# *The Hidden Cost of* Federal Tax Policy

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# CONTENTS

CHAPTER 4

# Why Do Workers Bear a Significant Share of the Corporate Income Tax?

Who bears the cost of corporate taxation: the owners of capital or the workers?[1] Corporate income tax reform debates can become bogged down in whether corporations pay their "fair share" of taxes or whether the revenue effects of tax reform should be scored dynamically or calculated by using a static model. But debaters often overlook who ultimately bears the true costs of corporate income taxes.[2] Estimates of how the corporate income tax burden is divided between owners of capital and workers vary, from the Treasury Department's ratio of 82:18 to one frequently cited study's estimate of 30:70.[3] If one group has the opportunity to decrease its tax burden, there can be additional long-term costs and even deadweight losses from corporate income taxation. This chapter examines tax incidence in the long term—after corporations have had the opportunity to relocate capital across industries and to other countries.

Determining who bears the burden of corporate taxation can help policymakers understand the long-run behavioral responses of both workers and

Table 4.1. Five Drivers of Corporate Tax Incidence and Their Effects

| DRIVER OF CORPORATE TAX INCIDENCE | SHARE OF TAX BURDEN FALLING ON CAPITAL GAINS | SHARE OF TAX BURDEN FALLING ON LABOR |
|---|---|---|
| High international product substitution | ↓ | ↑ |
| High GDP (size of country) | ↑ | ↓ |
| High international capital mobility | ↓ | ↑ |
| High factor substitution (labor for capital)[a] | ↑ | ↓ |
| High degree of industry capital intensity | ↓ | ↑ |

*Source:* Jennifer Gravelle, "Corporate Tax Incidence: Review of General Equilibrium Estimates and Analysis," *National Tax Journal* 66, no. 1 (March 2013): 185–214. The order in which the five drivers appear in this chapter is different from the order used in Gravelle's submission to the *National Tax Journal*.
a. Jennifer Gravelle writes about labor substitution as follows: "The less firms can substitute for capital, the larger the burden that labor will bear."

businesses to the US corporate income tax code. If American companies are becoming more sensitive to US corporate income taxation, a migration of new or existing capital to foreign countries can be expected. This chapter does not provide elasticity estimates for capital; instead, it examines five different drivers laid out by Jennifer Gravelle, an economist with the Congressional Budget Office, that determine how sensitive capital is to corporate taxation in an open-economy framework. These drivers are (a) high international product substitution, (b) high GDP,

(c) high capital mobility, (d) high factor substitution, and (e) high degree of industry capital intensity (see table 4.1).[4] After examining the five drivers, we conclude that the sensitivity of US businesses to corporate taxation is increasing and that the amount of capital invested in the United States may further decrease in the long term as a result.

## LITERATURE REVIEW OF CORPORATE INCOME TAX INCIDENCE

One of the most frequently cited studies on corporate income tax incidence is a 2006 paper by Jane Gravelle and Kent Smetters. These authors problematically give weight to short-run empirical estimates of imperfect product substitution and ignore the effect of corporate income tax on capital growth, both of which are key contributors to their conclusion that domestic labor's burden is only 21 percent of corporate tax revenue.[5] In her 2013 survey of the existing literature, Jennifer Gravelle estimates that 40 percent of the corporate tax burden falls on labor and 60 percent on capital—concluding that the United States operates in more of a closed economy than most models assume.[6] This chapter examines Jennifer Gravelle's five drivers of incidence and concludes that capital bears a decreasing share of the corporate income tax burden because the United States continues to become a more open economy. For example, increasing international capital mobility means that labor's share of the corporate income tax increases, whereas capital's share decreases, all other things being equal.

