

Fixing the Corporate Income Tax

By Alan Cole
Economist

Key Findings

- The U.S. corporate income tax has a number of problems that could be addressed through a series of reforms.
- Corporate income taxes reduce economic growth under most simple economic models. The drag on growth from corporate income taxes could be mitigated by moving to the full expensing of capital investment.
- A high corporate income tax rate encourages firms to shift profits to lower-tax jurisdictions. The U.S. can reduce profit shifting by setting its corporate income tax rate more in line with those of its trading partners.
- The worldwide system of taxation encourages corporate inversions, a problem that could be solved by moving to a territorial system comparable with those used in the rest of the developed world.

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Editor, Melodie Bowler
Designer, Dan Carvajal

Tax Foundation
1325 G Street, NW, Suite 950
Washington, DC 20005

202.464.6200

taxfoundation.org

Introduction

The U.S. corporate income tax has problems.

The first of these problems is that a wide variety of empirical economic literature has concluded that corporate income taxes are more harmful than any other tax to economic growth.¹ This is consistent with the findings of a broad theoretical framework where the capital stock, a determinant of growth, is responsive to taxation. If the capital stock is both responsive to taxation and a determinant of growth, then higher corporate income taxes reduce output in the long run.

Another concern with the corporate income tax is an international one, stemming from the general difficulty in defining corporate income as a concept. When corporations earn their income through activities in multiple tax jurisdictions, the apportionment of corporate income to different jurisdictions is a complicated exercise without obvious answers. As a result, tax jurisdictions face the risk of profit shifting (when most of a corporation's income gets reported in places with more advantageous corporate tax regimes).

Finally, a third problem with the corporate income tax in the U.S. is inversions (when a corporation relocates its headquarters away from the U.S., often through a merger, for tax purposes). This phenomenon has attracted substantial attention in recent years, and for good reason: it is puzzling and clearly suboptimal for mergers to take place for reasons of tax arbitrage.

While some economists have called for the elimination of the corporate income tax²³ because of these three concerns, lawmakers may be inclined to keep the tax because of the revenue it provides, or because it may be politically unfeasible to remove it.

This paper will look at a middle option: it will examine how to fix the corporate income tax by addressing each of the concerns through a series of competitive reforms: allowing the full and immediate expensing of capital expenditures, adopting a competitive rate, and moving to a territorial system. These reforms, put together, could provide the U.S. with sound tax policy at the corporate level.

1 McBride, William. "What Is the Evidence on Taxes and Growth?" Tax Foundation. December 2012. <http://taxfoundation.org/article/what-evidence-taxes-and-growth>.
2 Kotlikoff, Laurence J. "Abolish the Corporate Income Tax." *New York Times*. January 5, 2014. <http://www.nytimes.com/2014/01/06/opinion/abolish-the-corporate-income-tax.html>.
3 Mankiw, N. Gregory. "One Way to Fix the Corporate Tax: Repeal It." *New York Times*. August 23, 2014. <http://www.nytimes.com/2014/08/24/upshot/one-way-to-fix-the-corporate-tax-repeal-it.html>.

The Basic Case against Capital Income Taxes

The basic economic case against taxes like the corporate income tax is that, under a standard neoclassical production function, where savers have some intertemporal rate of substitution, capital income taxes (such as the corporate income tax) reduce the incentive to save, reduce the long-run capital stock, and reduce long-run output.

Here's why that is: framing a capital income tax in terms of consumption, a tax on the rate of return to capital is a differentiated tax on consumption, where future consumption is taxed at a greater rate than present consumption.

Differentiated taxes generally decrease welfare; they encourage substitution from the disfavored forms of consumption. This is ordinarily a small (though non-trivial) problem in tax policies of all kinds. However, in this particular case, the substitution away from future consumption is unusually important due to the manner in which that substitution happens.

People planning for future consumption do so by saving, which at the margin funds the purchase of capital goods: the tools that workers use to get jobs done. When savers substitute from capital goods and toward ordinary consumer goods, the result is harmful to workers—specifically, the kind of workers who might have become more productive if those new capital goods were constructed instead.

