The Potential Effect of Eliminating The State Corporate Income Tax On Economic Activity

by Laura A. Wheeler

I. Introduction

A proposal to eliminate the state’s corporate income tax has been advanced. This report addresses the potential effect of the proposal on economic activity within the state.

At first glance, the elimination of the corporate tax on business seems an obvious method of attracting new firms to the state and promoting the expansion of existing firms. In fact, states and localities have been offering tax incentives, usually in the form of reduced property taxes or corporate income tax credits, to firms for many years. The assumption is that firms move to states that impose the lowest tax on corporate profits. By minimizing taxes, corporations can maximize profits. That creates new jobs for the state that result in additional tax revenue. Unfortunately, there is scant evidence to suggest that this is an effective economic development policy in the long run.

Economists have struggled with this issue for over 30 years. More than 100 studies have been conducted, each trying to determine what effect, if any, fiscal variables have on firm location and thus on state employment and investment levels. The results have been less than definitive. Some studies have found relatively small effects in a few industries and for a few types of fiscal variables. Others have found no effects at all under any conditions. Various measures have been used over the years, almost all yielding the same level of weak and sporadic effects. So why is the issue not put to rest? Probably because it would be the most obvious result to have fiscal variables influence firm location. Taxes are a cost of production and profit-maximizing firms are expected to choose the lowest-cost location as part of their profit-maximizing decision.

There are several reasons why that may not be the case. The first is that taxes are not a relatively large part of a corporation’s cost structure. In general, state and local taxes are about 4 percent of cost of goods sold.¹ Labor, materials, and energy costs are much more significant factors. Second, firms are able to deduct state and local taxes paid at the federal level. While a deduction is not as lucrative as a credit and can be used only by those businesses with positive tax liabilities, it does serve to diminish the burden of state and local taxes by as much as 35

¹Data from the Statistics of Income Bulletin corporate file indicates that for the years 1999-2001, state taxes, measured as taxes deducted from federal income tax base, were about 3.5 percent of the cost of goods sold for each year.
percent in some cases. Third, not all businesses are incorporated and subject to the corporate income tax. Those businesses may be influenced by taxes such as the property and sales tax but not the corporate income tax. Fourth, businesses value more than a low-tax jurisdiction. Because taxes are used to fund public services, business may be willing to locate in high-tax areas if those areas are associated with a high level of desirable public service provision. Finally, if businesses are able to avoid the burden of taxes by various tax strategies or by passing them on to consumers or back to labor, a firm will be less concerned with the taxes in a region.

In addition to considering the effect of corporate income tax on economic activity, there are other issues that should be discussed in considering the possible elimination of the corporate income tax. First, is eliminating the corporate income tax the most efficient method of increasing employment and investment in the state? Second, does the increase in employment justify the loss in tax revenues and result in a net gain to the state? Third, would there be an overall welfare gain from the elimination of the corporate tax if other taxes are increased to offset the loss in revenue? Finally, the elimination of the state corporate tax must be evaluated in light of the approved move to a factor apportionment formula based solely on sales. A newly passed law changes the current apportionment formula from a three-factor formula double-weighted for sales to a single-factor model based completely on sales.

In this report we summarize some of the better studies — those studies that used a better research method. We then use the results of those studies to estimate the effect of eliminating the state’s corporate income tax on economic activity within the state. It’s not feasible for us to directly estimate the effect of eliminating the corporate income tax, because no state has yet done that, so we have nothing to observe. And, because we didn’t believe we could improve on existing studies, we did not try to estimate the effect of different state corporate income tax rates on economic activity.

II. Background

Under current law, Georgia imposes a 6 percent tax on corporate income. In fiscal 1999 state corporate tax revenue was $800 million (Morton and Hawkins 2004). Over the years, though, the corporate tax has become less important in providing revenue to the state. By fiscal year 2003 state revenue from corporate taxes was $470 million, accounting for 4 percent of all state revenue (Morton and Hawkins 2004). Thus, a simple estimate of the outright repeal of the corporate income tax would result in a revenue loss to the state of at least $564 million in fiscal 2006, which represents the forecasted revenue from the tax. But the potential revenue loss could be somewhat greater than that. Repealing the tax on corporate income creates some incentive to move income currently taxed under the state personal income tax code, such as sole proprietorships or LLCs, and reorganize it as corporate income to reduce taxes. That tax avoidance behavior could increase the revenue loss to the state.

Only Nevada and Wyoming currently don’t levy any taxes on business income. Neither has ever had a corporate income tax. Wyoming relies heavily on severance taxes, and Nevada has a relatively high reliance on sales taxes. Several other states, such as Texas, South Dakota, Michigan, and Washington, do not levy a traditional corporate income tax but do levy business income. For example, Washington levies a gross receipts tax, Michigan levies a business value added tax, and Texas uses a net worth franchise tax. Compared with neighboring states, Georgia’s corporate tax rate of 6 percent is equal to the average state corporate rate. Of Georgia’s contiguous neighbors, North Carolina has the highest rate at 6.9 percent, while South Carolina has the lowest at 5 percent.

