F I N A L R E P O R T

STATE TAX REFORM STUDY COMMITTEE

January, 1988

The State Tax Reform Study Committee was established by the Legislative Council in July, 1987. The Study Committee consisted of four members of the General Assembly and nine members from the general public. All members were voting members. The members are as follows:

Robert Houser, Chairman
Connie Wimer, Vice Chairwoman
Senator Charles Bruner
Senator Edgar H. Holden
Representative Minnette Doderer
Representative Hugo Schnekloth
Joyce Blum
Joe Lundsgaard
Cyril Mandelbaum
Marilyn Murphy
Stephen W. Roberts
Donald P. Rowen
Paul Stanfield

The charge of the Study Committee was as follows: "Study and make recommendations on the impact of the 1986 Federal Tax Reform Act on individuals in Iowa, and include recommendations on whether it is beneficial for the state to make changes in the area of "coupling" with federal tax code changes. The Committee should also examine whether maintaining deductibility of federal income taxes with higher state income tax rates is more beneficial to the state than eliminating deductibility and lowering state income tax rates. The Committee should review and comment on various methods to reduce the regressive nature of the sales and use tax, and document the total tax impact and progressivity, fairness, and competitive advantages or disadvantages of Iowa's sales, use, income and corporate taxes relative to the surrounding states. The Committee's meetings shall be completed by October 15, 1987, and its report presented to the Legislative Council no later than November 15, 1987."

The Study Committee was initially authorized five meetings and later an additional meeting was authorized for the Study Committee to review this Final Report. The Study Committee members received a number of publications requested by them

through the efforts of the Legislative Service Bureau and data furnished by the Department of Revenue and Finance. Those publications and data are listed in Attachment I of this report. The Study Committee held all of its meetings at the State House in Des Moines on August 19, September 1, September 8, September 15, September 29, and October 13, 1987.

The first meeting of the Study Committee was devoted to the presentation by the Department of Revenue and Finance of Iowa's present income and sales tax structure and the changes made by the federal Tax Reform Act of 1986, and to comments concerning whether to couple with federal changes or not by representatives of the Iowa Society of Certified Public Accountants and the Iowa State Bar Association. The next meeting consisted mostly of Study Committee discussion on the income tax issues facing the state. This was done after receiving additional data requested of the Department of Revenue and Finance.

At the third meeting held on September 8, the Study Committee made its first recommendation to the Legislative Council and General Assembly. This recommendation was of a temporary nature in that it applied to individual income tax years beginning in the 1987 calendar year only and consisted of the following three parts:

1. Revenue neutral coupling with the tax code changes made by the federal Tax Reform Act of 1986 for individual income taxpayers with at least a 10% reduction in the rates in each of the present individual income tax brackets.

2. Retaining the traditional Iowa married taxpayers filing separately concept.

3. Retaining the Iowa taxpayer's ability to deduct their federal income taxes.

In addition the Study Committee urged the calling of a special session in order to enact the above recommendation into law for the 1987 income tax year. (See Attachment II for the letter and recommendation sent to the Legislative Council.)

The fourth meeting of the Study Committee was devoted to presentations by David Swenson of the Institute of Public Affairs at the University of Iowa and Steven Gold from the National Conference of State Legislatures concerning the regressivity of state sales taxes and the need and methods to provide relief for the lower income families. A video tape of the business seminar of the Midwestern Legislative Conference of the Council of State Governments dealing with the ineffectiveness of providing state or local assistance or tax incentives to promote economic development was shown to the Study Committee.

The entire meeting on September 29, was devoted to making long term recommendations to the Legislative Council and General Assembly concerning the individual income tax and the state sales, services, and use tax. These recommendations are the following:

1. That Iowa taxable income be defined as federal taxable income with the Iowa income taxes adjustment, plus interest on municipal bonds, except for Iowa general obligation bonds, and with such other adjustments as are required by federal and state tax laws. There should be four or more progressive rate steps striving for rates significantly lower than the present schedule while maintaining revenue neutrality.

Some of the major effects of this change would be to eliminate federal income tax deductibility, couple capital gains treatment with the federal law, eliminate the married filing separately on a combined return, and include the federal definition of standard deductions and personal exemptions. It would be necessary to develop rate schedules for married filing jointly, single, married filing separately, and head of household categories similar to those of the federal tax law.

2. If additional sales tax revenue is needed, the General Assembly should consider a reasonable expansion of the sales, services, and use tax base before increasing the rate of tax. This should be done in such manner that similar services are taxed in the same manner.

3. If the sales, services, and use tax rates are to be increased because of revenue needs, a significant amount of tax receipts should be returned as a sales tax credit or refund to low-income groups so as to substantially reduce the burden of these taxes on such groups.

The Study Committee also decided that in fulfillment of its charge to "document the total tax impact and progressivity, fairness, and competitive advantages or disadvantages of Iowa's sales, use, income and corporate taxes relative to surrounding states", that a copy of a publication which the members received entitled "The Role Of Taxation In State Business Climate" done for The Corporation for Enterprise Development by Karl Seidman be attached and made a part of this Final Report and that a listing of the tax changes significantly affecting business made since the final report of the previous citizens tax study committee be made a part of this Final Report. (See Attachments III and IV.)

The Study Committee, without voting its approval or disapproval of the contents, decided to include as part of the Final Report an individual attachment by two of the Study Committee members. (See Attachment V.)

Final,Tax
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ATTACHMENT I

PUBLICATIONS:

Report of the Tax Study Committee, February, 1985, - from the 1983-1985 Tax Study Committee
The Iowa Economy - from federal Reserve Bank of Chicago
Making the Grade, Executive Summary - from The Corporation for Enterprise Development
Reforming State Tax Systems - from National Conference of State Legislatures
Relieving State Tax Burden on the Poor - from Center on Budget and Policy Priorities
The Role of Taxation in State Business Climate - from The Corporation for Enterprise Development
The Sorry State of State Taxes - from Citizens for Tax Justice
State Tax Relief for the Poor - from National Conference of State Legislatures
State Taxation and Economic Development - from Council of State Planning Agencies
Taxes and Growth - from Council of State Planning Agencies

Department of Revenue and Finance:

August 19 meeting:
1. Overview of state individual and corporate income and sales taxes, August 1987
2. Tax Reform Act of 1986, the Iowa law and legislative impact, October 1986

September 1 meeting:
1. Issues Pertaining to Iowa's Married Separate Filing.
2. Federal and State Taxation of Capital Gains
3. Effects of Elimination of Federal Tax Deduction for Individual Income Taxes and Hypothetical Alternative Tax Rate Structures.
4. Effect of Increasing Low Income Exemption.
5. Oklahoma Tax Rate Structure.
6. Alternative Sales Tax Exemptions and Credit Programs.
7. Effects of Elimination of Federal Tax Deduction for Corporate Tax Purposes and Alternative Rate Structures.

September 8 meeting:
1. Taxation of Captial Gains
2. Married Separate Filing
3. Federal Tax Deduction
4. Alternative Tax Program

Attachment,I
mg/cf/24

GENERAL ASSEMBLY OF IOWA

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EVELYN HAWTHORNE
PUBLIC INFORMATION OFFICER
GERALDINE WEGTER
ASST PUBLIC INFORMATION OFFICER

September 9, 1987

TO: CHAIRPERSON AVENSON AND MEMBERS OF THE IOWA LEGISLATIVE COUNCIL

FROM: Michael J. Goedert, Legal Counsel MJG
Legislative Service Bureau

On behalf of the State Tax Reform Study Committee, I am submitting the enclosed recommendations of the Study Committee to you for your consideration. The recommendations were unanimously approved by those attending the third meeting of the State Tax Reform Study Committee held on Tuesday, September 8, 1987. Those members in attendance and voting for the recommendations were:

Connie Wimer, Vice-Chairperson
Senator Charles Bruner
Senator Edgar H. Holden
Representative Minnette Doderer
Representative Hugo Schnekloth
Joyce Blum
Joe Lundsgaard
Marilyn Murphy
Donald P. Rowen
Cyril Mandelbaum
Stephen W. Roberts
Paul Stanfield

Chairperson Robert Houser was on vacation and was unable to attend the meeting and cast his vote.

MJC:dg
enclosure

The State Tax Reform Study Committee submits the following recommendations to the Legislative Council relating to actions that must be taken by the General Assembly and the Governor to resolve an urgent and immediate problem relating to the filing of the 1987 individual income tax returns. The need for urgency is because of the complex and expanded forms which each taxpayer will be required to complete and file for the 1987 tax year.

In order to simplify the Iowa individual income tax forms and reduce individual income tax rates for Iowa taxpayers for their 1987 income tax years, the State Tax Reform Study Committee appointed by the Legislative Council makes the following recommendations for purposes of the 1987 income tax year only:

1. Revenue neutral coupling with the tax code changes made by the federal Tax Reform Act of 1986 for individual income taxpayers with at least a 10% reduction in the rates in each of the present individual income tax brackets.

2. Retaining the traditional Iowa married taxpayers filing separately concept.

3. Retaining the Iowa taxpayer's ability to deduct their federal income taxes.

In addition, the State Tax Reform Study Committee urges the Legislative Council to recommend calling a special session of the Iowa General Assembly to enact the above tax recommendations into law for the 1987 income tax year.

MJC/cln/356e

The Corporation for Enterprise Development

THE ROLE OF TAXATION IN STATE BUSINESS CLIMATE

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THE ROLE OF TAXATION

IN STATE BUSINESS CLIMATE

by Karl Seidman (Mt. Auburn Associates)

for
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1986

TABLE OF CONTENTS

THE ROLE OF TAXATION IN STATE BUSINESS CLIMATE

Introduction

Tax policy is one of the most difficult and publicly scrutinized issues that state policymakers encounter. Legislators must balance many concerns when deciding upon tax questions. Undoubtedly, they seek to keep the level of taxation reasonable while also addressing demands and needs for public spending. The fairness and efficiency of taxation are other important considerations in tax policy. Lawmakers pursue tax fairness by attempting to tailor tax burdens to the taxpayer's ability to pay and by taxing individuals and businesses in similar circumstances under the same rules. Furthermore, since taxes can distort economic decision-making and lead to a less efficient allocation of resources, this consequence of tax policy must also be weighed.

In recent years, another issue has come to dominate tax debates in state capitols. Legislators and public officials have been warned that their tax system is the key to their economic fortunes -- if their tax system is not competitive with those of other states, then businesses will chose to invest and create jobs in those states where taxes are lower and tax incentives for business investment are greater. Since private business investment generates most employment and income growth, the competitiveness of state tax systems is largely a question of how differences in state and local taxes effect business investment and location decisions . Consequently, the effect of taxes on business location and investment decisions is the primary subject of this paper. Since it dominates tax policy debate in many states, policymakers need to understand how taxes may shape economic development and the results of empirical research on this question. Special attention to this issues is not meant to imply that competitiveness should be the major consideration in making tax policy. Tax competitiveness is only one characteristic that legislators need to consider alongside traditional concerns of adequate and stable revenue sources, tax fairness and economic efficiency.

This paper is divided into five sections. The first section discusses the potential effect of taxes on business investment and job growth. In the second section, the specific effects of different types of taxes are outlined. The next two sections summarize and critique empirical studies of taxes and economic development, first focusing on the cost impact of taxes and then looking at the indirect effects of taxation on population. Finally, the conclusions of the paper are presented.

1.0 Taxes and Economic Growth: The Major Issues

1.10 The Role of Different Business Investment Decisions in Job Creation

Business investment decisions are the motor behind state job and income growth. Different regions and states experience varying economic conditions, largely based upon their particular pattern of business investments.[1] One recent study suggests that plant closing rates vary far less than job replacement rates by region and therefore, the rate of new job creation is a more significant factor in economic growth.[2] Since job creation results from several kinds of business investment, the importance of taxes and other factors will vary with the type of investment involved.[3] Thus, state policy-makers need to know which investment decisions are the largest contributors to economic growth and which are most sensitive to tax considerations. Current research suggests that investments which are the largest sources of new jobs are the least likely to be affected by tax considerations while the investment type that is most sensitive to taxes is a relatively insignificant source of job growth.

Job generating investment decisions can be grouped into four categories:

(1) starting a new business;
(2) expansion at an existing site (with or without adding new facilities);
(3) opening a new branch plant; and
(4) relocating a plant or business.

Several studies indicate that on-site expansion is the most important source of new jobs while business relocations are relatively unimportant. Roger Schmenner's census of employment and investments at 410 of the nation's largest corporations during the 1970s uncovered that 60% of national job growth at these firms resulted from on-site expansions, net of contractions. Another 36% of employment gains were from new branch plant employment in excess of job loss from plant closings. Employment growth at relocating plants accounts for only 4% of the national job creation by these large companies. Results for the Sunbelt were different, with new plant employment being the largest source of new jobs. Since these findings apply only to large firms, they do not measure employment from

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[1]See Roger W. Schmenner, Making Business Location Decisions (Englewood Cliffs, New Jersey:Prentice-Hall, Inc., 1982), pp. 164-199; and Candee S. Harris, "The Magnitude of Job Loss from Plant Closings and the Generation of Replacement Jobs: Some Recent Evidence," The Annals of the American Academy of Political and Social Science 475 (September 1984), pp. 15-27 for a detailed analysis of this issue.

[2]See Harris, pp. 23-25.

[3]See Harold Wolman, Components of Employment Change in Local Economies: A Review and Critique of the Literature (Washington, D.C.: The Urban Institute, 1979), pp. 22-29, which discusses how the causes behind different sources of job creation are likely to vary by investment type.

business start ups and probably overstate the overall employment gains from new branch plants. Armington's analysis of corrected Dun and Bradstreet data for 1976-80 also found that expansions accounted for the largest share of gross job growth. Over half (50.4%) of the new jobs during this period were from expansions while start-ups and branch plants each accounted for about one quarter of new jobs.[4]

A detailed analysis of job creation in Rhode Island from 1971-1982 provides a more comprehensive indication of the components of job growth. Almost one third (32.1%) of new jobs resulted from business start ups while 13.3% resulted from out-of-state firms establishing new plants in Rhode Island. The remaining 55% of job creation was due to the expansion of existing in-state firms. Most of this expansion occurred on site. Among firms with 50 or more workers in 1982 (these enterprises accounted for almost three quarters of expansion employment), over 80% of new jobs were created on site. Since one facility, a new plant by the Electric Boat Division of General Dynamics, accounted for over 4,000 jobs, these results may overstate the impact of new plants. When employment at Electric Boat is excluded, the contribution of start ups and on site expansions increase to 36% and 53%, respectively, while new plant investments, both from Rhode Island and out-of-state firms, drops to 11%.[5] Although Rhode Island is not necessarily representative of all other states, these figures give some indication of the significance of new business in job creation and corroborate Schmenner's findings on the overriding importance of on site expansion.

While branch plant investments by large firms are an important source of job creation, especially in the South, employment at these facilities appears particularly vulnerable to business cycle contractions. In one study, the rates of employment loss from plant closings at firms with 100 or more employees doubled during the recession years of 1980-82 when compared to the preceding 1978-80 period. Firms with 100 or fewer employees experienced a 39% increase in their job loss rate while the rate of employment loss in dissolutions of firms with fewer than twenty employees actually declined during the recession. Consequently, the two regions (the South and North Central) with the greatest dependence on branch plants of large firms had the largest decline in job replacement rates during the 1980-82 period.[6]

Tax considerations are only likely to influence business location decisions when a firm is evaluating alternative sites to choose the best location. However,

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[4]Catherine Armington, Further Examination of Recent Employment Growth Analysis of USEEM Data for 1976-1980 (Washington, D.C.: The Brookings Institution, March 1983). Figures are based upon my analysis of data presented in this report.

