rate: Garland County	12.5 mills
School District (No. 5)	40.0 mills
Total	52.5 mills
Tax at 52.5 mills=(305,681)(.0525) ....≡	$16,048

Note: [a]Estimate obtained for real property only. Assumed to apply to personal property as well. From "Arkansas Ratio Study," *Report of Committee to Study Ratio of 1955 Arkansas Ad Valorem Property Assessments to 1954 Real Estate Sales,* March 1, 1956, mimeo., schedule III, p. 1.

Tax Calculations for Hypothetical Corporation A—(Continued)

(d) Income Taxes—(i) Allocation Ratio

Manufacturing cost only 9.5880%

(d) Income Taxes—(ii) First Year

Total gross income		$ 4,800,848
Deductions (excluding taxes)	$ 1,811,984	
Less: Emergency amortization unallowable	26,816	
Net deductions	$ 1,785,168	
Deductible taxes other than in Arkansas[a] .... $	342,419	
Deductible taxes in Arkansas[b]	17,139	
Total deductible taxes	359,558	
Total deductions		2,144,726
Net income		$ 2,656,122
Less: Non-unitary income		163,105
Unitary net income		$ 2,493,017
Allocated net income: (2,493,017)(0.9588) ....=		$ 239,030

Tax: First $ 3,000 at .01=$ 30
     Next   3,000 at .02=   60
     Next   5,000 at .03=   150
     Next   14,000 at .04=   560
     Next 214,030 at .05= 10,702

       Total tax $11,502

(d) Income Taxes (iii) Second and Subsequent Years

Total gross income		$ 4,800,848
Deductions (excluding taxes)	$ 1,811,984	
Less: Emergency amortization unallowable	26,816	
Net deductions	$ 1,785,168	
Deductible taxes other than in Arkansas[a] .... $	342,419	
Deductible taxes in Arkansas[b]	17,028	
Total deductible taxes	359,447	
Total deductions		2,144,615
Net income		$ 2,656,233
Less: Non-unitary income		163,105
Unitary net income		$ 2,493,128
Allocated net income: (2,493,128)(.09588) ....=		$ 239,041

Tax: First $ 3,000 at .01=$ 30
     Next   3,000 at .02=   60
     Next   5,000 at .03=   150
     Next   14,000 at .04=   560
     Next   214,041 at .05= 10,702

       Total tax $11,502

(d) Income Taxes (iv) Notes

[a]Deductible taxes other than in Arkansas:

Social Security	$ 242,179
Property	94,409
Use	5,766
Other	65
Total	$ 342,419

[b]Deductible taxes in Arkansas:

	First Year	Second and Subsequent Years
Qualification Fee ....$	111	0
Franchise	980	$ 980
Property (total)	16,048	16,048
Totals	$17,139	$17,028

Tax Calculations for Hypothetical Corporation A—(Continued)
(e) Present Value Calculations[a]
   I. (a) $R=\$28,530$
            $i=.05$

$$A=\frac{R}{i} \qquad\qquad -(1)$$
$$=\frac{28,530}{.05}$$
$$=\$570,600$$

       (b) $A=\$570,600$
            $n=1$
            $i=.05$

$$P=A(1+i)^{-n} \qquad\qquad -(2)$$
$$=570,600(1.05)^{-1}$$
$$=(570,600)(.95238095)$$
$$=\$543,942$$

   II. (a) $B=\$28,530$
            $n=1$
            $i=.05$

$$V=B(1+i)^{-n} \qquad\qquad -(3)$$
$$=28,530(1.05)^{-1}$$
$$=(28,530)(.95238095)$$
$$=\$27,171$$

   III. $Q=\$111$

   IV. $P=\$543,942$
            $V=27,171$
            $Q=111$
$$T=P+V+Q \qquad\qquad -(7)$$
$$=\$571,224$$

Note: [a]See Chapter VI for formula derivation, method, and meaning of symbols.

APPENDIX B-I

TAX CALCULATIONS FOR HYPOTHETICAL CORPORATION A

Exhibit 11—Florida Tax Calculations

(a) Charter Fee (once only)
   Allocation Ratio: Number of states in which doing business 1/20
   Base: Authorized Capital Stock .... $ 8,443,000

   Allocated Base $\dfrac{8,443,000}{20}=$ .... $ 422,000

   Tax: $250+1000$ $(422,150-125,000)=$ .... $ 399

(b) Business License Taxes
   State license at statutory maximum .... $ 100
   County license at statutory maximum .... $ 50

   Total .... $ 150

(c) Franchise Tax
   Allocation Ratio: 23.3986%
   Base: Capital Stock Outstanding .... $ 6,007,500
   Allocated Base: $(6.007.500)(.233986)=$ .... $ 1,405,671
   Tax: (flat tax as per schedule) .... $ 750

