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## Who Pays the Corporate Tax?

Among the issues surrounding tax reform is who bears the burden of the corporate tax. The burden could fall on stockholders, on capital owners in general, or on labor. This question is important for characterizing the distributional effects of the tax. If the tax reduces the returns to capital, it falls largely on higher-income individuals who own relatively more of capital assets and is progressive (i.e., the tax rises as a share of income as income rises). If it reduces wages, it falls on workers and it is less likely to be progressive.

A considerable amount of economic research has appeared, especially in the past 10 or 15 years, examining the incidence of the tax. That research is reviewed in detail in CRS Report RL34229, *Corporate Tax Reform: Issues for Congress*, by Jane G. Gravelle. That review suggests that the evidence supports most or all of the burden falling on capital.

Sometimes claims are made that the tax falls on the corporation's customers (and by implication on purchases in the economy). Only relative and not absolute prices matter in determining burden and aggregate real prices cannot rise in the economy due to taxes. A corporate tax would raise the prices of corporate goods but at the same time lower the price of noncorporate goods, with the overall effect on prices zero. Therefore, economic research has focused on which factor of production (labor or capital) bears the burden, which is the more important issue for distributional issues.

This research reflects two different approaches to empirical estimates of the burden: embedding behavioral responses in a general equilibrium model and reduced-form statistical estimates.

### Behavioral Responses in a General Equilibrium Model

Since the 1960s, the standard approach to studying the corporate tax burden was through a general equilibrium model. The model that prevailed for many years was one with a closed economy with a fixed capital stock. This model shows that the burden falls on capital. The corporate tax causes the return in the corporate sector to fall, and capital moves out of that sector and into the noncorporate sector. The contraction of the capital stock in the corporate sector causes the rate of return before tax to rise, restoring some of the original after-tax return, whereas the abundance in the noncorporate sector causes the rate of return to fall, spreading the burden to other capital income. It also causes prices to rise in the corporate sector and fall in the noncorporate sector. With a reasonable set of empirical assumptions, wages were largely unaffected and the burden fell around 100% on capital (both corporate and

noncorporate). It could slightly exceed 100% or slightly fall short, but was always close to 100%.

Economists then began applying the model to an open economy in which the tax could cause the capital stock to contract because capital could flow out to other countries. An important advantage of a model is that it can set the limits of what might be expected. The first, simplest, models suggested that significant taxes could fall on labor.

In the case of a small open economy with one good and with perfect capital mobility (i.e., investment flows to the highest rate of return regardless of location) and where foreign and domestic products are perfect substitutes, the full burden of the tax falls on labor income. Capital flows out of the country to the rest of the world causing the pre-tax return to rise and because prices must remain fixed (due to perfect product substitution) and capital owners must earn their original after-tax return, only the wage rate adjusts, falling enough to offset the rise in the pre-tax return.

These are strict assumptions; as they are relaxed, the burden is more likely to shift to capital. For example, applying the model to a larger economy causes part of the burden to fall on capital.

Empirical evidence also suggests that capital is not perfectly mobile (i.e., investing abroad is not a perfect substitute for investing at home). Relaxing that assumption causes a larger share to fall on capital as capital cannot move as easily. Similarly, making foreign products imperfect substitutes for domestic products makes the economy less open and, again, causes more of the burden to fall on capital. Overall, using values from the empirical literature for the three major behavioral effects (how easily substitutable capital is across jurisdictions, how easily substitutable foreign products are for domestic ones, and how easily capital can be substituted for labor in production), as well as how capital intensive the corporate-tradable sector is compared with the economy as a whole, labor appears to bear between 20% and 40% of the burden; hence, the majority falls on capital.

This analysis likely still places too much of the burden on labor for several reasons. First, some share of the profit that generates taxes is in the form of rents with the burden borne entirely by stockholders. Although little evidence is available on the share of rent, that evidence suggests a share of 10% to 20%. This share suggests a range of 15% to 36% falling on labor.

Strictly speaking, the analysis applies only to a source-based (territorial) tax in which the U.S. corporate tax applies only to profits earned in the United States. The U.S.

system is a worldwide system, but defers tax on dividends of foreign subsidiaries and allows a credit for foreign taxes. As a result, there is only a small residual tax (of about 5%) on foreign source income. This tax should reduce the share falling on labor slightly.

Finally, and most importantly, the corporate tax subsidizes debt, so lowering the corporate tax will bring in more equity capital but less debt. As estimated in a study of this phenomenon, if debt is more substitutable across countries than equity, lowering the corporate tax would cause a contraction of total capital and a fall in wages. The consideration of debt could reverse the findings, indicating that labor income falls when the corporate tax is reduced.

Another issue to consider is whether other countries might react to the United States lowering its tax rate, by lowering their own rates. Many countries lowered their tax rates following the reduction in the U.S. corporate tax rate from 48% to 34% in 1986. If other countries respond, those changes will reduce the burden on labor that arises from equity flows.

### Reduced-Form Statistical Estimates

Over the years, numerous studies have appeared that try to estimate the effect on wages by statistical regression techniques in which the change in wages (across countries, or in some cases across states) is estimated based on a number of explanatory variables, including the corporate tax rate.

Such estimates face many difficulties, among them that using a small variable, corporate taxes, that is about 2% of GDP, to explain labor income, which is about two-thirds of GDP, is unlikely to be robust (i.e., estimates are sensitive to small changes in variables). In addition, many of these studies have yielded implausible results. For example, one cross-country study's estimates indicated that labor income falls by \$22 for each \$1 of tax, an outcome that is theoretically impossible, as shown in the previous discussion. The authors later revised their estimates and found smaller results, but they still implied a fall in labor income of \$13 for each \$1 of tax. Most of these studies, when examined closely, have errors, rely on restrictive assumptions, or have results that disappear with reasonable changes in specification.

Studies across states have two additional limitations when used to infer U.S. corporate tax incidence. First, the state corporate taxes are themselves only a fraction of federal

corporate taxes and thus they appeal to an even smaller variable. Second, it is difficult to determine whether these results would apply to the U.S. corporate tax.

There is also a body of studies, mostly prepared by European economists, that examine the share of rents that labor receives using a bargaining framework. These studies are often cited as evidence of the U.S. corporate tax burden. This effect may be relevant in countries where unions are strong, such as the UK and Germany, but unions in the United States are much less important and have declined over time; less than 7% of workers in the private sector are unionized. Most of these studies suffer from the same problems as the cross-country and cross-state studies, and most find implausible effects, particularly as they should capture only the share of rents which, themselves, are a small share of profit. Ironically, the economic theory they use to model and justify their regressions actually indicates that while before tax profits would be shared in a bargaining situation, the tax itself would not be. Thus, these studies face a strong burden of proof when they seek an effect contradicted by theory.

Recent news reports indicated that the U.S. Department of Treasury has referenced studies indicating that the corporate tax falls mainly on workers, initially citing a study that found 60% of the burden falling on workers. The study cited was actually of the kind just discussed, estimating the share of rents and not likely relevant to the United States. It also produced implausible results given that rent is likely a small share of profits. The Treasury has offered three additional citations. One was to a general equilibrium model that used perfect substitutability of capital and products and estimated 70% of the burden fell on capital. That paper, however, clearly states that the effects would be smaller if these assumptions were relaxed. One was to a cross-country study that yielded implausible results, and the third fell into the group of studies examining rent and likely not relevant to the United States.

### Current Practices

Currently, the Congressional Budget Office and the Joint Committee on Taxation assign 25% of the burden of the corporate tax to labor when preparing distributional results. The Department of Treasury had a similar assignment in previous studies.

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