[5]These figures are based upon the author's analysis of figures from the Rhode Island Strategic Development Commission, The Greenhouse Compact, Volume I (Providence: Rhode Island Strategic Development Commission, 1984), chapters 5-8, pp. 77-161.

[6]See Harris, pp. 20 and 25.

two of the three most important job generating business investment decisions – the start-up of a new business and on site expansion – typically do not involve this type of site selection and, therefore, taxes are unlikely to be a location factor. Entrepreneurs typically start their business where they work and live; they do not search out the optimal location.[7] This location may be necessary for access to expertise at a university or to be close to a major customer. Alternatively, the entrepreneur may simply be choosing to stay in an area that is known and liked. Furthermore, corporate profit and property taxes are a minor concern for new firms since they usually are not profitable in the initial years and do not have substantial assets. Consequently, tax costs are likely to be quite small.

Expansion at an existing site is also insensitive to taxes. In many cases, expansion at an existing site may simply involve adding employees, a shift and some equipment, rather than new construction. Since, in this case, expansion does not require a new site, alternative sites, including their tax consequences, are unlikely to be considered and evaluated. When on site expansion does involve new construction and additional facilities, it is likely that the advantages of remaining at the same site (lower land costs and economies of scale) and the problems of dividing up operations will either preclude a search for an alternative site or outweigh cost savings at other sites. Detailed studies of business location decisions indicate that on site expansion is the most frequent expansion route chosen by companies.[8]

Relocation of an existing business or facility and establishing a branch plant are the two situations where tax considerations will matter most. These decisions are likely to involve information gathering and comparison of alternative sites, especially when the firm is large. When different sites are compared, the tax costs at each site may be estimated and considered in evaluating the costs and benefits of different locations.

Interstate tax differences, however, are irrelevant for most relocations since most firms relocate over a small distance. One study estimated that 80-90% of all relocations are short distance moves and are primarily motivated by space considerations.[9] Even among large Fortune 500 companies most plant relocations are short-distance. Since "the interstate, inter-regional location is a rare event,"[10] differentials in tax rates among states are unlikely to influence most business

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[7]This point is made by Eva Mueller and James M. Morgan, "Location Decisions of Manufacturers," American Economic Review 52 (March 1962), pp. 204-217; and by Wolman, pp. 23-25.

[8]See Roger W. Schmenner, Summary of Findings: The Manufacturing Location Decision: Evidence from Cincinnati and New England (Cambridge, Massachusetts: Harvard Business School, March 1978), p. 2.

[9]See Schmenner (1978), p. 9.

[10]Schmenner (1982), p. 179.

relocation decisions. For those few cases of interstate relocations, taxes may matter since long distance movers tend to be very cost conscious businesses. However, it makes little sense for states to pay attention to these situations or shape tax policies to influence decisions by these firms. Overall job creation from such relocations will be very small and unstable, since long distance relocations are likely to involve firms that are marginally profitable or are in extremely competitive industries.[11]

When taxes are a consideration, they are only one factor in business location decisions. Numerous other considerations enter into the decision on where to locate a plant. Taxes are also but one of many business costs evaluated when selecting a site. Thus, while the tax burden faced by businesses differs across states, other business costs also vary by state and may have a greater impact on profits. The facts on these issues are reviewed in the subsequent sections of this paper.

1.20 Major Factors in the Business Location Decision

The decision on where to locate a new plant is an extremely complex decision and is viewed by some analysts as one of the most difficult decisions faced by business executives.[12] A large number of factors are involved in choosing a site, and taxes are but one of the many considerations. Business location factors can be grouped into six categories:

(1) market demand;
(2) the supply of production factors;
(3) production and distribution costs;
(4) agglomeration economies;
(5) relationship to other plants and operations; and
(6) local characteristics.

While these six categories represent different issues that are analyzed when choosing a site, some issues are closely interrelated. For example, the location of the market served by a plant affects transportation costs. The relative importance of these factors will vary by the industry and product manufactured at a plant. A brief discussion of each category is presented to help elucidate the context in which the tax impact of a location decison is weighed.

Market Demand. The location of demand for the goods produced by a plant is a major consideration in plant location. Vaughan cites evidence that market growth

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[11]See Schmenner (1978), p. 9; and Mueller and Mc.gan, pp. 211-213 on the relationship between long distance relocating firms and their financial conditions.

[12]The best discussions of what influences business location decisions can be found in Schmenner (1982), chapters 1 and 3 and Roger J. Vaughan, State Taxation and Economic Development (Washington, D.C.: Council of State Planning Agencies, 1982). Vaughan provides a more detailed but similar discussion in his earlier study, The Urban Impacts of Federal Policies: Volume 2, Economic Development (Santa Monica, California: The Rand Corporation, 1977).

is perhaps the most important determinant of business location and employment growth.[13] Thus trends in population growth and migration partly influence business location since they determine the distribution of consumer demand. Access to markets is likely to be most important for industries that produce goods with low value to weight ratios and where transportation costs are large.[14] A location close to customers can also be important for firms that supply intermediate products to other industries. When supplier firms need to regularly share information with customers, observe and understand their operations and meet tight scheduling requirements, proximity may be a determining factor in location.

Supply of production factors. Labor, materials, land and energy are necessary inputs for production. Any plant must have an adequate supply of these resources to be profitable. Labor is generally the most important factor, representing the largest single cost and value component for most industries. Consequently, a plant must be located in an area where there is a sufficient supply of workers and where the required mix of skills is available. For firms that require highly skilled labor such as engineers, computer programmers, or scientists, the supply of skilled labor can be a major location factor. Similarly, technology-based operations may need a location that provides access to research, training and expertise at a university. While raw material supplies are not generally a major location factor, they are important for resource based industries such as paper, food processing and oil.[15] Energy and land availability are less important issues since they are generally available nationwide. However, land and space considerations can influence the choice of suburbs over central cities for manufacturing plants.

Production and Distribution Costs. Labor and transportation costs are generally the most important location cost factors. Several studies indicate that a large share of manufacturers is sensitive to transportation costs.[16] A study that simulated labor, transportation, tax and energy costs for manufacturing industries across the continental United States found that labor and transportation costs greatly exceed tax and energy costs for virtually all industries at the 2 digit SIC code.[17] The location of facilities that serve a national or large regional market will be affected by the cost of transporting goods to consumers, and will thus be influenced by the distribution of population. Labor costs are a consideration for

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[13]See Vaughan (1977), pp. 49-53 and (1982), pp. 21-23.

[14]Schmenner (1982), p. 37.

[15]Schmenner (1982), p. 37.

[16]See Vaughan (1982), p. 23.

[17]See Barry M. Rubin and C. Kurt Zorn, "A Comparative Analysis of Interstate Variation in Manufacturing Industry Business Costs" Center for Urban and Regional Analysis, School of Public and Environmental Affairs, Indiana University, 1983.

many companies, especially in highly competitive labor intensive industries.[18] The existence of a labor force with a high ratio of skills and productivity to wages will produce a higher labor cost advantage for firms and has been cited as an important factor in the growth of manufacturing in the South.[19]

Taxes are also a business cost factor although they are usually small in comparison to transportation and labor costs. However, when a firm is choosing among locations in the same region or area where other costs and location factors are very similar, then the significance of tax costs in the location decision can increase. Consequently, the influence of taxes on location decisions is likely to be greatest within a metropolitan area. When such an area includes several states, then interstate tax differences may matter.[20] The influence of taxes may be lessened since tax differentials may be capitalized in land values, i.e., the cost of land in lower tax jurisdictions may rise in compensation for lower taxes.[21] Since tax differentials also reflect differences in public services, the lower level of services in low tax jurisdictions may make the local environment less attractive to firms and increase other costs, such as employee training (to compensate for poorer quality education), transportation (to compensate for a less developed road system), security and fire protection.

Agglomeration Economies. When a business or plant locates in an area with a concentration of firms in the same industry, economic advantages may result. The advantages of agglomeration may include improved availability of skilled labor, a better ability to monitor competition and information and capacity sharing among firms. While study results vary, there is some evidence that firms located in areas of industry concentration are more productive.[22] ACIR's study of plant locations found that the first manufacturing plant established by a firm is usually in an area

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[18]Schmenner (1982), p. 37.

[19]Vaughan (1982), p. 24.

[20]The greater importance of taxes for intraregional location decisions is cited by several authors. See, for example, Advisory Commission on Intergovernmental Relations, Regional Growth: Interstate Tax Competition (Washington, D.C.: ACIR, 1981), p. 4; and Lawrence Litvak and Belden Daniels, Innovations in Development Finance (Washington, D.C.: Council of State Planning Agencies, 1979), pp. 29-30.

[21]See Dick Netzer, "State Tax Policy and Economic Development: What Should Governors Do When Economists Tell Them That Nothing Works?," New York Affairs 9, No. 3, (1986), p. 27; and Vaughan (1977), p. 78.

[22]Vaughan (1977), p. 76.

of industrial concentration.[23] Location in a industrially developed and diversified economy may also benefit firms that rely on specialized business services and a range of labor force needs.

Relationship to Other Plants and Operations. When a firm establishes a new branch plant, it must consider how this plant fits into its existing operations. The relationship of a new branch plant to other plants will depend on a firm's organization and multiplant manufacturing strategy. Schmenner outlines four possible strategies:

(1) a product plant strategy where a plant or a few plants produce a product for the entire domestic market;

(2) a market area plant strategy where a plant produces a product or product line for an entire regional market;

(3) process plant strategy where a plant is assigned a specialized stage in the production process for a more complex product; and

(4) general purpose plant strategy where a plant can take on a broad range of responsibilities with an assignment to a product, market area or process for a set period of time depending on changing conditions.[24]

Process plant strategies are most likely to require plant locations that are close to and closely related to other plants, while each market area plant will be placed in a separate region. The direct and logistical costs of moving people and materials between plants can be significant and may lead firms to cluster plants within one area, especially for firms following a process plant strategy.[25]

Local Characteristics. A number of local conditions, some of which are not directly related to demand, cost or supply issues, are important in business location decisions.[26] The quality of life in an area can influence the decision of where to site a plant or corporate headquarters. Firms are likely to prefer an area with good recreational and cultural amenities, good schools and less congestion and pollution. Quality of life consideration may be weighed heavily for plants that must attract and retain a more mobile, professional workforce.[27] Several factors that shape the local quality of life depend on public goods and services, e.g., recreation facilities and education. Local attitudes and leadership may also be considered.

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[23]ACIR, p. 37.

[24]See Schmenner (1982), p. 11-12 for a discussion of the classification.

[25]Schmenner (1982), p. 39.

[26]See Vaughan (1977), pp. 77-79 on these location factors.

[27]Schmenner (1982), p. 38.

Firms may evaluate public officials' desire for business expansion in their area and their willingness to cut red tape and resolve problems. The population and economic growth of an area, which will affect market demand, labor supply and other factors, may be favored by more active and visionary local leadership (both public and private).

The range and complexity of factors that shape plant location decisions have several implications for evaluating the importance of taxes. First, the information costs involved in locating and evaluating sites are large. Estimating tax costs alone is not simple. Property tax, income taxes, sales tax, unemployment insurance rates and fees must all be considered. Rates and assessment practices can vary from one locality to another. The tax base, exemptions and credits are different in each state. It is time-consuming to identify suitable sites, estimate land, labor, material and transportation costs into the future, and evaluate the local quality of life. Large information costs suggest that large firms are far more likely to undertake extensive searches and evaluations than small firms, especially firms that can use the information for many location decisions. Firms are also likely to make imperfect decisions, by not gathering all possible information and choosing the optimal site based on imperfect information. Rather, firms will attempt to minimize information costs by narrowing their options based on priority factors, such as market conditions, plant relationships or availability and cost of key factors. This type of decision may lead to specific regional choices and may favor certain cites. Tax considerations and, therefore, interstate tax differentials are unlikely to play a large role in this stage of decision-making since the "fine-tuning" of tax costs will not influence a decision driven by larger priorities. A second decision-making stage, where specific sites that meet priority criteria are compared, is more likely to involve the weighing of tax costs.[28]

Secondly, it is extremely difficult to isolate the independent effect of taxes on business investment when so many other factors are involved. This problem is magnified when variations in tax costs have a similar shape to variations in other important factors that influence business location. Historically, the regions with high population growth, an abundance of natural resources, low labor costs and relatively low taxes experienced high rates of new plant location during the 1960s and 1970s, i.e., the South and Southwest. Consequently, it is possible to point to the common existence of low taxes and higher growth rates and argue that taxes caused the higher growth rate. Unfortunately, much of the argument for reducing taxes to spur economic development has been based on simplistic observation of this relationship. However, it is possible that other factors caused the higher growth rate and the relationship between growth and taxes is coincidental. A large number of studies have attempted to tackle this thorny problem by using statistical techniques to isolate the independent relationship between business investment and taxes. The results of these studies and their meaning will be discussed in detail in Section 3.0.

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[28]A number of authors have described the business location decision process as such a two stage process. See, for example ACIR, pp. 32-34 and Michael Kieschnick, Taxes and Growth: Business Incentives and Economic Development (Washington, D.C.: Council of State Planning Agencies, 1981), pp. 37-38.

Two important economic trends provide a compelling explanation for why the Sunbelt grew faster than the Frostbelt since World War II. The first trend is the substantial shift in population from the Northeast and Midwest to the South and Southwest. This pattern of population shapes business locations in many ways. It has greatly increased consumer demand in these regions and shifted the locus of plants that serve national markets southward. It has also increased the labor supply for businesses in these regions. Secondly, U.S. industry has undergone a process of decentralization that has been reinforced by the shifts of population southward and the development of a large interstate highway system. With industry highly concentrated in the Northeast and Midwest at the end of World War II, the greater growth in the Sunbelt is understandable as part of a decentralization process. As industry expanded during this period, it spread plant locations throughout the nation partly in response to a more decentralized population, partly to take advantage of better access to markets and materials provided by a national highway system, and partly to reduce vulnerability to disruptions from labor stoppages, weather and natural disasters that were greater when production was centralized in one or two regions.[29]

1.30 The Potential Effect of Taxes on Business Investment

Direct Effect on Business Costs. State and local taxes may affect businesses in several ways and these effects can vary with the scope of the geographic region considered. Taxes may directly affect businesses by increasing their costs. If all other costs are the same, then a higher tax bill will reduce profits and lower a firm's rate of return. Since state and local taxes differ across jurisdictions, businesses will face lower tax bills in some states than in others. A business could increase its profit rate by making its plant investments in the lower tax state, assuming revenues and all other costs are not affected. Theoretically, this potential consequence of taxes could, over time, result in greater levels of investment and employment in states with lower taxes than in states with higher taxes.