(d) Property Taxes
   Base:

Type of Property	Book Value	Ratio of Assessed to Market Value	Assessed Value
Land	$ 57,000	20%	$ 11,400
Improvements	1,047,768	25%	261,942
Machinery and Equipment	1,407,888	25%	351,972
Inventories	665,497	25%	166,375
Totals ....$	$3,178,153	24.911%	$ 791,689

   Orange County tax at 38 mills: $(791,689)(.038)=$ ....$ 30,084

Tax Calculations for Hypothetical Corporation A—(Continued)

(e) Intangibles Tax

Cash and bank balance $25,000

Tax at .05 per $1,000: (21,000)(.0005)= $1.25

(f) Present Value Calculations[a]

I. (a) R=$30,985
        i= .05

$$A=\frac{R}{i}$$ —(1)

$$=\frac{30,985}{.05}$$

$$=\$619,700$$

(b) A=$619,700
     n=1
     i=.05

$$P=A(1+i)^{-n}$$ —(2)

$$=619,700(1.05)^{-1}$$

$$=(619,700)(.95238095)$$

$$=\$590,190$$

II. (a) B=$30,985
         n=1
         i=.05

$$V=B(1+i)^{-n}$$ —(3)

$$=30,985(1.05)^{-1}$$

$$=(30,985)(.95238095)$$

$$=\$29,510$$

III.   Q=$ 1,160

IV.   P=$590,190
         V= 29,510
         Q= 399

$$T=P+V+Q$$ —(7)

$$=\$620,099$$

Note: [a]See Chapter VI for formula derivation, method, and meaning of symbols.

APPENDIX B-I

TAX CALCULATIONS FOR HYPOTHETICAL CORPORATION A

Exhibit 12—Georgia Tax Calculations

(a) Qualification Fee (once only) ....$ 10

(b) Franchise Tax

Allocation Ratio:

I. Total property in Georgia ....$ 3,211,454

Business done in Georgia 984,021

Numerator ....$ 4,195,475

II. Total property everywhere $13,725,000

Business done everywhere 18,139,636

Denominator $31,864,636

III. Ratio: $\dfrac{4,195,475}{31,864,636}=$ 13.16656%

Base: Net Worth $20,025,000

Allocated Base: (20,025,000)(.1316656) ....=$ 2,636,604

Tax; (flat tax as per schedule) ....$ 1,000

Tax Calculations for Hypothetical Corporation A—(Continued)

(c) Property Taxes

Base:

Type of Property	Book Value	Ratio of Assessed to Market Value	Assessed Value
Land ....$	57,000	25%	$ 14,250
Improvements	1,047,768	25%	261,942
Machinery and Equipment	957,994	25%	239,499
Power Plant Equipment	109,128	25%	27,282
Tools and Dies	277,243	25%	69,311
Furniture and Fixtures	28,974	25%	7,244
Automobiles	4,549	38.5%	1,751
Other	30,000	25%	7,500
Inventories	698,798	25%	174,699
Totals ....$	3,211,454	25.019%	$ 803,478

State tax at ¼ mill: (803,478)(.00025) ....=$ 200.87

Thomas County tax at 20 mills: (803,478)(.02) ....= 16,069.56

School District tax at 18 mills: (802.472)(.018) ....= 14,462.60

Total tax $30,733.03

(d) Intangibles Tax

Cash and bank balances ....$ 25,000

Tax at $.10 per $1,000=(25,000)(.0001) ....$ 2.50

(e) Income Taxes—(i) Allocation Ratio

I. Average Inventories

Domestic ....$ 665,497
Total ....$ 8,110,604
Ratio 8.2053%

II. Gross Receipts (sales by destination) 5.4247%

III. Payroll 6.1186%

Total 19.7486%
Average Ratio 6.5829%

(e) Income Taxes—(ii) First Year

Total gross income .... $ 4,800,848

Deductions (excluding taxes) .... $ 1,811,984

Deductible taxes other than in Georgia[a] ....$ 342,419

Deductible taxes in Georgia[b] 31,746

Total deductible taxes 374,165

Total deductions 2,186,149

Net income .... $ 2,614,699

Less: Non-unitary income 163,105

Unitary net income .... $ 2,451,594

Allocated net income: (2,451,594)(.06582) ....= $ 161,364

Tax at 4%: (161,364)(.04) ....= $ 6,455

Tax Calculations for Hypothetical Corporation A—(Continued)