III. Effect on Employment, Investment, and New Firm Birth: A Literature Review

There are several potential effects of the elimination of the state corporate income tax. One of the most commonly discussed is the effect on economic competitiveness. If firms respond to lower state taxes, the relocation or expansion of firms in the state would result in an increase in employment and investment at the state level. That would lead to more jobs, perhaps better wages, and a higher standard of living in the state.

The success of that argument depends on two things. The first is that state indicators such as employment and investment are responsive to changes in state corporate tax rates. The second is that the size of the tax change is large enough in absolute terms to cause a significant response. Thus, the overall effect of eliminating the tax would be the product of the degree to which employment and investment are influenced by changes in the tax rate

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3The official state forecast of corporate income tax revenue for fiscal 2006 is $564,173,900.
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Many prominent economists argue for the elimination of the state corporate tax on the grounds of improving efficiency. They contend that the existing corporate tax distorts economic decisions and reduces economic welfare.
and the size of the change in tax payments due to the elimination of the tax. It’s the combination of those two factors that determines the potential change in state employment and investment.

To determine the degree of responsiveness of employment and investment to changes in taxes, we turned to the existing literature on this subject. The literature on the effect of taxation on employment and business location is extensive and dates back over 30 years. A review of the literature compiled by Wasylenko (1997) referenced almost 100 articles. In 1997 the New England Economic Review devoted an entire issue to various literature reviews of research concerned with the effects of state and local fiscal policies on economic development. The studies measure the effect of fiscal variables on various economic variables such as employment, investment, new firm birth, and changes in state personal income. Unfortunately, producing a concise summary of those studies is difficult because each study includes its own twist on the fundamental question. In addition, while those studies test for the effect of taxes, many different measures of taxes are used and not all taxes are found to be important. On the whole, the studies tend to find small and inconsistent results. Some studies find that higher taxes have a small but statistically significant negative influence on employment or new firm creation. Others find little or no effect at all. We summarize a small set of the existing studies, selecting those studies we believe use stronger or more sophisticated method.

**The overall effect of eliminating the tax would be the product of the degree to which employment and investment are influenced by changes in the tax rate and the size of the change in tax payments due to the elimination of the tax.**

As stated above, the degree of responsiveness is one of two factors that will determine the overall outcome of a corporate tax elimination. The other factor is the size of the elimination. The proposed change in the tax rate in this case is a 100 percent elimination of the 6 percent statutory rate. But that elimination must be considered in light of recent legislative changes to the state apportionment formula used by firms with multistate operations. Current legislation recently passed into law will phase out by 2008 the three-factor formula and replace it with a single-factor formula based solely on sales. As discussed below, that change will reduce the tax base of the corporate income tax for firms with multistate operations. Therefore, any potential effect on employment and investment resulting from the elimination of the tax must be considered against this reduced tax base.

**A. Potential Effects on Employment**

Early studies of fiscal variables on economic activity were concerned with determining the effect of lower taxes on state employment levels. Typically, those studies considered differences in state employment levels to be in part a function of the level of state taxes, such as corporate income, property, or personal income taxes. Several of those studies were done to determine the magnitude of that effect. Unfortunately, the results of those studies vary widely. Some find that higher taxes have no effect on employment; other studies find statistically significant but small effects. When effects are found to exist, the results vary by industry, indicating that taxes matter for some industries but perhaps not others. An important delineation needs to be made, though. In only a few studies was the corporate tax rate found to be a statistically significant determinant of state employment. In some studies, taxes — such as property or income but not corporate income — were determined to influence employment.

A study by Wasylenko and McGuire (1985) considers the effect of taxes and public expenditures on the differences in employment growth between the states. In that study, the authors attempted to determine the factors that explain the change in employment among the states between 1973 and 1980. In addition to the expected results for labor and energy costs, their work found that increases in state funds spent on education have a positive effect on the change in employment over that time period. What is most notable is the absence of an effect on the change in state employment from changes in taxes. In a few sectors, the effective personal income tax rate was found to be a statistically significant factor, but the corporate income tax variable was never found to be important. In terms of taxes, the results indicated a generally small negative response to increases in personal income taxes but no effect on employment from changes in the state corporate tax.

Another study, by Plaut and Pluta (1983), indicates that fiscal variables do influence the level of state manufacturing employment. Specifically, the study found that changes in state levels of employment are strongly influenced by two factors: the business climate in the state and the state tax effort. That finding supported the hypothesis that taxes do affect employment and business location. Both factors — the state business climate and the state tax effort — are composite tax measures, reflecting the value of all taxes imposed in a state and the ease with which revenue can be raised, respectively. Therefore, it can’t be said that the effect is a reflection solely of the corporate tax. In the empirical model, no relationship between corporate taxes and...
employment was found. In addition, their results indicate that higher property taxes significantly increase employment, with the size of the estimated effect being almost twice the size of the effect of the business climate. It’s the presence of unexpected results like these that tend to reduce confidence in the results of all of these studies.