The investment impact of tax differentials is far more complicated than this simple hypothesis for several reasons. First, the crucial "ceteris paribus" assumption (everything else being equal) is not true. Non-tax costs vary considerably across states and are generally more significant than taxes. Second, a tax collected from a business is not necessarily paid by the business's owners. A firm may be able to shift taxes, such as sales and property taxes, forward to consumers or backward to factor suppliers. If the cost of taxes is not ultimately paid by the firm, then profits will not be affected. While the ultimate tax incidence question has been well researched, no clear conclusions have been reached.[30] Third, differences in property tax rates may be offset by their capitalization in land value, thus

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[29]The role of decentralization in the post war pattern of business investment and employment growth is discussed by several authors. See Mueller and Morgan, p. 14; and Schmenner (1982), pp. 167-172.

[30]For discussions of tax incidence see Kieschnick, p. 5; and Lester Thurow, The Impact of Taxes on the American Economy (New York: Praeger Publishers, 1971), chapter 4.

reducing a potential cost advantage in states with low property taxes. Capitalization of taxes occurs because buyers consider the long term costs and benefits associated with a property purchase, not simply the initial purchase price. Therefore, if land in one location has higher property taxes, then the annual cost of ownership is higher and a buyer would be willing to pay less for that property than for a similar property with lower tax costs. Similarly, sellers of property in a low tax area can expect to get a higher purchase price in compensation for the low tax costs associated with the property.[31] Finally, the costs associated with taxes may be compensated for in benefits from public services. If the taxes paid business are spent on services that have little or no value to business, then the tax is a net cost. However, if businesses gain greater or equal benefits in public services than the cost of their tax payments, then a state's package of taxes and services may have a neutral or even positive impact on business investment.

Empirical evidence on the direct effect of taxes on business investment will be reviewed in Section 3.0.

Indirect Effects. State and local taxes may affect business investment indirectly by influencing population movement. If people choose their locations based on low taxes, then taxes may be affecting business location decisions indirectly through population migration effects. As people move to lower tax areas, the market demand and labor supply increases in these areas. Businesses may then follow people and increase their investment in low tax areas to gain better access to the increased consumer demand and labor supply. For this indirect effect to matter, taxes must influence residential choice and businesses must follow people to where they locate.

Studies of this potential indirect effect of state taxes on business activity will be discussed in Section 4.0.

Incentive Effects. A third possible tax effect is to provide incentives for certain types of business investments or decisions. Tax incentives constitute an important part of state efforts to attract new plant investments from large firms. However, the effect of these tax incentives on interstate business locations is closely related to the impact of tax differentials on business profits and investments. The abatement or reduction of taxes is only likely to influence firm location if taxes in general affect these location decisions. Many states also provide specific tax incentives designed to achieve a particular purpose such as increasing investment (e.g., investment tax credits), affecting the location of investment (e.g., enterprise zones) and encouraging employment of the poor or unemployed.[32] These incentives are usually aimed at encouraging in-state firms to take actions that will increase overall investment and employment, promote the growth of a targeted industry or reduce unemployment in certain areas or among

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[31]Public services can also be capitalized into property values when they are an amenity desired by property buyers. A good example of this type of capitalization is when a family will pay more for a home in a community with high quality public schools.

[32]For a good discussion of business tax incentives, see Kieschnick, especially chapter 2.

certain population groups. These incentives attempt to use taxes to make the desired action economically advantageous through the value of tax savings. To be effective, a tax incentive must actually cause a firm to take a desired action it would not otherwise take rather than provide a windfall benefit to firms that would have acted the same way without the incentive. To be an efficient expenditure of public dollars, the public benefits generated by those firms which acted due to the incentive must exceed the foregone tax revenues from all business who use the incentive.

Interregional and Intraregional Effects. As mentioned earlier, the influence of tax costs on business investments may vary depending on the geographic area. Since access to markets and resources, the nature of the labor force, labor costs, transportation costs, energy costs and other business location considerations vary enormously between major regions of the United States, we would expect the impact of different tax bills to be less significant across regions. However, within the same state, among bordering states and within metropolitan areas, where major business factors are fairly similar, the variation in taxes may take on more significance. Similarly, people may be more likely to locate based on tax considerations when the underlying climate, economic conditions and quality of life is similar within an area. Therefore, we might expect the potential influence of taxes, both directly and indirectly, to be greater within regions than across regions. This evaluation of the evidence on the effect of taxes on economic growth, therefore, will consider separately the impact between regions and the impact within a state or metropolian area.

The Importance of Federal Taxes. State and local taxes interact with federal taxes as they influence economic decisions. Since federal taxes are significantly greater than state and local taxes, federal tax policy is an important constraint and influence on the potential effect of state and local taxes on business investment. The ability of businesses to deduct state and local taxes from their income for federal purposes reduces the actual cost of these taxes and the magnitude of differentials between jurisdictions.[33] With most corporations now paying a federal marginal tax rate of 46%, each $100 of state and local taxes paid reduces federal tax liability by $46 and thus is actually an effective tax of only $54. Thus, federal deductibility will reduce a $100 tax differential between two states to a $54 differential. Although federal deductibility does not change the relative difference between taxes across states, it does alter the size of the state and local tax bill and thus the importance of taxes in comparison to other location costs. Federal deductibility also significantly reduces disparities in personal income taxes among states and thus mitigates the potential impact of these taxes on population migration.[34]

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[33]See Herman B. Leonard, Unchecked Balances: The Quiet Side of Public Spending (New York: Basic Books, 1986), p. 134.

[34]See ACIR, pp. 19 and 22.

2.0 The Potential Effects of Major State and Local Taxes

It is the variation in state and local taxes across jurisdictions that potentially affects business and individual location decisions, altering the distribution of economic growth. States and localities, however, vary not only in their level of taxes but in the tax mix they employ. Two states with similiar overall tax burdens may have very different tax structures; one state may rely heavily on sale. and property taxes while the other largely depends on corporate and personal income taxes. Since the myriad studies on taxes and economic growth use a variety of tax burden measures, it is important to consider how particular taxes may influence economic growth before evaluating their results. This section discusses the relevance of overall tax burden, and the four major state and local taxes– property, sales, personal income and corporation income – to the debate.

2.10 Overall Tax Burden

The most common way to compare taxes across states is to use an aggregate measure of total tax burden. Per capita tax revenues and tax revenues as a share of personal income are the two most common measures of total tax burden. Since fees are also used to finance government services, it is appropriate to include both tax and fee revenue (usually called own source revenue) in these figures. Many studies rely on these indicators. The Grant Thornton state business climate ranking uses state and local taxes per $1000 of personal income as its tax burden measure. Two recent studies of interstate effects of taxes on business investment and employment growth also use overall tax burden.[35]

Aggregate tax measures, however, do not accurately reflect the tax burdens that matter to businesses and individuals. Firms should be interested in taxes that are direct costs to them. A high tax burden due to a large sales tax for which goods and equipment used in manufacturing are exempt (a fairly common exemption) should not matter to a manufacturing business. Similarly, we would not expect high taxes to discourage individuals from moving to or remaining in a state if the major tax was an oil severance tax and energy costs were a small share of income. Alaska is a good example of this problem. Alaska has the highest overall tax burden per $1000 of personal income. However, since most of its revenues come from oil severance taxes, the taxes paid by a married couple in Alaska are the lowest in the nation.[36]

Different taxes, tax bases, and rates across states, as well as the complication of tax incidence and capitalization, make it difficult to get accurate data on the actual tax burdens for corporations and individuals. Therefore, overall tax burden

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[35]See B. Benson and R. Johnson, "Capital Formation and Interstate Tax Competition;" and Michael Wasylenko, "The Effect of Business Climate on Employment Growth: A Report to The Minnesota Tax Study Commission," 28 June 1984, cited in Netzer, p. 25.

[36]See ACIR, Significant Features of Fiscal Federalism, 1985-86 Edition (Washington, D.C.: ACIR, 1986), pp. 52 and 128.

is used as a convenient proxy for actual burdens. One can argue that tax shifting makes overall burden as good a measure as taxes initially paid by businesses. It is also possible that high overall tax burdens are read by businesses as negative signals or substituted for the cumbersome effect of determining actual tax burden.[37] This argument discounts the economic behavior of firms and individuals; if firms and people seek to increase their profits and incomes, then they should care about the actual taxes they incur.

2.20 Personal Income Taxes

Forty-three states collected $58.9 billion in personal income taxes in 1984. Nationwide, personal income taxes accounted for 11.9% of state and local revenues (including federal aid) during the same year. While most states have a graduated income tax rate, some use a flat rate and some base the tax on federal income tax liability. There is considerable variation across states in the rates applied, the tax base used and compliance with the federal tax code. Eleven states also have personal income taxes imposed by local political jurisdictions. Consequently, there is a lot of variation in personal income tax burdens among states. However, variation in personal income tax burden is much greater than the variation in the combined personal burden of income, sales and property taxes.[38]

Differentials in personal income tax burdens may have two important economic development effects. First, they can impose a direct cost on businesses in states with high income taxes by requiring these firms to pay a higher salary to managerial and professional employees who are recruited nationally.[39] The extent of this cost effect is reduced by the federal deductibility of state and local income taxes. Second, population migration may be affected by differences in personal income taxes.[40] People may leave high income tax states and move to lower income tax states. This effect may be most important in a multistate metropolitan area and along state borders where someone can hold the same job but reduce his or her tax liability by location choice. Across regions, however, salaries may adjust to compensate for income tax differentials diminishing the impact on migration. States with low personal income taxes are likely to have higher burdens in other taxes (the variation in combined sales, property and personal income taxes is less than that of personal income taxes alone) which will also reduce the migration effect.

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[37]Schmenner (1982) makes this argument. See p. 44.

[38]See ACIR (1986), pp. 127 and 128.

[39]Kieschnick, p. 16; Vaughan (1982), p. 118; and Netzer, p. 25.

[40]This effect is cited by many authors. See, for example, Netzer, p. 25; Kieschnick, p. 16; and Vaughan (1977), pp. 118-119.

376

2.30 Corporate Income Taxes

In 1984, forty-five states collected $15.5 billion in corporate income taxes, representing only 3.1% of state and local revenues nationwide. Corporate tax rates and tax bases, like the personal income tax, vary to a large extent across states. Top rates range from 2.35% in Michigan to 11.5 % in Connecticut. There are also differences in depreciation schedules, investment tax credits, and the allocation of income for multistate firms.[41]

Since corporate income taxes are a cost to businesses that directly reduce their profits and rate of return, variation in this tax is expected to influence business investment and location. Firms in states with high corporate income taxes might invest less, while those in low tax states might have a higher rate of investment. Similarly, firms considering new plant investments or relocations would favor states with lower corporate income taxes. This effect will differ by type of firm since the effective tax is lessened by depreciation write-offs, investment credits and the like. Furthermore, new firms and firms with unstable profits should be less influenced by corporate tax rate differences since their tax liabilities will be less and can be offset with loss carry-forwards. The potential economic impact of the corporate income tax also may be overshadowed by property tax rate differentials. A study by the Federal Reserve Bank of Boston found that, on average, corporate income taxes accounted for 20% of the state and local taxes paid by a firm while property taxes were 43% of the total. Therefore, differing property tax burdens, which are large both within and across regions, may have a more significant effect that interstate variation in corporate income taxes.[42]

2.40 Sales Taxes

Forty-five states had general sales taxes in 1984 that generated $62.6 billion in revenue. The sales tax is the most important single tax for state governments, accounting for 18.9% of revenues in 1984. For combined state and local revenues, sales taxes represent 13.9% of revenues. While the variation in state sales taxes is limited, ranging from 3 to 7.5%, the sales tax base varies enormously. States differ in exemptions for consumer goods (clothes, food, etc.), consumer services, business services, and materials and equipment used in manufacturing. In addition to these variations, local sales tax add-ons are very common. Over six thousand local government units in twenty-nine states collect sales taxes.[43] Consequently, the sales tax burden can vary a lot both between and within states.

Sales taxes can impose a cost on businesses. However, the sales tax's burden on business, and thus its effect on investment, is reduced due to widespread

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[41]See ACIR (1986), pp. 40, 48 and 103 for data on state corporate income taxes.

[42]See Vaughan (1982), pp. 73 and 76.

[43]Data on sales taxes is from ACIR (1986), pp. 48, 49, 92 and 94.

exemptions for goods and services used by private firms. Only eight states tax consulting, research and public relations services while computer services are subject to a sales tax in only 12 states. Energy and utility purchases are exempted from the sales tax in 32 states. Finally, many states exempt goods and equipment used in manufacturing.[44] One study lists 31 states with sales tax exemptions on industrial equipment.[45] Manufacturers in most states, therefore, are unlikely to have substantial sales tax costs. While states without these exemptions may be at a disadvantage due to a particularly high sales tax burden, this impact may be offset by relatively low income and property taxes.

Sales tax variation does have consequences on the retail industry. Since shoppers are mobile, local variations in sales taxes affect the locations where people shop, shifting both retail sales and the location of retailer to lower tax jurisdictions. Studies have shown that central city retail sales decline when suburban areas have lower sales tax rates.[46] Similarly, states with large populations along the border of states with lower sales taxes will also lose retail activity.

Sales taxes might also affect individual location choices, with people favoring low sales tax jurisdictions over ones with higher taxes. However, this effect may be weakened by several factors. First, the sales tax burden is proportionately smaller on higher income professionals who are usually more geographically mobile. Second, sales taxes can be avoided by shopping in lower tax areas while property and income taxes are determined by one's residency. Finally, sales taxes are often less visible to consumers since they are paid in small bits and pieces. The elimination of federal deductibility for sales taxes, however, may make individuals more sensitive to their cost.

2.50 Property Taxes

Property taxes are the single largest source of taxes for state and local government, totalling $96.5 billion in 1984 and accounting for 17.8% of state and local revenues. Most of this money -- $92.6 billion -- went to local governments and constituted 28.6% of their revenues. Variations in property wealth and assessment practices across communities lead to considerable differentials in property tax burdens. Higher service needs in urban centers tend also contribute to large differences in property tax rates between cities and suburbs. Suburbs tend to have considerable property wealth and lower basic service needs. Thus, they are often able to support important amenities such as quality education and recreation facilities at lower tax rates than urban centers. Urban centers, on the other hand, have greater demands for fire, police, transportation and anti-poverty services (housing, public health, and welfare) that must be supported with a smaller base of

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[44]ACIR (1986), p. 92.

[45]Kieschnick, p. 17.

[46]Vaughan (1982), p. 122. and Netzer, p. 24.

property wealth per capita. Consequently, cities may have higher property tax rates while appearing to have a lower level of services valued by businesses. In this manner, variation in tax rates and services within a region can have a reinforcing effect. This situation can be ameliorated through state aid that helps equalize localities' ability to provide services or their property tax rates, or by metropolitan tax base sharing.[47]

Property tax differentials are likely to affect business and residential location only to the extent that they are not capitalized in land values. While reserach on this issue is not conclusive, there is some evidence that capitalization of tax differentials does occur.[48] To the extent that property tax rates are not capitalized, businesses investments and individual residency would be expected to shift toward low property tax jurisdictions. This effect should be greater for more capital intensive firms. Property taxes, by raising the cost of investments in plant and equipment, may also reduce these investments and lower the capital to labor ratio. Since property taxes generally support services valued by businesses, the impact of property tax differentials may well be offset by differences in the benefits firms receive from these services. Areas with lower property tax burdens may also impose more user fees, further reducing the actual variation in business costs.