Table 4.2. Research Summaries on Corporate Income Tax Incidence

| STUDY | EFFECT OF CORPORATE INCOME TAX ON WAGES | IMPORTANT DIFFERENCES IN SCOPE AND ASSUMPTIONS |
|---|---|---|
| Arulampalam, Devereux, and Maffini (2012) | Each $1 increase in the tax bill reduces median real wage by $0.49. | Measures effect of corporate income tax paid by firms on employee compensation using data on more than 500,000 firms in 9 European countries from 1996 to 2003 |
| Felix and Hines (2009) | Each $1 increase in the tax bill reduces union wages by $0.54 | Uses data from 2000 to estimate effects of state corporate income taxes on union wages |
| Hassett and Mathur (2010) | Each $1 increase in tax revenues leads to a $3 to $4 decrease in real wages. | Uses aggregate wage and tax data within the manufacturing sector for 72 countries from 1981 to 2002 in a general equilibrium model |
| Felix (2007) | A 1 percentage point increase in top statutory corporate income tax rate decreases annual wages by 0.7%. | Uses aggregate data on wages of workers at different skill levels from 19 Organisation for Economic Co-operation and Development countries over the period 1979–2000 |
| Desai, Foley, and Hines (2007) | Labor bears between 45% and 75% of corporate income tax incidence. | Uses data from US multinational firms operating in 50 countries from 1989 to 2004 to jointly estimate the relative share of corporate income tax borne by labor and capital |

Table 4.2. (*continued*)

| STUDY | EFFECT OF CORPORATE INCOME TAX ON WAGES | IMPORTANT DIFFERENCES IN SCOPE AND ASSUMPTIONS |
|---|---|---|
| Liu and Altshuler (2013) | The burden of a $1 increase in the corporate income tax liability borne by labor is about $0.60 | Uses data on individual US workers matched with industry-level effective marginal tax rates and industry concentration ratios in a general equilibrium model to analyze the extent to which imperfect competition affects the incidence of the corporate income tax |

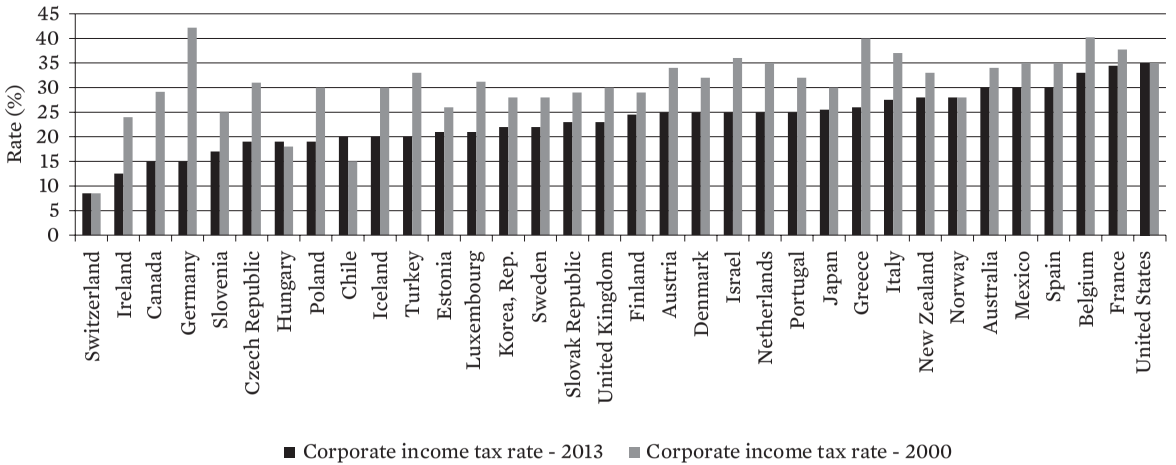
*Sources:* Wiji Arulampalam, Michael P. Devereux, and Giorgia Maffini, "The Direct Incidence of Corporate Income Tax on Wages," *European Economic Review* 56, no. 6 (August 2012): 1038–54; R. Alison Felix and James Hines, "Corporate Taxes and Union Wages in the United States," NBER Working Paper 15263, National Bureau of Economic Research, Cambridge, MA, 2009; Kevin A. Hassett and Aparna Mathur, "Spatial Tax Competition and Domestic Wages," Working Paper 185, American Enterprise Institute, Washington, DC, 2010; Alison R. Felix, "Passing the Burden: Corporate Tax Incidence in Open Economies," Regional Research Working Paper 07-01, Federal Reserve Bank of Kansas City, Kansas City, MO, October 2007; Mihir A. Desai, Fritz Foley, and James R. Hines Jr., "Labor and Capital Shares of the Corporate Tax Burden: International Evidence," Prepared for the International Tax Forum and Urban Institute–Brookings Institution Tax Policy Center Conference on Who Pays the Corporate Tax in an Open Economy; Li Liu and Rosanne Altshuler, "Measuring the Burden of the Corporate Income Tax under Imperfect Competition," *National Tax Journal* 66, no. 1 (March 2013): 215–38.