Using a different approach to modeling the location decision, Modifi and Stone (1990) recognized that levels of public expenditures might affect the location decision as well as taxes. Their model uses data from 1962 to 1982 to measure the effect on changes in manufacturing employment and investment from changes in taxes used to fund transfer payment expenditures. Unlike previous research, their empirical model included all public expenditure categories with the exception of transfer payments to individuals. Their results indicate that a 1 percentage point decrease in the ratio of corporate taxes to state personal income in conjunction with a reduction in transfer-type expenditures increases employment in the state by 6 percent. That result is at odds with other studies, which find no relationship between employment and corporate taxes. The difference may stem from the unique model specification that explicitly connects the level of public revenue to the level and type of public expenditures. Specifically, the model emphasizes the importance of nontransfer-type public expenditures, such as education and transportation, in the location decision. In fact, results from this study found that increases in public spending on education and highways have almost as much of an effect on employment as do taxes. As will be shown throughout this literature review, other papers employing that same model consistently found an effect between taxes and employment, investment, or state personal income, indicating businesses’ willingness to pay for public services.

It’s conceivable that taxes play a more important role in the location decision once a given region has been chosen. That is, because wages and other costs of production are likely to be equal across the region, taxes that can vary between jurisdictions can sway a location decision.

A slightly different approach is to consider the location decisions of firms relocating within a given region. It’s conceivable that taxes play a more important role in the location decision once a given region has been chosen. That is, because wages and other costs of production are likely to be equal across the region, taxes that can vary between jurisdictions can sway a location decision. In this way, it is expected that taxes may play a more significant role in the location decision within a given region.

Several studies use that approach. Wasylenko (1980) found that property taxes had a significant effect on the location decisions of wholesale and manufacturing firms relocating within the Milwaukee suburb between 1964 and 1974. Mark, McGuire, and Papke (2000) found that while corporate income taxes don’t explain the difference in private employment growth between areas within the Washington, D.C., metropolitan area, state sales tax and personal property taxes do. Their findings lead to the conclusion that increases in state sales tax negatively affect annual employment growth in a state. They also conclude that increases in the property tax rate negatively affect employment growth. Consistent with most other studies considered here, those results indicate that changes in the corporate tax rate don’t influence the level of state employment growth.

In another study (Carroll and Wasylenko 1994) focusing on the effect of employment, state levels of employment are considered to be a function of input prices such as energy and wages, public expenditures, and various state and local taxes. A particular strength of that report is that the authors attempt to account for state effects that may influence the location decisions. Those fixed effects may include climate, land area, and agglomeration economies. In addition, their empirical model was designed to test the hypothesis that there has been a fundamental change in the influence of taxes on employment over time. Indeed, their findings support that conclusion. Specifically, the authors found that before the late 1970s, taxes, including the corporate tax, had a significant influence on state manufacturing employment levels, but after that time period, they did not. That conclusion is supported by the research of Newman (1983), who also found that increases in the state corporate tax rate over time lead to small but statistically significant reductions in state employment. His results are based on manufacturing employment data over the 1957 to 1973 time period. That period is consistent with the early regime for which Carroll and Wasylenko found taxes to be influential in determining state employment levels.

B. The Effect on Investment

One would expect that, in addition to affecting employment, decreases in the corporate tax rate would reduce the cost of capital and increase the rate of return on corporate investments. The reduction would be expected to result in an increase in investment within the state. Fewer studies have focused on the effect of a reduction in taxes on the level of domestic investment in the state because data on investment at the state level is limited.
One study, by Mofidi and Stone (1990), explored the issue and found that increases in taxes and user fees significantly decrease the level of manufacturing investment in the state. When corporate income taxes are specifically tested for, they have a statistically significant effect on the amount of investment in the state. The results are interpreted as follows: A percentage point decrease in corporate income taxes as a percent of personal income in conjunction with an equal reduction in transfer-type public expenditures is associated with a 9 percent increase in manufacturing investment at the state level. That empirical model differs from others in that it specifically includes the use of public funds. While the result supports the hypothesis that taxes affect firm-level investment, it does so with a caveat. Results from this study imply that any reduction in corporate taxes must be offset with an equal reduction in transfer-type public expenditures and not a reduction in other types of public expenditures. The result also implies a willingness by businesses to pay for nontransfer-type public services.

In addition to testing for a relationship with employment, Plaut and Pluta (1983) also tested for a relationship between corporate income taxes and investment. Their research indicates that as with employment, investment is influenced by changes in the business climate. As discussed earlier, this is a composite tax measure incorporating the effects of several state and local taxes. Therefore, it is not possible to attribute this result solely to the corporate income tax. The empirical model includes a direct measure of the statutory corporate income tax, which was not found to be a statistically significant determinant of the change in the level of investment.

Influence on Foreign Direct Investment

In addition to possibly attracting domestic investment, a reduction in the state corporate tax rate has the potential to attract foreign direct investment (FDI) to the state. It’s believed that FDI behaves differently than domestic investment. Foreign direct investors are subject to a more complex tax system than are domestic investors in that some may be allowed an exemption for profits earned overseas while others may be granted a credit against their home income tax for taxes paid overseas. Therefore, this additional complexity must be incorporated into the investment decision.

