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The Disappearing State Corporate Income Tax

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Abstract

This paper examines alternative explanations for the decline over the past two decades in state corporate income taxes relative to the state economy. We employ a survey of state tax administrators, individual tax returns from Georgia and Utah, and panel data to explore the importance of tax policy, tax planning, and economic factors on the trend in state corporate taxes. We find that corporate tax planning and economic factors account for much of the relative decline and that state tax policy changes are important factors. However, federal tax changes had only a modest effect during this period.

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INTRODUCTION

The corporate income tax has been an important source of federal tax revenue since it was created in 1909, but has been less important to states and even less important to local governments. Corporate taxes accounted for 12 percent of federal tax revenues in 1981, fell to a low of 8.8 percent in 2001, but have since rebounded to 9.9 percent of federal tax revenues in 2003. State corporate tax revenues made up 9.4 percent of total state tax revenue in 1981, but made up only 5 percent in 2002.

While the relative importance of corporate taxes has declined, corporate profits have grown. Using NIPA reported corporate profits, corporate profits as a share of national income have been on the rise for most of the past two decades. The most recent recession dealt the largest blow to corporate profit growth over the period, but in general, corporate profits as a share of national income have increased—hardly a pattern that suggests *reduced* corporate income tax revenues. However, total state corporate income tax revenues as a share of reported corporate profits (Figure 1) have declined significantly over the period 1980 to 2000, from 6.6 percent to 4.0 percent.

The diminished role of corporate income taxes at the federal and state levels in the face of increased corporate profits has generated a variety of hypotheses regarding the decline in corporate tax shares (Fox and Luna 2002 and 2003; Mazerov 2003; Pomp 1998; Desai 2002; Hofmann 2002). Various authors suspect that changes in the structure of the economy, tax planning (including changes in the form of incorporation), legislated narrowing of the tax base, and tax compliance have caused revenue from corporate income taxes to decrease in federal and state budgets. To date, limited empirical analyses of these hypotheses have failed to discover a single culprit, instead, they find that the

reduced importance of the corporate income tax as a revenue producer is likely the result of a combination of factors.

We focus on the trends in the state corporate income tax (SCIT) since 1980 and use both survey and empirical analyses in an attempt to explain these trends. While state corporate tax revenues generally have fallen over time, the corporate income tax in some states has been more stable or even increased as a share of state tax revenues. In our analysis, we use detailed information on changes in state corporate tax structures, corporate tax returns from two states, and opinions of tax administrators to analyze whether the change in the state corporate income taxes is due to economic factors, tax changes at the federal level, changes in the structures of state corporate income tax, or tax compliance/tax avoidance behaviours. A contribution of the analysis is that we are able to employ a file of tax returns for Utah and a panel of tax returns from Georgia; analysts rarely have had access to such data to allow this type of scrutiny.

The article proceeds as follows: The next section documents the trends in state corporate income tax revenues and demonstrates that most (but not all) states have witnessed a decline in state corporate income tax revenues over the last two decades. That section is followed by an exploration of the effect of changes in the structure of the federal corporate income tax on state corporate tax revenue. In the fourth section, we analyze the results of a survey of tax administrators that asked for their views on the most influential factors in state corporate tax collections. The fifth section reports on a detailed analysis of the factors associated with trends in state corporate income tax revenue in Georgia using corporate income tax returns from that state. The sixth section reports on an analysis using a time series of state-level data to explore the potential

importance of various factors in explaining changes in state corporate tax revenue. A summary and conclusion section completes the paper.

TRENDS IN STATE CORPORATE TAX REVENUES

If we compare state corporate tax receipts to gross state product (GSP), we have a rough measure of whether the corporate income tax is keeping up with the general movement in a state's economy. Figure 2 demonstrates this point more directly; it shows a divergence between state corporate income tax revenues and GSP (the values were normalized to 1980). The trend line for SCIT is below that of GSP for the entire period. While the divergence is evident from 1980, there is a significant drop in 1989 and another downward adjustment in 1995. It appears that something other than changes in the economy impacted state corporate revenues throughout the period. A simple regression of normalized state corporate income taxes on time and normalized gross state product suggests that over the 1981-2000 period, the percentage change in state corporate income taxes for a one percent change in gross state product is 0.84. Interestingly, if we break up the series and run separate regressions for 1981-1989 and 1990-2000, the elasticity of the state corporate income tax falls from 1.08 for the 1981-1989 period to 0.78 for the latter period.

There are some differences among the states regarding this trend. Out of the 44 states for which we have data on state corporate income taxes, 30 states (68 percent) have trends reflecting the divergence between GSP and state corporate income tax revenues illustrated in Figure 2. For 23 of these 30 states there is a continuous divergence between GSP and corporate income tax revenue over the period. Some of these 30 states,

including Maine, New Hampshire, North Carolina, Illinois, Nebraska, Arizona, and Arkansas, show relatively minor divergence between the growth of corporate income tax receipts and GSP; in fact, in the early 2000s, state corporate income tax growth closely approaches that of GSP in Maine and New Hampshire. On the other hand, some states, for example, Hawaii, Ohio, Oregon, Rhode Island, and South Carolina, show very large divergences over the period. Finally, 14 states show mixed or opposite trends. In 7 states (Michigan, Montana, North Dakota, Delaware, Mississippi, Oklahoma, and Utah), the growth in state corporate income tax tracks very closely the growth in GSP. West Virginia is an outlier in that it has relatively large reported growth in state corporate income taxes relative to GSP over the period, perhaps due to the state's frequent changes in corporate income tax rate.

Fox and Luna (2002) present a rather comprehensive list of factors that may have influenced state corporate income taxes. They discuss each of the factors and provide some data relevant to them, but for most of the factors they are unable to estimate the magnitude of the effect. In fact, there exists little research that provides estimates of the magnitude of the effect of the various factors that are thought to be responsible for the downward trend in state corporate income tax revenue relative to GSP. We now turn to a discussion of the few studies that do exist.

The amount of state corporate income tax that is avoided through passive investment schemes, more commonly known as "Delaware holding companies," is generally unknown, but the Center on Budget and Policy Priorities (Mazerov 2003) suggests that based on several important court cases where the value of the tax saving

was disclosed, the revenue loss to states is quite substantial. Unfortunately, no data are available that allow a direct investigation of the growth in passive holding companies.

Fox and Luna (2003) explore the extent to which limited liability companies (LLCs) account for the recent decline in SCIT revenues. LLCs were first adopted in 1977 but gained popularity in the 1990s and are now an option in all states. LLCs combine the advantages of partnerships (no corporate tax) and corporations (limited liabilities) and they avoid the restrictions on ownership associated with S-corporations. To measure the effect of LLCs on SCIT revenue, Fox and Luna use panel data from states over the period of 1988 to 2000, although there are several missing observations. The dependent variable in the revenue equation is SCIT revenue measured as a percentage of personal income. The independent variable of interest is the percentage of businesses in a given year that choose the LLC structure. In order to account for the likelihood that the extent of adoption of LLCs by firms in a state is a function of the level of corporate income taxes, they estimate a simultaneous model.

For the average state, Fox and Luna's regression analysis implies that a 10 percent increase in the share of LLC firms reduces SCIT revenue as a percent of personal income by 3.6 percent. This implies that the rise of LLCs has reduced state tax revenue by about one-third.

The Multistate Tax Commission (MTC) (2003) estimated that domestic and international corporate tax sheltering reduced state corporate income tax revenue by 35 percent (of actual collections) in 2001. A breakdown by state of the revenue loss was

calculated, and mid-range estimated losses extend from a low of 10.3 percent for Michigan to a high of 57.8 percent for West Virginia.¹

Fisher (2002) explores the effect of changes in apportionment formulas, tax rates, and tax incentives on effective corporate tax rates in 20 states during the period 1990 to 1998. He relies on a hypothetical firm model developed by Fisher and Peters (1998). The major limitation of the model is that it applies only to manufacturing firms and only to 20 states, although these states account for 75 percent of U.S. manufacturing. Fisher finds that for manufacturing investment in the 20 states, the effective corporate income tax rate before incentives fell from 4.91 percent in 1990 to 4.42 percent in 1998, a decrease of 11.4 percent. Considering the effective corporate income tax rate net of incentives, Fisher finds that it fell from 4.42 percent in 1990 to 3.12 percent in 1998, a decrease of 29.4 percent. It appears from Fisher's analysis that for manufacturing firms, the decrease in effective tax rates is largely due to the increase in the use of tax incentives. In fact, tax incentives increased from 9.9 percent of gross income from manufacturing investment in 1990 to 29.4 percent in 1998.