In contrast, other scholars adopt assumptions about the international market being perfectly competitive, where labor bears a larger portion of corporate income tax owing to the ability of corporations to move capital across countries (see table 4.2).

Of course, markets are not perfectly competitive, and capital is not completely mobile. In their frequently cited 1963 book, Marian Krzyaniak and Richard Musgrave find that after-tax profits rise in the short run in response to increases in the corporate income tax.[7] According to University of California–Berkeley economist Alan Auerbach, taxation on capital in an imperfect market further restricts output: "[A] tax on production in an industry in which output is already restricted by imperfect competition will be more distortionary than one in a competitive environment, because it exacerbates an already existing distortion."[8] As a result, the US share of global corporate capital will decline in the long run in response to less burdensome corporate tax rates abroad. A rising burden on corporate capital discourages capital formation in the United States and lowers wages and economic growth. In a 2012 paper, economists Ergete Ferede and Bev Dahlby cite a 2010 publication of the Organisation for Economic Co-operation and Development that claims that corporate income taxes "have the most adverse effect on per capita GDP growth followed by personal income and consumption taxes."[9]

To encourage capital formation in the United States and promote higher wages and economic growth, federal tax policy reform should deal with the increasingly high statutory US corporate tax rate, especially compared to the rates of other countries (see figure 4.1; see also chapter 3). The historical trend suggests that international markets are clearly becoming more competitive, not less (see figures 4.2 and 4.3, pages 90 and 92). Consequentially, the data indicate that the trend

Figure 4.1. Corporate Income Tax Rates in Organisation of Economic Co-operation and Development Countries, 2000 and 2013




*Source*: OECD, "Taxation of Corporate and Capital Income," table II.I, Paris, May 2013.

is toward labor bearing more of the corporate tax burden. As chapter 3 explains, instead of retaining high statutory tax rates on corporations, which will likely increase capital flight, tax policy reform should lower the US corporate tax rate.[10]

However, neither the effective rate of tax on corporate income nor the statutory rate can fully explain the economic distortions caused by the federal tax system. Another cause for economic inefficiencies is the complexity of the US tax code. A 2013 paper by Hans Bacher and Marius Brülhart finds that the complexity of a corporate tax code is a significant determinant in the rate of new businesses being formed.[11] As chapter 1 explains, the complexity of the US tax code costs the economy $215 billion to $987 billion annually. Preferential treatment of debt financing is another determinant of economic inefficiency, often exacerbated by a high corporate income tax rate. A 2010 paper by Simeon Djankov, Tim Ganser, Caralee McLiesh, Rita Ramalho, and Andrei Shleifer finds a significant positive association between the effective corporate tax rate and the ratio of aggregate debt to equity.[12]

Given the significant differences worldwide in corporate income tax rates, owners of capital have many choices regarding which industries to invest in and where to locate geographically. As long as these domestic and international trends continue to reveal an increased sensitivity of corporate capital, a continued decline can be expected in returns on investments in capital-intensive industries in the US corporate sector. We turn now to a detailed discussion of Jennifer

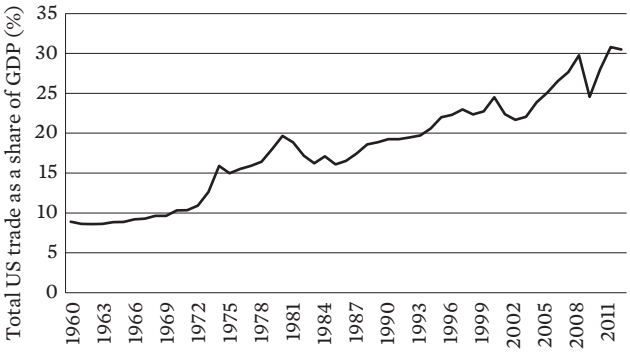
Gravelle's five drivers of capital sensitivity to corporate taxation.