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[47]See Vaughan (1982), chapter 4 on this issue.

[48]Vaughan (1977), p. 78; Leonard, p. 135; and Netzer, p. 27.

3.0 The Direct Impact of Taxes as a Business Cost

3.10 The Relative Size and Variation of State and Local Tax Burdens

The direct impact of state and local taxes on business location decisions depends both on the variation in effective tax (and fee) costs across jurisdictions and the size of tax cost differentials in comparison to variations in other costs and location factors. While the theoretical effect of each tax may differ, it is not the variations in these particular taxes that matter, but rather the variation in the sum total of taxes incurred by businesses. A review of data and studies indicates that there is substantial variation in business tax bills across states. However, these measures often do not accurately reflect tax costs and overstate the extent of variation in the net tax costs since they do account for the benefits received from government services, tax incidence and tax capitalization.[49]

Measures of overall tax burden provide a rough indication of the extent of tax variation. In 1984, the per capita state and local tax burdens ranged from $866 in Arkansas to $4704 in Alaska. If we exclude Alaska because of its high costs and unique tax structure, the range is $866 to $2504, almost three to one, with 47 states within a range of 2 to 1. Measuring tax burden as a share of personal income, the variation in overall tax burdens was similar. The range from the state with the highest to the lowest burden was three to one, with 48 states within a range of 1.8 to 1.

Since businesses face a specific set of taxes and do not pay the average tax burden, several studies have looked at interstate differences in the particular taxes paid by firms. Three approaches have been taken. Some studies estimate the total amount of taxes initially paid by businesses in a state and then compare it to total business income, profits or capital stock in that state. While this approach is informative about the taxes paid by business as a whole, it does not reveal actual differences in taxes for specific firms or classes of firms due to the highly aggregated data employed. This measure is also very sensitive to the year chosen for comparison since business income fluctuates from year to year with the business cycle. Other studies construct a typical manufacturing firm or typical firms in several industries and then estimate the taxes collected from these typical firms in each state. Both approaches, however, ignore the interaction of federal tax deductibility and do not measure the marginal cost of taxes for new investments. Despite these problems, both kinds of analysis are better indicators of the variation in state and local taxes paid by businesses than overall tax burden.

These studies, while somewhat mixed in their results, do indicate that a large degree of variation in business taxes exists and that the variation appears greater for manufacturing firms than for all business. Wheaton's analysis of tax burdens for all business and manufacturing firms in the continental U. S. in 1977 found

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[49]For a good discussion of the problems with various measures of tax burdens as indicators of business tax costs, see Stephen Brooks, Robert Tannenwald, Hillary Sale and Sandeep Puri, The Competitiveness of the Massachusetts Tax System (Boston: Massachusetts Special Commission on Tax Reform, 1986), pp. 4-27.

that total taxes initially paid by manufacturing firms average 8% of profits. The range between the smallest burden (2.1%) and the largest (20.3%) was close to 10:1. For all businesses, the average tax burden was similar, 7.7%, but variation was less; the ratio of the highest tax burden to the lowest was only 3 to 1.[50] However, Wheaton's study has been criticized both for its validity and for the many assumptions he made.[51] The state of Ohio sponsored a study that also compared taxes to profits. This study found that for all businesses tax burdens varied by a factor of 2.7 to 1 from the highest to the lowest state.[52] A study prepared by Price Waterhouse for the state of Missouri compared the tax bill for a typical manufacturing firm in Missouri to that in 20 competing states. Estimates ranged from a low $389,000 to a high of $790,000, a ratio of 2 to 1.[53] Rubin and Zorn's study of interstate variation in manufacturing costs looked at hypothetical firms in 20 manufacturing sectors (by 2 digit SIC code). Their estimated tax burdens varied by industry; for most industries the ratio of the highest to lowest state tax bill was close to 6:1. One sector (instruments) had a ratio of 10:1 while the lowest range was 5:1 in lumber and wood products.[54]

A third approach, which is perhaps the most accurate measure of tax cost variation, simulates the effect of state and local taxes on the rate of return for business investment. Simulation study results, which will be discussed later in this section, indicate that tax effects on firm rates of return vary much less than other studies indicate.

The impact of differences in tax burden on business location and investment depends on how the spread of tax costs compares to differentials in other business costs. Both the relative degree of variation and the size of each cost factor matter. Empirical evidence and logic suggest that costs, other than taxes, are quite different between states and that these factors represent a much larger share of firms' overall costs than taxes. Average manufacturing wages, a far more importance cost factor than taxes, vary by over 80% across states.[55] Moreover, a

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[50]William C. Wheaton, "Interstate Differences in the Level of Business Taxation," National Tax Journal 36, No. 1, pp. 88-92.

[51]See Brooks, et. al., pp. 15-18.

[52]Cited in Kleschnick, p. 43.

[53]See Kleschnick, pp. 41-42.

[54]Rubin and Zorn, Table 2A, pp.30-33.

[55]Based on 1984 Annual Wage Data from the U.S. Department of Labor, Bureau of Labor Statistics. The lowest figure is $16,005 in South Dakota while the highest figure in $29,820 in

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relatively small increase in wage costs can have a large impact on profitability. For example, a 5% increase in wages for a firm with moderate wage costs can reduce profits by over 16%.[56] Legislative staff in New York estimated that a 2% wage differential is equivalent in its effect on profits to a 106% differential in corporate taxes.[57] Thus, a 20% difference in wage costs among states would overwhelm even a 500% difference in tax bills.

Rubin and Zorn's study of interstate cost difference for 20 manufacturing industries shows that absolute tax differences are far less than those for labor and transportation costs. While estimated tax costs might vary by 6 to 1, the actual cost difference was usually a matter of a few thousand dollars.[58] Labor costs, on the other hand, generally varied by less than 2:1, but these variations represented tens of thousands if not hundreds of thousands of dollars in annual costs.[59] Similarly, in most industries the transportation cost differentials across states were at least tens of thousands of dollars.[60] In each manufacturing sector, transportation and labor costs were far greater than tax costs, by multiples ranging from 5 to 50.

3.20 Survey Studies

One way of studying the role of taxes in business location decisions is to survey the corporate executives who make these decisions. Most of the early studies of this issue were done through mail and personal interview surveys of business executives. A number of states have also commissioned such studies to

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Michigan. See also Leonard, p. 136 for data on the greater size and variation of business costs other than taxes.

[56]Assume initial annual sales of $1 million, wages of $333,000, 10% profit margin and total taxes equal to 60% of profits. Before tax profits are $100,000 and after tax profits are $40,000. A 5% increase in wages raised the wage bill to $349,650 and reduced gross profits to $83,350. After tax profits are $33,340 (83,350 X .40). The change in profits is $6,660 or 16.6%.

[57]See State of New York Legislative Commission on the Modernization and Simplification of Tax Administration and the Law, "Interstate Business Locational Decisions and the Effect of the State's Tax Structure on After-Tax Rates-of-Return of Manufacturing Firms," Staff Working Paper, 1983, p. 76.

[58]See Rubin and Zorn, Table 2A, pp. 30-31.

[59]Rubin and Zorn, Table 4A, pp.49-50.

[60]Rubin and Zorn, Table 1A, pp. 16-17.

gauge firms' perceptions of their suitability as a site for business expansion and plant location. The reliability of survey studies has been questioned for a number of reasons. First, the answers provided may depend on the type of questions asked - whether executives are choosing from a list in the survey or naming the factors themselves. Second, the answers may be biased if the respondent expects to influence the behavior of state and local governments. Thus, executives may overstate the importance of taxes if they think it might result is reduced taxes or larger tax incentives for business. Third, if the survey respondent is not the actual decision maker for plant locations or is one member of a decision-making team, then the survey response may not accurately reflect how factors are weighed in the decision-making process. Finally, most surveys do not distinguish between stages of the plant location process. Since the process can be multistage, the importance of decision factors can be different in each stage. One factor may be very important in choosing the region for a plant but be far less important when choosing the final site. While these problems require caution in interpreting survey study results and the results should not be considered conclusive, they do provide insight into which factors business executives perceive as most important for locating plants.

Virtually all survey studies of business location decisions conclude that tax considerations are a minor factor. In surveys conducted from the 1950s through the 1980s, firms consistently identified market factors, labor conditions, raw material access and transportation as more significant concerns than taxes in plant location. A 1964 paper compared 17 studies based on mail surveys and 7 based on personal interviews conducted during the 1950s and early 1960s and classified each according to whether it determined that a location factor was of primary significance, some significance, or little significance. For thirteen of the 17 mail survey studies, taxes were determined to be of little significance in location decisions. Three studies concluded that taxes were of some significance, while one study found taxes to have primary significance. All seven studies based on personal interviews concluded that taxes had little significance for firms making location decisions.[61]

A 1962 study based on interviews with manufacturing firms in Michigan distinguished between what executives felt would be important factors in locating a firm similar to their own and what were important factors in the location of their specific plant. Interviewees were asked to choose the five crucial location factors from a list of 21 items. When asked the general question, 52% of the firms listed taxes as one of the five crucial location factors. Overall, taxes ranked fifth among six factors selected by at least half of the firms, behind labor costs, proximity to markets, availability of labor and industrial climate. However, the responses were very different to a question about a particular location decision. A better tax situation was listed as a crucial factor by only 1% of the firms as a reason for locating their plant in Michigan and 2% listed this factor as a reason why the plant was located at its specific site. For this question, the most commonly stated

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[61]The results of this comparative study are cited in Kieschnick, pp. 53-54; and by Donald C. Liner, "The Effect of Taxes on Industrial Location," Popular Government 39 (February 1974), pp. 36-38.

factor was personal reasons or chance.[62]

Roger Schmenner's research included interviews with executives at dozens of the nation's largest U.S. firms. He concluded that:

> In none of the more than 80 interviews I have had with key location decision makers in, mainly, large companies have I heard that state or local levels of taxation have been the most significant determinant of a plant's location. Almost every company takes a look at taxes; indeed, tax costs are one of the costs of a new site which can be quantified and presented in the documentation that supports the project's formal capital appropriation request. Nevertheless, taxes themselves are merely a minor consideration, capable of altering the decision in favor of a particular site only if almost all other factors are equal.

Taxes, according to Schmenner's interviews, are more likely to be a consideration when a high rate for a very visible tax "pushes" a firm away from a potential site.[63]

In another analysis, Schmenner looked at how the tax bill changed for relocating firms. If lower taxes were an important factor in firm location, then taxes at a new site should be lower than taxes at the old site. Overall, Schmenner found that the likelihood of moving to either a lower tax or higher tax site was about equal. For plant relocations studied in New England and Cincinnati, slightly more than one quarter moved to a site with lower property taxes, almost half found a new site with the same property taxes and one-quarter located at a new site with higher taxes. Furthermore, firms with higher capital to labor ratios, which would be expected to be more sensitive to property tax rates, were not more likely to settle in low tax jurisdictions.[64] Schmenner did find that multiplant firms in Cincinnati and long distance movers from New England were likely to choose new sites with lower taxes. However, this pattern did not hold true for long distance moves by Fortune 500 firms.[65]

Michael Kieschnick conducted a mail survey of firms concerning investments they made in 1979 in 11 states offering employment or investment incentives through their tax codes. Investments in creating a new firm, expansion of an existing plant and establishment of a new branch plant were analyzed separately. Business and personal taxes were rated as an insignificant or moderate factor by

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[62]See Mueller and Morgan, pp. 207-210.

[63]Schmenner (1982), p. 46.

[64]Roger W. Schmenner, "Industrial Location and Urban Public Management," in Arthur P. Solomon, Editor, The Prospective City (Cambridge: The MIT Press, 1980), pp. 460-461.

[65]Schmenner (1982), pp. 47-51.

the vast majority of firms. Among new firms making interstate location choices, less than one in six cited business or personal taxes as a deciding positive influence, while one-third considered business taxes and 41% considered personal taxes insignificant factors. These two tax factors were ranked in the bottom half among twenty factors included in the survey. Firms making expansion investments similarly rated taxes as relatively unimportant factors, again ranking business and personal taxes in the bottom half. For branch plant decisions, business tax considerations gained in significance. While 50% of the responding firms cited business taxes as an insignificant factor, over one-third considered them a positive deciding factor. Business taxes also ranked among the top four location factors.[66]

Three surveys conducted for states also indicate that taxes are a secondary consideration in location decisions. A 1978 survey of top executives at large firms, conducted for the California Commission for Economic Development by Louis Harris Associates, Inc., found taxes to be much less important than other location characteristics. Only 26% of the respondents cited favorable taxes as a major important characteristic for a manufacturing plant location. Access to markets and suppliers was cited as a major criteria by 84% of respondents while labor availability and a favorable labor climate was rated as a major factor by three quarters of the responding executives.[67] In a 1985 survey of firms that expanded or developed new sites in Tennessee from 1980-1983, low taxes was mentioned by 13% of responding firms as an essential factor in the choice of a region and ranked 9th out of 21 factors.[68] A 1982 survey of 61 firms by Coopers and Lybrand, conducted for the state of Illinois, also concluded that factors – including access to markets and suppliers, labor cost and availability and integration with existing company operations – other than taxes were the primary issues in location decisions.[69]

The consensus of survey studies is that most business executives themselves do not consider taxes to be a major factor in location decisions. Taxes appears to be either a secondary or insignificant factor, depending on the type of firm and investment decision, which is overwhelmed by the greater importance of other location characteristics. This conclusion seems noteworthy given the diversity in study periods, regions and approaches and the criticism of survey studies for response bias that would overstate the impact of taxes. While the evidence is

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[66]See Kleschnick, pp. 68-71 and 95-102.

[67]Louis Harris and Associates, Inc., "Attitudes of the Nation's Corporate Leaders Toward California as A Business Location," February 1978, pp. 17-18 and 22.

[68]See David A. Hake, Donald R. Ploch and William F. Fox, "Business Location Determinants in Tennessee," Center for Business and Economic Research, University of Tennessee, October 1985, pp. 12-21.

[69]Coopers and Lybrand, "Report to the State of Illinois on HB 2588," Tax Notes (11 October 1982), cited in Leonard, pp. 137-8.

mixed, a few studies suggest that tax considerations may be weighed more heavily by larger firms and firms locating new branch plants. The few studies that look at the tax impact of actual location decisions also support the view that reducing tax costs is not a motivating factor in location choices.

3.30 Evidence from Interregional Econometric Studies

A second, increasingly common way to analyze the relationship between taxes and economic growth is through econometric studies that use a statistical method known as multiple regression. These studies attempt to statistically explain the relationship between business investment (or other measures of state economic growth) and various causal factors using historical data. Econometric studies have several advantages over survey studies. First, econometric analysis is based on the actual behavior and experience of firms and states rather than the subjective opinions of surveyed executives. Second, these studies can provide a more precise measure of the role of taxes in states' economic performance by controlling for the contribution of non-tax differences between states. With the inclusion of non-tax factors in econometric models, the variation in these factors is used to explain differences in economic growth and a better estimate of the separate effect of taxes can be obtained. Thus, econometric studies hold the promise of using empirical evidence to elucidate the importance of tax factors in business investment.

