

FISCAL RESEARCH CENTER

POTENTIAL EFFECT OF ELIMINATING THE STATE CORPORATE INCOME TAX ON STATE ECONOMIC ACTIVITY

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Executive Summary

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. And 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. Under current law, Georgia imposes a 6 percent tax on corporate income. In fiscal year 1999, state corporate tax revenues were \$800 million (Morton and Hawkins 2004). Over the years though, the corporate tax has become less important in providing revenues to the state. By fiscal year 2003 state revenues from this source were \$470 million (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 FY 2006 which represents the forecasted revenues from this tax.^A But in fact, 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 in order to reduce taxes.^B This tax avoidance behavior could increase the revenue loss to the state.

Literature Review

In an attempt 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 quite large and dates back over 30 years. The studies measure the effect of fiscal factors on various economic variables such as employment, investment, new firm birth, and changes in state personal income. On the whole, the studies tend to find small and inconsistent results. Some studies find that higher taxes have a small but statistically

^A The official state forecast of corporate income tax revenues for fiscal year 2006 is \$564,173,000.

^B The incentive to reorganize into a corporate business form would not be overwhelming because reorganization at the state level also requires reorganization at the federal level. Since the federal corporate tax rate is 35 percent, there still exists an incentive to remain a noncorporate entity.

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significant negative influence on employment or new firm creation. Others find little or no effect at all.

An extensive review of the existing literature finds no overriding consensus regarding the effect of fiscal variables on economic conditions. Based on the studies reviewed, the corporate income tax rate is only occasionally found to affect employment levels. Of the seven studies considered, four find significant effects. In two of these cases, though, the results provided only weak support and were based on data prior to 1977. Only one study employing data from the early 80s finds a strong significant relationship between corporate tax rates and employment. This study is unique in that it ties state revenues to state expenditures. In the study, a one 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 payment expenditures. Such a result indicates that patterns of expenditures are also of importance to firm location. The same research finds that increases in nontransfer type public expenditures (education, 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.

We see more consistency of results when we consider the effect of the 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. In addition, 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 in general investment levels decline as tax rates increase. The one study that specifically tested this relationship found that a one percent decrease in corporate tax revenues as a percent of personal income associated with an equal offset of transfer type public expenditures, would result in a 9 percent increase in investment at the state level. As explained earlier, an important component of this research is the effect of public expenditures on the level of investment. For example, this work also finds that increases in public education expenditures paid for with an equal reduction in transfer

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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 foreign direct investment (FDI). In all three studies considered here, state corporate income tax rates were a statistically significant determinate of the amount of foreign direct investment in the state. Findings from 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 as compared to foreign investors from countries that offer tax credits for foreign taxes paid. Findings from another study indicate that a one percent decline in state corporate tax revenues 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 begin 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 firm 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. This study found that such a variable was influential on 2 out of 5 industry sectors considered.

In general, the results of the academic literature summarized in Table EX-1 on this topic reveal mixed findings. There is little support for the effect of the corporate income tax on employment or firm location. The results are more supportive for investment and foreign direct investment. Furthermore, the review of the literature indicates one particular empirical model is responsible for almost all of the studies with positive findings. In this model, tax revenues are linked to expenditure patterns. The majority of the studies using this empirical model find a negative relationship between taxes and employment, investment, or foreign direct investment. It should be noted that while this 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. In fact, results from this empirical model reveal the interdependence of taxes and expenditures and supports the idea

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TABLE EX-1. SUMMARY OF RESEARCH RESULTS

Dependant Variable	Research Results
Employment	4 out of 7 studies find small effect on employment; 1 finds 6% increase in employment when 1% tax decreases are offset by transfer payment expenditures. 2 find effects only in limited cases using data prior to 1975.
Domestic Investment	One study finds that a 1% decline in the ratio of taxes to personal income that is financed by an equal reduction in transfer payments would lead to a 9% increase in investment.
Foreign Direct Investment	All three papers reviewed find an effect on the level of foreign investment in manufacturing. The size of the effect may be dependant on the tax treatment of foreign earnings by the home country.
Firm Births	A 1% decrease in the effective tax rate leads to a 9.5% increase in the number of firm births in the Communications Industry and a 2.7% increase in the Furniture industry.

that nontransfer payment expenditures, such as education and highways, are of importance to the firms even when these expenditures are funded with higher taxes.