Fisher also investigates whether shifts in manufacturing to low-tax states has had an effect on the national trend of declining effective SCIT rates. For manufacturing investment in the 20 states, he finds that tax rates after incentives were higher among those states gaining manufacturing shares. Thus, a shift to low-tax states does not appear to explain the declining effective SCIT rate for manufacturing firms. He also finds that

¹ The MTC's methodology has, however, been subject to criticism, particularly by the Council of State Taxation (2003).

increased local property tax (a deductible expense) is not a significant factor in explaining the decrease in the effective SCIT rate.

There are a few studies that have estimated point-in-time revenue losses from specific legislative actions. Illinois, for example, estimated that the adoption of the single-sales factor apportionment formula in 1998 reduced 2001 revenues by approximately \$63 million, which is 6.0 percent of gross corporate income tax revenues (Illinois Economic and Fiscal Commission, 2002). Massachusetts adopted several corporate tax changes in the 1990s, including an increased weight on the sales factor. The estimated revenue loss from this shift from the three factor formula is \$221.3 million for FY 2004 (Executive Office for Administration and Finance 2003). Other changes in Massachusetts during the 1990s included a reduction in the tax rate for banks (a \$32 million reduction in revenue), a tax rate reduction for insurance firms (a \$39 million revenue reduction), a research and development (R&D) tax credit (a \$94 million reduction), and an investment tax credit (a \$13 million reduction) (see McLynch and St. George, 2003). Actual corporate tax revenue for FY 2003 was \$799 million.

CHANGES IN FEDERAL TAXABLE INCOME

Most states use federal corporate taxable income as the basis for their corporate income tax. Thus, policies at the federal level that affect corporate taxable income should affect state corporate income tax collections. Fox and Luna (2002), as part of their summary exploration of the factors driving the trends in SCIT revenue, focus on changes in federal corporate taxable income. They calculate the effective tax rate measured as the ratio of federal corporate income tax revenue to corporate profits, as reported in the

NIPA, for the period of 1960 to 2000. We use their calculations and add two subsequent years. They report two ratios, one using actual tax receipts and one using tax receipts adjusted for changes in the federal tax rate; we consider only the latter.²

From 1960 to 1982, the adjusted effective tax rate declined from 40 percent to 20 percent (its low point for the post-1960 period). Changes in the early 1980s, culminating in the Tax Reform Act of 1986 (TRA86), resulted in a substantial increase in the adjusted effective tax rate to about 42 percent in 1987. TRA86 created a rate structure under which the statutory corporate tax rate exceeded the statutory individual income tax rate for the first time in the modern history of both income taxes, while also changing the tax base. These federal changes increased the incentive for businesses to find a way to distribute income so that it could be taxed at the lower individual income tax rate. This could be accomplished if business income were to flow through to individuals via partnerships, S-corps or LLCs. If this change occurred, the number of corporate income tax returns and corporate tax liabilities at the state level could fall as businesses “disincorporated.”³ The effect of these changes, including changes in organization arrangements is to reduce the federal corporate tax base and by extension, the state tax base.

² Maguire (2003) reports effective tax for non-financial corporations but does not adjust for rate changes.

³ As discussed by Nelson (1988), this disincorporation could occur either by businesses shifting out of the corporate sector or by new businesses starting out in the noncorporate sector at a faster rate than new incorporations.

TRA86 also changed the definition of taxable income. The investment tax credit was eliminated, the research and development tax credit was reduced, the preferential rate of capital gains taxation was eliminated, depreciation allowances were reduced, and business and entertainment expenses were reduced, among other changes. Because of the close coupling of most state corporate income tax bases to the federal corporate tax base, states were also subject to significant changes in their corporate income tax bases.

Post-1987, additional changes occurred that reduced (statutory rate-) adjusted effective rates through the early 1990s. Between 1993 and 2000, the adjusted effective rate increased from about 31 percent to about 36 percent. Additional tax changes were made in 2002 (retroactive to 2001), when depreciation allowances and expensing for small businesses were made more lucrative, allowing an immediate deduction of 30 percent of new equipment purchases.⁴ For 2002, the adjusted effective tax rate had fallen to 25 percent.

The effect of federal base changes on state corporate tax revenue depends on the period under consideration. If we compare the federal adjusted effective tax rate for 1960 to that for 2002, we find that for that period the adjusted effective tax rate did not change by very much, and thus federal base changes accounted for a relatively small portion of the fall-off in state corporate income tax revenues. However, for the period we consider, *i.e.*, 1980 to 2002, the federal adjusted effective tax rate increased, and thus changes in the federal tax base, *ceteris paribus*, should have substantially increased state corporate

⁴ Additional investment incentives were enacted in May 2003 that allow a 50 percent deduction for investment in building and equipment, with full write-off for investments of less than \$100,000.

tax revenue. Most of the change in the effective tax rate during that later period occurred in the 1980s, and thus changes at the federal level since the late 1980s have resulted in a modest decline in the federal tax base relative to profits. Therefore, for the period we consider, changes at the federal level do not appear to be the cause of the decrease in state corporate income taxes.

EMPIRICAL EVIDENCE: SURVEY OF STATE TAX ADMINISTRATORS

For this part of the study we used a mail survey to examine the opinions of state tax administrators on the importance of various economic, legislative, and administrative factors in explaining SCIT trends.⁵ The officials we surveyed were chosen based on recommendations from the Federation of Tax Administrators (FTA).⁶ The professional

⁵ There are advantages and disadvantages to using questionnaires, but one advantage is that the responses seem more likely to reflect the actual opinions of the respondents.

Research on the rate of abortions (Fu et al. 1998), church attendance (Presser and Stinson 1998), and racial intolerance (Krysan 1998) appears to produce much different results in face-to-face interviews than in surveys. The assertion is that face-to-face interviews create situations where respondents are likely to offer the socially desirable or acceptable responses. Thus in face-to-face interviews about church attendance or racial intolerance, the answers suggest more church attendance than actually happens or more (or less) racial intolerance than is reported.

⁶ The FTA is a professional body that serves as a research and clearinghouse on tax administrative and policy issues for the revenue and tax commissions of the 50 states and the District of Columbia.

leadership of the FTA identified two administrative professionals in each state with a SCIT who have been recognized for their expertise and knowledge of state-specific SCIT issues.

Surveys were sent to 90 tax administrators, and we received 41 completed surveys from 24 states.⁷ The sample size is small by conventional standards. But given the nature of the questions and the extensive time frame covered by the survey, the population of experts with both an understanding of the issues and a historical perspective on the SCIT within the context of a state's legislative, administrative, and economic history is small. Thus, we have a small but well-informed sample.⁸

To motivate responses to the survey, we included with the survey a figure similar to Figure 2 for each recipient's individual state to illustrate the relative year-over-year trends in GSP and SCIT. Based on the relationship between a state's GSP index and a state's SCIT index, we defined state-specific subperiods for analysis that were distinguished by the degree to which the trend in the SCIT index corresponded to the trend in the GSP index. We then solicited opinions of the experts regarding the importance of a set of policy and economic factors in explaining the various trends in SCIT relative to GSP for each subperiod that we identified.

⁷ In three states, the surveys were returned because the individuals who received the survey did not feel they had sufficient understanding of tax history in the state to answer the questions.

⁸ We are aware that the responses to tax policy questions differ depending on the occupations of the respondents. Academics' and administrators' responses are quite similar to each other but different from the responses of tax practitioners (Slemrod 1995).

The issues on which we sought opinions can be classified into six general areas. The first area included issues that are under the direct control of the firm's corporate tax departments and questions about the perceived importance of corporate tax planning and corporate tax compliance. The second area solicited views on the effects of national and state business cycles on SCIT revenue. The third general section had ten questions exploring the revenue importance of SCIT policies over which the state has policy and legislative control. These policies are all directly related to the definition of the SCIT tax base. Examples of such policies are the allowance of passive investments (Delaware holding companies), subchapter "S" corporations, economic development credits, LLC entities, carry forward and throwback rules, and state depreciation schedules. The fourth general area of inquiry included two questions about changes in the federal corporate income tax code, both federal depreciation and general code changes. The final two general areas included questions about the importance of state corporate tax rates and of the state's administrative efforts, *e.g.*, audits and enforcement.

When replying to the questions, respondents were asked to rate the effect of the various factors in terms of the perceived effect on SCIT revenue. The responses and the assigned score were "substantial increase in revenue" (1), "increase in revenue" (2), "no effect on revenue" (3), "decline in revenue" (4), and "substantial decline in revenue" (5).