Modeling this basic story under reasonably flexible conditions, Kenneth Judd (1985) found it is in everybody's interest to have a zero rate on capital income, even if that tax on capital income went to transfer payments to workers.⁴ This argument won the agreement of distinguished economists,⁵ but also attracted some skepticism.

The result is not intuitive in a world view where the interests of capital and labor are opposed. However, in practice, the incomes of capital and labor tend to remain in relatively constant proportions,⁶ and the two factors of production work together to create income.

Under other modeling assumptions, the optimal capital tax rates can be higher than zero and depend on intertemporal elasticities.⁷ However, even in these studies, the optimal rates typically remain smaller than the rates on ordinary income. In a recent survey of top economists on the subject, the majority of those with an opinion endorsed the idea that a lower rate on capital income increases prosperity.⁸

4 Judd, Kenneth L. "Redistributive Taxation in a Simple Perfect Foresight Model." *Journal of Public Economics* 28 (1985): 59-83.

5 Lucas, Robert E., Jr. "Supply-Side Economics: An Analytical Review." *Oxford Economic Papers*, New Series 42, no. 2 (April 1990): 293-316.

6 Cole, Alan. "A Walkthrough of Gross Domestic Income." Tax Foundation. May 2015. <http://taxfoundation.org/article/walkthrough-gross-domestic-income>.

7 Golosov, Mikhail, Maxim Troshkin, Aleh Tsyvinski, and Matthew Weinzierl. "Preference Heterogeneity and Optimal Capital Income Taxation." NBER Working Paper No. 16619 (December 2010). <http://www.nber.org/papers/w16619>.

8 "Taxing Capital and Labor." IGM Economic Experts Panel. October 2012. http://www.igmchicago.org/igm-economic-experts-panel/poll-results?SurveyID=SV_6MzyqvYPzrjYvb.

The case against the U.S. corporate income tax, at first glance, is that it is a tax on the return to capital, and therefore, through the framework described above, an unusually large drag on economic output.

However, it doesn't have to be: through the use of appropriate deductions for cost recovery, a corporate income tax can inoculate itself against this particular critique.

Expensing Allows for Better Taxation of Capital Income

The basic case against capital income taxes changes dramatically once deductions are considered as a possibility. Robert Hall and Dale Jorgenson (1967) laid the ground for a more robust framework for analysis of taxes and investment behavior, one that included the possibility of deductions and credits in addition to simple tax rates.⁹

The Hall-Jorgenson framework measures the cost of capital services—that is, the minimum return on capital that would be required to justify the production of a capital asset. This amount is measured including the net of all taxes, depreciation, and rental costs. Hall and Jorgenson derive an expression for the price of capital, as follows:¹⁰

$$c = q(r + \delta) \frac{(1 - k)(1 - uz)}{1 - u}$$

where c is the cost of capital services, q is the price of capital goods, r is the discount rate, k is an investment tax credit, z is the present value of the depreciation deduction on one dollar's investment, and u is the tax rate. For the purposes of this analysis, we will concern ourselves with the relationship between z and u .

The value of z under current law is greater than zero, but less than one. A value of zero would correspond to no deductions at all, whereas a value of one would correspond to a system where deductions for capital equipment were taken immediately. (This is also often known as “expensing.”)

Recent Tax Foundation research found z to be 0.8714 in the U.S. in 2012, meaning that the present value of the depreciation deduction schedule for the average investment made in 2012 was only about 87 percent of the value of the actual investment.¹¹

⁹ Jorgenson, Dale and Robert E. Hall. “Tax Policy and Investment Behavior.” *American Economic Review* 57, no. 3 (1967): 391-414. <http://scholar.harvard.edu/jorgenson/publications/tax-policy-and-investment-behavior>.

¹⁰ Id.

¹¹ Greenberg, Scott. “Cost Recovery for New Corporate Investments in 2012.” Tax Foundation. January 2016. <http://taxfoundation.org/article/cost-recovery-new-corporate-investments-2012>.

With a value of 0.8714 for z , we find that the cost of capital increases as u increases. That is to say, a higher corporate rate (under current depreciation schedules) increases the cost of capital.