Estimated Effects

It is not appropriate to extrapolate the results from the literature review to the effect of a complete corporate income tax elimination.^C As an alternative to the estimates found in the academic literature two other estimates are produced and shown in Table EX-2.

In the first alternative 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.^D This 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. Second, this figure is based on data from all states and does not incorporate the relatively low corporate rate of Georgia or the new method of

^C Elasticities are defined in terms of responses to a 1 percent change. These responses are not believed to be linear. Thus, a 100 percent change in the tax stemming from the complete elimination of the tax is not equivalent in magnitude to 100 1-percent changes.

^D Using 2001 data from Statistics of Income, all state and local taxes paid by corporations are about 4 percent of cost of goods sold.

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apportioning income. Therefore, the estimated effect of elimination of the state corporate income tax on employment and investment based on this method are expected to overstate the actual effect.

Based on this method, we estimate of the affect of eliminating the tax would be an increase in employment of 2.7 percent or 86,000 new jobs and \$8.7 billion in new investment. As stated above, this is believed to be upper limit on the effect since 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 due to data limitations we use total state private sector employment. 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 is expected that the state would experience the full increase in investment first as it is believed that capital is more mobile than labor and thus responds to changes in price faster.

In a second approach we use estimates of the responsiveness of the capital stock to its user cost to determine an alternative estimate of the potential effect on investment and employment from eliminating the corporate income tax. From this method we estimate the elimination of the state corporate income tax would result in an increase in employment of 17,000 new jobs and \$1.8 billion in new investment.^E As explained for the method above, this increase 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 first approach, is expected to overstate the true effects. This estimate is based on total state private investment and employment. It is expected that the effects of the corporate tax elimination will be confined mainly to the corporate sector.

^E This estimate assumes a base of employment in the state of 3.2 million workers.

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TABLE EX-2. ESTIMATED EFFECT OF ELIMINATION OF THE STATE CORPORATE TAX

Effect on:	Bartik method	User Cost method
Employment	86,000 new jobs	17,000 new jobs
Investment	\$8.7 billion in new investment	\$1.8 billion in new investment

While these estimates for employment and investment are not estimated directly, they are preferred to those based on the estimated effects found in the literature for several reasons. First, the estimates found in the literature are only applicable to small changes in the tax rate. Therefore, they cannot be applied to a 100 percent reduction in the tax on corporation income. Second, the estimates in Table EX-2 are directly dependent on the size of the effective tax rate. The estimates found in the literature only consider 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 should not expect a large response from the elimination of the tax.

The two estimates provided in Table EX-2, for employment and investment, differ from each other. The estimates based on the User Cost method are the preferred estimates since they incorporate more information specific to Georgia, though both sets of estimates are likely to overstate the effects on employment and investment due to a lack of specific corporate data.

Other Factors to Consider

It is important to note that the elimination of the tax would not be done in a vacuum. It is expected that the revenue lost from the elimination of the tax would be raised by increasing other taxes, or reducing expenditures. As illustrated in the literature review, most studies find that government expenditures have a positive effect on firm location. This is interpreted to mean that increased government funded amenities such as good schools and public infrastructure are valued by firms and are a factor in their relocation decisions.^F Therefore, the revenue loss described above from the elimination of 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

^F See Mark, McGuire, and Papke (2000) and also Bradbury, Kodrzycki, and Tannenwald (1997).

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that these 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.

Are Tax Reductions Worth the Revenue Loss?

A related question is whether these potential benefits represent a net gain to the state. In the process of winning 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 value of those reduced tax liabilities. The possible corporate income tax elimination also needs to be weighted against alternative methods of increasing employment and investment in the state. That is, would the elimination of 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?

Are New Jobs Created by the Elimination of the Tax?

It is 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 these types of economic development efforts. It is 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 this type of economic development effort. There is some evidence to suggest that manufacturing jobs are more sensitive to changes in fiscal policy than other industries

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but the manufacturing jobs of today are not always the high wage/high benefit jobs of previous decades.

Corporations Benefit from Public Expenditures

Lastly, 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 is reasonable to expect corporations to shoulder some of the burden of the provision of these public goods. Several of the studies reviewed in this report 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 is true that corporate income is a poor proxy for the value of these 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.