Currently, employment from FDI operations in Georgia accounts for about 5.8 percent of total employment in Georgia, or about 228,000 jobs, in 2000.6 There have been several studies of the effect of changes in state tax rates on FDI. Early studies found little effect and were less sophisticated in their estimation techniques than more recent studies, which found that foreign direct investment is highly influenced by changes in the state corporate tax rates. Three of those later studies are reviewed below.

Once one state starts down the road of eliminating the corporate tax, others will follow. The expected gains to Georgia would be significantly reduced if other states also eliminated or reduced their corporate tax.

Ondrich and Wasylenko (1993) conducted a comprehensive study of the site locations of foreign firms in the United States for the period 1979 to 1987, focusing on the factors influencing the decision by a foreign-owned company to locate in a particular state. Estimating a multinomial logit model, the authors found that both user charges and state corporate income tax revenues as a percent of state personal income have a significant effect on the number of foreign-owned firms locating in a state. Their results indicate an elasticity of between -0.567 and -0.758 for the corporate income tax variable. That means that a 1 percent decline in state corporate income tax revenue as a percent of state personal income would lead to a 0.57 percent to 0.76 percent increase in the probability of a state being chosen as a location.7

An additional component of the study is that it considers the effect of completely eliminating the corporate income tax at the state level. The authors simulate the effect of eliminating the corporate tax and replacing it with an appropriate increase in the individual income tax. The results indicate a 25.11 percent increase from the baseline of existing foreign-owned firms if Georgia were the only state in the nation to eliminate its corporate income tax. The authors are quick to note, though, that once one state starts down the road of eliminating the corporate tax, others will follow. The expected gains to Georgia would be significantly reduced if other


7It should be noted that the variable “employment agglomeration” is the most influential factor in the model with an elasticity of around 14, meaning that a 1 percent decline in state employment concentration as a percent of state personal income would lead to a 14 percent decrease in the probability of a state being chosen as a location.

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6At the 95 percent level of confidence, the authors can’t say that the size of this coefficient is different from the coefficient on other taxes, which was estimated to be -21 percent.
Another study (Hines 1996) confirms the effect found by Ondrich and Wasylenko. Hines’s research focused on the responsiveness of foreign capital investments to changes in the state corporate tax rates. Specifically, he tested whether foreign investors from countries that exempt foreign-earned income from taxation are more sensitive to corporate tax changes than investors from countries that offer tax credits for foreign paid taxes. Foreign direct investors from countries with a credit system of taxation are believed to be less sensitive to state tax rates because they receive a credit against their home taxes for any taxes paid abroad and therefore are less burdened by the tax. Hines found that a 1 percent decrease in the state corporate tax rate would increase foreign investment from exempt investors by as much as 10 percent more than from tax credit investors. This result indicates not only the influence of the state’s corporate rate on location decisions but also the impact of the home country’s tax treatment of foreign earnings. The finding is also relevant to the issue of the influence of fiscal variables on domestic firm location. For exempt firms, the host country tax rate is the only tax they face, so in that respect, those firms are no different than domestic investments. Thus, Hines’s finding of a significant relationship between tax rates and levels of investment not only apply to FDI, but also lend support for a relationship between tax rates and the level of domestic investment. Grubert and Mutti (2000) also found foreign investment and firm location to be sensitive to taxes and trade policies. While their study looked at the decision process of U.S. firms locating abroad, there is no reason to believe that in a global market, foreign firms would not behave in a similar manner.

C. The Effect on New Firm Creation

There have also been several studies examining the effect of state taxes on the number of firms locating in an area. Papke (1991) explored the effects of taxes on the creation of new manufacturing businesses and found that tax rates do affect the number of new businesses in some industries but not all. First, she found that not all industries respond the same to tax rates, a result also borne out in other studies. Therefore, care must be taken when generalizing those results to all employment sectors. That is important because eliminating the corporate tax would affect all corporate entities but perhaps not all to the same degree. Second, Papke’s work found that taxes have a significant impact on the creation of new firms. The tax measure used in her study is an effective business tax rate that serves to capture all levels of tax facing a corporation, as well as various treatments of depreciation and deductions. That tax measure incorporates more than the strict statutory corporate tax rate. The author correctly argued that the statutory corporate rate is a poor measure of the effective tax faced by corporations because of the complexity of the corporate tax structure. The results indicate that this variable is highly influential in the business location decision. According to Papke’s work, a 1 percent decrease in the effective corporate tax rate would result in an increase of anywhere from 1.6 percent to 15.7 percent in the number of new firms. Unfortunately, that measure doesn’t translate into a specific number of jobs created.

D. Summary of Results

The literature review above gives a sampling of the academic work in this area, and the results are summarized in Table 1. No overriding consensus exists regarding the effect of fiscal variables on economic conditions. The empirical models used to estimate potential effects are not behavioral and don’t attempt to model the actual location decision of an individual firm. Those models instead include factors that are believed to influence the location decision. That lack of true understanding of the firm location decision only adds to our lack of confidence in the findings, especially in the face of conflicting results.