However, suppose that the U.S. moved to full expensing, bringing z to a value of 1. Substituting this value into the Hall-Jorgenson equation and reducing algebraically, we see a remarkable result:

$$c = q(r + \delta) \frac{(1 - k)(1 - u)}{1 - u}$$

$$c = q(r + \delta)(1 - k)$$

If z is equal to one, the term for the corporate rate drops out of the expression entirely. That is to say that under the simple Hall-Jorgenson model, with the full expensing of capital assets, the basic case against capital income taxes no longer applies. With expensing, the corporate income tax no longer distorts time preferences under a simple model of investment behavior.¹²

This revelation is counterintuitive, but it is clearly backed by the mathematics. Andrew Abel (2007) finds an equivalent result to the derivation above.¹³ Additionally, he notes that “even though this specification of the capital income tax imposes a zero effective rate on capital, the capital income tax can collect substantial revenue.”

There are two reasons why this is the case. The first is that part of the burden of corporate income taxes is levied on existing capital, rather than new capital. The existing capital gets no new deductions, but is still subject to the corporate rate, resulting in positive revenue. In other words, for any corporate rate, the government could be modeled as a shareholder with a stake in the company equal to the corporate rate.

For all new capital, however, the government effectively “buys” this stake by offering a tax deduction, in effect paying for a portion of the asset. This, too, can generate revenue. The key is that the Hall-Jorgenson cost of capital services reflects the minimum return to justify an investment. Some investments are inframarginal, meaning that it is known, even beforehand, that they will lead to a much better-than-minimum return. In the case of these inframarginal investments, the deduction for the investment is worth much less than the future revenue stream. However, despite this unfavorable tax regime, the inframarginal asset still gets built because it is so profitable.

¹² Under more complex and realistic models, where the return of an investment is unknown *ex ante*, the rate would continue to have an effect on investment behavior. However, expensing would still reduce substantially the degree to which the rate affects investment.

¹³ Abel, Andrew B. “Optimal Capital Income Taxation.” NBER Working Paper No. 13354 (August 2007). <http://www.nber.org/papers/w13354>.

One good way to think of this is that the government gets to buy its stake in the capital asset at book value, but its share of the profits, collected through tax revenue, comes at market value. If an asset is marginal, and the market value of its profits is about equal to its cost, then the value of the deduction is equal to the present value of the tax on future profits. But if an asset is inframarginal, the market value of its profits is greater than its book cost, and the government receives positive tax revenue in present-value terms.

With these two effects combined, a corporate income tax with expensing can continue to generate revenue without the substantial distortions to investment behavior seen in a corporate income tax without expensing. The tax still has other harmful effects on output¹⁴ but the basic case against capital income taxes, as outlined by Kenneth Judd in 1985, no longer applies.

Moving to a Competitive Rate Reduces Profit Shifting

Another problem with the U.S. corporate income tax is profit shifting. While income can often (though not always) be defined in a straightforward way for firms, it is much harder to assign the income a precise location. Many multinational corporations have supply chains that run through many tax jurisdictions. It is often unclear whether income is earned in the place where goods are produced, or in the place where they are sold.

Further complicating the issue are cases like intellectual property. For example, a popular movie series might be produced by an American film company with American and British actors, using filming locations in Tunisia and Guatemala. If the brand value of the movie series is substantial, then apportioning income to the different jurisdictions would have to involve some sort of accounting of how much of the brand value comes from each place. This is, in practice, an extremely subjective exercise.

Firms' accounting in such subjective cases tends to favor income realizations in low-tax jurisdictions, for the obvious reason of self-interest. This phenomenon is known as profit shifting.¹⁵ While some efforts to stop the flow of income to low-tax jurisdictions might be prudent, in practice, it is an impossible exercise to do this entirely. The continued existence of profit shifting as an issue, despite substantial efforts against base erosion, proves this to be the case.

Therefore, it makes sense to avoid having a corporate income tax rate much higher than the norm, in order to avoid this problem. Unfortunately, the U.S. has the third highest corporate tax rate in the world, and the highest in the OECD.¹⁶ These factors make the U.S. unusually susceptible to base erosion through profit shifting.