Conclusion

So will 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 state that low state corporate income taxes have a positive effect on investment and employment in a state. It is also expected that the elimination of the corporate income tax would have a larger and faster effect on investment in the state as opposed to employment. This 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 these 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

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size of this “WOW” effect in terms of additional employment and investment cannot be estimated at this time since no state has yet eliminated its corporate income tax. But it is 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 those studies which include public expenditures in their empirical models find that corporate taxes do affect both investment and employment at the state level. But the correct interpretation of these results does not lead to an elimination of the corporate income tax but to an understanding that there is some optimal balance of taxes and nontransfer type public expenditures that are valued by firms. Therefore, these studies lead to the conclusion that an elimination of the corporate income tax should be accompanied by an increase in revenues from another tax or a decrease in public expenditures spent on income support programs so that the public services valued by firms are not diminished in any way.

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I. Introduction

A proposal to eliminate the state's corporate income tax has been advanced. This report addresses the potential effect of this 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. And 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. This 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 thirty years. Over a 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 find relatively small effects in a few industries and for a few types of fiscal variables. Others find 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 this 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 this may not be the case. 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

¹ Data from Statistics of Income 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.

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can only be used by those businesses with positive tax liabilities, it does serve to diminish the burden of state and local taxes by as much as 35 percent in some cases. Third, not all businesses are incorporated and are subject to the corporate income tax. These businesses may be influenced by other taxes such as the property and sales tax but not by the corporate income tax. Fourth, businesses value more than a low tax jurisdiction. Since 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. Lastly, if businesses are able to avoid the burden of taxes by various tax strategies or by passing them onto consumers or back to labor, then 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?² Lastly, 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 3 factor formula double weighted for sales to single factor model based completely on sales.

In this report we summarize some of the better studies, i.e., those studies that utilized a better research methodology. We then use the results of these studies to estimate the effect of eliminating the state's corporate income tax on economic activity within the state. It is not feasible for us to directly estimate the effect of eliminating the corporate income tax because no state has done that, so we have nothing to observe. And, because we didn't believe we could improve on existing

² 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 our economic welfare.

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studies, we did not try to estimate the effect of differential state corporate income tax rates on economic activity.

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II. Background

Under current law, Georgia imposes a 6 percent tax on corporate income. In fiscal year 1999, state corporate tax revenues were \$800 million (Morton and Hawkins 2004). Over the years though, the corporate tax has become less important in providing revenues to the state. By fiscal year 2003 state revenues from this source were \$470 million, accounting for 4 percent of all state revenues (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 FY 2006 which represents the forecasted revenues from this tax.³ But in fact, 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 in order to reduce taxes.⁴ This tax avoidance behavior could increase the revenue loss to the state.

Only two states currently do not levy any taxes on business income, Nevada and Wyoming neither, of which has ever had a corporate income tax. Wyoming has a heavy reliance 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 tax business income. For example, Washington levies a gross receipts tax, Michigan levies a business VAT (value added tax) and Texas uses a net worth franchise tax. Compared to our neighboring states, the Georgia corporate tax rate of 6 percent is equal to the average state corporate rate. Of our contiguous neighbors, North Carolina has the highest rate at 6.9 percent, while South Carolina has the lowest at 5 percent.

³ The official state forecast of corporate income tax revenues for fiscal year 2006 is \$564,173,000.

⁴ The incentive to reorganize into a corporate business form would not be overwhelming because reorganization at the state level also requires reorganization at the federal level. Since the federal corporate tax rate is 35 percent, there still exists an incentive to remain a noncorporate entity.

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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 do indeed respond to lower state taxes, then the relocation or expansion of firms in the state would result in an increase in employment and investment at the state level. This would lead to more jobs, perhaps better wages and a higher standard of living in the state.

The success of this argument is dependant on two factors. The first factor is that state indicators such as employment and investment are indeed responsive to changes in state corporate tax rates. The second factor is that the size of the tax change will be large enough in absolute terms to cause a significant response. Thus, the overall effect of eliminating the tax will 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. It is the combination of these two factors which determine the potential change in state employment and investment.

In an attempt 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 quite large and dates back over 30 years. A review of the literature conducted 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 these studies is difficult as each study includes its own twist on the fundamental question. In addition, while all these 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

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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 the stronger or more sophisticated methodology.

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 this 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 is discussed below, this change will reduce the tax base of the corporate income tax for firms with multistate operations. Therefore, any potential effect on employment and investment stemming 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, these 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 such studies were done to determine the size of such an effect. Unfortunately, the results of these studies vary widely. Some find that higher taxes have no effect on employment, while 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.

