

**MODELING THE DISTRIBUTION OF TAXES
ON BUSINESS INCOME**

Prepared by the Staff
of the
JOINT COMMITTEE ON TAXATION



October 16, 2013
JCX-14-13

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INTRODUCTION

In estimates of the distribution of Federal taxes, the staff of the Joint Committee on Taxation (“Joint Committee staff”) has traditionally provided an analysis only of changes to individual income, employment, and excise taxes. The Joint Committee staff has refrained from estimating the distribution of changes to the taxation of corporate income as reported on corporate tax returns or of changes to the tax treatment of income, gains, losses, deductions, or credits of passthrough entities that apply at the level of the passthrough entity and therefore do not appear on individual returns. Past decisions not to estimate the distribution of taxes on corporations and passthrough entities were the result both of uncertainties among economists regarding the appropriate incidence of business taxes and to data limitations which made it impractical to distribute such taxes in the timeframe necessary to fit the legislative schedule. However, the economic literature has continued to advance. The Joint Committee staff believes that public finance economists now have a better understanding of, and can more appropriately measure, the incidence of taxes on business income. Reflecting the recent desire of Members of Congress for information on the distributional impact of business tax changes as well as the narrowing uncertainty regarding the incidence of taxes on business income, the Joint Committee staff believes it is appropriate to include estimates of the distributional effects of business tax changes in their analysis. In addition, more detailed data and faster computing speeds help make timely completion of such distributional effects more feasible.

This document outlines the approach that the Joint Committee staff employs, as of October 16, 2013, for distributing the taxes on the income of corporations and passthrough entities.¹ The first section provides background on economic research about distributing business taxes and describes the approaches of other agencies to distribute these taxes. The second section provides a detailed discussion of the new approach employed by the Joint Committee staff for estimating the distribution of business taxes. The third section considers an example of distributing a reduction in business taxes impacting both corporations and passthrough entities to illustrate the effect of this change. The fourth section briefly summarizes this report and indicates that the new methods adopted by the Joint Committee staff for distributing taxes on corporations and on businesses conducted in passthrough entities will continue to be refined to reflect the current understanding in the economics profession.

The Joint Committee staff welcomes comments regarding the modeling of the distribution of taxes on business income.

¹ This document may be cited as follows: Joint Committee on Taxation, *Modeling the Distribution of Taxes on Business Income* (JCX-14-13), October 16, 2013.

I. BACKGROUND AND PREVIOUS LITERATURE

The seminal research on the incidence of business taxes comes from the work of Arnold Harberger,² who developed a general equilibrium model of the incidence of the corporate income tax. He concludes that, because owners of capital have far less ability to adjust their investment decisions to changes in taxation than labor has, the entire long-run burden of the corporate tax falls on capital owners, with both corporate and non-corporate capital owners being affected. A key aspect of Harberger's original analysis is that his estimates are long-run estimates. In the short run, he observes that current corporate capital owners bear the entire burden of the tax since the expected after-tax return on that investment is diminished for both the capital owner and any potential purchasers of that capital.

Harberger's conclusion that current corporate capital owners bear the entire corporate tax burden in the short run is reaffirmed by subsequent research.³ However, recent research has noted limitations of the model in other respects. The most significant of these limitations is that Harberger's original results were built on the assumption of a closed economy, in which capital could not flow internationally among countries. In an open economy, where capital is mobile and goods can be traded internationally, capital owners can escape a portion of the long-run burden of business taxes and shift that burden onto domestic labor through lowering wages or reducing employment.⁴ Some economists, however, emphasize that since the capital stock of the United States is large relative to the rest of the world, one may expect this outflow to reduce the worldwide rate of return on capital and limit the ability of capital owners to escape the incidence of the tax.⁵ Even with this limitation, some researchers have estimated that labor actually bears the majority of the burden of the corporate tax. Under the assumption that capital is perfectly mobile while the stock of labor is fixed, one study estimates that domestic labor bears approximately 70 percent of the long-run burden of the corporate income tax while owners of

² Arnold C. Harberger, "The Incidence of the Corporate Income Tax," *Journal of Political Economy*, 70:3, June 1962, pp. 215-240.