We received returned questionnaires that allowed evaluations of 57 periods when revenue from the SCIT was decreasing relative to GSP and 49 periods when revenue was increasing at about the same rate or faster than the change in GSP. When the indices were moving in the same upward directions we reported the interval as an "increasing" period, and if the SCIT index was decreasing as the GSP index was increasing, the phase

was reported as a “decreasing” period. Each state had at least two distinct revenue periods and in many states there were three or four periods. We made no mention in our instructions to the respondents about the relative direction of the GSP or SCIT indices, we only asked the respondents to comment on the importance of the above listed items for each distinct period in the state. The results are summarized in Table 1.⁹

For the factors on which the experts expressed an opinion, the most common response (47 percent) was that the factor had no observable effect on the change in SCIT revenue. Given the level of rhetoric that often surrounds the SCIT, we did not expect this outcome—we thought the views expressed would be more polarized. The second somewhat surprising outcome was that the next most common response (35 percent) was that when an issue was perceived to trigger a change in revenue, it was reported as a decline but was only viewed as a modest decline. This was true for factors like formula apportionment, combined reporting, and nexus confusion. Also, many state policies (for example rate or base changes) had little reported effect because the policies were not commonly adopted.

Less than eight percent of the responses reported any policy that created a substantial decline in SCIT revenue. Respondents believed that most of the factors we inquired about decreased revenue regardless of whether SCIT was increasing or decreasing relative to GSP. This result suggests that tax administrators see most factors

⁹ For each category, the top row refers to periods in which SCIT collections are declining relative to GSP, while the bottom row refers to periods where SCIT collections are increasing relative to GSP.

as having a negative effect on revenues and that the trend in SCIT is the result of many factors, each of which has had at best a small effect on the trend in SCIT.

Consistent with the finding of the previous section, responses to the survey suggest that state administrators do not believe state SCIT revenue was overwhelmed by the changes at the federal level. We were also surprised by the number of respondents who viewed changes in the national and state business cycles as having no observable effect on SCIT revenue. This response runs counter to the common view in the literature of the high cyclical instability SCIT. However, this outcome is consistent with the reported work of Fox and Luna (2002). We note that the responses to these two issues are the ones with the most bi-polar response pattern, indicating that a number of respondents in this study believed economic cycles influenced SCIT revenue in both directions.

Tax administrators in periods of both declining revenue and increasing revenue see aggressive tax planning and aggressive shifts in tax compliance by corporations as among the actions most likely to reduce SCIT revenue. Passive investment schemes, subchapter “S” corporations, LLCs, and economic development incentives are also perceived to negatively influence SCIT revenue. These factors are often cited in the literature as having major effects on state corporate tax receipts.

INDUSTRIAL STRUCTURE AND CORPORATE TAX TRENDS

In this section we explore the relationship between a state’s industrial structure and corporate income tax trends. There are many reasons why the trends in SCIT could differ across states because of differences in a state’s industrial structure. First, it is

possible that differential growth in output across industries could result in profits growing more rapidly than the firm's contribution to other sources of state income, for example wages and salaries, for some industries. Second, transfer pricing and other tax avoidance behavior may be easier to accomplish in certain industries, and therefore those industries may have less tax liability per dollar of sales.

Cross-sectional data from Utah that allowed us to identify firms by their NAICS classification suggests that the magnitude of the state corporate tax differs, and quite dramatically, depending on the type of industry.¹⁰ Data does not exist to allow us to calculate tax revenue as a percent of GSP by industry. Instead we consider multi-state firms and compare by NAICS the ratio of corporate income taxes to the value of each of the three standard apportionment factors -- property, sales, and payroll. These comparisons are made using data from the 2001 state corporate tax returns filed in Utah, (We are limited to such ratios because taxable income is not reported on Utah state tax returns).

Figure 3(a) suggests that there are substantial differences across industries in the values of the ratios of Utah corporate income tax to each of the three factors. Consider, for example, the payroll factor, which is the largest income component of GSP. The ratio of corporate taxes to payroll varies significantly across industries. For example, professional, scientific, technical sector has low corporate income tax relative to payroll as compared to finance and insurance. Thus, growth of the former sector would cause GSP to grow more rapidly than corporate tax revenue, all else equal.

¹⁰ We could not use our Georgia CIT for this analysis because industry is not identified on the Georgia returns.

A second way of considering the effect of the industrial sector is to compare Utah corporate income taxes to federal corporate income taxes (Figure 3(b)). The beginning point of the Utah law is federal taxable income. Thus, if there were no differences across industrial sectors in the ability of firms to engage in tax planning or in the state's corporate tax provision, we would expect that the ratio of Utah to federal corporate income tax would be very similar across industries. The evidence in Figure 3(b) seems quite clear -- there are substantial differences across industries in the state corporate tax burden relative to the federal corporate tax burden.

We calculated the correlation between the growth in each industrial sector, as measured by employment growth between 1990 and 2003, and the values of the ratios reported in Figures 3(a) and 3(b). For the ratio of taxes to payroll and of Utah taxes to Federal taxes the correlation coefficients with employment growth are -0.35 and -0.49, respectively. This implies that the growth in the Utah economy was focused on those industries in which corporate taxes are a small percentage of payroll and in which Utah corporate taxes are a small percentage of Federal corporate taxes. This suggests that differential growth by industries may have reduced corporate income taxes as a percentage of GSP.

EMPIRICAL EVIDENCE: A GEORGIA CASE STUDY

In this section, we report on an analysis of the change in SCIT conducted with a panel of Georgia CIT returns. Table 2 shows the aggregate Georgia tax liability of multistate corporations from 1992 to 2002, along with the dollar and percentage change from the previous year. The early 1990s saw significant growth in aggregate tax liability,

with annual increases of over 41 percent in 1993 and roughly 25 percent in 1994. Other than a 21.7 percent upturn in 1998, growth in aggregate tax liability slowed or turned slightly negative for the remainder of the decade. Growth turned significantly negative beginning in 2000. Aggregate tax liability fell 18.0 percent in 2001 and 47.8 percent in 2002. From 1999 to 2002, aggregate tax liability of multistate corporations fell from \$601 million to \$238 million.

These large changes in aggregate tax liability can be broken down into their component parts in order to isolate the predominant factor or factors that explain the change. To accomplish this, we considered only firms with a non-negative tax liability in each year, since firms with a negative tax liability are charged no tax, and movements in the various determinants of tax liability do not alter aggregate collections except to the extent that they come into or fall out of the tax umbrella.

Tax Credits

Aggregate Georgia tax liability for multistate corporations in any given year is given by:

$$(1) \quad Tax_t = \sum_i \max\{0, \tau_t \pi_{it}^T - \delta_{it}\}$$

where τ is the statutory corporate income tax rate, π^T is Georgia taxable income, and δ is tax credits taken. Table 3 decomposes aggregate Georgia tax liability for corporations reporting non-negative taxable income into the amount of pre-credit tax liability ($\tau\pi^T$) and tax credits taken.

The aggregate Georgia tax liability of multistate corporations was boosted in the early 1990s largely by increases in taxable income,¹¹ but also by reductions in tax credits taken (with the exception of 1994). Increased use of tax credits mitigated increases in taxable income in the late 1990s. By 2000, large declines in taxable income drove aggregate tax liability down precipitously. The impact of tax credits on tax collections varied widely from year-to-year, being as low as 2.4 percent of pre-credit tax liability in 1993 and as high as 19.6 percent in 1992, averaging 10.8 percent over the period. Overall, the use of tax credits seems to have increased over time, averaging 8.8 percent from 1992 to 1997 and 13.0 percent since 1998.

Allocation and Apportionment

The aggregate Georgia taxable income of multi-state corporations can be written as:

$$(2) \quad \pi_t^T = \sum_i (\phi_{it} \pi_{it}^A + \alpha_{it} - \eta_{it}) = \left(\frac{\sum_i \phi_{it} \pi_{it}^A}{\sum_i \pi_{it}^A} \right) \sum_i \pi_{it}^A + \sum_i \alpha_{it} - \sum_i \eta_{it} = \phi_t^* \pi_t^A + \alpha_t - \eta_t$$

where π^A is income subject to apportionment, ϕ is the share of income apportioned to Georgia, α is taxable (non-business) income specifically allocated to Georgia, and η is net operating loss (NOL) deductions (NOL reflects apportionment of prior year income).