There are, however, potential problems with econometric studies, which warrant caution in their interpretation. First, a study must include all the factors that determine business investment or economic growth to successfully control for the influence of non-tax factors. This task is difficult since so many state characteristics shape economic growth and some factors – for example, the talent of a state's population – are very hard to measure. When an important controlling factor is inappropriately omitted, the impact of this omitted factor may be partially attributed to factors included in the study, overstating or understating their effect. Second, when a statistical relationship is uncovered, the underlying causality between a factor and economic growth may not exist or may be in the opposite direction than presumed. In the first case, the revealed correlation is spurious--a result of a chance relationship in the data or a unique historical situation rather than underlying causality. In the second case, causality exists but it runs in the opposite direction than assumed in the study. For example, a statistical relationship between lower tax rates and greater economic growth may mean faster growth increases tax revenues, leading to lower tax rates -- rather than lower tax rates leading to more growth.

3.31 Study Summaries

In the past several years, several studies have been conducted to relate differences in economic growth among states to differences in tax levels and other factors. These studies employ a number of economic growth measures including new firm formations, branch plant locations, employment growth, personal income growth and business investment. Most often, the study focus is on the manufacturing sector of the economy, although a few studies look at broader

economic indicators. There are also large differences in measures of taxation used and the type of controlling factors incorporated in the models. While most earlier and simpler studies concluded that taxes have little effect on business location and economic growth,[70] these more recent papers have mixed results with several authors concluding that state and local taxes have an important influence on a state's economic development.[71]

Carlton, in one of the best formulated studies, separately modeled the probability of new firm formation and new branch plant location for three manufacturing industries. This study has the advantages of using very disaggregated data -- actual business investment decisions -- and treating each type of decision uniquely. Carlton also controls for many location factors, including wage levels, availability of skilled labor, energy prices, firm size and industry agglomeration. The taxation variables in his model do not perform well; they are not statistically significant and the direction of effect is often the opposite of the expected one. Therefore, Carlton concludes both that high taxes do not discourage business investment and that low taxes and incentives cannot stimulate business location.[72] In a later study, Carlton uses a similar model to predict both the location and size of new branch plant locations. While the model does very well in predicting plant size, the tax variables were once again found to be insignificant. The author again concluded that state taxes and incentive programs do not appear to have major effects on plant size or location.[73]

In another study based on branch plant locations, Bartik uses data on new plant locations for Fortune 500 firms from 1972-1978. His tax variables include effective corporate and property tax rates, unemployment insurance taxes and workers' compensation rates. A number of economic factors were included in the model, such as wage rates, energy costs, state size, market factors, work stoppages, skill level of labor force and industry agglomeration. Bartik's results were mixed. The only tax factor that was statistically significant was the corporate tax rate which had a modest negative effect on the probability of locating a plant.

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[70]See John F. Due, "Studies of State-Local Tax Influence on Location of Industry," National Tax Journal 14 (June 1961) pp. 163-173.

[71]An overview of most of the studies presented here can be found in Michael Wasylenko, "Business Climate, Industry and Employment Growth: A Review of the Evidence," Occasional Paper #98, Metropolitan Studies Program, Maxwell School of Citizenship and Public Affairs, Syracuse, N.Y, October 1985.

[72]See Dennis W. Carlton, "Why New Firms Locate Where They Do: An Econometric Model," in William Wheaton, Ed., Interregional Movements and Regional Growth (Washington, D.C.: The Urban Institute, 1979).

[73]See Dennis W. Carlton, "The Location and Employment Choices of New Firms: An Econometric Model With Discrete and Continuous Endogenous Variables," The Review of Economics and Statistics 65, No. 3 (1983), pp. 440-449.

Workers' compensation and unemployment insurance rates variables often indicated a positive effect. Bartik concludes that his estimated effect of taxes on location is small.[74]

The remaining studies have involved much more aggregate measure of economic growth based on employment, business investment and personal income. Since these studies are not based on actual business location decisions and use aggregate data, they are less precise and may hide the effects that appear with micro level data. Three studies have analyzed the impact of state and local taxation on employment growth. Plaut and Pluta studied how manufacturing growth from 1967-1972 and 1972-1977 was related to four location factors – access to markets, cost and availability of production factors, climate and environment and business climate and taxes. Three growth measures were used: employment, value added and capital stock. Their results did not demonstrate any strong or consistent negative affect from the taxation factors. While adding the tax variables as a group improved the model's ability to predict employment growth and capital stock growth, no such result occurred for value added. Corporate tax, personal income tax and sales tax variables were all statistically insignificant. A state's overall tax effort was found to have a negative and statistically significant effect while the property tax variable and education expenditures were significant with a positive effect on growth. The authors concluded that "differences in overall industrial expansion can still be best explained largely by traditional market factors."[75]

Neuman's study was based on relative employment growth for 13 separate manufacturing industries during 1957-1965 and 1965-1973. This model used just three factors to explain growth – corporate tax rates, unionization rates and the presence of a right to work law. Furthermore, the corporate tax data was based on the ten years prior to the period of employment growth, since Neuman argued that the tax effect was a lagged one, i.e., businesses are slow to see tax differentials and respond to them. The corporate income tax variable had a negative effect and was statistically significant for 5 of the 13 industries. Neuman also found that the tax effect was greater for more capital intensive and faster growing industries. Neuman concluded that his results were consistent with Carlton because the impact of taxes may vary by industry.[76] However, Neuman's results seem problematic due to his failure to control for most non-tax factors that affect state employment growth. His use of a lagged tax variable is also questionable since it assumes that businesses are more concerned with the past level of taxation than with present or future taxes when making investment decisions.

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[74]See Timothy J. Bartik, "Business Location Decisions in the United States: Estimates of the Effects of Unionization, Taxes and Other Characteristics of States," Journal of Business and Economic Statistics, 3, No. 1 (January 1985), pp. 14-22.

[75]See Thomas R. Plaut and Joseph E. Pluta, "Business Climate, Taxes and Expenditures, and State Industrial Growth in the United States," Southern Economic Journal July 1983, pp. 99-119.

[76]See Robert J. Neuman, "Industry Migration and Growth in the South," The Review of Economics and Statistics 65, No.1 (February 1985), pp. 76-85.

A study by Wasylenko and McGuire uses the most aggregated employment figures. This study is based on explaining state variation in total employment growth and employment growth in six major economic sectors (manufacturing, services, retail, wholesale, finance, and transportation and utilities) from 1973-1980. The authors control for state characteristics in 1973 with respect to taxes, public expenditures, energy costs, climate, agglomeration, labor costs and availability and market measures. The corporate tax rate and welfare expenditure variables did not have a statistically significant effect for any sector. Sales taxes had a negative significant effect for only one sector, the wholesale trades while personal income taxes had a negative significant effect for employment growth in the wholesale, retail and finance sectors. Education expenditures had a positive significant effect on overall employment growth and growth in each sector. Wasylenko and McGuire conclude that tax effects vary with each sector and, therefore, studies on manufacturing alone may not apply to other sectors. They also state that, factors such as wages, energy costs and other characteristic beyond the control of policymakers are the most important contributors to slow employment growth.[77]

Helms' study is unique in that the effect of state and local taxes on economic growth is measured by the type of government expenditures taxes support. Personal income growth from 1965 to 1979 is related to expenditures for public health, highways, schools, higher education and other non-transfer payment expenditures. The inclusion of these expenditure variables allows the tax variable to be interpreted as taxes raised to support transfer payments. Controlling economic variables include relative wage levels, unionization rate and population density. The model allows a unique variable for each state to account for variations in other factors and state-specific characteristics. Results indicate that taxes and fees collected to finance transfer payments have a negative effect on state personal income. The effect is largest for property taxes. However, the positive effects of other expenditures are greater than the negative impacts, leading Helms to conclude that "the net impact of a tax-financed increase in government services may well be positive."[78]

Another three studies analyze the impact of taxes on business investment. Benson and Johnson relate annual manufacturing plant and equipment expenditures during 1966-1978 to taxes, relative wages, welfare expenditures and state debt. A state effect variable is used to account for other factors. Seven tax variables are used: total state and local taxes as a share of personal income, relative to the national average for the current year and the six previous years. Thus, this study also posits that businesses invest based on past patterns of taxation. The results show that the total effect of these tax variables is negative and statistically significant. However, the effect of current taxes on business investment is not found to be significant. While the authors conclude that taxes appear to negatively affect economic activity, they state it is difficult to measure the size of this

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[77]See Michael Wasylenko and Therese McGuire, "Jobs and Taxes: The Effect of Business Climate on States' Employment Growth Rates," National Tax Journal (December 1985), pp. 497-511.

[78]See Jay L. Helms, "The Effect of State and Local Taxes on Economic Growth: A Time Series-Cross Section Approach," The Review of Economics and Statistics (1985), pp. 574-581.

effect. Since their study is based on relative tax levels, it is difficult to translate actual tax changes into changes in relative position, especially since states may respond to tax reductions in other states.[79]

Kieschnick used 1977 data to analyze the impact of taxes on a state's share of gross national investment for 13 manufacturing industries. Two tax variables were used – an estimate of the actual taxes paid by a hypothetical firm for each industry and a state's rank in an ordering of tax burdens for each industry. Other factors in the model included average wage levels, labor productivity, energy costs, unionization rates, population growth and density, income levels, industry concentration, climate and welfare expenditures. Kieschnick's results did not show any strong impact of taxes on investment. The variable for taxes paid was significant for 2 of the 13 industries, but the estimated effect was positive in one case. The tax rank variable was significant for five industries, with a positive effect estimated for one industry. However, when the tax effect was statistically significant, its size was very small.[80]

The final study of taxes and capital investment was done by Papke using data from 20 states and 20 industries. New capital investment per production worker in a year was related to taxes and several variables that controlled for energy costs, wage costs, industry concentration, and labor productivity. Tax differentials were measured as the after-tax rate of return on investment for each industry and state, derived by a computer simulation model. Thus taxes are not included directly, but rather through their estimated effects on investment profit rates. The estimated effect of the after-tax rate of return variable was positive and statistically significant. This variable also had the greatest impact on investment among factors in the study.[81]

3.32 Analysis and Conclusions from These Studies

Econometric studies of interregional growth fail to provide conclusive evidence concerning the impact of taxes on economic development. Although several studies conclude that higher state and local taxes do deter growth, the case for this conclusion is not strong. The inconsistent pattern of results, several methodological questions and the small impact of most estimated tax effects together mitigate the evidence that taxes are an important factor in business location and growth.

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[79] See Bruce L. Benson and Ronald N. Johnson, "The Lagged Impact of State and Local Taxes on Economic Activity and Political Behavior," Economic Inquiry, pp. 389–401.

[80] See Kieschnick, pp. 74–78.

[81] See Leslie E. Papke, "The Influence of Taxes on the Location of Manufacturing Activity: New Evidence," in James A. Papke, Ed., "Indiana's Revenue Structure: Major Components and Issues, Part II," Center for Tax Policy Studies, Purdue University March 1984.

Since the results across studies are so inconsistent, no recurring, theoretically supported evidence of negative tax effects emerges from the research. If there is a strong negative impact of taxes on economic growth, then we would expect it to be discernible with some consistency and to operate in a similar way in different time periods and for the same economic sectors. However, no such pattern of evidence exists. Four studies (both by Carlton, Plaut and Pluta, and Kieschnick) result in little or no demonstrated tax effects. Six other studies suggest some negative tax effects, but the tax responsible for the effect and the timing of the effect differs in each study. Two studies (Bartik, Neuman) find that high corporate income taxes contribute to less growth while two find no effect from this tax (Wasylenko and McGuire, Plaut and Pluta). Personal income taxes are significant in one study (Wasylenko and McGuire) but not for others. One study concludes that taxes deter growth when they finance transfer payments, yet two studies find welfare expenditures are not important factors (Benson and Johnson and Wasylenko and McGuire). Furthermore, some studies (Neuman and Benson and Johnson) base their conclusions on past taxes affecting current growth. This result is counterintuitive since it suggests businesses do not consider current taxes but are instead influenced by past information on taxes (as far as ten years ago). Moreover, the results from a lagged tax effect differ from those studies that find taxes affect growth in the same year.

The omission of important controlling factors in several studies also weakens the case for taxes exerting a negative impact of economic growth. Only one study includes population growth as a variable, yet population growth contributes to both labor supply and market demand. Furthermore, there has been substantial difference in state population growth rates during the periods covered by these studies. Few studies control for important state economic characteristics such as industry mix, the age of capital stock or the life cycle stage for products produced in a state. Yet these characteristics are potentially important influences on business investment and employment, especially in the "frostbelt" with its concentration of mature industries and older plants. Public services and expenditures are also not included in some studies although these services benefit businesses and may affect business investment decisions. Some studies that estimate a negative impact for taxes, e.g., Neuman, include relatively few location factors. Given the failure to control for important state characteristics that may shape growth, the results of these studies may be overstating the tax effects.[82]

Most studies, including several that indicate taxes deter growth, either conclude that factors other than taxes are the major determinants of growth or attribute a relatively small effect to taxation. Studies by Carlton, Kieschnick, Wasylenko and McGuire, and Plaut and Pluta all conclude that factors beside state and local taxes are the most important influences in state growth. Bartik finds that tax effects are fairly small and that modest changes won't exert much influence on business locations while Helms suggests that the overall effect of taxes may be positive due to the impact of services that taxes support. Thus, the bulk of the

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[82]This conclusion is supported by the fact that most studies left a large portion of the differences in growth among states unexplained by their model -- a result that suggests they are omitting important variables. If left-out factors, such as population growth, were correlated with tax levels, then these studies would attribute the effects of population to the tax variables.

econometric evidence on taxes and interregional growth supports the conclusions of survey research that tax effects are not a major influence on business location and economic growth.

3.40 Evidence From Intraregional Econometric Studies

Within a state or metropolitan area, taxes may affect business location differently. Since many important location factors, such as wages, availability of labor, market access and energy costs will be similar within a small geographic area, the impact of tax differentials between communities may be amplified. Several studies over the past two decades have employed multiple regression analysis to estimate how taxes influence firm location within a region. Most of these studies analyze business location or investment within metropolitan areas. Intraurban studies have two advantages over the interregional studies. First, since tax differentials across communities in the same metropolitan are primarily due to property tax rates, there is consistency in the tax variable used. Second, since many location factors are the same within an urban area, studies have had to control for fewer non-tax related influences. In addition to property taxes, studies have typically included measures of distance from the central city, transportation access, labor supply, agglomeration, land availability and public services as controlling factors.[83] While no consensus has emerged from these studies, some do conclude that property taxes influence some types of business location with metropolitan areas.

The first study of intraurban business location did not directly measure tax impacts. Moses and Williamson studied expansions and relocations by 2000 firms in the Chicago area between 1950 and 1959. While no tax variable was used, a "dummy" variable indicated whether a location zone was predominantly inside or outside Chicago and served as a proxy for differences in tax rates, zoning policy and other factors between Chicago and its suburbs. Distance from the central city and an agglomeration measure were found to have statistically significant effects, but the tax proxy variable was not statistically significant.[84]

Schmenner used econometric models to predict three measures of business location – the existing pattern of firm density, changes in firm density and relocations – in four metropolitan areas during two time periods. In all, sixty regressions were conducted. Two tax variables were used – effective property tax and income tax rates. The income tax rate was never statistically significant. The property tax variable was significant in only five regressions but with no consistent pattern. Consequently, Schmenner concluded that taxes were an unimportant factor in firm location. He also observed that causation may run two ways. While lower taxes may induce firms to locate in a community, low taxes may

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[83]See Wasylenko (1985), pp. 19-20 for a brief discussion of factors in intraurban firm location.