## DRIVER 1: HIGH INTERNATIONAL PRODUCT SUBSTITUTION

The elasticity of product substitution assesses the percentage change in demand for an imported good versus a domestically produced good in response to a price change. Jane Gravelle and Kent Smetters's key argument for why corporate capital must bear a high portion of the cost of corporate taxation is that demand substitutability between domestic and foreign tradable goods is low.[13] They claim, in other words, that there are barriers to importing international goods, which in turn protect returns on domestic capital investments in a "closed" economy, thus lowering the corporate income tax burden on labor.

One problem with that argument, as pointed out by William Randolph, is that the data cited to support it examine only the short-run elasticity of international trade substitution.[14] According to Gravelle and Smetters, assuming that capital mobility is high, labor's share of corporate income tax could be as low as 21 percent. If these short-run inelastic numbers indicate US consumers' historical preferences between the same domestically or internationally made product, the levels of US trade as a share of the economy should not increase. However, examination of the continually rising trend of US trade makes clear that these short-run numbers cannot be indicative of actual consumer choices (see figure 4.2).

Figure 4.2. Total US Trade as a Percentage of GDP, 1960–2011




*Source:* Data from US Census Bureau, Foreign Trade Division, "U.S. Trade in Goods and Services—Balance of Payments (BOP) Basis," June 4, 2013.

*Note:* Total US trade = US exports + US imports.

Trade's rising share of the US economy reveals that Americans more frequently find that their preferred product was produced abroad rather than at home. Although alternative elasticity numbers are not provided here, this chapter argues that the long-term preference of US consumers is a more convincing measure of US consumer preferences.

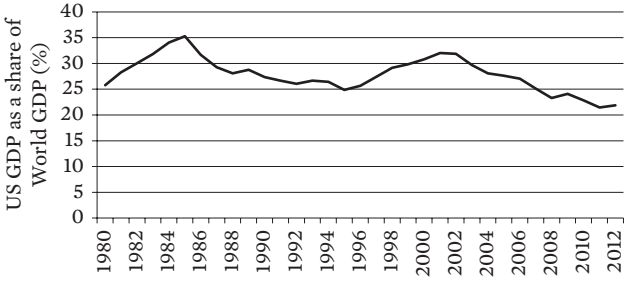
Rising levels of trade mean that consumers have more choices than ever. Although a historical argument could be made that relatively low levels of international trade were once small enough that they did not affect corporate decision making regarding where to invest globally for the highest returns on capital, this narrative is unraveling as total trade is growing as a share of US GDP. Products made in foreign markets are becoming increasingly competitive with American

products, and the ease with which capital flows across borders is increasing.

## DRIVERS 2 AND 3: HIGH GDP AND CAPITAL MOBILITY

The incidence of the corporate income tax that is borne by capital owners depends on how easily capital in the United States can be moved to other countries and on the existing level of capital in a given country relative to the rest of the world. The more easily capital can leave the country for investments with higher payouts, the more heavily American workers will bear the cost of corporate taxation. Part of the problem with the taxation of capital is that at some level it discourages the very formation of capital—startups or a new branch are instead opened in a more tax-competitive country. In separate works, Jane Gravelle and Kent Smetters, Jennifer Gravelle, and William Randolph examine the size of a country's GDP as an explanatory measure for determining the incidence of taxation between labor and capital.[15] James Melvin likewise claims that a country's relative size of GDP may affect international prices.[16] The theory is that the larger a country's market is (as approximated by GDP), the greater the country's ability to determine factor prices by determining the price of the good or service for sale.[17] Randolph finds that the US economy accounted for 30 percent of the world economy,[18] and Jennifer Gravelle uses Randolph's numbers to assert that the United States possesses 30 percent of the world's capital stock.[19] Although the United States used to possess

Figure 4.3. US GDP as a Percentage of World GDP




*Source:* Data from International Monetary Fund, World Economic Outlook Database, April 2013.

more than 50 percent of the world's capital stock,[20] a rapidly growing foreign market has meant that the US share has shrunk relative to that of international competitors (see figure 4.3). International markets are pulling new capital away to more competitive policy environments.