Individual corporations are indexed by i , and years are indexed by t . ϕ^* represents the weighted average apportionment ratio for all multistate corporations filing a Georgia

¹¹ Georgia did not make any changes in its statutory corporate income tax rate over the period, which remains a flat-rate six percent today, so any changes in tax liability over the period of the analysis, other than changes in tax credits, can be attributed to changes in Georgia taxable income.

income tax return. Table 4 presents values for the decomposition of *changes* in aggregate taxable income according to (2).

Changes in specific allocation ($\Delta\alpha$) to Georgia account for little of the total changes in aggregate taxable income. The only exceptions are 1996 and 1997, where the large values reflect activity on a single corporate income tax return from a firm that allocated \$4.6 billion in nonbusiness income to Georgia in 1996 and took an NOL ($\Delta\eta$) for the same amount. These are then represented in opposite values of roughly the same magnitude in allocation and NOL in the following year.

Changes in apportionment percentages vary by a surprisingly large margin from year to year, resulting in large year-to-year differences in $\Delta\phi^*$. This suggests that corporations are able to manage apportionment factors in an effort to manage taxable income.

Other than the large increase in 1995 and a moderate increase in 1998, the change in taxable income apportioned to Georgia due to changes in ϕ^* have been negative in the aggregate, with especially large declines in 2000 and 2002. One possible policy-oriented explanation for this pattern is the 1995 switch to a double-weighted sales apportionment formula.

The most salient item in Table 4 is an increase in taxable income of \$3.5 billion, arising from changes in the apportionment percentage in 1995 ($\Delta\phi^*$). Because 1995 was the first year in which multistate firms were subjected to a double-weighted sales apportionment formula, the most obvious explanation is that the large increase in taxable income is due to the change in factor weights. Much of the initial increase in revenues arising from a change in the apportionment formula depends on the relative sales or

production intensity of corporations in the state. Previous research has shown Georgia to be a production-intensive state.¹² Thus, with all else equal, Georgia should have seen an initial *decrease* in the share of income apportioned to it rather than an increase as a result of the shift to a double-weighted sales factor.

The anomaly arises because of dramatic differences in the growth of reported sales (S), payroll (P), and property (R) in Georgia relative to the nation as a whole from 1994 to 1995 (for firms with positive taxable income) (Table 5). For example, Georgia property was down 6.5 percent from 1994 to 1995, but national property reported on Georgia income tax returns (with positive taxable income) decreased by 46.5 percent. Payroll reported on tax returns was up 3.9 percent in Georgia in 1995 but down 42.2 percent nationally. Similar magnitudes held for sales. Thus, changes in the factors themselves explain the increase in π^A between 1994 and 1995, not changes in the weights of these factors. If not for the offsetting effect of the change to double-weighted sales, the increase in taxable income due to the change in the aggregate apportionment ratio ($\Delta \phi^*$) would have been even larger in 1995.

Placing a relatively larger weight on sales in the apportionment formula increases the implicit sales tax embodied in the formula and reduces the implicit payroll and property taxes, discourages sales in the state and encourages the sitting of productive factors (Edmiston, 2002). If relative changes in sales exceed changes in payroll and property, the apportionment percentage will decrease. Edmiston and Arze (2002) found that the elasticity of in-state sales with respect to the implicit sales tax in the

¹² If the tax returns are recalculated under the previous equally weighted formula, the share of apportioned income going to Georgia is even higher (See Edmiston 2001).

apportionment formula in Georgia is -0.116 , while the analogous elasticities for payroll and property are -0.069 and -0.035 , respectively. Double-weighting increases the sales factor weight by 50 percent and reduces payroll and property factor weights by 25 percent. Thus, the impact of double-weighting should lead to a 5.8 percent decrease in sales but an increase in payroll and property of only 1.7 percent and 0.9 percent, respectively. The first few years following Georgia's 1995 change to double-weighted sales supports this (Table 5). In 1996, Georgia sales as reported on tax returns declined 30.1 percent, while property and payroll declined only 13.9 percent and 3.8 percent. In 1998, Georgia sales declined 43.3 percent, while Georgia property increased by 24.2 percent and Georgia payroll increased by 15.3 percent.

In later years, property and payroll in the state declined relatively faster than in the nation as a whole. In 2000, Georgia property declined by 6.6 percent, while property nationally increased by a fairly substantial 10.5 percent. Moreover, payroll increased in Georgia in 2000 at about half the national rate of increase. In 2002, sales, payroll, and property saw substantial declines both in Georgia and nationally, which is not surprising given the nature of the economic climate in 2002. But declines were much more substantial in Georgia. Property declined 46.4 percent in Georgia and 28.1 percent nationally in 2002. Payroll declined 33.8 percent in Georgia, compared to 23.4 percent nationally. Declines in sales were about the same in Georgia as in the nation as a whole. Growth in Georgia's GSP was in the second lowest quintile nationally over this period,¹³

¹³ Bureau of Economic Analysis, "Slowdown Was Widespread in 2001," news release, May 22, 2003.

and thus the decline in Georgia's share of apportionable income in 2002 may reflect the overall macroeconomic environment rather than state-specific policies.

Apportionable Income

Other than changes in apportionment percentages, changes in taxable income tend to mirror changes in apportionable income, which can be decomposed as

$$(3) \quad \pi_t^A = FTI_t + GAadd_t - GAsub_t - A_t$$

where FTI_t is federal taxable income, $GAadd_t$ is Georgia additions to federal taxable income, $GAsub_t$ is amounts subtracted from federal taxable income, and A_t is income allocated everywhere (and therefore not subject to apportionment).¹⁴ Table 6 decomposes changes in apportionable income according to (3).

Changes in apportionable income ($\Delta \pi^A$) largely reflect changes in federal taxable income (ΔFTI), and reductions in federal taxable income explain the bulk of the sizeable losses to π^A in 2001 and 2002. A substantial increase in the share of national income apportioned to Georgia reversed what would have been a considerable decrease in revenue collections for 1995, due entirely to a reduction in federal taxable income. No sizeable trends are apparent in Georgia additions and subtractions from federal taxable income, but both factors do appear to be quite volatile relative to federal taxable income.

¹⁴ Georgia additions to federal taxable income include state and local bond interest, net income taxes imposed by taxing jurisdictions other than Georgia, expenses attributable to tax-exempt income, and NOL deducted on Federal returns, among other additions. Georgia subtractions from federal taxable income include interest on U.S. government obligations and other minor subtractions. See Georgia Code § 48-7-21(b).

Other than a single firm's activity in 1994 and 1995, allocations nationally appear to be relatively stable with no discernible trend in either direction.

A decomposition of multistate corporate income tax returns in the State of Georgia reveals that recent declines in corporate income tax collections are largely cyclical in nature in that apportionable income is determined largely by federal taxable income, which is highly cyclical (compare $\Delta\pi^A$ and ΔFTI in Table 6). Further, the close relationship between state and federal taxable income suggests that to the extent that federal policy changes reduced federal taxable income, Georgia taxable income suffered as well. In terms of state-specific determinants, movements in Georgia taxable income was due largely to changes in apportionment percentages (see $\Delta\phi^*$ in Table 4), and the data reveal that the bulk of these changes arose from changes in the apportionment factors (e.g., Georgia's share of total payroll) rather than from changes in the formula weights (Table 6). These changes in apportionment factors may be due in large part to the dynamic effects of Georgia's move to a double-weighted sales apportionment formula in 1995. Specific allocation of non-business income ($\Delta\alpha$ in Table 4) seems to have had little effect on corporate income tax collections. Although additions and subtractions to federal taxable income were very volatile relative to federal taxable income (ΔGAadd and ΔGAsub in Table 6), the magnitudes of the changes mattered little for tax collections overall.

Switch to S-Corps

Using the panel of Georgia C-corp returns along with a panel of S-corp tax returns over the same period, we identified the C-Corps that converted to S-Corps in each year. The SCIT paid by these firms in the year prior to their conversion ranged from \$1.7 million to \$6.6

million. To determine a cumulative revenue effect we adjusted the taxes paid by the annual growth in taxes per firm for all corporations with a non-zero tax, essentially "inflating" these taxes to the 2002. For corporations that switched from C-Corps to S-Corps over the period 1991 to 2002, the estimated SCIT revenue that was lost as a result of switching was 9.5 percent of actual 2002 SCIT revenue. Thus, even in the 1990s, long after S-Corps were allowed, Georgia experienced a small but significant decrease in SCIT revenue as a result of the conversions to S-Corps.