[84]See Leon Moses and H. Williamson, Jr., "The Location of Economic Activity in Cities," American Economic Review 57 (1967), pp. 211-222.

also result from a greater concentration of businesses in a municipality.[85]

Grubb used public expenditures and property tax rates to explain the degree of suburbanization of employment for 106 metropolitan areas between 1960 and 1970. He found that relative property tax rates were statistically insignificant and concluded that employment location is insensitive to property taxes.[86] In a recent study of firm births in the New Jersey-Maryland-Virginia region, Howland concluded that local property taxes and the presence of a tax abatement program did not influence the intraregional location of new firms. Her results, based on data for the machine tool and electronic components industries, found that separate variables for effective property tax rates and the presence of a local tax abatement program were not statistically significant.[87]

Wasylenko and Erickson studied the destinations of firms relocating from Milwaukee to its suburbs in seven major economic sectors. Firms from the retail, service or financial sectors were assumed to choose a site based on profit maximization, while the location choice in other sectors was modeled based on minimizing costs. Effective property tax rates were not statistically significant, with estimates often indicating a positive effect. The authors concluded that fiscal factors are not an important factor in suburban site decisions.[88] However, when Wasylenko later modified the study by omitting communities that appeared to zone out commercial and industrial land use, property tax rates were statistically significant and had a negative effect on the location choice of relocating manufacturing and wholesale firms.[89]

Three other studies seem to confirm Wasylenko's latter conclusion that property taxes influence intraurban firm location. Fox related the amount of land in industrial use to land supply, market, fiscal and transportation access factors for 43 Cleveland suburbs. While the initial results found that the property tax rate was not significant, a regression that omitted 19 municipalities with no land in industrial use (he assumes that these jurisdictions zone out industry) yielded a

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[85]Cited in Wasylenko (1985), pp. 27-28. See also Roger Schmenner, "City Taxes and Industry Location," Harvard Business School, 1975, especially pp 49-50.

[86]See Norton W. Grubb, "The Flight to the Suburbs of Population and Employment, 1960-1970," Journal of Urban Economics 11 (1982), pp. 348-367.

[87]See Marie Howland, "Property Taxes and the Birth and Intraregional Location of New Firms," Journal of Planning Education and Research 4 (1985), pp. 148-156.

[88]See M. Wasylenko and R. Erickson, "Firm Relocation and Site Selection in Suburban Municipalities," Journal of Urban Economics 9 (1980), pp. 69-85.

[89]See M. Wasylenko, "Evidence on Fiscal Disparities and Intrametropolitan Firm Location," Land Economics 56 (1980), pp. 339-349.

negative and statistically significant effect for property tax rates.[90] Charney studied the density of manufacturing firms that relocated to communities wthinin the Detroit metropolitan area between 1970 and 1975. Both local property taxes and local income taxes were included as location factors in his model. His results indicated that property tax rates had a large negative and statistically significant effect on relocation destination. The effect was strongest for large firms and nondurable goods producers. No consistent, statistically significant effect was found for income tax rates.[91] In a third study, McGuire explained the building permit value for both new and existing firms over six years in 119 Minneapolis-St. Paul area communities using the property tax rate and four other variables. While the property tax rate had a negative and statistically significant effect in two cases, her results were not consistent. The property tax rate was not significant when building value per land area was used as the dependent variable, and when data for 1976 alone were used. McGuire concluded that there was only qualified support for the hypothesis that taxes matter in firm location and that the extent to which taxes matter is unclear.[92]

No apparent conclusions emerge from studies of intraregional firm location. While four studies concluded that taxes do not matter, three other studies found a strong relationship between property tax rates and firm location or investment within a metropolitan area. One study uncovered qualified evidence that taxes affected commercial and industrial building activiity. It is possible, as Fox and Wasylenko argue,[93] that the studies where taxes do not matter are flawed because they do not account for the supply of industrial space. Studies that control for communities where zoning prohibits industry, therefore, are better designed and provide corroborating evidence that taxes matter.

While this point has some validity, there are important problems that question the conclusions of these studies as well. First, studies that omit communities that zone out industrial land use an imperfect measure of site supply. The actual size and number of avaliable business sites is not included in the model. Thus, densely developed urban communities with existing industrial use, but a shortage of land for expansion or new firms, are innaccurately measured as suppliers of industrial sites. Consequently, the paucity of new business location or investment may be attributed to higher tax rates, when in fact it results from supply shortage. Second, the dependant variables used in several studies raise questions about the

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[90]Cited in Wasylenko (1985), p. 31.

[91]See Albert H. Charney, "Intraurban Manufacturing Location Decisions and Local Tax Differentials," Journal of Urban Economics 14 (1983), pp. 184-205.

[92]See T. McGuire, "Are Local Property Taxes Important in the Intrametropolitan Location Decision of Firms? An Empirical Analysis of the Minneapolis-St. Paul Area," Journal of Urban Economics 18 (1985), pp. 226-234.

[93]See especially Wasylenko (1980), pp. 339-340 and Wasylenko (1985), pp. 29-31.

direction of causality. Fox and McGuire used property taxes to explain the amount of land in industrial use and the value of building permits, respectively. However, these variables indicate the size of the tax base and, as Schmenner has observed, can be a cause, rather than a result, of lower property taxes. The remaining studies that use actual firm location decisions apply only to firm relocations. The two studies by Wasylenko and Charney only provide evidence that relocating manufacturers and, for Wasylenko, wholesalers, may be influenced by property taxes. Thus their results may not be valid for other location and investment decisions which are the major sources of job growth.

3.50 Simulation Studies

The final approach used to assess the impact of state and local tax differentials is to calculate tax bills and their effect on the rate of return for hypothetical firms at different locations. Simulation studies use computer models to mimic the operation of federal, state and local tax laws and estimate the tax bill for firms with given characteristics at different sites. This method has a number of advantages. First, it provides a estimate of actual tax costs in different states and communities that is more accurate than measures based on comparing total business tax collections to either total state tax collections or total business income. Simulations use detailed information on firm characteristics such asset mix, location of sales, and plant locations to estimate tax burdens. Second, the effect of taxes can be isolated from other location factors. Simulation studies usually assume that all other costs are identical at all sites and thus estimate how tax differences alone affect firms' "bottom line." A third advantage of simulations is that they take into account the interaction of federal taxes with state and local taxes. Simulations also incorporate the interaction of multiple state tax laws into their results.[94] Finally, simulations can uncover how tax impacts vary by industry and firm characteristics.

There are also limitations to tax simulation models. Since these models are purely descriptive, they provide no information on how the estimated difference in tax burdens affect business investment and location. A second limitation is that the hypothetical firm used for the simulation may not be representative of most firms. Thus, the results may not reflect tax differences for many businesses. Finally, the assumptions used in the simulation may limit the interpretation and universality of results. While the assumption that all costs besides taxes are identical at all sites helps isolate the impact of taxes, it clearly is not true for actual investment decisions. Thus the tax advantages or disadvantages uncovered in a simulation study may be irrelevant for an actual investment because other factors nullify the tax impact.

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[94] For example, the distribution of a firm's assets among states usually influences its corporate income taxes in each state. Thus, if a firm with facilities in New York, Florida and California adds a plant in Illinois, this investment generates a tax bill in Illinois and affects the allocation of its income for taxation in the other three states. Simulations can include this latter tax impact in calculating the net effect of the Illinois investment on the firms overall taxes.

Several states have used simulation studies to evaluate the competitiveness of their tax system. The advantages of tax simulations and their flexibility in estimating the impact of specific tax law changes make them useful tools in policy analysis. Tax commissions in Hawaii, Indiana, Massachusetts and New York have all used a simulation model to evaluate the competitiveness of their tax system for business investment. With the exception of Massachusetts, the same simulation model – AFTAX – has been used by each state.

AFTAX is a simulation model developed by James and Leslie Papke to estimate how taxes affect the after tax rate of return on investments at alternative sites.[95] This model assumes that the pre-tax rate of return is identical at all sites, i.e., all non-tax costs are identical across sites, and then applies federal, state and local tax laws to calculate the after-tax rate of return. Consequently, the results measure how taxes alone affect profitability at varying locations. Federal corporate income taxes, state corporate income taxes, state business franchise fees, state and local sales taxes, and state and local income taxes are all included in the AFTAX model. Representative firms are defined for several manufacturing industries and size classes, and assumptions are made about the location of a firm's sales and plants. The after tax rate of return is then calculated for a variety of situations. First, a baseline estimate of how profit rates vary by site can be calculated. Second, the tax impact of a new investment made at different locations can be simulated. This latter simulation is often run both for "home state" firms and firms based in other states. AFTAX simulations are also used to estimate the impact of particular tax changes and tax incentives on profit rates.

An early application of the AFTAX model compared Hartford, Connecticut to ten sites in nine other states for investments by representative firms in ten industries. When the firm was based in Hartford, the after tax rate of return for a new investment at alternative sites fell within a range of 2-3 percentage points. For some industries, investing in the site with the highest return could boost the return by close to 30% over the site with the lowest return. A simulation to measure the after tax return for home site investment for firms based in each state showed a slightly narrower range of variation.[96]

AFTAX simulations were also used to evaluate the competitiveness of Indiana's tax code. For Indiana based firms, expansion investments in eleven out-of-state sites generally had higher returns than in-state expansion. Across 13 industries, the average out-of-state return is ranged from 7-12% higher than in-state investment. However, in some cases particular sites outside Indiana provided a greater advantage. For example, an electronic components manufacturer which expanded in Cameron, Texas was estimated to earn a return almost 25% higher than

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[95]See Leslie E. Papke and James A. Papke, "Microanalytic Simulation For Analyses of Interstate Business Tax Differentials," National Tax Journal (September 1981), pp. 76-85 for a more detailed description of the AFTAX model.

[96]Papke and Papke, pp. 78-83.

investing in Indiana.[97] When firms were assumed to be based at the out-of-state sites, expansion in Indiana was, on average, more profitable than home site expansion, but the differentials were smaller and sites in four states had consistently higher returns for local expansion.[98]

A New York state study performed AFTAX simulations for investments in seven industries at eight sites within New York and seven out-of-state sites.[99] Profit rates for new investments at a firm's home site ranged from 10.2 to 13.2 -- a difference of just under 30% -- with most New York sites comparing favorably to sites in five other states. The same range occurred for out-of-state investments by New York based firms and investments in New York (outside of New York City) by firms based out-of-state. When out-of-state firms expanded in New York City, returns varied from a high of 11.6% for Massachusetts based firms to a low of 8.4% for firms based in Texas -- a difference of 38%.[100] Simulations for several policy issues found that relatively large changes in tax incentives, such as doubling an investment tax credit from 6% to 12% had trivial effects on after-tax rates of return.[101] Based on the AFTAX results and other evidence, the New York State report concluded that differences in business taxes among states do not have a large impact on after-tax rates of return and that changes in business taxes are not an effective means to influence location decisions.[102]

Massachusetts' Tax Reform Commission performed a similar study based on a simulation model developed by Steven Brooks. Brooks' model improves upon the AFTAX model by including state unemployment compensation taxes and allowing for inflation. However, it does not incorporate state and local sales taxes. In the same manner as the AFTAX model, Brooks' analysis only considered how variation in taxes affects rates of return; all other costs and factors were assumed to be the same across sites. Simulations were run for representative firms in five industries

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[97]James A. Papke and Leslie E. Papke, "The Competitiveness of Indiana's Business Tax Structure," in "Indiana's Revenue Structure: Major Components and Issues," Center for Tax Policy Studies, Purdue University, January 1983, pp. 65-68.

[98]Papke and Papke (1983), pp. 68-70.

[99]See State of New York Legislative Commission on the Modernization and Simplification of Tax Administration and the Tax Law, "Interstate Business Location Decisions and the Effect of the State's Tax Structure on After-Tax Rates-Of-Return Of Manufacturing Firms," December 1984, especially part III.

[100]New York Legislative Commission (1984), Table 4, p. 57.

[101]New York Legislative Commission (1984), Table 5, p. 67 and Table 6, p. 70.

[102]New York Legislative Commission (1984), p. 75.

making expansion investments at five sites in Massachusetts and ten sites in ten other states.[103]

The Massachusetts study found that state and local tax differentials resulted in minimal variation in after tax-rates of return. For a hypothetical firm where all sales occurred in its home state, the after-tax rate of return on an expansion investment in all five industries differed by less than 1 percentage point between the site with the highest return (El Paso, Texas) and the one with the lowest return (Bala Cynwyd, Pennsylvania). When the highest and lowest sites are ignored, the after-tax rate of return is virtually the same for all sites.[104] When the hypothetical firm was assumed to have ten percent of sales in its home state and the remaining 90% in states where the firm had no investment, there is a greater spread of returns on the new investment. The largest difference between sites is 2 percentage points, but on average the highest and lowest sites differ by 1.5 percentage points which represents about a 10% difference in after tax returns. Moreover, when the lowest and highest states are omitted, the difference in returns drops to 1 point.[105] Much of the increased variation in returns for this second simulation resulted from a tax law provision relating to the treatment of sales in states where the firm has no income tax liability. However, in practice, this rule is easy to avoid and is rarely applied.

Brooks also simulated the effect of eliminating all state and local taxes. His study included an "empty site" where only federal taxes existed. The after tax rate of return at this empty site, on average, ranged from 10% to 16% higher than the return at the site with the lowest return. Therefore, the maximum impact state and local taxes would have on profit rates was found to be fairly moderate.[106]

While simulation studies found differences in profitability due to state and local taxes, these more precise estimates show far less variation than most other estimates of overall business tax burdens. These four simulation studies all estimate that tax-related differences in profitability from new investments can vary across states by as much as 10 to 30% Other gross measures of business tax burdens have estimated differences of 100% and upward. Thus, simulation model results indicate that variation in profit rates due to state and local taxes are much less than the variation in state and local business taxes themselves. Furthermore, the tax-induced differences in profitability appear modest in comparison with the effect of differences in other factors such as market access, availability of skilled labor, wage levels, transportation costs, and energy costs across states. Thus, evidence from simulations supports other evidence that state and local tax differences are unlikely to exert a major influence on business location decisions.

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[103]See Brooks, et.al., pp. 28-33 and Appendix B for an explanation of the model and his analysis.

[104]Brooks, pp. 39-42.

[105]Brooks, et.al, p.43.

[106]See Brooks, et. al., Tables 2 and 3, pp. 41 and 44.

4.0 The Indirect Effect of Taxes on Population Movement

While the evidence on the direct impact of tax costs generally supports the view that taxes are not a major influence on business location, it is also possible that taxes may indirectly affect economic growth through their influence on population movement. According to this hypothesis, people may choose their residential location in part by the level of taxation, and jobs then follow people to areas with greater population. This theory has been proposed by Wasylenko who argues in two recent papers that personal income taxes affect economic growth by influencing personal location and the availability of labor.[107]

An indirect tax-induced influence on business location is based on two causal relationships. First, population location must shape business location, i.e., jobs must follow people. Second, population location choices must be effected by tax levels. Evidence on these two relationships is reviewed in this section. While empirical studies support the theory that jobs follow people, the limited research on the effect of taxation of residential location is inconclusive.