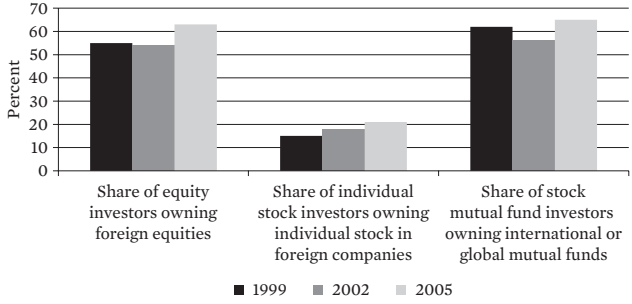
It can be concluded from figures 4.2 and 4.3 that foreign markets have become more competitive. Not only is international trade more prevalent than at any other time in US history (meaning that US consumers are more frequently buying abroad, and that foreign consumers are more frequently buying US goods), but also an increasing number of consumers worldwide also can afford to buy products (meaning that the importance of being within US borders to be close to consumers is decreasing). As markets become more internationally competitive with one another, national corporate tax policy becomes a more important deter-

minant of the level and location of a business's capital investments.

Even under assumptions of imperfect competition, the continued decline in relative US GDP suggests that the ability of the United States to set prices will become more limited as world GDP rises—making the United States more of a price taker than a price setter. As a result, corporate taxation has implications for businesses that are trying to decide where to increase production, where to locate for new production, and when to add to existing investment. Economists John Mutti and Harry Grubert find production intended for exports to be particularly sensitive to tax differences: if proximity to the market is decreasingly important, the role of tax policy becomes more significant.[21] For businesses that want to locate in foreign countries for new production, effective average tax rates are a significant determinant.[22] Djankov and colleagues find that "a 10 percentage point increase in the first-year effective corporate tax rate reduces the aggregate investment to gross domestic product (GDP) ratio by about 2 percentage points (mean is 21 percent), and the official entry rate by 1.4 percentage points (mean is 8 percent)."[23] Studies by Grubert and Mutti and by James Hines and Eric Rice also find a large negative effect of the average tax rate on capital stock.[24]

Another way to examine whether capital is more mobile today is to determine whether US investors have increased their investments in foreign stocks and bonds. Greater amounts of such investments might suggest that payouts in the international community

Figure 4.4. Ownership of Foreign Equities




*Source:* Investment Company Institute and the Securities Industry Association, "Equity Ownership in America," 2005, figure 31.

are rising relative to payouts from US-based firms, all other things being equal. One small set of time series data on statutory combined corporate tax cuts provides additional evidence of greater capital competition (see figure 4.4).

The rising trend in foreign equity ownership might be the result of increased economic growth in foreign countries (increased competition of return), the desire for a more diversified risk portfolio, or the result of the growing noncompetitive nature of a US business relative to a lower-taxed business (as average global tax rates continue to fall). Regardless of the reason, these trends may indicate that the investment choices available to owners of capital are greater now than in the past. To the extent that corporate tax reform can increase the desirability of US equity, tax reform should seek to decrease what has become the highest statutory corporate tax rate among developed countries.

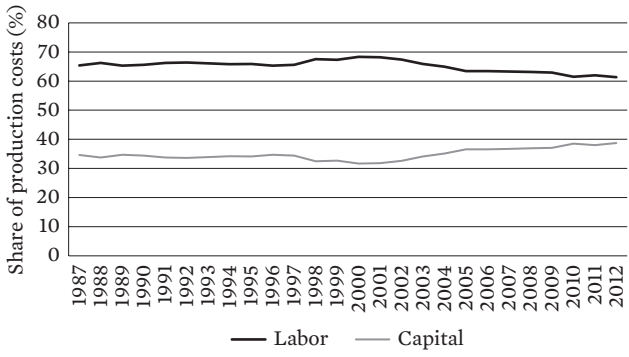
## DRIVERS 4 AND 5: HIGH FACTOR SUBSTITUTION AND HIGH DEGREE OF INDUSTRY CAPITAL INTENSITY

Jennifer Gravelle's last two drivers that determine tax incidence are factor substitution and factor intensity. The more competitive markets are, the more these two drivers will be affected by corporate taxation. *Factor substitution* is a measurement of how easily businesses can exchange labor for capital over time, whereas *factor intensity* is a static measurement of how much labor and how much capital a particular industry uses for profits. In separate works, Melvin and Randolph find that the domestic burden of the corporate income tax is borne by the factor used most intensely.[25] For now, labor remains the predominant factor of production for US business profits. Although this chapter does not provide estimates of an elasticity of substitution between capital and labor, in the overall US economy capital is clearly being substituted for labor (see figure 4.5).