EMPIRICAL EVIDENCE: AN ANALYSIS OF PANEL DATA

In this section we employ panel data to explore the importance of tax policy, tax planning, and economic factors on the trend in state corporate tax receipts. We use a panel data set of states that covers the period 1980-1999 to estimate the impact of structural and economic factors on state corporate tax revenues to determine how much of the change in SCIT can be explained by these factors.

It is very difficult to identify a variable to capture the effects of tax planning (setting up S-corporations, LLCs, tax shelters, off-shore banking, transfer pricing, and the like) on SCIT. Fox and Luna (2003) note the difficulties of gathering data on one of these strategies: LLCs. They ultimately used data from Lexis/Nexis, augmented with their own survey, and they were able to account for about 83 percent of potential observations for the 50 states from 1988 to 2000. However, they note that there is a substantial degree of measurement error in their LLC variable.

To uncover the impact of tax planning on the trend in state corporate income tax collections, we take an empirical approach that controls for most of the structural and economic changes that are thought to influence corporate income taxes. We suggest that

the residual includes the effects of “other” factors including tax planning, which we can’t easily incorporate directly into the regression.

We estimate the following two equations incorporating time (γ_t), and state (α_i) fixed effects:¹⁵

$$(4) \quad \text{SCITrev}_{it} = \alpha_i + \gamma_t + X_{it}'\beta + Y_{it}'\zeta + Z_{it}'\eta + \theta * \text{Demo}_{it} + \varepsilon_{it}$$

$$(5) \quad \text{SCITrev/GSP}_{it} = \alpha_i + \gamma_t + X_{it}'\beta + Y_{it}'\zeta + Z_{it}'\eta + \theta * \text{Demo}_{it} + \varepsilon_{it}$$

The dependent variable in the first equation is total SCIT revenue and uses GSP as a control variable, while the dependent variable in the second equation is the ratio of SCIT to GSP. The issue in selecting between the two equations is how we should measure the effect of a policy variable, *i.e.*, by considering its effect on total SCIT revenue or on the share of the state’s economy that goes to SCIT revenue. We expect these two measures of state corporate income taxes would be affected by similar sets of variables, but since both have been analyzed in the literature, we use both for ease of comparison with previous literature.

The X -vector includes variables that capture components of the state tax systems, including the maximum SCIT rate, various tax exemptions, and depreciation allowances. In general, the adoption of or increase in most of these specific factors is expected to reduce corporate tax liability. If these factors and incentives have that impact, they could

¹⁵ We did not include Alaska in the empirical analysis because of the volatility and magnitude of corporate tax data associated with oil-related industries. Also excluded are states without a corporate income tax: South Dakota, Nevada, Wyoming, Washington, and Texas.

reduce state corporate tax revenue in the short run, but increase it in the long run through increased investment and corporate activity. Because of this possible long-term effect, it is difficult, *a priori*, to hypothesize a specific relationship between these policy variables and state corporate tax revenues.

The **Y**-vector includes variables that attempt to capture the impact of federal policies on state corporate tax revenues. We explored the use of several variables, such as federal individual income tax revenues (as a proxy for changes in forms of incorporation), which proved insignificant and did not increase the ability of our regressions to explain state corporate income tax revenue growth or decline. In some cases, these variables were highly collinear with other variables, so we eventually dropped these control variables. We were left with one variable, federal income tax revenue (adjusted for tax rate changes) as a share of total corporate profits, and employ it as a proxy for major base changes.¹⁶

The **Z**-vector includes economic-base variables that we expect should explain part of the growth or decline in the corporate income tax. The unemployment rate is used as a general measure of strength in the economy, and we expect it to be negatively related to the state corporate income tax. As suggested by Figures 3(a) and 3(b), the ability to tax some industries may be stronger than the ability to tax other sectors. To test this hypothesis, we include a variable equal to the ratio of manufacturing output to total GSP. All else being equal, we expect that states with a relatively large manufacturing sector will experience smaller decline in SCIT revenue.

¹⁶ These data are reported by state by the Internal Revenue Service, Statistics of Income.

Finally, we include a dummy variable to control for the possible effects of politics on tax collections. The dummy variable, Demo, equals 1 if the state legislature is controlled by Democrats and equals to 0 otherwise. Our expectation is that a Democratic legislature will be less likely to adopt tax measures that reduce SCIT revenue.

Our results are found in Table 7 for both the level of state corporate tax revenue and for tax revenue as a share of GSP (the state and time fixed effect results are not reported).¹⁷ The regression results suggest strong explanatory power. In both regressions, higher state tax rates are positively and significantly related to corporate tax revenues. The existence of some incentives (tax exemption on land and capital improvements, research and development credit, and inventory tax exemption on goods in transit) is associated with increased state corporate tax revenues, while others (accelerated depreciation, corporate income tax exemption, tax incentive for industrial development, tax exemption on manufacturers' inventory, and tax incentive for industrial development) are associated with reduced revenue. Perhaps, as suggested above, some of these policies affect long-term economic development and thus increase the tax base.

The economic variables performed in line with expectations in both of the regressions. Higher GSP yields higher revenue, higher unemployment is correlated with lower revenue, and a larger manufacturing base is correlated with higher revenue. This confirms the findings from the analysis of the Georgia data but runs somewhat counter to the survey results. The coefficient on the ratio of federal corporate tax revenue to corporate profits is positive in both equations, as expected, but significant only in the first

¹⁷ We thought that there might be a pattern to the time effects reflecting the increased use of S-corps, LLCs, and the like, but there was no such pattern in either regression.

equation. The coefficient on the legislative control dummy variable is insignificant in both equations.

What do the results suggest? First, that the types of state corporate income tax incentives and specific structures seem to have had an impact on the growth of state corporate income taxes over the last 20 years. However, the impact of any specific incentive is very difficult to predict. The size (as measured by GSP) and condition (as measured by the unemployment rate) of the state's economy have the expected effect on the state corporate tax revenues.

Overall, our regressions suggest that a significant portion of the change in state corporate income tax can be explained by the factors we list. In the first equation the R^2 is very large, a fact that results from the high correlation between SCIT revenues and GSP. For the second the R^2 is 0.74. The unexplained variation may represent in part the effect of tax planning that we could not directly control for, including tax shelters, changes in forms of incorporation, and transfer pricing. We also ran the regressions without the state and time effects and find that, in the case of total state corporate tax collections, these fixed effects add only marginal explanatory power to the analysis. In the case of the state tax collections as a share of GSP, the time and state effects are very important, as the R^2 of the regression without these effects is only about 0.23.

To shed more light on the impact of changes in state tax policy variables (the \mathbf{X} -vector of variables), we compared the difference in the predicted levels of state corporate tax revenue in 1985 and 1999 (based on the results of the regression analysis for SCIT revenue as presented in Table 7) to the difference in the predicted revenue in 1985 and a hypothetical prediction for 1999. For the hypothetical prediction we used the regression

coefficients applied to the 1985 values of the policy variables and the 1999 values for GSP, the effective federal corporate income tax rate, legislative control dummy, unemployment rate, and the ratio of manufacturing value added to total GSP. The general form of this analysis is:

$$(StTxCollhat_{hypo} - StTxCollhat_{85}) / (StTxCollhat_{99} - StTxCollhat_{85}),$$

where “hat” refers to the predicted value and $StTxCollhat_{hypo}$ is the predicted value of SCIT revenue for 1999 assuming that the state corporate tax policy variables remain at 1985 levels. In the latter case, we are effectively holding state corporate tax policy constant at the level of the 1985 law, so by comparing the two sets of changes, we can estimate how much of the growth in state corporate tax revenue is due to changes in the policy variables. When we compare the growth or decline in state-predicted state corporate tax revenues in these two cases, we find that, on average, the changes in the policy variables account for about 24 percent of the growth in the predicted values of state corporate tax revenue. This is a substantial amount that helps to explain the trend in the state corporate income tax, but also suggests that another 75 percent of the change in level of state corporate tax revenue is the result of other factors. These other factors may include tax planning or other uncontrolled for economic effects.

SUMMARY AND CONCLUSIONS

For most states over the period 1980 to 2002, SCIT revenue declined relative to GSP. This article attempts, using a variety of approaches, to identify the factors that have driven the changes in state corporate income tax revenue. The results of our analyses are suggestive, but not definitive, as to the factors that are associated with the relative decline

in SCIT revenue. We are not able to identify one factor that explains the trend, but we are able to provide evidence about the relative importance of several factors.