(e) Income Taxes—(iii) Second and Subsequent Years

Total gross income			$ 4,800,848
Deductions (excluding taxes)		$ 1,811,984	
Deductible taxes other than in Georgia[a] ....$	342,419		
Deductible taxes in Georgia[a]	31,736		
Total deductible taxes		374,155	
Total deductions			2,186,139
Net income			$ 2,614,709
Less: Non-unitary income			163,105
Unitary net income			$ 2,451,604
Allocated net income: (2,451,604)(.06582) ....=			$ 161,365
Tax at 4%: (161,365)(.04) ....=			$ 6,455

(e) Income Tax—(iv) Notes

[a]Deductible taxes other than in Georgia:

Social Security ....$	242,179
Property	94,409
Franchise	62
Use	5,766
Filing Fee	3
Total ....$	342,419

[b]Deductible taxes in Georgia:

	First Year	Second and Subsequent Years
Qualification Fee ....$ 10		0
Franchise 1,000	$	1,000
Intangibles 3		3
Property (total) 30,733		30,733
Totals ....$ 31,746	$	31,736

(f) Present Value Calculations[a]

I. (a) R=$38,191
         i=.05

$$A=\frac{R}{i}$$ —(1)

$$=\frac{38,191}{.05}$$

$$=\$763,820$$

(b) A=$763,820
      n=1
      i=.05

$$P=A(1+i)^{-n}$$ —(2)
$$=763,820(1.05)^{-1}$$
$$=(763,820)(.95238095)$$
$$=\$727,448$$

II. B=$38,191
      n=1
      i=.05

$$V=B(1+i)^{-n}$$ —(3)
$$=38,191(1.05)^{-1}$$
$$=(38,191)(.95238095)$$
$$=\$36,372$$

III. Q=$10
IV.   P=$727,448
       V= 36,372
       Q=   10

$$T=P+V+Q$$ —(7)
$$=\$763,830$$

Note: [a]See Chapter VI for formula derivation, method, and meaning of symbols.

APPENDIX B-I

TAX CALCULATIONS FOR HYPOTHETICAL CORPORATION A

Exhibit 13—Kentucky Tax Calculations

(a) Qualification Fees:

Filing fee	$25
Recording fee	10
Total	$35

(b) Franchise Tax

Allocation Ratio:	Total	Kentucky
Sales[a]	0	0
Purchases	$ 8,081,506	$ 1,035,676
Payrolls	5,144,084	314,746
Totals	$13,225,590	$ 1,350,422
Total ÷ 2 = Business Factor	$ 6,612,795	$ 675,211
Property	13,725,000	3,211,454
Totals	$20,337,795	$ 3,886,665

$$\text{Ratio: } \frac{3,886,665}{20,337,795} = 19.11055\%$$

Base: Estimated market value of stock	$30,257,500
Allocated Base: (30,257,500)(.1911055) =	$ 5,782,375
Tax at $.70 per $1,000: (5,782,375)(.0007) =	$ 4,048

Notes: [a]Sales definition assumed to be same as that for income tax purposes—i.e., "origin." Sales figures omitted: no sales in Kentucky. Sales left out of total because of the omission provisions in the income tax regulations.

(c) Property Taxes

State: Base

Type of Property	Book Value	Ratio of Assessed to Market Value	Assessed Value	Tax Rate (per $100)	Tax
Land	$ 57,000	30%	$ 17,100	.05	$ 8.55
Improvements	1,047,768	30%	314,330	.05	157.16
Machinery and Equipment	957,994	28%	268,238	.50	1,341.19
Power Plant Equipment	109,128	28%	30,556	.50	152.78
Tools and Dies	277,243	28%	77,628	.50	388.14
Furniture and Fixtures	28,974	28%	8,113	.50	40.56
Automobiles	4,549	40%	1,820	.50	9.10
Others	30,000	28%	8,400	.50	42.00
Finished Goods	468,195	28%	131,095	.50	655.47
Work in Process	167,711	28%	46,959	.50	234.79
Raw Material	62,892	28%	17,610	.50	88.05
Totals	$3,211,454	28.71%	$921,849	—	$3,117.79

Fayette County: Base

Type of Property	Book Value	Ratio of Assessed to Market Value	Assessed Value	Tax Rate (per $100)	Tax
Land	$ 57,000	30%	$ 17,100	.50	$ 85.50
Improvements	1,047,768	30%	314,330	.50	1,571.65
Furniture and Fixtures	28,974	28%	8,113	.50	40.57
Automobiles	4,549	40%	1,820	.50	9.10
Others	30,000	28%	8,400	.50	42.00
Finished Goods	468,195	28%	131,095	.50	655.47
Totals	$1,636,486	29.384%	$480,858	—	$2,404.29