One possibility is that the corporate income tax actually drives resources and capital into the noncorporate sector. The model that best examines this idea is a closed economy, where capital can be located only in the corporate or noncorporate sector of a given economy and can neither be created nor destroyed. As economists Mihir Desai, C. Fritz Foley, and James Hines claim:

> If the corporate sector of the economy has a lower capital/labor ratio than the noncorporate

Figure 4.5. Share of Production Costs for Capital and Labor




*Source:* US Bureau of Labor Statistics, "Net Multifactor Productivity and Costs, 1987–2013: Private Business Sector (Excluding Government Enterprises)."

> sector, then the introduction of a corporate tax shifts resources into the noncorporate sector and thereby raises the demand for capital. If this effect is large enough, then it has the potential to exceed in magnitude the countervailing impact of factor substitution, thereby implying that higher rates of corporate tax are associated with greater after-tax returns to capital including capital invested in corporations. It would then follow that labor bears the burden of the corporate tax in the form of lower wages.[26]

Hence, one possible interpretation of figure 4.5 is that, in addition to deadweight loss from the economic efficiencies of the corporate tax code, the noncorporate economy is growing in the United States at

the expense of growth in the corporate sector. Desai, Foley, and Hines reach a similar conclusion in an open-economy model that follows from using an assumption of perfect capital mobility by which after-tax rates of return on capital cannot differ across countries. Laurence Kotlikoff and Jianjun Miao find that the corporate income tax keeps entrepreneurs from incorporating because of the large fixed costs of public incorporation and that therefore fewer workers are hired.[27] As a result, a number of businesses remain S corporations when they might otherwise become C corporations.

The other possibility, with seemingly more significant economic costs, is that businesses are moving capital to foreign countries. If a business desires to maintain its corporate status, it may move its capital to a foreign market. Whether capital leaves for foreign markets or for the US noncorporate sector, the pressures of corporate taxation increase the ratio of capital to labor in the corporate sector such that capital becomes a relatively more profitable factor of production. Labor, the less marginally productive factor of production, bears the cost of the corporate income tax through falling wages or slower wage growth.

## CONCLUSIONS

Jennifer Gravelle presents five drivers for determining whether corporate tax incidence falls on capital or on labor: (a) degree of international product substitution, (b) size of domestic GDP relative to world GDP, (c) degree of international capital mobility,

(d) degree of factor substitution, and (e) degree of capital intensity. Establishing the actual incidence, or who bears the burden of the corporate income tax, is significant because only then will policymakers have the knowledge to understand whether capital in the US corporate sector is able to grow or is pressured to leave (either internationally or domestically to the noncorporate sector). Additionally, policymakers can then better understand who exactly is being taxed when an increase in corporate income taxes is being considered. For example, if the burden of the corporate tax falls primarily on labor, proposals to raise the corporate income tax are really a call to raise taxes on workers, not the owners of capital. This realization would deepen policymakers' understanding of the progressive or regressive nature of various tax reform proposals.

Contrary to Jennifer Gravelle's assertion that demand substitutability between domestic and foreign tradable goods is low, the upward trend in US trade as a percentage of GDP is clear (see figure 4.2, page 90). Trade as a percentage of GDP has risen from less than 10 percent to more than 30 percent as of 2011. US corporations are reaching international markets, and international producers are better able than ever to reach US consumers. US consumers now use more international products than at any other time, thereby decreasing the importance of American-made products.

The level of US capital relative to that of the rest of the world is falling. The United States, which once held more than 50 percent of the world's capital, now holds less than 25 percent (see figure 4.3, page 92). These decreasing numbers mean that the importance

of a corporation being located close to the US market is lower than ever.

Empirical studies show that a country's level of capital investment is sensitive to the effective corporate tax rate and that investors are increasing the level of international capital in their portfolios. In other words, new businesses gravitate toward friendlier tax policies, and US investors are increasingly investing overseas.