Given that most states couple their corporate income tax base to the federal base, changes in tax structure at the federal level should translate into changes in corporate tax revenue at the local level. But based on the trend in the effective federal tax rate, it does not appear that changes in the federal tax code explain much of the change in state CIT revenue over the period of 1980 to 2002. This result is supported through our survey, in which state tax officials put only modest weight on changes in the federal tax code as a cause of the trend in state corporate income tax revenue.¹⁸

We find evidence that suggests corporate tax planning is an important factor in explaining the decline in SCIT relative to GSP. While our regression explains a substantial percentage of the changes in SCIT over the twenty year period, a significant amount of variation is not accounted for by our economic and policy variables. In this regard, we suggest that much of the unexplained variance may be a result of an increase in tax planning. This is reinforced by the survey results; on balance the most striking and

¹⁸ Of course, there is a close tie between federal taxable income and state taxable income, as revealed by the analysis of Georgia corporate income tax returns. We are not arguing that changes in federal taxable *income* did not influence the pattern we see in state corporate income tax revenues. Rather, we argue that the changes in federal taxable income over the period we consider are due to macroeconomic forces and not structural changes in the tax base. Thus, changes in the *structure* of the federal tax did not appear to affect the base in such a way as to explain much of the change in state corporate income tax collections.

consistent result of the survey was the opinion of state tax administrators that tax planning was the most important reason that revenue from the SCIT was declining. We find little evidence in the Georgia data that firms are shifting non-business income to low tax rate states, but we do find a significant number of firms changing their forms of incorporation in Georgia, as evidenced by our link of C-corp and S-corp returns in the state.

Our analysis of Georgia corporate income tax returns also suggests that changes in apportionment factors, rather than changes in apportionment factor weights, influenced SCIT revenue in the state. While macroeconomic changes likely are responsible for much of the change in the relative magnitudes of factors in Georgia, which in turn reduced corporate tax revenue, part of the story is tax planning, as manifested in apportionment factor management.

We find for Georgia that the growth in economic development credits had a significant effect on corporate tax revenue, as the use of credits increased over the period and measured up to 19.6 percent of pre-credit tax liability. The regression analysis also revealed a dampening of revenues by some tax incentives, although others lead to an increase in revenue long-term. Most respondents to our survey revealed that economic development credits have lead to “decreases” (44 percent) or “substantial decreases” (23 percent) in revenue during periods of declining revenue relative to GSP.

We also find evidence that the changing composition of the industrial structure has resulted in decreased corporate tax revenue. Using tax return for Utah, we find that industries that are growing have smaller profit per employee.

While state corporate income tax revenues move closely with the business cycle, as evidenced by the regression of revenues on GSP and unemployment rates and by the federal taxable income proportion of changes in Georgia apportionable income (Table 6), the consistency of the decline in state corporate income tax collections (relative to GSP) suggests that the business cycle does not explain much of the trend, which would require a downward trend in economy wide growth over the period. Our survey findings support this conclusion. Sharply declining profits likely do explain a substantial amount of the decline in revenues in the first part of this decade, however.

Our analysis suggests that much of the decline in state corporate income tax revenues is explained by economic factors (such as changes in industrial structure) and tax planning (such as changes in corporate form and apportionment factor management). Federal policy that would alter taxable income does not seem to be much of a causal factor. Tax officials do not believe that state policy changes have had a significant effect on SCIT revenue either, and our other analyses support their views, with the exception of tax rates and tax incentives. While we believe that our analysis has contributed to the understanding of recent trends in SCIT revenue, there is still much work to be done to fully understand the factors that drive SCIT revenue.

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Table 1 Survey Results

Factor	Direction Of change in CIT*	Mean Score	Number of Responses (Listed by Increase/Decrease)*						# of Responses
			Substantial Increase in Revenue (1)	Increase in Revenue (2)	No Observable Change in Revenue (3)	Decrease in Revenue (4)	Substantial Decrease in Revenue (5)	Not Applicable	
Tax Planning	INC	4.24	0	0	9	23	22	3	57
	DEC	3.89	0	0	13	26	8	2	49
Corporate Compliance	INC	3.95	0	1	18	20	17	1	57
	DEC	3.31	1	1	27	10	3	7	49
Changes In State Economy	INC	3.24	0	6	26	18	0	7	57
	DEC	2.93	1	10	23	9	0	6	49
National Business Cycles	INC	3.20	0	11	19	17	2	8	57
	DEC	2.60	3	20	15	6	1	4	49
Passive Investment	INC	4.04	0	0	14	22	16	5	57
	DEC	3.52	0	1	23	16	4	5	49
C to S Corp	INC	4.04	0	0	9	33	11	4	57
	DEC	3.72	0	0	18	23	5	3	49
Econ Develop Credits	INC	3.98	0	0	14	25	13	5	57
	DEC	3.84	0	1	10	29	5	4	49
LLC	INC	3.84	0	1	10	28	5	13	57
	DEC	3.65	0	0	16	22	2	9	49
Carry Forward	INC	3.76	0	0	18	20	7	12	57
	DEC	3.43	0	1	21	13	2	10	47
Combined Reporting	INC	3.35	0	5	8	7	3	34	57
	DEC	3.07	1	6	12	10	0	20	49
Apportionment	INC	3.48	0	3	9	11	2	32	57
	DEC	3.22	0	4	13	10	0	22	49
Nexus Issues	INC	3.15	0	3	34	8	1	11	57

	DEC	3.17	0	2	30	9	0	8	49
Throwback Rules	INC	3.06	0	5	24	7	0	21	57
	DEC	2.92	0	10	19	7	0	13	49
Changes in State Dep	INC	2.92	0	3	8	2	0	44	57
	DEC	3.33	0	1	8	6	0	34	49
Federal Depreciation	INC	3.49	0	0	25	18	2	12	57
	DEC	3.25	0	2	23	11	0	13	49
Fed Code Changes	INC	3.43	0	0	27	20	0	10	57
	DEC	3.34	0	0	27	14	0	8	49
Increased State Rate	INC	2.60	1	3	5	1	0	47	57
	DEC	2.15	2	7	4	0	0	36	49
Reductions in State Rate	INC	3.85	0	0	5	5	3	43	56
	DEC	3.42	0	0	7	5	0	37	49
State Enforcement	INC	3.15	0	3	30	10	3	11	57
	DEC	3.24	0	0	29	9	0	11	49
Reduced Audits	INC	3.60	0	0	12	4	4	37	57
	DEC	3.36	0	0	15	6	1	27	49

* Rows labeled "INC" ("DEC") are survey responses for periods in which the state's CIT revenue was increasing (decreasing) relative to GSP.

Table 2. Georgia Tax Liability of Multistate Corporations
1992–2003 (\$)

Year	Tax Liability	Δ from Previous Year	% Δ
1992	295,098,623		
1993	416,951,344	121,852,721	41.3
1994	520,999,395	104,048,052	25.0
1995	532,161,356	11,161,960	2.1
1996	496,742,646	-35,418,710	-6.7
1997	492,541,940	-4,200,706	-0.8
1998	599,434,049	106,892,109	21.7
1999	600,983,333	1,549,285	0.3
2000	555,935,542	-45,047,791	-7.5
2001	455,891,132	-100,044,410	-18.0
2002	238,152,464	-217,738,668	-47.8

Source: Computed from Georgia Corporate Income Tax Returns.

**Table 3. Decomposition of Aggregate Georgia Tax Liability
Corporations Reporting Non-negative Taxable Income
1993–2002 (\$)**

Year	Tax	$\tau\pi^T$	δ	
			Amount	% of $\tau\pi^T$
1992	295,098,623	366,947,380	-71,848,757	-19.6
1993	416,951,344	427,255,185	-10,303,841	-2.4
1994	520,999,395	569,597,717	-48,598,321	-8.5
1995	532,161,356	578,240,067	-46,078,711	-8.0
1996	496,742,646	531,315,243	-34,572,598	-6.5
1997	492,541,940	547,914,768	-55,372,828	-10.1
1998	599,434,049	664,389,363	-64,955,314	-9.8
1999	600,983,333	683,595,419	-82,612,086	-12.1
2000	555,935,542	654,735,638	-98,800,096	-15.1
2001	455,891,132	550,608,771	-94,717,638	-17.2
2002	238,152,464	263,343,260	-25,190,796	-9.6

Source: Computed from Georgia Corporate Income Tax Returns.