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A study by Wasylenko and McGuire (1985) consider the effect of taxes and public expenditures on the differences in employment growth between the states. In this study, the authors attempt to determine the factors which 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 finds that increases in state funds spent on education have a positive effect on the change in employment over this 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 corporate income tax variable was never found to be important. In terms of taxes, the results indicate 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, their 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. This finding lends support to the hypothesis that indeed 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 revenues can be raised, respectively. Therefore, it cannot be said that the effect is a reflection solely of the corporate tax. In fact, 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 is 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) recognize 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

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empirical model includes all public expenditure categories with the exception of transfer payments to individuals. Their results indicate that a one 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. This 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 which explicitly connects the level of public revenues 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 find 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 this same model consistently find an effect between taxes and employment, investment, or state personal income, indicating a willingness to pay for public services on the part of businesses.

A slightly different approach is to consider the location decisions of firms relocating within a given region. It is conceivable that taxes play a more important role in the location decision once a given region has been decided upon. That is, since wages and other costs of production are likely to be equal across the region, taxes which 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 this approach. Wasylenko (1980) finds that property taxes have a significant effect on the location decisions of wholesale and manufacturing firms relocating within the Milwaukee suburbs between 1964 and 1974. Mark, McGuire, and Papke (2000) find that while corporate income taxes do not explain the difference in private employment growth between areas within the Washington DC 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

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studies considered here, these results indicate that changes in the corporate tax rate do not 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 this paper is that the authors attempt to account for state effects which may influence the location decisions. Such fixed effects may include climate, land area, and agglomeration economies. In addition, the empirical model is designed to test the hypothesis that there has been a fundamental change in the influence of taxes on employment over time. Indeed, their research findings support this conclusion. Specifically, the authors found that prior to the late 70s, taxes, including the corporate tax, had a significant influence on state manufacturing employment levels, but that after that time period they did not. This conclusion is supported by the research of Newman (1983) who also found that increases in the state corporate tax rate over time do 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. This time 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

In addition to an effect on employment, one would expect decreases in the state corporate tax rate to reduce the cost of capital and increase the rate of return on corporate investments. Such a 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, Mofidi and Stone (1990), does explore this issue and finds that both 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 are found to have a statistically significant effect on the amount of investment in the

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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.⁵ This empirical model differs from others in that it specifically includes the use of public funds. While the result gives support for 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. This 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 test for a relationship between corporate income taxes and investment. Their research indicates that like employment, changes in investment are 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 to the state. It is believed that Foreign Direct Investment (FDI) behaves differently than domestic investment. Foreign direct investors are subject to a more complex tax system than 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.

⁵ At the 95 percent level of confidence, the authors cannot say that the size of this coefficient is different from the coefficient on other taxes which was estimated to be -21 percent.

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

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 find 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. This means that a one percent decline in state corporate income tax revenues 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 elimination, others will follow. The expected gains to Georgia would be significantly reduced if other states also eliminated or reduced their corporate tax. Nor does their model incorporate any negative effects from the offsetting increase in the individual income

⁶ See Bureau of Economic Analysis document (1997) on Foreign Direct Investment establishments.

⁷ It should be noted though that the variable “employment agglomeration” is the most influential factor in the model with an elasticity of around 14, meaning that a one 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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tax or reduction in public expenditures. Therefore, such estimates are for discussion only and are not meant to be realistic expectations of actual results.

Another study (Hines 1996) confirms the effect found by Ondrich and Wasylenko. His research focuses on the responsiveness of foreign capital investments to changes in the state corporate tax rates. Specifically, he tests whether foreign investors from countries which exempt foreign earned income from taxation are more sensitive to corporate tax changes than investors from counties 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 they are less burdened by the tax. His findings reveal 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.⁸ This finding is also relevant to the issue of the influence of fiscal variables on domestic firm location. In the instance of exempt firms, the host country tax rate is the only tax they face and so in that respect these firms are no different than domestic investments. Thus, Hines' finding of a significant relationship between tax rates and levels of investment not only apply to foreign direct investment but also lend support for a relationship between tax rates and the level of domestic investment. Grubert and Mutti (2000) also find foreign investment and firm location to be sensitive to taxes and trade policies. While their study looks at the decision process of US 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 considering the effect of state taxes on the number of firms locating in an area. Papke (1991) explores the effects of taxes on

⁸ The author of this study is cautious about the implications of such a high elasticity and warns against applying this elasticity to a large reduction in the corporate tax rate.