³ Alan J. Auerbach, "Who Bears the Corporate Tax?" in James Poterba, ed., *Tax Policy and the Economy Vol. 20*, ed., Cambridge, MA: MIT Press, 2006, pp. 1-40, and Arnold C. Harberger, "Corporate Tax Incidence: Reflections on what is Known, Unknown, and Unknowable" in John W. Diamond and George R. Zodrow, eds., *Fundamental Tax Reform: Issues, Choices, and Implications*, Cambridge, MA: MIT Press, 2008.

⁴ Arnold C. Harberger, "The ABCs of Corporate Tax Incidence: Insights into the Open-Economy Case," Prepared for Symposium of the American Council for Capital Formation Center for Policy Research, Tax Policy and Economic Growth, June 8, 1994.

⁵ Harry Grubert and John Mutti, "The Taxation of Capital Income in an Open Economy: The Importance of Resident-Nonresident Tax Treatment," *Journal of Public Economics* 27, August 1985, pp. 291-309 and Julie Anne Cronin *et al.* "U.S. Treasury Distributional Analysis Methodology," Office of Tax Analysis Working Paper, 2012.

domestic capital bear just 30 percent.⁶ Similarly, another study estimates that, for a large country such as the United States, if capital is mobile and labor is immobile, then labor bears almost the entire corporate tax burden.⁷

Nevertheless, while some research suggests that, when accounting for capital outflows, labor may bear most, or even all, of the corporate tax incidence, there are also reasons to believe that such results may understate the share borne by owners of domestic capital. Models concluding that most corporate income taxes are borne by labor generally assume that the U.S. after-tax rate of return to capital has no effect on worldwide capital supply,⁸ fail to capture the current tax-deductibility of corporate debt,⁹ ignore foreign reactions to U.S. tax changes,¹⁰ or assume that all capital receives just a normal rate of return.¹¹ Also, they typically assume that labor is completely immobile, while in reality one may expect some labor mobility. If these assumptions do not hold, the burden of the corporate tax shifts partially back towards owners of domestic capital.¹² Furthermore, most researchers adopt an open-economy general equilibrium model, as discussed above, to estimate the incidence of corporate income taxes. However, under an alternate differential allocation model, approximately 94 percent of the corporate tax falls on owners of domestic capital in the long run.¹³

⁶ William C. Randolph, “International Burdens of the Corporate Income Tax,” CBO Working Paper 2006-09, 2006.

⁷ Arnold C. Harberger, “Corporate Tax Incidence: Reflections on what is Known, Unknown, and Unknowable” in John W. Diamond and George R. Zodrow, eds., *Fundamental Tax Reform: Issues, Choices, and Implications*, Cambridge, MA: MIT Press, 2008.

⁸ Mihir A. Desai, C. Fritz Foley, and James R. Hines, “Labor and Capital Shares of the Corporate Tax Burden: International Evidence,” Prepared for International Tax Policy Forum Conference, Who Pays the Corporate Tax in an Open Economy, December 18, 2007.

⁹ Alan J. Auerbach, “Who Bears the Corporate Tax?” in James Poterba, ed., *Tax Policy and the Economy Vol. 20*, ed., Cambridge, MA: MIT Press, 2006, pp. 1-40 and Arnold C. Harberger, “Corporate Tax Incidence: Reflections on what is Known, Unknown, and Unknowable” in John W. Diamond and George R. Zodrow, eds., *Fundamental Tax Reform: Issues, Choices, and Implications*, Cambridge, MA: MIT Press, 2008.

¹⁰ Michael P. Devereux, Ben Lockwood, and Michela Redoano, “Do Countries Compete over Corporate Tax Rates,” *Journal of Public Economics*, 92:5-6, 2008, pp. 1210-1235, and Jennifer C. Gravelle, “Corporate Tax Incidence: Review of General Equilibrium Estimates and Analysis” Congressional Budget Office Working Paper 2010-03, 2010.