Based on the studies reviewed above, the corporate income tax rate is only occasionally found to affect employment levels. Of the seven studies considered, four found significant effects. In two of those studies, though, the results provided only weak support and were based on data before 1977. Only one study employing data from the early 1980s found a strong significant relationship between corporate tax rates and employment. That study is unique in that it ties state revenue to state expenditures. In the study, a 1 percent decrease in the corporate tax rate would increase employment by about 6 percent if the decrease in taxes was associated with an offsetting decrease in transfer payments. That result indicates that patterns of expenditures are also important to firm location. The same research found that increases in

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9The author of this study is cautious about the implications of such a high elasticity and warns against applying the elasticity to a large reduction in the corporate tax rate.

9For example, her results indicate that a 1 percentage point increase in the effective tax rate would result in a 26 percent decrease in firm births in the outerwear industry.
nontransfer-type public expenditures (such as education and highways) paid for with a reduction in transfer payments (income support programs) and keeping all other taxes constant would have roughly the same effect on employment as a decrease in the corporate tax rate.

Additional studies reveal an influence from other taxes, such as property, state income, or sales. Those results indicate that property, sales, and sometimes individual income taxes are statistically significant determinants of the state employment levels. Those studies typically found those taxes to have a small, but statistically significant impact on state employment.

We see more consistent results when we consider the effect of state corporate income tax rates on investment. There have been fewer studies, though, focusing on investment because the necessary data at the state level is hard to come by. Also, only one of the studies focusing on domestic investment tests specifically for the influence of the corporate income tax rate. The other studies employ some aggregate measure of tax burden. Two studies did find that investment levels generally decline when tax rates increase. The one study that specifically tested that relationship found that a 1 percent decrease in corporate tax revenue as a percent of personal income associated with an equal offset of transfer-type public expenditures would result in a 9 percent to 23 percent increase in investment at the state level. Though the effect is statistically significant, the authors can’t, with a high degree of confidence, state that the effect of corporate taxes is any larger than that of other taxes. That is, the actual size of the effect on investment may be closer to 10 percent to 23 percent. As explained earlier, an important component of that research is the effect of public expenditures on the level of investment. For example, that study also found that increases in public education expenditures paid for with an equal reduction in transfer-type public expenditures and holding all other taxes constant would have roughly the same effect on investment as a decrease in the corporate income tax rate.

The surprising case is that of FDI. In all three studies considered, state corporate income tax rates were a statistically significant determinant of the amount of FDI in the state. One study found that a 1 percent decrease in the state corporate income tax rate would result in a 10 percent increase in manufacturing investment by foreign investors from countries that exempt foreign earnings over foreign investments from countries that offer tax credits for foreign taxes paid. Another study indicates that a 1 percent decline in state corporate tax revenue as a percent of state personal income would lead to an increase of 0.57 percent to 0.76 percent in the probability of a state being chosen as a location for FDI.

Two of the studies reviewed considered the effect on the number of firms in an area due to the existence of lower taxes. One found that property taxes but not corporate taxes have a statistically significant influence on a firm’s location. The other study used a combined effective tax rate composed of all state and local taxes a firm would face in a given location. That study found that such a variable was influential in two out of five industry sectors considered.

The results of the academic literature on this topic reveal mixed findings. There is weak support for the effect of the corporate income tax on employment or firm location. The results are more supportive for investment and FDI, but the estimated impact is small. The review of the literature indicates one particular empirical model is responsible for almost all of the studies with positive findings. In that model, tax revenue is linked to expenditure patterns. The majority of the studies using that empirical model found a negative relationship between taxes and employment, investment, or FDI. It should be noted that while that empirical model seems to consistently find a relationship between taxes and employment and investment, it cannot be used as support of a repeal of the corporate income tax.

Table 1. Summary of Research Results

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Research Results</th>
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<tr>
<td>Employment</td>
<td>Four out of seven studies found small effect on employment; one found 6 percent increase in employment when 1 percent tax decreases were offset by transfer payment expenditures. Two studies found effects only in limited cases using data prior to 1975.</td>
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<tr>
<td>Domestic Investment</td>
<td>One study found that a 1 percent decline in the ratio of taxes to personal income that is financed by an equal reduction in transfer payments would lead to a 9 percent increase in investment.</td>
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<tr>
<td>Foreign Direct Investment</td>
<td>All three papers reviewed found an effect on the level of foreign investment in manufacturing. The size of the effect may be dependent on the tax treatment of foreign earnings by the home country.</td>
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<tr>
<td>Firm Births</td>
<td>One study found that a 1 percent decrease in the effective tax rate leads to a 9.5 percent increase in the number of firm births in the communications industry and a 2.7 percent increase in the furniture industry.</td>
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tax. In fact, results from this empirical model reveal the interdependence of taxes and expenditures and supports the idea that nontransfer payment expenditures, such as for education and highways, are important to the firms even when these expenditures are funded with higher taxes.

IV. Change in the State Apportionment Formula

It’s estimated that about 35 percent of firms filing Georgia corporate returns have multistate operations and are therefore directly affected by the corporate apportionment formula.10 Based on Georgia corporate returns from 1999-2002, those firms make up about 80 percent of the corporate tax revenues. Recently passed legislation has changed the method by which firms with multistate operations apportion their income to the state. That change will significantly affect the effective tax rate they pay. The method by which firms with multistate operations apportion their income to the state. That change will significantly affect the effective tax rate faced by many firms and thus the amount of tax paid by firms with multistate operations.