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births of new manufacturing businesses and finds that indeed tax rates do affect the number of new births in some industries but not all. First, she finds that not all industries respond the same to tax rates, a result borne out in other studies as well. Therefore, care must be taken when generalizing these results to all employment sectors. This is important because the elimination of the corporate tax would affect all corporate entities but perhaps not all to the same degree. Second, her work does find that taxes have a significant impact on the birth of new firms.⁹ The tax measure used in her study is an effective business tax rate which serves to capture all levels of tax facing a corporation as well as various treatments of depreciation and deductions. Therefore, this tax measure incorporates more than the strict statutory corporate tax rate. The author correctly argues 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 this work, a 1 percent decrease in the effective corporate tax rate would result in an increase in anywhere from 1.6 percent to 15.7 percent in the number of new firms. Unfortunately, this measure does not 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. As one can see, 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 therefore do not attempt to model the actual location decision of an individual firm. These models instead include factors which are believed to influence the location decision. This 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.

⁹ For example, her results indicate that a one percentage point increase in the effective tax rate will result in a 26 percent decrease in firm births in the Outerwear industry.

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TABLE 1. SUMMARY OF RESEARCH RESULTS

Dependant Variable	Research Results
Employment	4 out of 7 studies find small effect on employment; 1 finds 6% increase in employment when 1% tax decreases are offset by transfer payment expenditures. 2 find effects only in limited cases using data prior to 1975.
Domestic Investment	One study finds that a 1% decline in the ratio of taxes to personal income that is financed by an equal reduction in transfer payments would lead to a 9% increase in investment.
Foreign Direct Investment	All three papers reviewed find 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.
Firm Births	A 1% decrease in the effective tax rate leads to a 9.5% increase in the number of firm births in the Communications Industry and a 2.7% increase in the Furniture industry.

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 find significant effects. In two of these cases, though, the results provided only weak support and were based on data prior to 1977. Only one study employing data from the early 80s finds a strong significant relationship between corporate tax rates and employment. This study is unique in that it ties state revenues to state expenditures. In the study, a one 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 payment expenditures. Such a result indicates that patterns of expenditures are also of importance to firm location. The same research finds that increases in nontransfer type public expenditures (education, 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. Their results indicate that property, sales, and sometimes individual income taxes are statistically significant determinants of the state employment levels. These studies typically find these taxes to have a small but statistically significant impact on state employment.

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We see more consistency of 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. In addition, 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 in general investment levels decline as tax rates increase. The one study that specifically tested this relationship found that a one percent decrease in corporate tax revenues as a percent of personal income associated with an equal offset of transfer type public expenditures, would result in a 9 to 23 percent increase in investment at the state level. Though the effect is statistically significant, the authors cannot, 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 than 23 percent. As explained earlier, an important component of this research is the effect of public expenditures on the level of investment. For example, this work also finds 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 foreign direct investment (FDI). In all three studies considered here, state corporate income tax rates were a statistically significant determinate of the amount of foreign direct investment in the state. Findings from 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. Findings from another study indicate that a one percent decline in state corporate tax revenues 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

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corporate taxes have a statistically significant influence on firm 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. This study found that such a variable was influential in 2 out of 5 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 foreign direct investment 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 this model, tax revenues are linked to expenditure patterns. The majority of the studies using this empirical model find a negative relationship between taxes and employment, investment, or foreign direct investment. It should be noted that while this 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. In fact, results from this empirical model reveal the interdependence of taxes and expenditures and supports the idea that nontransfer payment expenditures, such as education and highways, are of importance to the firms even when these expenditures are funded with higher taxes.

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IV. Change in the State Apportionment Formula

It is estimated that about 35 percent of firms filing Georgia corporate returns have multistate operations and therefore are directly affected by the corporate apportionment formula.¹⁰ Based on Georgia corporate returns from 1999-2002, these 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. This change will have a significant effect on the effective tax rate faced by many firms and thus on 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 which does not vary across states but affects all states equally. The other three taxes can be viewed as state specific excise taxes. These consist of a tax on sales, payroll, and property. These 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 to a state that has an equal weight on sales, payroll, and property.

Since these 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 towards a formula which is believed to be more favorable to state businesses, the single factor apportionment formula on sales.¹¹ The impetus behind the move to a sales only formula is two pronged. First is the belief that firms will be able to export the tax to their out of state customers by increasing the price of their products. This of course depends on the elasticity of demand for their product.