¹¹ Julie Anne Cronin *et al.* “U.S. Treasury Distributional Analysis Methodology,” Office of Tax Analysis Working Paper, 2012.

¹² Jennifer C. Gravelle, “Corporate Tax Incidence: Review of General Equilibrium Estimates and Analysis” Congressional Budget Office Working Paper 2010-03, 2010.

¹³ Under the differential allocation model, there is an average worldwide tax on capital. Each country’s deviation from this average represents a subsidy or a tax on corporate profits. This deviation from the worldwide

The debate over the incidence of corporate income taxes is ongoing, with a range of estimates on the precise breakdown depending on the assumptions of underlying models. Nevertheless, the existing research has arrived on two clear points of consensus. One is that the burden of the corporate income tax falls largely on domestic individuals, and therefore the corporate income tax does impact the well-being of these individuals. The second is that the burden of corporate income taxes is not borne entirely by capital owners, and is instead shared between capital owners and labor with the share borne by each being the subject of ongoing debate.

In response to the evolving economic consensus on corporate income taxes, other government agencies interested in tax distribution have updated their distributional methods. For example, from 1996 through 2010 the Congressional Budget Office (“CBO”) allocated the entire corporate income tax to owners of domestic capital - which was in line with the initial Harberger assumptions.¹⁴ More recently, however, CBO updated its distribution methods to reflect that a portion of the corporate income tax is borne by labor. The CBO now allocates 75 percent of corporate income taxes to capital owners and 25 percent to labor in its long-run estimates.¹⁵

Similarly, the Department of the Treasury (the “Treasury”) assumed that the incidence of corporate income taxes rested entirely on owners of domestic capital until recent years.¹⁶ Starting in 2012, the Treasury adopted a more complex approach, noting that capital owners receive both a normal (risk-free) rate of return and a supernormal return.¹⁷ The supernormal return represents the additional return on their risky investment, returns to monopolies, or any other returns that result in profits above those which could be obtained in a risk-free environment. This approach allows the Treasury to estimate differential treatment of tax changes based on the extent to which the change impacts normal returns to capital and labor or the supernormal returns received by some capital owners. Nevertheless, despite this additional complexity, the overall distribution of corporate income taxes to capital (both normal and supernormal returns) and labor is relatively

average is the tax that is then allocated to capital and labor using the incidence assumptions from the traditional general equilibrium model. This approach emphasizes the importance of relative, rather than absolute, tax rates in the ability for capital to flow abroad in an attempt to avoid the burden of the corporate income tax. See Jennifer C. Gravelle, “Corporate Tax Incidence: Review of General Equilibrium Estimates and Analysis” Congressional Budget Office Working Paper 2010-03, 2010.

¹⁴ See Congressional Budget Office, *The Incidence of the Corporate Income Tax*, 1996, Congressional Budget Office, *Effective Federal Tax Rates, 1979-1997*, 2001, and Congressional Budget Office, *Trends in the Distribution of Household Income between 1979 and 2007*, 2011.

¹⁵ Congressional Budget Office, *The Distribution of Household Income and Federal Taxes, 2008 and 2009*, 2012.

¹⁶ Julie Anne Cronin, “U.S. Treasury Distributional Analysis Methodology,” Office of Tax Analysis Working Paper, 1999.

¹⁷ Julie Anne Cronin *et al.* “U.S. Treasury Distributional Analysis Methodology,” Office of Tax Analysis Working Paper, 2012.

similar to that estimated by the CBO. Overall, the Treasury allocates approximately 82 percent to capital and 18 percent to labor.

The Joint Committee staff has traditionally not distributed corporate income taxes to individuals.¹⁸ However, given the current economic research on the distribution of corporate income taxes, it is appropriate to distribute these taxes to individual taxpayers rather than to ignore these taxes in a distributional analysis, effectively assuming that such taxes do not affect the overall distribution of tax liabilities. Thus, the approach described below distributes corporate income taxes in such a way that is consistent with the current economic research. However, some uncertainty remains regarding the division of the incidence between owners of domestic capital and labor so the Joint Committee staff will continue to evaluate this approach to be consistent with new research findings as they arise.