**Table 4. Decomposition of Changes in Georgia Taxable Income
Corporations Reporting Non-negative Taxable Income
1993–2002 (\$ millions)**

Year	$\Delta\pi^T$	due to $\Delta\pi^A$	due to $\Delta\phi^*$	due to $\Delta\alpha$	due to $\Delta\eta$
1993	1,005	1,954	-761	1	-188
1994	2,372	3,465	-983	0	-109
1995	144	-3,232	3,477	24	-124
1996	-782	-460	-606	4,603	-4,319
1997	277	482	-99	-4,566	4,461
1998	1,941	965	742	-18	252
1999	320	769	-310	40	-179
2000	-481	602	-1,120	-61	98
2001	-1,735	-1,727	-44	17	19
2002	-4,788	-2,522	-2,153	53	-166

Source: Computed from Georgia Corporate Income Tax Returns.

**Table 5. Change in Apportionment Factors (% from previous year)
Corporations Reporting Non-negative Taxable Income
1993–2002**

Year	R_{GA}	R_{Total}	P_{GA}	P_{Total}	S_{GA}	S_{Total}	ϕ^*
1993	4.18	14.70	1.62	5.55	2.99	13.82	3.90
1994	31.92	23.07	28.91	26.39	56.24	33.55	3.55
1995	-6.53	-46.48	3.90	-42.29	6.96	-28.23	5.38
1996	-13.89	-3.80	-3.76	-0.76	-30.12	-11.42	5.05
1997	1.63	-2.80	0.51	1.45	-2.33	-1.96	4.99
1998	24.16	29.19	15.29	13.98	-43.32	19.72	5.35
1999	8.70	-1.43	-4.38	-0.92	12.89	7.06	5.21
2000	-6.61	10.51	5.26	10.10	55.62	33.29	4.73
2001	-13.92	-16.50	-16.45	-13.24	-47.71	-32.03	4.71
2002	-46.40	-28.11	-33.82	-23.44	-30.22	-28.94	3.24

Source: Computed from Georgia Corporate Income Tax Returns.

Table 6. Decomposition of Changes in Income Subject to Apportionment
1993–2002 (\$ millions)

Year	$\Delta\pi^A$	due to ΔFTI	due to ΔGA_{add}	due to ΔGA_{sub}	due to ΔA
1993	45,502	60,113	-1,954	-12,994	337
1994	88,919	78,445	3,531	12,468	-5,526
1995	-91,156	-101,934	-1,197	6,749	5,226
1996	-8,548	-7,966	-1,636	2,064	-1,011
1997	9,549	12,230	-346	-2,856	521
1998	19,332	22,111	-19,333	16,444	110
1999	14,385	15,239	-4,922	3,208	860
2000	11,559	10,777	2,541	-1,489	-271
2001	-36,485	-35,156	2,420	-3,289	-461
2002	-53,519	-66,580	38,234	-26,967	1,794

Source: Computed from Georgia Corporate Income Tax Returns.

Table 7. Regression Results (State and Time Fixed Effects)

Variable	State Tax Collections			State Tax Collections/GSP		
	Coefficient	Standard Error	t-value	Coefficient	Standard Error	t-value
	-344.92	101.25	3.41	-2.12	0.72	2.94
Maximum corporate rate	5.29	2.08	2.54	0.039	0.016	2.43
Payroll tax factor weight	-86.94	80.09	1.09	0.441	0.61	0.72
Gross state product	3.86E-06	8.6E-08	44.85			
Corporate income tax exemption	-30.06	15.33	1.96	-0.042	0.12	0.36
Tax exemption or moratorium on land and capital improvement	87.14	21.65	4.03	0.471	0.17	2.84
Tax exemption or moratorium on equipment or machinery	-3.14	18.22	0.17	0.051	0.14	0.36
Inventory tax exemption on goods in transit	24.07	30.54	0.79	0.864	0.23	3.69
Tax exemption on manufacturers' inventory	-40.17	25.82	1.62	-0.401	0.19	2.11
Tax incentive for industrial investment	-13.19	14.22	0.93	-0.313	0.11	2.87
Accelerated depreciation	-43.97	15.47	2.94	-0.082	0.12	0.70
Research and development indicator	4.39	12.55	0.35	0.394	0.10	4.11
Unemployment rate	-20.32	3.45	5.90	-0.131	0.02	4.97
Ratio of Manufacturing value added to total GSP	-38.16	173.11	0.22	7.950	1.31	6.07
Federal corporate tax revenue/corporate profits	1280.52	287.19	4.46	9.305	2.08	4.47
Democratic legislature (=1 for democrats, =0 otherwise)	-14.35	9.18	1.56	0.084	0.07	1.20
R-sq	0.98			0.74		