¹⁰ Based on Georgia corporate returns from 1999-2002 with positive tax liabilities.

¹¹ In fact well 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.

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If the consumption of their product is sensitive to changes in price then 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, then firms will just be passing each others' 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 behind the change in the apportionment formula 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. 3 FACTOR VS. SINGLE FACTOR APPORTIONMENT FORMULA

Suppose a company has a total profit of \$5,000,000 and 75% of payroll, 80% of property, and 60% of sales located in Georgia. Under the three factor apportionment formula, the firm has a Georgia tax liability of \$206,250.

$$\begin{aligned} &6\% * \$5,000,000 * (0.25 * 0.75 + 0.25 * 0.8 + 0.5 * 0.6) \\ &= 0.06 * \$5,000,000 * 0.6875 \\ &= \$206,250 \end{aligned}$$

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

$$\begin{aligned} &6\% * \$5,000,000 * (0.25 * 0.85 + 0.25 * 0.8 + 0.5 * 0.6) \\ &= 0.06 * \$5,000,000 * 0.7125 \\ &= \$213,750 \end{aligned}$$

Under the single factor formula, the same firm has a tax liability of \$180,000 ($6\% * \$5,000,000 * 0.6 = \$180,000$) regardless of its level of employment in the state.

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

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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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V. Estimated Effect to 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. In addition, the estimated effects are measured assuming a small change in the tax rate. It is not appropriate to extrapolate these 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.

A. Bartik Approach

In the first alternative, we employ an approach outlined in Bartik (1991). In order 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 This 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 does not incorporate the relatively low corporate rate of Georgia or the new method of apportioning income (see Section IV.). All of these factors dampen the effect of the reduction in taxes paid in the case of a corporate income tax elimination in Georgia. Because of this, the estimates of the effect of elimination of the state corporate income tax on

¹² Elasticities are defined in terms of responses to a 1 percent change. These responses are not believed to be linear. Thus, a 100 percent change in the tax stemming from the complete elimination of the tax is not equivalent in magnitude to 100 1-percent changes.

¹³ Using 2001 data from Statistics of Income, all state and local taxes paid by corporations are about 4 percent of cost of goods sold.

¹⁴ According to their report, the property tax paid by businesses in Georgia accounted for 39 percent of all business taxes paid, sales tax on business inputs accounted for 33 percent, excise taxes 9 percent, payroll taxes 5 percent, corporate income taxes 5 percent, individual income taxes on pass-thru income 6 percent, and licenses and other taxes 4 percent.

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employment and investment based on this method will be biased upward, i.e., will overstate the actual effect.

In his review of the literature on this topic, Bartik (1991) finds an average elasticity of employment to a change in the wage rate of about -0.67. This implies that a 10 percent decrease in the wage level in an area would increase employment by about 6.7 percent. We apply this 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 affect 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, this is believed to be upper limit on the effect since 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 due to data limitations we use total state private sector employment. State or national employment data is not broken down by corporate sector vs. 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 86,000.¹⁷

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-labor

¹⁵ $-0.67 \times 4 = -2.7\%$. This approach assumes the elasticity of employment with respect to changes in the wage rate is the correct elasticity. In the best world, we would employ the elasticity of employment with respect to changes in total cost for this calculation but that is not known to us. It is assumed though, that since wages are such a large component of cost that these elasticities are not significantly different from each other.

¹⁶ See www.census.gov/prod/2004pubs/04statab/labor.pdf, table 612, p.399.

¹⁷ If we applied this elasticity to manufacturing employment only, the expected gain in jobs would be around 12,000.

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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 is expected that the state would experience the full increase in investment first as it is believed that capital is more mobile than labor and thus 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 determine 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 with respect to changes in the cost of capital. The general consensus of these estimates is that the elasticity is around -0.3.¹⁹ That is, a 10 percent decrease in the cost of capital will result in a 3 percent increase in capital investment.

This elasticity can be used to determine the potential effect on investment and employment in Georgia from a corporate income tax elimination. If we assume the average rate of corporate taxation in Georgia is about 2.0 percent, an elimination of the tax can be considered a 2 percent reduction in the user cost of capital.²⁰ Applying the elasticity of -0.3 found in the literature, this 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 again is expected to occur over several years. If we again assume a constant capital-labor ratio of 2.3, then a 0.6 percent increase in investment would result in an increase in employment of 17,000 new jobs.²¹ As explained for the Bartik method, this increase does not represent an annual increase but a permanent, one time increase in investment and employment for the state. It

¹⁸ The capital-labor ratio is determined by the ratio of the value of private fixed nonresidential assets in 2003 to total private industry compensation for 2003.