Thus far, the discussion of methodologies for distributing business taxes has focused on corporate income taxes rather than taxes on the income of businesses organized as passthrough entities. The Joint Committee staff has traditionally distributed some passthrough tax changes to the passthrough owner, and left some passthrough tax changes undistributed. This distinction was based on whether the legislative change occurred on the individual tax return or occurred at the level of the passthrough entity, which would have required determining how much income, deductions, and tax credits to pass through to each individual taxpayer in the data. For example, a change in the depreciation schedule of passthrough entities would not be distributed since it occurred at the level of the passthrough entity, but a change in the tax rate on passthrough income of individuals would be distributed because this change occurs on the individual tax form. However, given the reevaluation of the distribution of corporate income taxes to capital owners and to labor based on the recent business tax incidence literature, it is also appropriate to reevaluate the treatment of taxes on the income of passthrough entity businesses to reflect that both capital owners and labor bear a portion of the incidence of taxes on passthrough businesses.

While there is little direct research on the incidence of taxes on passthrough entity businesses, the same principles of the general business tax literature should apply. Like corporations subject to tax under subchapter C (“C corporations”); sole proprietorships and passthrough entities such as corporations subject to the rules of subchapter S (“S corporations”) and partnerships (including limited liability companies, which are generally treated as partnerships for Federal tax purposes) use capital and labor as factors of production to produce income. These entities often compete in the same domestic market for labor with C corporations. They also compete with C corporations for capital. Accordingly, the taxes on the income of

¹⁸ The Joint Committee staff briefly distributed corporate taxes completely to capital owners in the early 1990s, partially reflecting the short-term aspect of the five-year budget window in effect at that time. See Joint Committee on Taxation, *Estimated Budget Effects of the Finance Committee Chairman’s Proposed Mark of the Revenue Reconciliation Provisions* (JCX-7-93), June 17, 1993, and Joint Committee on Taxation, *Methodology and Issues in Measuring Changes in the Distribution of Tax Burdens* (JCS-7-93), June 14, 1993. However, the Joint Committee staff has not distributed corporate taxes since the replacement of the five-year budget window with a ten-year budget window.

passthrough entity businesses should be borne partially by labor and partially by capital owners. However, passthrough capital owners may have less ability to shift their capital abroad due to the size and nature of their businesses. As will be discussed further below, passthrough entities receive substantially less foreign income than C corporations, reflecting the more domestic nature of their operations. As a result of their limited ability to shift capital abroad, the incidence is expected to fall more heavily on owners of domestic capital than is the case for taxes on C corporations.

II. DESCRIPTION OF NEW METHODS

A. Economic Incidence Assumptions

To be consistent with prior methods as well as with 10-year budget analyses, the Joint Committee staff now provides both a distribution of the current steady-state business tax incidence as well as an analysis of the distributional effect of tax changes. The analysis of changes to business taxes reflects short-run responses as well as longer-run results over the course of the budget window. This is in contrast to the work of the Treasury and the CBO, which each focus on the incidence of corporate income taxes in a long-run steady state environment. The new approach for distributing business taxes adopted for purposes of Joint Committee staff analyses is guided by the economic theory described above, and also is tempered by practical data and computational considerations, including the limitation that most analyses are based on data available in tax records received from the Internal Revenue Service.

The new method for distributing business taxes matches the longstanding practice of the Joint Committee staff of distributing individual taxes on an annual basis for each year in the budget window. In doing so, the current incidence of present-law taxes on corporations and on owners of passthrough entities is assumed to match the long-run incidence of corporate taxes and taxes on passthrough owners.¹⁹ The market effects of tax changes, however, take time to reach their long-run equilibrium.