The traditional apportionment formula is a three-factor formula with equal weights on property, payroll, and sales. The academic literature has shown that this method of income apportionment can be thought of as four separate taxes (McLure 1980). The first is a nationwide profits tax that does not vary across states but affects all states equally. The other three taxes can be viewed as state-specific excise taxes. Those include taxes on sales, payroll, and property. Those taxes vary by state to the extent that states have different corporate tax rates and different weights on the apportioning factors. For example, a state with a double weight on sales places a relatively lower tax on labor compared with a state that has an equal weight on sales, payroll, and property.

Because those latter three excise taxes are sensitive to changes in state-controlled variables such as the tax rate and the apportionment factor, they can be altered by state government officials to produce a potentially more favorable business climate (Edmiston 2002). In fact, there is a nationwide trend away from a three-factor apportionment formula and toward a formula that is believed to be more favorable to state businesses: the single-factor apportionment formula on sales.11 There are two reasons behind the move to a sales-only formula. The first is that firms will be able to export the tax to their out-of-state customers by increasing the price of their products. That, of course, depends on the elasticity of demand for their product. If the consumption of their product is sensitive to changes in price, increasing the price of the commodity to cover the firm’s corporate tax liability could result in a reduction in sales for the firm. Furthermore, if other states follow suit and also change their apportionment formula, firms will just be passing each other’s corporate tax among themselves. A simulation by Edmiston (2002) shows that once all states follow suit and adjust their apportionment formula to one based only on sales, the advantage for the early adopters is significantly reduced.

The second reason is to increase state employment. By eliminating the payroll factor in the apportionment formula, the disincentive to increase employment is also eliminated. Because the three-factor apportionment formula includes payroll as a factor, it creates a disincentive to increase employment in the state. In other words, by increasing employment within the state, a firm increases the share of corporate profits that are subject to the state corporate income tax. Thus, increasing employment increases the firm’s tax burden. This is illustrated in Example 1.

Example 1. Three-Factor Versus Single-Factor Apportionment Formula

Suppose a company has a total profit of $5 million and 75 percent of payroll, 80 percent of property, and 60 percent of sales located in Georgia. Under the three-factor apportionment formula, the firm has a Georgia tax liability of $206,250.

\[ = \frac{6 \text{ percent} \times 5,000,000 \times 0.8 + 25 \text{ percent} \times 5,000,000 \times 0.6}{1.0} \]

\[ = 0.06 \times 5,000,000 \times 0.875 \]

\[ = 206,250 \]

Suppose that the firm increased its employment in the state so that 85 percent of its total employment was located in Georgia. Its corporate tax liability would then increase by $7,500 to $213,750.

\[ = \frac{6 \text{ percent} \times 5,000,000 \times 0.85 + 25 \text{ percent} \times 5,000,000 \times 0.25}{1.0} \]

\[ = 0.06 \times 5,000,000 \times 0.7125 \]

\[ = 213,750 \]

The effect of the change in the state formula for apportioning income reduces the potential effect on employment and investment from an elimination of the corporate income tax by eliminating the disincentive to increase employment in the state and by reducing the burden of the corporate income tax to the firm. The change in the apportionment formula reduces the effective tax faced by a firm in Georgia on its original tax base by about 1 percent. That is, the change in the apportionment formula is equivalent in terms of lost revenue to lowering the tax rate from 6 percent to 5 percent.

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10Based on Georgia corporate returns from 1999 to 2002 with positive tax liabilities.
11Well over half of the states now use an apportionment formula with at least a double weight on sales and a reduced weight on property and payroll.
V. Estimated Effect on Georgia

Although the literature reviewed above indicates some responsiveness of business activity (employment, investment, or firm location) to taxes, the results are not consistently replicated in other studies nor do they seem to apply to all industries. Also, the estimated effects are measured assuming a small change in the tax rate. It’s not appropriate to extrapolate those results to the effect of a complete corporate income tax elimination.¹² As an alternative to the estimates found in the academic literature, two other estimates are produced and shown in Table 2 (next page).

A. Bartik Approach

In the first alternative, we employ an approach outlined in Bartik (1991). To estimate the effects of completely eliminating the corporate income tax, we consider the corporate income tax as one component of the cost structure of the firm. Eliminating the corporate tax would reduce the cost of goods sold by about 4 percent.¹³ That is believed to be an overstatement of the effect for several reasons. First, this figure incorporates all state and local business taxes, and an elimination of only the corporate tax would naturally have a smaller effect. For instance, according to an analysis of state and local business taxes by Cline et al. (2005), the Georgia corporate tax accounts for only 5 percent of all business taxes paid in the state.¹⁴ Second, this figure is based on data from all states and doesn’t incorporate the relatively low corporate rate of Georgia or the new method of apportioning income (see Section IV). All of those factors dampen the effect of the reduction in taxes paid in the case of a corporate income tax elimination in Georgia. As a result, the estimates of the effect of elimination of the state corporate income tax on employment and investment based on this method would be biased upward—that is, they would overstate the actual effect.