¹⁹ See Chirinko (2002).

²⁰ Based on analysis from 1997-2002 Georgia corporate tax returns.

²¹ This estimate assumes a base of employment in the state of 3.2 million workers.

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should also be noted that this estimate, like those in the Bartik approach, is based on total state private employment. It is expected that eliminating the corporate tax would only affect employment in the corporate sector. Unfortunately, employment data based on the organizational structure of a firm is not collected, i.e., corporate employment vs. noncorporate employment. Thus, the base of employment from which this estimate is produced is total state private employment and is likely to overstate the true effect on corporate employment for the state.

While these estimates for employment and investment are not estimated directly, they are preferred to those based on the estimated effects found in the literature for several reasons. First, the estimates found in the literature are only applicable to small changes in the tax rate. Therefore, they cannot 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 only consider 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 should not expect a large response from the elimination of the tax.

The two estimates provided in Table 2, for employment and investment, differ from each other. The estimates based on the User Cost method are the preferred estimates since they incorporate more information specific to Georgia, though both sets of estimates are likely to overstate the effects on employment and investment due to 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.

TABLE 2. ESTIMATED EFFECT OF ELIMINATION OF THE STATE CORPORATE TAX

Effect on:	Bartik Method	User Cost Method
Employment	86,000 new jobs	17,000 new jobs
Investment	\$8.7 billion in new investment	\$1.8 billion in new investment

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VI. Other Factors to Consider

A. The Influence of Public Services

It is important to note that the elimination of the tax would not be done in a vacuum. It is expected that the revenue lost from the elimination of the tax would be raised by increasing other taxes, or reducing expenditures. As illustrated in the literature review, most studies find that government expenditures have a positive effect on firm location. This is interpreted to mean that increased government funded amenities such as good schools and public infrastructure are valued by firms and are a factor in their relocation decisions.²² Therefore, the revenue loss described above from the elimination of 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 these 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 such 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 taxes, in particular property taxes, were increased to pay for additional income support programs, state welfare (as measured by state personal income) was adversely affected. This work emphasizes the importance of considering the implications of a corporate tax rate elimination on public expenditures. According to the findings of Helms' work, a reduction in the corporate tax that leads to a reduction in public spending on nontransfer type programs would have a negative affect on state personal income.²³

²² See Mark, McGuire and Papke (2000) and also Bradbury, Kodrzycki, and Tannenwald (1997).

²³ This work does not test for the impact of shifting business taxes to individual taxes as an alternative to reducing public spending.

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B. Are Tax Reductions Worth the Revenue Loss?

The academic literature cited earlier focuses on the question of whether changes in fiscal policy are effective in influencing employment, investment, or firm birth. A related question is whether these potential benefits represent a net gain to the state. In the process of winning 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 value of those reduced tax liabilities. A recent study (Fox and Murray 2004) considers this issue and finds 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 weighted against alternative methods of increasing employment and investment in the state. That is, would the elimination of 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 does not address the issue of 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 is 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 these types of economic development efforts. It is 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 this type of economic development effort. There is some evidence to suggest that

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manufacturing jobs are more sensitive to changes in fiscal policy than 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

Lastly, 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 is reasonable to expect corporations to shoulder some of the burden of the provision of these public goods. This is referred to as the benefit-received principle of taxation and 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 is true that corporate income is a poor proxy for the value of these 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.

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VII. Conclusion

So will 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 state that low state corporate income taxes have a positive effect on investment and employment in a state. It is also expected that the elimination of the corporate income tax would have a larger and faster effect on investment in the state as opposed to employment. This 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 lead 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 these 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 this “WOW” effect in terms of additional employment and investment cannot be estimated at this time since no state has yet eliminated its corporate income tax. But it is 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 those studies which include public expenditures in their empirical models find that corporate taxes do affect both investment and employment at the state level. But the correct interpretation of these results does not lead to an elimination of the corporate income tax but to an understanding that there is some optimal balance of taxes and nontransfer type public expenditures that are valued by firms. Therefore, these studies lead to the conclusion that an elimination of the corporate income tax should be accompanied by an increase in revenues from another tax or a decrease in public expenditures spent on income support programs so that the public services valued by firms are not diminished in any way.

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