¹⁴ For example, it still reduces the returns to work. If the tax burden falls on those who own the firm, then it raises the price of future consumption. If the tax burden falls on the consumers of the firm's products, then it raises the price of current consumption.

¹⁵ See: Cederwall, Erik. "Tax Foundation Forum: Making Sense of Profit Shifting." Tax Foundation. May 2015. <http://taxfoundation.org/blog/tax-foundation-forum-making-sense-profit-shifting>.

¹⁶ Pomerleau, Kyle. "Corporate Income Tax Rates Around the World." Tax Foundation. October 2015. <http://taxfoundation.org/article/corporate-income-tax-rates-around-world-2015>.

A Tax Foundation study using different estimates of semi-elasticity (that is, the degree to which income realization increases as the rate declines) found that, under one economist's estimate of the semi-elasticity,¹⁷ the revenue-maximizing corporate rate is lower than the current U.S. top rate.¹⁸ Even under a less aggressive estimate of profit shifting, the budgetary cost of a corporate income tax rate cut was substantially reduced.¹⁹ These findings suggest that a corporate tax rate reduction would be less costly than a simple estimate would show.

Overall, a rate reduction would be part of the set of reforms required to eliminate the problems with the U.S. corporate income tax as it currently stands.

Moving to a Territorial System Would Curb Inversions

An inversion is a process by which a corporation changes its legal location from one tax jurisdiction to another. In this process, a company from one country purchases a company from another (say, a foreign company purchases an American one) and as a result, the merged corporation now is legally located in the place where the purchasing company was located. It does not, however, change the operational structure of the business or the physical location of the purchased company's assets.²⁰

A common misconception about corporate inversions out of the United States is the belief that corporations undertake inversions to avoid the high U.S. tax rate on its domestic income. In fact, the more relevant purpose of an inversion is to avoid the unique U.S. "worldwide" system of taxation on the U.S. corporation's foreign assets.

Put simply, if a British corporation earns income in France, under the UK's territorial system, it pays only French taxes on its French-source income. In contrast, if a U.S. corporation earns income in France, it pays both French taxes and U.S. taxes. This is a substantial disadvantage to describing oneself as a U.S. corporation. Because the status of being a U.S. corporation has very little to do with the physical world, firms can often reinvent themselves as non-U.S. corporations without substantial changes to their actual operations.

17 See: Clausing, K. "Multinational Firm Tax Avoidance and Tax Policy." *National Tax Journal* 62, no. 4 (2009): 703-725.

18 Ekins, Gavin. "Corporate Income Tax Rates and Base Broadening from Income Shifting." Tax Foundation. October 2015. <http://taxfoundation.org/article/corporate-income-tax-rates-and-base-broadening-income-shifting>.

19 Id.

20 See: Pomerleau, Kyle. "Everything You Need to Know About Corporate Inversions." Tax Foundation. August 2014. <http://taxfoundation.org/blog/everything-you-need-know-about-corporate-inversions>.



As Gregory Mankiw put it in the New York Times:²¹

A main feature of the modern multinational corporation is that it is, truly, multinational. It has employees, customers and shareholders around the world. Its place of legal domicile is almost irrelevant. A good tax system would focus more on the economic fundamentals and less on the legal determination of a company's headquarters.

Most nations recognize this principle by adopting a territorial corporate tax. They tax economic activity that occurs within their borders and exclude from taxation income earned abroad. (That foreign-source income, however, is usually taxed by the nation where it is earned.) Six of the Group of 7 nations have territorial tax systems.

The exception is the United States, which has a worldwide corporate tax. For companies incorporated in the United States, the tax is based on all income, regardless of where it is earned. Again, moving our tax code toward international norms would help slow corporate inversions.

Moving to a territorial system would be the third reform required to eliminate the major problems with the corporate income tax.

Conclusion

There is near-universal consensus that the U.S. corporate income tax currently does not work well. While some economists believe the corporate income tax is worthy of elimination, a more incremental reform would be to improve it substantially through major reforms. Some of the major problems with the tax could be alleviated through three key reforms: the adoption of expensing, a reduction in the rate, and a move to a territorial system. Together, these reforms would preserve the corporate income tax as a means of raising revenue while mitigating its economic harms.

²¹ *Supra*, note 3.