In his review of the literature on this topic, Bartik (1991) found an average elasticity of employment to a change in the wage rate of about -0.67. That implies that a 10 percent decrease in the wage level in an area would increase employment by about 6.7 percent. We apply the same elasticity to the change in cost due to the elimination of the corporate income tax. The response to employment from a 4 percent reduction in the costs of all firms in the state is estimated to be a 2.7 percent increase.¹⁵ Thus, one estimate of the effect of eliminating the tax would be an increase in employment of 2.7 percent, or 86,000 new jobs, assuming a base of employment in the state of 3.2 million workers.¹⁶ As stated above, that is believed to be the upper limit on the effect because corporate taxes are hypothesized to be less than 4 percent of the cost of production. Furthermore, only employment in corporations would be affected by the elimination of the tax, but because of data limitations, we use total state private-sector employment. State or national employment data is not broken down by corporate sector versus noncorporate sector. Therefore, we have used total private state employment in this estimate, but we believe that the effect on employment of eliminating the corporate income tax will be largely confined to the corporate sector and be less than the estimate of 86,000 new jobs.¹⁷

To estimate the potential effect on investment from an increase in employment, a key assumption is necessary. By assuming a constant relationship between inputs of capital and labor, we can estimate the increase in investment stemming from an increase in employment. If we assume a constant capital to labor ratio of 2.3, a 2.7 percent increase in employment translates into a one-time increase of capital expenditures of $8.7 billion, which is expected to occur over several years.¹⁸ Both the additional employment and investment would be one-time increases to the state and not annual increases. The length of the adjustment period would depend on the mobility of both capital and labor. It’s expected that the state would experience the full increase in investment first because capital is believed to be more mobile than labor and responds to changes in price faster.

B. User Cost Approach

In this approach we use estimates of the responsiveness of the capital stock to its user cost to
Determining an alternative estimate of the potential effect on investment and employment from eliminating the corporate income tax. Several papers have estimated the value of the elasticity of capital investments regarding changes in the cost of capital. The general consensus of those estimates is that the elasticity is around -0.3. That is, a 10 percent decrease in the cost of capital will result in a 3 percent increase in capital investment.

That elasticity can be used to determine the potential effect on investment and employment in Georgia from eliminating the corporate income tax. If we assume the average rate of corporate taxation in Georgia is about 2 percent, an elimination of the tax can be considered a 2 percent reduction in the user cost of capital. Applying the elasticity of -0.3 found in the literature, that reduction in the user cost of capital translates into a 0.6 percent increase in investment, or $1.8 billion additional investment in the state, which is expected to occur over several years. If we again assume a constant capital to labor ratio of 2.3, a 0.6 percent increase in investment would result in an increase in employment of 17,000 new jobs. As explained for the Bartik method, that estimate does not represent an annual increase, but a permanent, one-time increase in investment and employment for the state. It should also be noted that this estimate, like those in the Bartik approach, is based on total state private employment. It’s expected that eliminating the corporate tax would only affect employment in the corporate sector. Unfortunately, employment data — that is, corporate employment versus noncorporate employment — based on the organizational structure of a firm is not collected. Thus, the base of employment from which that estimate is produced is total state private employment and is likely to overstate the true effect on corporate employment for the state.

While those estimates for employment and investment are not estimated directly, for several reasons, they are preferred to those based on the estimated effects found in the literature. First, the estimates found in the literature apply only to small changes in the tax rate. Therefore, they can’t be applied to a 100 percent reduction in the tax on corporation income. Second, the estimates in Table 2 are directly dependent on the size of the effective tax rate. The estimates found in the literature consider only the relative differences in the tax rate (usually across states) and not the absolute value. Given the already relatively low effective tax rate in Georgia, we shouldn’t expect a large response as a result of eliminating the tax.

The two estimates provided in Table 2, for employment and investment, differ. The estimates based on the user cost method are the preferred estimates because they incorporate more information specific to Georgia, though both sets of estimates are likely to overstate the effects on employment and investment because of a lack of specific corporate data. As explained above, the estimates based on the Bartik method are likely to overstate the effect even more because the corporate tax is only a small part of all business taxes in Georgia.

VI. Other Factors to Consider

A. The Influence of Public Services

It’s important to note that the elimination of the tax would not be done in a vacuum. It’s expected that the revenue lost from the elimination of the tax would be raised by increasing other taxes or by reducing expenditures. As illustrated in the literature, most studies found that government expenditures have a positive effect on firm location. That is interpreted to mean that increased government-funded amenities such as good schools and public infrastructure are valued by firms and factor in relocation decisions. Therefore, the revenue loss described above from eliminating the corporate tax would need to be offset by revenue from other sources if the amount of public expenditures is not diminished. To the extent that those funds are raised through additional taxes on business, such as a gross receipts tax, increased property taxes, or licensing fees, the potential positive economic development effects of the corporate income tax elimination would be dampened.