4.10 Population and Employment Location

The relationship of population and employment location is likely to be a mutually dependent one. Movement of population to an area should attract firms that seek access to consumer markets and a labor force. On the other hand, people are likely to locate where there are greater employment opportunities. However, there is much debate on which effect is larger. Is the tendency of jobs to follow people stronger than the tendency of people to follow jobs? The answer to this question may well depend on the geographic area studied. Within a metropolitan area, where people have relatively good access to jobs throughout the area, the choice of residency may be less dependent on employment locations. However, businesses in the retail, transportation, and service sectors that directly serve consumers, might then follow the pattern of population location. Across regions, individual migration is more likely to be affected by employment opportunities and the tendency of people to follow jobs may be greater.

Several studies of surburbanization indicate that, within a metropolitan area, jobs follow people to a greater extent than people follow jobs. These studies, for the most part, rely on separate econometric models to simultaneously explain population movement with employment shifts and changes in employment location with population movement. The results of the two separate models are then compared to identify which effect is stronger. A 1974 study by Steinnes and Fisher concluded that the location of employment did not have a significant effect on

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[107]See Wasylenko (1985), pp. 19 and 38; and Wasylenko and McGuire (1985).

residential location.[108] In a later study of 15 cities, Steinnes found that population location had a positive and statistically significant effect on manufacturing employment location, but for population location the effect of manufacturing employment was negative and statistically insignificant. The same relationship was observed for service employment.[109] An extensive study of urban decline by Bradbury, Downs and Small also concludes that "the 1960-70 intrametropolitan results suggest that jobs followed people quite strongly and people followed jobs."[110]

Across regions, population growth also appears to have a stronger effect on employment growth than employment changes have on population location. A recent study of 3000 counties by Carolino and Mills identified a very strong effect of population growth on job growth while the opposite effect was fairly small. Based on estimates that a 10% increase in population leads to 4.9% growth in employment but that a 10% increase in jobs only leads to a 1.1% rise in population, the authors conclude that "county population seems to attract county employment more than county employment attracts county population."[111]

While Bradbury, Downs and Small found that both population growth determined employment growth and employment growth affected population growth in 121 metropolitan areas, the impact of population on jobs growth was greater during the first half of the 1970s.[112] Similarly, Muth's study of growth in urban areas during the 1950s uncovered mutual dependence between population in-migration and employment growth, but the effect of in-migration on job growth was larger.[113] A study by Greenwood found that population migration had its strongest effect on the location of government and nonmanufacturing employment

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[108]Cited in Roger J. Vaughan and Mary E. Vogel, The Urban Impacts of Federal Policies: Volume 4, Population and Residential Location (Santa Monica, California: The Rand Corporation, 1979), pp. 59-60.

[109]See Donald N. Steinnes, "Causality and Intraurban Location," Journal of Urban Economics 4, No.1, pp. 69-79. Steinnes also cites three other studies that support the view that jobs follow people in intraurban location.

[110]Katherine L. Bradbury, Anthony Downs and Kenneth A. Small, Urban Decline and the Future of American Cities (Washington, D.C.: The Brookings Institution, 1982), p. 104.

[111]See Gerald Carlino and Edwin S. Mills, "Do Public Policies Affect County Growth?," Business Review, Federal Reserve Bank of Philadelphia (July/August 1985), pp. 3-16.

[112]Bradbury et. al., pp. 89-91 and 104.

[113]See Muth, "Migration: Chicken or Egg," Southern Economic Journal 37, No. 3, pp. 295-306.

400

location.[114] On the other hand, Olvey found that in-migration responded to employment growth, but the effect was twice as high for noncontiguous states than for contiguous states.[115] This latter result suggests that the tendency of people to follow jobs is stronger across regions than within regions.

Despite the difficulty of econometric models to completely control for the many factors that shape population and employment location, the consistency of results in numerous studies over several time periods provides strong evidence that jobs do follow people, both within and across states. With this relationship fairly well established, it is necessary to consider the effect of taxes on population location.

4.20 Taxes and Population Location

Unfortunately, the literature on how taxes affect residential location is fairly limited and has produced mixed results. There is no strong evidence that taxes effect migration across regions and studies of tax-induced intraurban population movement have yielded some conflicting results. The difficulty in obtaining consistent results undoubtedly reflects the complexity of influences on population movement and residential location.[116] Another problem results from the interaction between taxes and population. On the one hand, population growth increases public service needs such as schools, sewers, and police and fire protection which in turn require more taxes. This situation suggests population growth is associated with higher taxes. On the other hand, population growth and associated development of an area may increase the tax base and reduce tax rates and average tax burdens, suggesting a negative relationship between taxes and population growth. In either case, since population growth can affect taxes as well as taxes affecting population location, it is difficult to interpret the meaning of study conclusions. This is particularly problematic since these studies have not used the type of simultaneous models applied to study the interaction of population and employment growth. There have also been no studies that test Wasylenko's hypothesis on the negative effect of personal income taxes on population location.

Carlino and Mills found a negative and statistically significant effect of per capita taxes on county population growth. However, the effect was small and the authors conclude that "public policies, such as taxes, crime rates and Industrial Development Bonds (IDBs) exert little impact on either county population or total

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[114]Cited in Michael J. Greenwood, "Research on Internal Migration in the United States: A Survey," Journal of Economic Literature 13, pp. 397-433; and in Vaughan and Vogel, p. 30.

[115]Cited in Greenwood, p. 420.

[116]For a detailed discussion of factors in population migration, see Vaughan and Vogel, pp. 21-34; and Greenwood. Vaughan and Vogel also discuss what influences residential location choice and suburbanization on pp. 52-84.

employment growth."[117] This result may reflect the fact that service needs, and thus taxes, are likely to be lower for areas with less population growth. Cebula, in two studies of migration across states and metropolitan areas during the 1960s, found that per capita property taxes and welfare benefit levels had a negative and statistically significant effect on migration to a state by whites. Black migration was not affected by taxes but was positively affected by welfare benefits. The author concludes that whites avoid locations with greater redistributive fiscal policies.[118]

For intraurban population location, Mayo analyzed the effect of tax and expenditure policies on the probability of a person choosing a location in an urban area. He concluded that public services and taxes are not a major location factor.[119] Grubb's analysis of growth in 106 metropolitan areas between 1960 and 1970 concluded that tax rates affected the out-migration of high income families and whites from central cities.[120] Other studies suggest that high income persons seek communities with homogeneous high income populations to minimize the taxes paid to support redistributive policies.[121] Bradbury, Downs and Small found that the greater a city's tax burden relative to its suburbs, the slower the city's relative population growth. They also found that the greater the fiscal disparities between a city and its suburbs, and the smaller the geographic jurisdiction of the city government, the more residents avoided living in the city.[122] Both results suggest that suburbanization is affected by tax disparities. However, the same authors found no relationship between tax disparities and income growth for communities within a metropolitan area and thus found no evidence that high income residents avoid living in central cities due to high taxes or redistributive polices.[123] Vaughan and Vogel, in their review of the causes of suburbanization, conclude that differential tax rates have not been a major influence in the

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[117]Carlino and Mills, p. 13.

[118]See Richard J. Cebula, "Interstate Migration and the Tiebout Hypothesis: An Analysis According to Race, Sex and Age," Journal of the American Statistical Association 69 (December 1974), pp. 876-879; and "Local Government Policies and Migration: An Analysis for SMSAs in the United States, 1965-1970," Public Choice 19 (1974), pp. 85-93.

[119]Cited in Vaughan and Vogel, p. 75.

[120]See Grubb, p. 358.

[121]See Vaughan and Vogel, pp. 75-76.

[122]See Bradbury, et. al., pp. 101-102 and 190.

[123]Bradbury, et.al., p. 102.

decentralization of population in urban areas.[124]

In conclusion, the impact of taxes on population location is unclear. There are too few studies on taxes and interregional population migration to justify any conclusions. For intrametropolitan areas, several studies have found that higher taxes are associated with slower population growth or out-migration. However, other studies do not support these findings. Moreover, these studies do not account for the potential effect of population changes on taxes and do not control for many non-tax factors affecting residential location. Consequently, both the meaning of these results and the relative effect of taxes on population location are unresolved. Thus, there is currently no strong evidence that taxes are an important influence on population location choices either across or within regions, but it is also not possible to conclude that no such effect exists.

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[124]Vaughan and Vogel, p. 84.

5.0 Conclusions

Given the large amount of taxpayers' money at stake in tax incentive programs and general tax deductions aimed at stimulating economic growth, the burden of proof for using tax incentives and reductions to stimulate growth should rest with the advocates of tax concessions. However, the wealth of research summarized in this paper fails to support the position that state and local taxes are an important factor in business location decisions or overall economic development. On the contrary, the weight of evidence lends support to the conclusion that taxes are not a major influence on state economic growth. While studies do not rule out the possibility that taxes influence growth in some circumstances or for some economic sectors, several types of research provide strong evidence that taxes are a minor factor in firm location while other research is inconclusive. Therefore, state policymakers would be wise to ignore the pleas for lower taxes or tax incentives and concentrate instead on other policies with greater promise in fostering economic development.

The following lessons that emerge from this analysis and literature review lend support to a economic development policy that rejects the use of state tax expenditures to stimulate job creation.

- State and local taxes are only one factor among many in complex plant location decisions. Firms consider access to markets, availability of labor and materials, costs, local amenities and integration with other facilities when choosing a plant site. Taxes enter the equation as one part of the cost factor.

- As a direct cost to business, state and local taxes are small and the variation in other costs, such as labor and transportation, overwhelm interregional differences in taxes. When the impact of taxes on profit rates for new investment is measured, fairly modest differences in rates of return are attributable to state and local taxes.

- Business executives themselves, in numerous surveys conducted over three decades, consistently point to factors other than taxes as the major items that they consider whem making location decisions.

- The interstate impact of taxes on economic development is further mitigated by the limited type of business investment decisions where taxes are considered. New business start-ups and on-site expansion, which account for a large share of job growth, are insensitive to tax considerations. Firm or plant relocations are most likely to be influenced by tax costs but account for a very small share of job growth. New branch plant locations are one important source of job creation where taxes are a location factor, although a secondary one. Consequently, interstate tax differentials are irrelevant for investment decisions responsible for a majority of state job creation.

- Econometric studies that have attempted to measure the impact of taxes on state and metropolitan economic growth are inconclusive. Most studies of taxes and interstate growth support the view that taxes have little or no effect on state economic development, although some have found a negative impact. Research on how taxes influence firm location within a metropolitan area have mixed results with some finding no effect while others point to higher property taxes retarding firm location. Several methodological problems in these studies further limit their value as a guide to policy.

While these conclusions argue against using tax concessions to foster economic development, they do not imply that states can ignore tax policy altogether. States must be particularly concerned with large tax differences within metropolitan areas where the potential for taxes influencing location choice are the greatest. There are sound fiscal policies that states can follow to minimize the opportunities for taxes to deter business investment and residential location. These policies include:

- Rely on a balanced set of taxes to avoid very high tax rates on any individual tax that might push a firm away from a state.

- Follow fiscal policies that maintain stable revenues and avoid large and highly visible tax increases or service cuts which may convince firms that they face an uncertain future with further tax increases or service cuts.

- Expand state aid to local communities and assume program costs, such as welfare, that impose large costs on poorer communities, to equalize the fiscal health of local governments and thus reduce tax differences among communities in the same metropolitan area.

ATTACHMENT IV

Tax Items Enacted That Have Significantly Affected Business:

1985, 1986, and 1987 Sessions:

Income Taxes:

1. Credit for increasing employment level by ten percent under a training agreement with a community college. The amount of credit is equal to six percent of the total wages for the additional jobs which are taxable for determining the contribution to the unemployment insurance fund.

2. Creation of Iowa alternative minimum tax patterned after the federal alternative minimum tax in place of former percent of the federal minimum tax.

Property Taxes:

1. Tax on personal property completely eliminated.

2. A city or county may provide an exemption from tax of the actual value added to industrial real estate by the construction of a research-service facility which is a building or group of buildings devoted primarily to research and development activities.

Sales, Services, and Use Tax Exemptions:

1. Industrial machinery, equipment and computers and their depreciable replacement parts that are used by an insurance company, financial institution, or commercial enterprise in processing tangible personal property or in research and development of new products or processes or in processing or storage of data or information.

2. Farm machinery and equipment and their depreciable replacement parts which are self-propelled implements or implements customarily drawn or attached to self-propelled implements used directly and primarily in the production of agricultural products or which is a grain dryer.

3. Commercial vehicles weighing thirteen tons or more used substantially in interstate commerce.

4. Fuel used for heating and cooling livestock buildings.

5. Design and installation of new industrial machinery and equipment including electrical and electronic installation.

6. Expand definition of processing with regard to the use of services by a manufacturer of food products.

ATTACHMENT V

INDIVIDUAL STUDY COMMITTEE MEMBER ATTACHMENT FROM SENATOR CHARLES BRUNER REPRESENTATIVE MINNETTE DODERER

INFORMATION NOT GENERALLY WELL EXPLAINED IN THE ANALYSES OF A VARIETY OF INCOME TAX REFORM PROPOSALS

1. Iowa's Competitive Position: Perception And Reality.
2. Where Iowa Stands With Other States On The Top Rate.
3. Shifts In The Iowa Tax Burden -- 1983-1987.
4. How Tax Incidence Should Be Evaluated.
5. How "Soft" Tax Incidence Data Is: Revenue vs. Peat, Marwick, and Mitchell.

IOWA'S COMPETITIVE POSITION: PERCEPTION AND REALITY

Iowa's overall tax system has always been moderate in the sense that Iowa's ranks about in the middle among states in its overall state and local tax incidence. These taxes support and educational system and economic infrastructure that probably are considered above average among states.

Nevertheless, over the past half dozen years, as "tax competition" among the states has intensified (much to the dismay of many state government leaders, who nonetheless feel compelled to be a part of that competition), Iowa has been cited as having an "uncompetitive" climate for economic development because of one of another specific adverse taxes on business. Business organizations and groups have used the media and lobbied the legislature for tax changes to make Iowa more competitive.

The underlying theme of this effort has been that an anti-business tax policy has seriously affected Iowa's economic development. This has proved to be a very effective lobbying theme (although hardly supported by overall state tax policy).

The first recent push for repeal of an adverse tax was the sales tax on machinery and equipment. At the time, business leaders and a tax study committee indicated that this sales tax constituted an obstacle to economic development and, if corrected, would place Iowa in a competitive position with respect to taxation.

When the General Assembly eliminated the sales tax on machinery and equipment, organizations lobbying for that elimination did not go out and say, "Now we can sell Iowa." Rather, new adverse taxes were identified.

The next adverse tax on the list became Iowa's unemployment compensation rate, with a Governor's task force called together shortly after passage of the repeal of the machinery and equipment tax that cited unemployment compensation law as a major impediment to attracting new industry. That issue now has been addressed (again, with little if any positive publicity for the state).