Factor substitution of capital for labor is increasing, whereas labor intensity, although trending lower, remains high (see figure 4.5, page 96). *Factor substitution* measures how easily a business can exchange labor for capital (or vice versa) over time, whereas *factor intensity* is a static measurement of how much labor or capital a certain industry uses in the course of making profits.

With growing levels of product substitution, relatively lower US GDP as a share of the world's GDP, high international capital mobility, the ability to use less labor in total production costs (factor substitution), and the high use of labor to produce corporate receipts, all five indicators provided by Jennifer Gravelle point to an economy in which labor bears more of the burden of corporate taxation than is traditionally accepted in the current literature.

See also Joint Committee on Taxation, "Estimates of Federal Tax Expenditures for Fiscal Years 2012–2017," JCS-1-13, Washington, DC, February 1, 2013, table 1.

27. OECD, "Revenue Statistics: Comparative Tables," OECD StatExtracts database, http://stats.oecd.org/Index.aspx?DataSetCode=REV.
28. Alex Brill and Kevin Hassett, "Revenue-Maximizing Corporate Income Taxes," Working Paper 137, American Enterprise Institute, Washington, DC, July 31, 2007.

## CHAPTER 4: WHY DO WORKERS BEAR A SIGNIFICANT SHARE OF THE CORPORATE INCOME TAX?

1. Benjamin Harris, senior research associate at the Brookings Institution, states:

   > Determining who bears the burden of the corporate income tax is a complicated exercise. The corporate tax can influence the investment decisions of capital owners, how companies finance investment, and the international allocation of capital, and these effects can vary not only across countries but also across sectors. Changes in firm and investor decisions can then affect wages, output prices, and levels of investment, which in turn can influence the terms of trade. In sum, the complex set of economic interactions makes it difficult to isolate the impact of the corporate tax on the return to capital and land, wage rates, and consumer prices.

   See Benjamin H. Harris, "Corporate Tax Incidence and Its Implications for Progressivity," Tax Policy Center, Urban Institute–Brookings Institution, Washington, DC, November 2009.
2. Jason J. Fichtner and Nick Tuszynski, "Why the United States Needs to Restructure the Corporate Income Tax," Mercatus Working Paper 11-42, Mercatus Center at George Mason University, Arlington, VA, November 2, 2011.
3. In recent changes to the understanding of who ultimately bears the costs of taxation, the Joint Committee on Taxation assumes that 75 percent of the tax is paid by owners of capital and 25 percent by workers. Joint Committee on Taxation, "Modeling the Distribution of Taxes on Business Income," JCX-14-13, Washington, DC, October 16, 2013. Slightly older methodology from the Treasury Department assumes that 82 percent of the corporate income tax is borne by capital

and 18 percent by labor. See Julie Anne Cronin, Emily Y. Lin, Laura Power, and Michael Cooper, "Distributing the Corporate Income Tax: Revised U.S. Treasury Methodology," US Treasury Department, Washington, DC, May 17, 2012. Alternatively, other studies find that labor bears a significant portion of the corporate income tax, including a paper by economists Mihir Desai, C. Fritz Foley, and James Hines, where labor bears 75 percent of the cost of capital. See Mihir A. Desai, C. Fritz Foley, and James R. Hines Jr., "Labor and Capital Shares of the Corporate Tax Burden: International Evidence," prepared for the International Tax Forum and Urban Institute–Brookings Institution Tax Policy Center Conference on Who Pays the Corporate Tax in an Open Economy, December 18, 2007. Note: The short- versus long-run effects of who bears the burden of a tax are an important consideration when evaluating the incidence of a tax. In the short run the corporate income tax may fall on either owners of capital, workers, or consumers through higher prices. In the long run, capital may relocate across industries and countries. This chapter follows the convention outlined in Joint Committee on Taxation, "Modeling the Distribution of Taxes on Business Income," which states: "Following the standard view expressed in the economic literature, the Joint Committee staff's distributional methodology assumes that none of the burden of corporate income taxes flows through to consumers. These long-run incidence assumptions match those currently made by the CBO."