In the very short run, the incidence of business tax changes should fall entirely on the holders of the existing capital stock and bond holders.²⁰ This is because the owners of the existing capital have almost no capacity to immediately shift their assets to other sectors of the economy or to foreign holdings, or to substitute labor for capital in the production process. Similarly, bond holders are impacted by the after-tax rate of return on capital since it determines the returns they can demand on their investment, but current bond holders have no ability to immediately adjust bond holdings prior to the change in the bond values that results from tax changes. Further, it takes time for wages and employment to adjust to reflect labor's share of these business taxes. As a result, in estimating the distributional effects of business tax changes, the initial burden of business tax increases (or benefits from business tax reductions) is assumed to fall entirely on capital owners, which includes both the owners of the business and the bond holders. In the short run, there is no incidence on labor. This is true both for corporate income taxes where the entire tax falls on current owners of corporate equity and debt, and for passthrough entities where the entire incidence initially falls on the passthrough owners who are unable to shift any of the burden to labor in the very short run.

¹⁹ Should corporate tax reform occur, the Joint Committee staff may revisit this assumption to allow the baseline distribution of corporate tax incidence to reflect the fact that substantial tax changes may take time to reach their steady-state equilibrium.

²⁰ Alan J. Auerbach, "Who Bears the Corporate Tax?" in James Poterba, ed., *Tax Policy and the Economy Vol. 20*, Cambridge, MA: MIT Press, 2006, pp. 1-40.

As previously noted, economic analysis concludes that in the long run owners of domestic capital are more easily able to escape some of the burden of the tax so business taxes are at least partially passed on to labor. In estimating the long-run burden of corporate income taxes on capital and labor, the Joint Committee staff follows the middle range of the current economic literature by assuming that 25 percent of corporate income taxes are borne by domestic labor and 75 percent are borne by owners of domestic capital. Some of these owners of domestic capital, however, are foreign individuals, who are excluded from Joint Committee staff distribution tables. 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.

Some passthrough entities are multinational businesses that are largely indistinguishable from C corporations in terms of their capital mobility. However, others are smaller closely-held businesses that are less able to move capital overseas while still operating the business. Furthermore, to the extent that smaller passthrough entities have a domestic (rather than foreign) market for their goods and services, they may require operations that are geographically close to their customer base in the United States, further restricting the ability to shift operations abroad.

Recognizing these constraints, however, businesses conducted in both corporations and passthrough entities may be able to escape some of the tax burden through international flows. A Joint Committee staff analysis of sources of income of corporations and passthrough entities observed that approximately 20.6 percent of corporate gross income is from foreign income, while only about 7.6 percent of passthrough income is from foreign sources. This implies that while some passthrough entities do have international operations to which they may shift some capital, the ability of passthrough entities to shift capital abroad generally is more limited than that of C corporations. In those situations where capital in passthrough entities is less able to avoid the burden of the tax through international capital flows, capital owners of passthrough entities bear a larger share of the tax burden. This relatively larger incidence of tax on domestic capital owners of passthrough entities gives rise to a relatively smaller incidence on labor, the other factor of production. Given the assumption of a 25-percent incidence on labor for C corporation taxes, the Joint Committee staff determined that the relatively smaller ability of passthrough owners to shift capital abroad implies between a five- and 10-percent incidence on labor of taxes on passthrough entity business income. Given the paucity of empirical and theoretical literature on incidence effects in passthroughs, the Joint Committee staff believes that it is appropriate to choose an incidence on labor at the low end of this range.²¹ Thus, the Joint Committee staff assumes that five percent of taxes on business income of passthroughs is borne by domestic labor and 95 percent is borne by domestic capital owners in the long run.

²¹ As an example of the uncertainties in analyzing the passthrough sector, while a C corporation may know fairly exactly its tax rate, a partnership needs to know the tax rates for each of its partners to determine the overall average tax rate on partnership income. This depends, among other things, on whether partners are affected by the alternative minimum tax or by the passive loss rules, which in turn depends on other income sources about which the partnership may know nothing.