The current adverse tax that is cited as an obstacle to Iowa's being competitive is its top published individual income tax rate, which most people admit is more a perception problem than a problem based in reality.

Again, this issue has been brought forth and publicized by Iowa itself. We have pointed to our own presumed "black eye" and said, "Stop being anti-business, government leaders."

If this top rate is substantially reduced, new areas of potential attack include the top published corporate income tax rate and the top workman's compensation benefit. There will always be some tax to mobilize against as putting Iowa in an "uncompetitive" position.

WHERE IOWA STANDS COMPARED TO OTHER STATES ON ITS TOP PERSONAL INCOME TAX RATE

The following provides information on states with top marginal published tax rates and top marginal effective tax rates above what Iowa's would be under the proposed compromise plan offered by Democrats.

TOP MARGINAL PUBLISHED TAX RATE: 1987 TAX YEAR

Oklahoma	17.0 %	[1]
Montana	12.1 %	[2]
North Dakota	12.0 %	[3]
Connecticut	12.0 %	[4]
IOWA	11.9 %	[5]

[1] Provides the option of filing without federal deductability, with a top rate of 6 %. [2] Allows full federal deductability. Has a 10 % surcharge bringing top rate from 11.0 % to 12.1 % which expired in two years. [3] Provides the option of filing without federal deductability, and using a percentage of the federal. [4] Provides for taxation of a very limited set of items (interest and dividends) at 12 %, and also taxes net capital gains at 7 %. [5] Provides for full federal deductability and gives preferential tax treatment to capital gains.

TOP MARGINAL EFFECTIVE TAX RATE: 1987 TAX YEAR

(Adjusts for federal deductability and capital gains)

District of Columbia	11.0 %	
Hawaii	10.0 %	
Maine	10.0 %	
Vermont	9.9 %	[1]
California	9.3 %	
Rhode Island	9.0 %	[1]
Minnesota	9.0 %	
Oregon	8.8 %	
Deleware	8.8 %	
New York	8.8 %	
New Mexico	8.5 %	
Idaho	8.2 %	
Montana	7.5 %	[2]
IOWA (full coupling and 5 % rate cut)	7.4 %	[2]
Arkansas	7.0 %	
North Carolina	7.0 %	
South Carolina	7.0 %	
Ohio	6.9 %	
IOWA (capital gains exclusion and 5 % rate cut)	6.8 %	[3]

[1] Vermont and Rhode Island both base their taxes on a percentage of the federal tax, which in 1987 means their top tax rate is equal to that presented in the chart. [2] Montana and Iowa both allow full federal deductability, which brings down their top published rate by 38 % (the top federal tax rate in 1987). [3] Iowa proposal would allow the 60 % exclusion for capital gains, which for the average top tax rate filer will bring down effective taxation by approximately 7.5 %.

SHIFTS IN THE IOWA TAX BURDEN -- 1983-87

During the past five years, which coincide with Governor Branstad's term in office, the state has undergone a number of financial difficulties and been called upon to provide a number of "economic development" tax policies. During this period, there have been several major tax increases, virtually all of which have been regressive in overall impact. They have been used in part to finance state government as a whole, and in part to provide for other initiatives designed to serve as incentives for economic development. The following lists the major tax increases and the initiatives adopted to serve as incentives for economic development.

MAJOR TAX INCREASES FROM 1983 THROUGH 1987.

1. ONE CENT SALES TAX INCREASE. 1983. CIRCA $ 180 MILLION IN GENERAL FUND REVENUE.

The sales tax, even with the exemption for food and drugs, is generally considered to be the most regressive tax levied on Iowans. Its tax incidence is more than twice as great on the lowest quintile of Iowa families as it is on the top quintile of Iowa families.

2. GASOLINE TAX INCREASE. CIRCA $ 40 MILLION IN ROAD USE TAX FUND REVENUE.

The gasoline tax is similary considered to be a regressive form of taxation.

3. ENACTMENT OF A STATE LOTTERY. 1986. CIRCA $ 45 MILLION ANNUALLY IN INCREASED COLLECTIONS OF MONEY FROM THE CITIZENS OF IOWA.

Although a discretionary form of revenue generation because people make the choice to purchase lottery tickets, the actual tax incidence of lottery sales falls very heavily on low and moderate income Iowans. Studies have shown that lottery revenue collections are more regressive in impact than either sales or property taxes.

4. RETENTION OF THE WINDFALL FROM FEDERAL TAX LAW CHANGES, AND LIMITED COUPLING EFFORTS. 1987 SPECIAL SESSION. CIRCA $ 60 MILLION IN INCREASED STATE TAX COLLECTIONS.

Of the $ 60 million collected, approximately $ 45 million comes from individual income tax returns, with the lowest income and highest income taxpayers having the greatest proportional increases in their tax burden. Except for the very upper taxfilers, the effect of the special session tax law is slightly regressive with respective to individual income tax. Increased corporate income tax collections as a result of coupling represent the other $ 15 million in tax collections. This coupling was preferred by business groups over leaving the state uncoupled, for reasons of tax filing simplicity.

ECONOMIC DEVELOPMENT INCENTIVES AND INITIATIVES

1. REPEAL OF THE TAX ON PURCHASES OF NEW MACHINERY AND EQUIPMENT. 1985. CIRCA $ 35 MILLION IN REVENUE LOSS TO THE STATE.

The major beneficiaries of this repeal are large manufacturing interests. The General Assembly enacted this repeal after several study committees identified Iowa's business climate as being competitive with other states with respect to taxation except for the imposition of this particular tax (e.g., the tax study committee and the Garfield-Swartz study).

2. COMPLETION OF THE PHASE-OUT OF THE PERSONAL PROPERTY TAX. 1985-7. CIRCA $ 25 MILLION IN REVENUE REPLACEMENT COSTS BY THE STATE.

The beneficiaries of the final phase-out of the personal property tax are the largest businesses in the state. Again, one of the primary reasons for completely phasing out the personal property tax was to remove an impediment to economic development.

3. RESTRUCTURING OF THE UNEMPLOYMENT COMPENSATION PROVISIONS. 1987. CIRCA $ 25 MILLION IN REDUCED EMPLOYER PAYMENTS INTO THE SYSTEM.

The 1987 action of the General Assembly removed another provision that the business community had cited as being an impediment to economic development.

CONCLUSION

Over the last five years, changes in Iowa's tax law have made Iowa's tax collections decidedly more regressive. The tax incidence for financing state government has shifted to a degree from corporate interests to low and moderate income taxpayers, and increased revenue sources have come from regressive forms of taxation.

THE COOPERS & LYBRAND HYPOTHETICAL CASES- IOWA FAMILIES AND STATE INCOME TAX

At the Des Moines Register's request, Coopers and Lybrand developed eight examples of Iowa taxfilers to demonstrate the effects changes in Iowa tax laws would have on different Iowa tax liabilities. In running these examples, Coopers and Lybrand did not take advantage of Iowa's option for married taxpayers to file separately.

This analysis takes advantage of Iowa's option for married taxpayers to file separately. It reviews four different scenarios: (1.) what the taxfiler paid in 1986 taxes, (2.) what the taxfiler will pay under special session tax law changes and in 1987 taxes, (3.) what the taxfiler will pay under the proposal of the tax committee in 1987 taxes (coupling and a 10 % rate cut), and (4.) what the taxfiler will pay under the modified tax committee proposal (coupling and a 5 % rate cut).

Most important, this analysis provides information on the percentage of the taxfiler's income paid in state income taxes under each proposal. This information can be used to suggest the relative progressivity of each of the four scenarios.

Five of the eight examples are provided here, as they represent families at different income levels, where comparisons of tax incidence can be made in terms of progressivity.

C & L Family	% OF INCOME PAID IN IOWA TAXES UNDER DIFFERENT TAX PLANS			
	1986 Tax Year	Special Session	Tax Com. Proposal	Modified Proposal
$ 25,100 Farm Family	4.1 %	4.4 %	3.9 %	4.0 %
$ 26,900 Shop Owner Family	3.7 %	4.0 %	3.6 %	3.6 %
$ 30,200 Blue Collar Couple	2.9 %	3.3 %	2.9 %	3.1 %
$ 58,100 Upper-Middle Class Family	3.0 %	3.0 %	3.3 %	3.4 %
$ 161,000 Executive Couple	3.4 %	3.9 %	4.7 %	4.5 %

CONCLUSION: Both the 1986 and the Special Session taxes are regressive as far as the five identified families go. The latter two proposals tax the first three families at a slightly lower rate than the last two families, but at best are only slightly progressive in overall impact on the families. They do have greater progressivity than the 1986 or Special Session tax systems.

COOPERS & LYBRAND FAMILIES

Farm Family. Family of five, with farm income generating $ 25,100. Do not itemize or have IRAs. File jointly.

1986 Tax -- $ 1030 (4.1 % of income)
Special Session Tax -- $ 1110 (4.4 %)
Tax Committee Tax -- $ 990 (3.9 %)
Modified Proposal Tax -- $ 1010 (4.0 %)

Shop Owner Family. Family of four, store nets $ 26,900 in income. Spouse has IRA, do not itemize. File jointly

1986 Tax -- $ 1000 (3.7 % of income)
Special Session Tax -- $ 1070 (4.0 %)
Tax Committee Tax -- $ 960 (3.6 %)
Modified Proposal Tax -- $ 980 (3.6%)

Blue Collar Family. Family of four, factory worker income $ 25,100, part-time clerk income of spouse $ 5000. Itemize deductions. File separately.

1986 Tax -- $ 900 (2.9 % of income)
Special Session Tax -- $ 970 (3.3 %)
Tax Committee Tax -- $ 880 (2.9 %)
Modified Proposal Tax -- $ 940 (3.1 %)

Upper middle-class couple. Family of four, two incomes of $ 30,100 and $ 25,000. $ 1000 in capital gains income, $ 1500 in municipal bond interest. Two IRAs, itemize deductions, claim child care tax credit.

1986 Tax -- $ 1760 (3.0 %)
Special Session Tax -- $ 1720 (3.0 %)
Tax Committee Tax -- $ 1911 (3.3 %)
Modified Proposal Tax -- $ 1980 (3.4 %)

Executive couple. Family of two, salaries of $ 121,000 and $ 30,000. Capital gains income of $ 10,000. Two IRAs, husband has 401 (k) plan and defers $ 18,000. Tax shelter losses of $ 20,000 and investment interest expense of $ 15,000. Itemize.

1986 Tax -- $ 5520 (3.4 %)
Special Session Tax -- $ 6320 (3.9 %)
Tax Committee Tax -- $ 7590 (4.7 %)
Modified Proposal Tax -- $ 7310 (4.5 %)

THE TAX IMPACT OF COUPLING -- NO AGREEMENT ON TAX INCIDENCE

The Department of Revenue has provided estimates of the effects of various changes to state income tax laws, including the effects of coupling with federal tax law provisions. Their estimates are based upon a number of assumptions of taxpayer behavior.

The Policy Economics Group of Peat, Marwick, and Mitchell provided a different set of estimates of the effects of changes to state income tax laws as a result of coupling. The Policy Economics Group uses data on Iowa taxpayers that contains substantially more information than that used by the department of revenue. The Policy Economics Group has provided such services to a number of states and to the Congressional Budget Office, and states such as New York have used their estimates in tax projections.

Because the assumptions made by the Department of Revenue and the Policy Economics Group differ, their estimates of the revenue generated from coupling also differ. These differences are most pronounced with respect to high income taxfilers.

According the the Department of Revenue, the increase in taxes for Iowans making over $ 100,000 per year is over 32 %. According to the Policy Economics Group, that increase is estimated to be 11 %.

Virtually all experts have urged caution for states in estimating revenue returns from coupling with federal tax law provisions, and urge states to be very conservative in estimating revenues. The Policy Economics Group are much more conservative in this respect than the Department of Revenue's.

The following two table provide the estimates made by the Department of Revenue and Peat, Marwick, and Mitchell both for coupling with tax law changes and for coupling and also reducing tax rates 10 %. While the Department's estimates suggest that either measure is a very progressive tax change, Peat, Marwick and Mitchell's estimates suggests that either change has, for the most part, a similar effect on different income classes and is neither particularly progressive or regressive.

TAX POLICIES ACCORDING TO THE STATE DEPARTMENT OF REVENUE -- LIABILITIES BY INCOME CLASS FOR STRAIGHT COUPLING AND FOR COUPLING WITH 10 % RATE REDUCTION

Adjusted Gross Income Class	Number Returns	Current Liability	STRAIGHT COUPING ONLY: Coupling Liability	STRAIGHT COUPING ONLY: Percent Change	COUPLING AND 10 % CUT: Coupling Less 10%	COUPLING AND 10 % CUT: Percent Change
$0 - 10,000	408,547	$22,008,142	$24,670,872	12.10%	$22,203,785	.89%
$10- 20,000	278,004	$117,969,749	$130,014,147	10.21%	$117,012,732	-.81%
$20- 30,000	198,530	$180,267,308	$199,254,666	10.53%	$179,329.199	-.52%
$30- 40,000	124,566	$177,049,088	$203,091,639	14.71%	$182,782,475	3.24%
$40- 50,000	60,885	$119,632,826	$137,277,346	14.75%	$123,549,611	3.27%
$50- 75,000	38,606	$110,965,892	$143,698,961	29.50%	$129,329,065	16.55%
$75-100,000	7,456	$35,336,813	$44,301,021	25.37%	$39,870,919	12.83%
Over 100,000	7,062	$83,739,818	$110,948,229	32.49%	$99,853,406	19.24%
	1,123,656	$846,969,636	$993,256,881	17.27%	$893,931,193	5.54%

SOURCE : IOWA DEPARTMENT OF REVENUE. 1988 STATE FISCAL YEAR.

TAX POLICIES ACCORDING TO PEAT, MARWICK, AND MITCHELL -- LIABILITIES BY INCOME CLASS FOR STRAIGHT COUPLING AND FOR COUPLING WITH 10 % RATE REDUCTION

Adjusted Gross Income Class	Number Returns	Current Liability	STRAIGHT COUPLING ONLY: Coupling Liability	STRAIGHT COUPLING ONLY: Percent Change	COUPLING AND 10 % RATE CUT: Coupling Less 10 %	COUPLING AND 10 % RATE CUT: Percent Change
$0 - 10,000	408,547	$22,008,142	$22,000,000	-.04%	$19,800,000	-10.03%
$10- 20,000	273,004	$117,969,749	$127,000,000	7.65%	$114,300,000	-3.11%
$20- 30,000	198,530	$180,267,308	$200,000,000	10.95%	$180,000,000	-.15%
$30- 40,000	124,566	$177,049,088	$195,000,000	10.14%	$175,500,000	-.87%
$40- 50,000	60,885	$119,632,826	$132,000,000	10.34%	$118,800,000	-.70%
$50- 75,000	38,606	$110,965,892	$122,000,000	9.94%	$109,800,000	-1.05%
$75-100,000	7,456	$35,336,813	$39,000,000	10.37%	$35,100,000	-.67%
Over 100,000	7,062	$83,739,818	$93,000,000	11.06%	$83,700,000	-.05%
	1,123,656	$846,969,636	$930,000,000	9.80%	$837,000,000	-1.16%

SOURCE: PEAT, MARWICK, AND MITCHELL. 1988 STATE FISCAL YEAR.