4. Jennifer Gravelle, "Corporate Tax Incidence: Review of General Equilibrium Estimates and Analysis," *National Tax Journal* 66, no. 1 (March 2013): 185–214.
5. Jane G. Gravelle and Kent A. Smetters, "Does the Open Economy Assumption Really Mean That Labor Bears the Burden of a Capital Income Tax?," *Advances in Economic Analysis and Policy* 6, no. 1, article 3 (August 2006): 1–44. See also William C. Randolph, "International Burdens of the Corporate Income Tax," Working Paper 2006-09, Congressional Budget Office, Washington, DC, August 2006; R. Alison Felix, "Passing the Burden: Corporate Tax Incidence in Open Economies," Regional Research Working Paper 07-01, Federal Reserve Bank of Kansas City, Kansas City, MO, October 2007.
6. Gravelle, "Corporate Tax Incidence."
7. Marian Krzyaniak and Richard A. Musgrave, *The Shifting of the Corporation Income Tax* (Baltimore: Johns Hopkins Press, 1963).

8. Alan J. Auerbach, "Who Bears the Corporate Tax? A Review of What We Know," NBER Working Paper 11686, National Bureau of Economic Research, Washington, DC, October 2005.
9. Ergete Ferede and Bev Dahlby, "The Impact of Tax Cuts on Economic Growth: Evidence from the Canadian Provinces," *National Tax Journal* 65, no. 3 (September 2012): 563–94, 564, citing OECD, "Tax Policy Reform and Economic Growth," OECD Tax Policy Study 20, Organisation for Economic Co-operation and Development, Paris, 2010.
10. US Department of the Treasury, "General Explanations of the Administration's Fiscal Year 2015 Revenue Proposals," Washington, DC, March 2014.
11. Hans Ulrich Bacher and Marius Brülhart, "Progressive Taxes and Firm Births," *International Tax and Public Finance* 20, no. 1 (February 2013): 129–68.
12. Simeon Djankov, Tim Ganser, Caralee McLiesh, Rita Ramalho, and Andrei Shleifer, "The Effect of Corporate Taxes on Investment and Entrepreneurship," *American Economics Journal: Macroeconomics* 2, no. 3 (July 2010): 31–64.
13. Gravelle and Smetters, "Does the Open Economy Assumption Really Mean That Labor Bears the Burden of a Capital Income Tax?"
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16. James R. Melvin, "The Corporate Income Tax in an Open Economy," *Journal of Public Economics* 17, no. 3 (1982): 393–403.
17. Gravelle, "Corporate Tax Incidence."
18. Randolph, "International Burdens of the Corporate Income Tax."
19. Gravelle, "Corporate Tax Incidence."
20. Arnold C. Harberger, "The ABCs of Corporation Tax Incidence: Insights into the Open-Economy Case," in *Tax Policy and Economic Growth*, 51–73 (Washington, DC: American Council for Capital Formation Center for Policy Research, 1995).
21. John Mutti and Harry Grubert, "Empirical Asymmetries in Foreign Direct Investment and Taxation," *Journal of International Economics* 62, no. 2 (March 2004): 337–58.
22. Michael P. Devereux and Rachel Griffith, "Taxes and the Location of Production: Evidence from a Panel of US Multinationals," *Journal of Public Economics* 68, no. 3 (June 1998): 335–67. See also Sven Stöwhase, "Profit Shifting

Opportunities, Multinationals, and the Determinants of FDI," Discussion Paper in Economics 29, Ludwig Maximilian University of Munich, Munich, Germany, 2002.

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## CHAPTER 5: HOW DOES THE CORPORATE TAX CODE DISTORT CAPITAL INVESTMENTS?

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2. Congressional Budget Office (CBO), "Taxing Capital Income: Effective Rates and Approaches to Reform," Washington, DC, October 2005.
3. Michael Schuyler, "Comparing the Growth and Revenue Effects of Four Proposed Depreciation Systems: Baucus, Camp, Wyden, and Full Expensing," Fiscal Fact 433, Tax Foundation, Washington, DC, June 2014.
4. For accounting purposes, assets are often depreciated using the simple straight-line method. But there are other acceptable practices, as outlined in the Financial Accounting Standards Board's Accounting Standards Codification of Generally Accepted Accounting Principles (GAAP). See also Entin, "Tax Treatment of Capital Assets"; *Hearing on Tax Reform Options: Incentives for Capital Investment and Manufacturing before the United States Senate Committee on Finance*, 112th Cong., 2nd sess. (March 6, 2012) (testimony