Figure 1: SCIT as a share of Corporate Profits

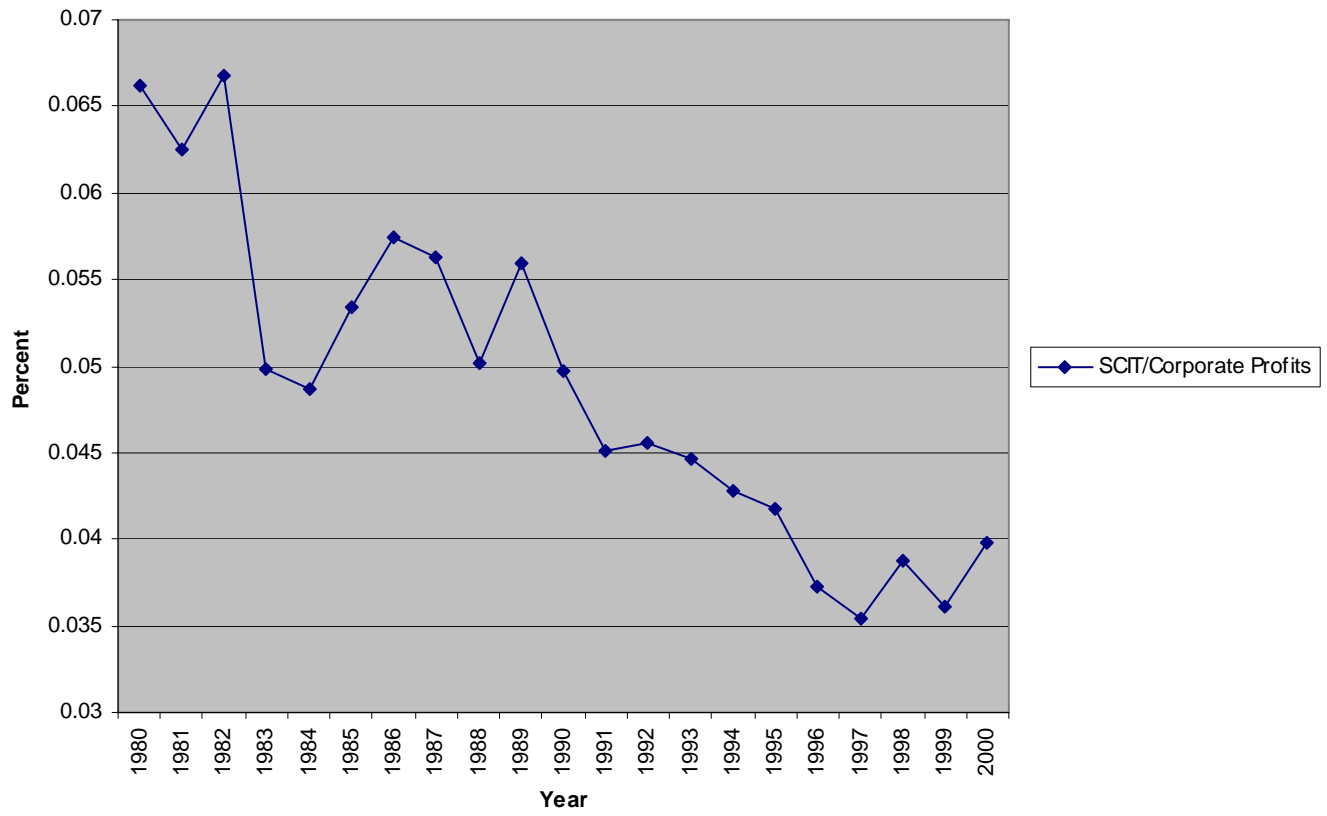


Figure 2: State Corporate Income Tax Revenues and GSP

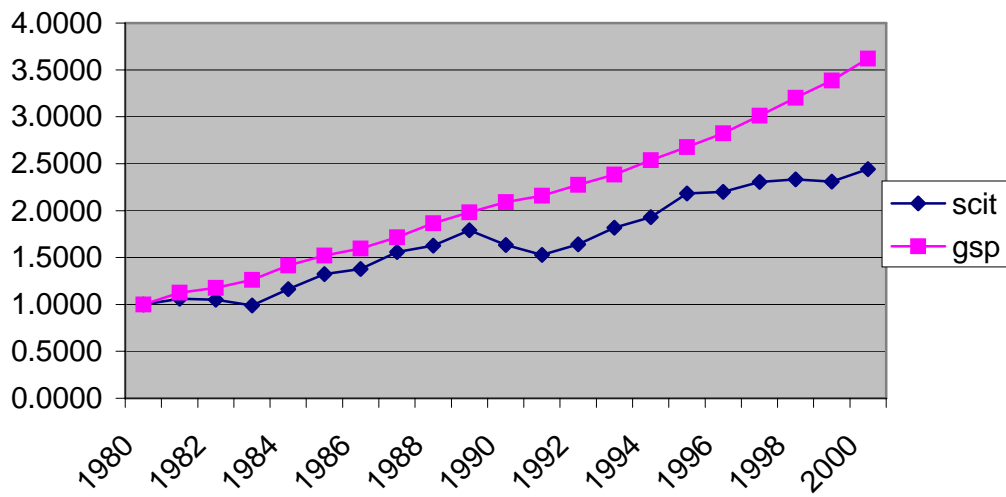


Figure 3(a)
Utah Corporate Income Tax as a % of Apportion Factors

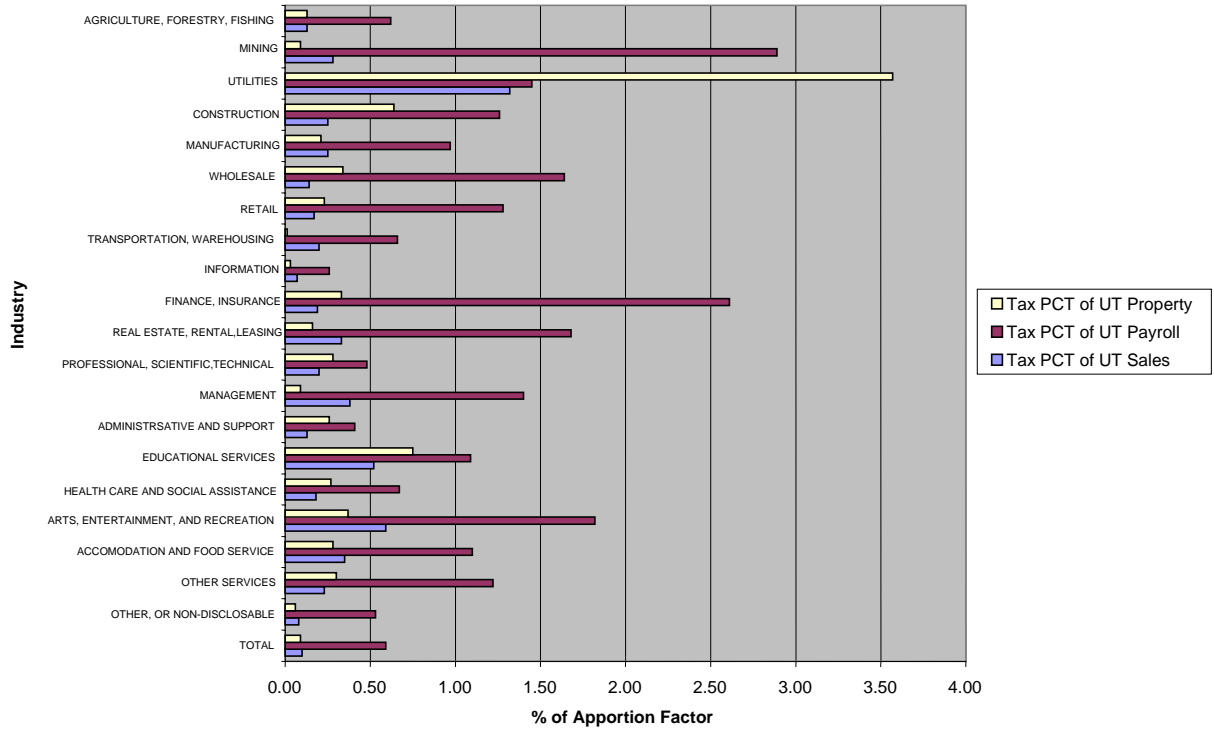


Figure 3 (b)
Utah State Corporate Income Tax as a % of Federal Corporate Tax by NICS

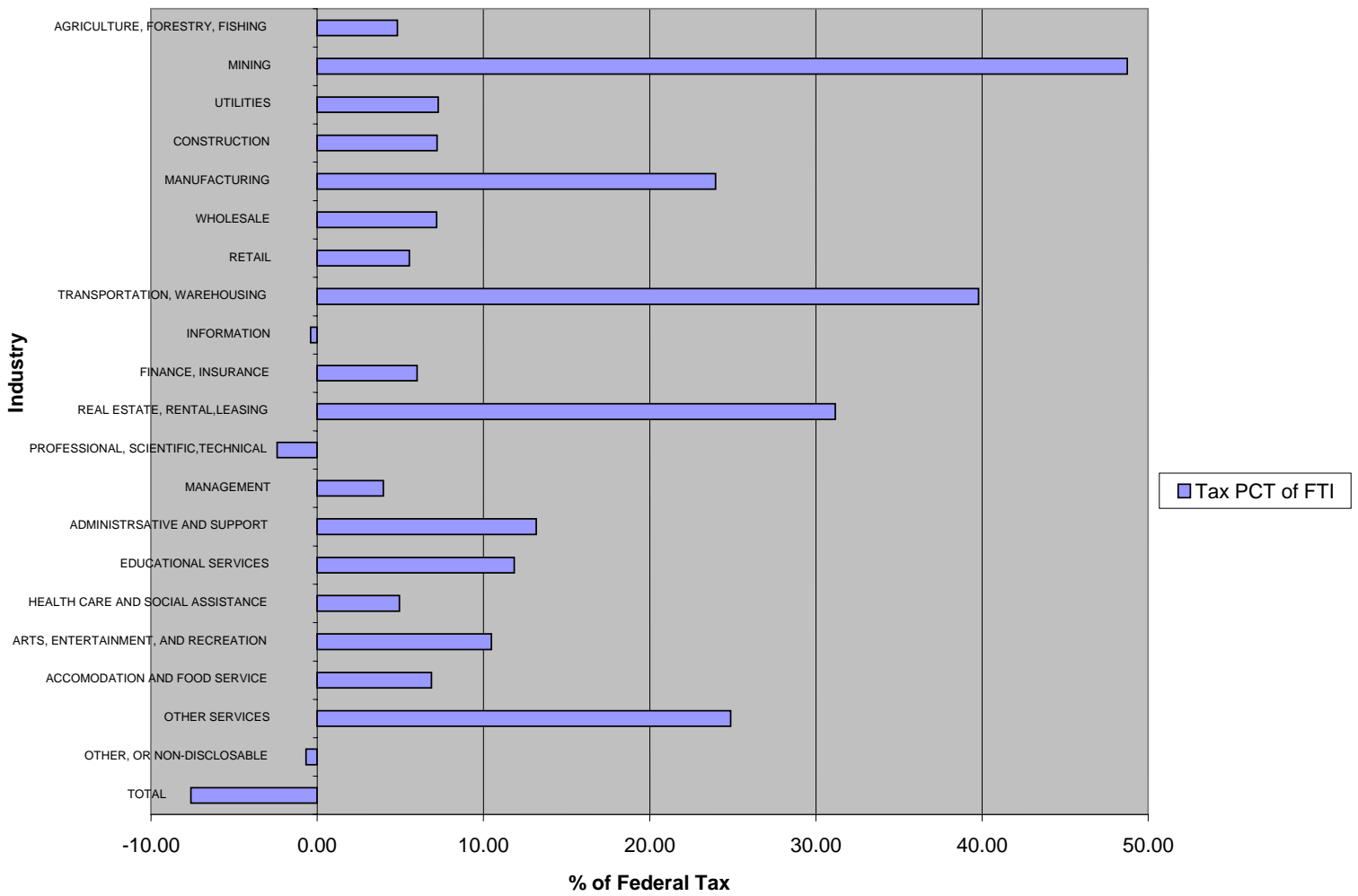


Figure 3: State Corporate Tax Revenues as a Share of Total State Taxes and as a Share of Federal Corporate Tax Revenues