Helms (1985) verifies those effects for both public spending and taxes on employment for the 1965-1979 time period. His findings underscore the importance of considering the entire package of taxes and public spending. His results indicate that when

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19 See Chirinko (2002).
20 Based on analysis from 1997 to 2002 Georgia corporate tax returns.
21 That estimate assumes a base of employment in the state of 3.2 million workers.

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<th>Effect on:</th>
<th>Bartik Method</th>
<th>User Cost Method</th>
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<tr>
<td>Employment</td>
<td>86,000 new jobs</td>
<td>17,000 new jobs</td>
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<tr>
<td>Investment</td>
<td>$8.7 billion in new investment</td>
<td>$1.8 billion in new investment</td>
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taxes — especially property taxes — were increased to pay for additional income support programs, state welfare (as measured by state personal income) was adversely affected. Helms’s work emphasizes the importance of considering the implications of a corporate tax rate elimination on public expenditures. According to Helms’s findings, a reduction in the corporate tax that leads to a reduction in public spending on nontransfer-type programs would negatively affect state personal income.23

B. Are Tax Reductions Worth The Revenue Loss?

The academic literature cited earlier focuses on whether changes in fiscal policy are effective in influencing employment, investment, or firm birth. A related question is whether those potential benefits represent a net gain to the state. In trying to bring businesses to the area, state and local governments typically offer reductions in tax liabilities. Therefore, the potential gains in tax revenue stemming from additional employment and investment should be weighed against the weight of those reduced tax liabilities. A recent study (Fox and Murray 2004) found that the use of tax incentives to attract large firms rarely results in a net benefit to the locality. The possible corporate income tax elimination also needs to be weighed against alternative methods of increasing employment and investment in the state. For example, would eliminating the corporate income tax provide a larger economic stimulus per dollar of revenue than other potential stimuli, such as increases in the existing jobs tax credit? The academic literature reviewed above offers mixed results concerning the ability of the corporate income tax to affect economic development, and it doesn’t address whether the approach is the most cost-effective one at the state’s disposal.

C. Are New Jobs Created By the Elimination of the Tax?

It’s important to discriminate between the creation of new employment in the state and employment shifted from some other locale. None of the studies reviewed above measure the extent to which new jobs, as opposed to a relocation of existing jobs, are created by those types of economic development efforts. It’s usually assumed that the presence of new plants in the state will result in a higher employment rate for state residents. But that may not be completely true. The presence of a new plant in the state may also encourage migration into the state from other states, especially if the plant is simply relocating its operations. In that case, few if any new jobs are created nationwide, and while the state may gain employment opportunities, not all those opportunities will be filled by native residents. Furthermore, there is little research to indicate the types of jobs created from that type of economic development effort. There’s some evidence to suggest that manufacturing jobs are more sensitive to changes in fiscal policy than are other industries, but the manufacturing jobs of today are not always the high-wage/high-benefit jobs of previous decades.

D. Corporations Benefit From Public Expenditures

Finally, businesses benefit from spending on public infrastructure and are better suited to attract skilled labor if government-provided amenities are of a high quality. Therefore, it’s reasonable to expect corporations to shoulder some of the burden of the provision of those public goods. That’s referred to as the benefit-received principle of taxation, which states that individuals or firms receiving the benefits of government-provided services should bear the cost of their provision. Several of the studies reviewed above indicate that firms place considerable value on government-provided services. In many cases, the impact of higher spending on public services such as education and highways had as much an effect on employment or investment levels in a state as did the corporate income tax rate. It’s true that corporate income is a poor proxy for the value of those public services, but corporate income is the tax base used at the federal level and its use at the state level relieves corporations of determining another base.

VII. Conclusion

Would the elimination of the corporate income tax lead to increased employment and a higher level of investment in Georgia? Based on the research reviewed above, we can say that low state corporate income taxes have a positive effect on investment and employment in a state. It’s also expected that the elimination of the corporate income tax would have a larger and faster effect on investment in the state than on employment. That is because of the greater responsiveness of investment to changes in the tax rate as documented in the academic literature. The controversy concerning the elimination of the corporate income tax resides around the magnitude of the effect on investment and employment. Our best estimate leads us to expect an increase in investment for the state of around 0.6 percent, or $1.8 billion, and an increase in employment of 17,000 additional new jobs. In addition to those estimated employment and investment effects, the elimination of the corporate income tax may send a signal to businesses that the state is business-friendly and willing to support business activities. The size of that “WOW” effect in terms of additional
employment and investment can’t be estimated at this time because no state has yet eliminated its corporate income tax. But it’s expected to have some small positive influence on employment and investment in the state.

The academic research also indicates that public expenditures are important to firms, and studies that include public expenditures in their empirical models have found that corporate taxes affect both investment and employment at the state level. But the correct interpretation of those results leads not to an elimination of the corporate income tax but to an understanding that there’s some optimal balance of taxes and nontransfer-type public expenditures valued by firms. Therefore, those studies lead to the conclusion that an elimination of the corporate income tax should be accompanied by an increase in revenue from another tax or by a decrease in public expenditures spent on income support programs so that the public services valued by firms aren’t diminished.

Bibliography