Although economists generally agree that owners of domestic capital bear the entire burden of business tax changes in the very short run, and that the burden is shared between owners of domestic capital and labor in the long run, a crucial challenge in developing a practical distribution analysis is that there is no clear definition of when the long-run equilibrium is reached. Further, the time-frame for reaching such equilibrium may differ by firm or by tax change.²² For some tax changes, the long-run equilibrium may be reached quite quickly, but in other cases it may be a slow transition. In the absence of a clear theoretical determination of the long-run, the Joint Committee staff generally assumes that a provision enacted in the first year of the ten-year budget window reaches a long-run equilibrium in the final year of the 10-year budget window. However, for proposals with delayed effective dates, the phase-in may be adjusted to reflect the fact that individuals may not fully adjust to the tax change by the end of the budget window.

Joint Committee staff distribution analyses are produced using the Joint Committee staff individual tax model, which is built around a sample of individual income tax returns and associated information returns provided by the Statistics of Income Division of the Internal Revenue Service.²³ While the data in this model is well suited to the analysis of the distributional effects of most provisions affecting individual income taxation, additional modeling and assumptions are necessary to add information about business tax incidence.

²² For example, a proposal changing depreciation schedules may reach a long-run equilibrium more slowly than an immediate corporate tax rate change, as it takes time for equipment purchased under the old tax regime to be phased-out. Similarly, a firm with a multi-year collective bargaining agreement with its workers may be slower to renegotiate wages in response to a tax change than a firm that reassesses wage schedules on a more frequent basis.

²³ *The JCT Revenue Estimating Process*, January 30, 2013 (available at <https://www.jct.gov/publications.html?func=startdown&id=4500>) provides more information about the individual tax model.

B. Distributing Labor's Share of the Corporate Tax

Although much of the economics literature on corporate tax incidence focuses on the division of the incidence of business taxes between capital and labor, this is just the first step in distributing business taxes. It is also necessary to determine how much of the capital and labor share of the tax liabilities to allocate to each individual in the population based on individuals' observable characteristics.

In allocating labor's share of the corporate tax, the Joint Committee staff begins with the assumption that labor is mobile across corporate and non-corporate employment. Since labor pays its share of corporate income taxes through lower compensation (based on the after-tax value of marginal product), if an increase in corporate income taxes results in lower demand for labor and lower compensation at corporate firms, labor moves towards non-corporate employment. This, in turn, drives up compensation for corporate firms as their supply of labor contracts and drives down compensation for non-corporate firms as their supply of labor expands until balanced pay across sectors is restored. Thus, once labor's share of the corporate income tax is determined, this share should be distributed across all labor regardless of the type of employer. Additionally, the impact of corporate income taxes on labor compensation should be based on each worker's total compensation package and not just based on cash wages. Each worker's share of the corporate income tax is therefore computed as labor's total share of the corporate tax change times the individual's compensation relative to the total compensation of all workers. Compensation is defined for this purpose as the sum of the worker's wages as reported on the tax return, payroll taxes paid by the employer on behalf of the worker, employer contributions to health insurance plans, and untaxed voluntary contributions to retirement plans made by the worker.²⁴

The distribution of total employee compensation by the prior expanded income definition is shown in Table 1. This distribution reflects the distribution that the Joint Committee staff assumes for distributing labor's share of business taxes. As will be discussed further in the subsequent sections of this document, the distribution of labor compensation is less concentrated

²⁴ The Joint Committee staff uses data from the Medical Expenditure Panel Survey, which includes information about income and health insurance benefits, to impute the value of employer health insurance to individuals on the individual tax model. Ideally, other forms of employee compensation, such as employer contributions to section 401(k) plans, pension plans, and other non-taxed benefits should also be included. However, data limitations prevent the incorporation of these additional income sources because they are not readily matched to individuals on the individual tax model. The exclusion of these additional elements of compensation may impact where in the income distribution labor's share of the corporate tax burden falls, to the extent that the distribution of excluded compensation elements differ from the distribution of those included. However, because labor's burden of the entire corporate tax is distributed to individuals based on observed compensation levels, the exclusion of these elements of compensation does not change the total amount or share of corporate taxes borne by labor for any proposed corporate tax change. Although there may be justifications for treating minimum wage workers differently in a distributional analysis of business taxes, because their wages cannot be adjusted downward in response to tax increases, data limitations make such a distinction impractical to implement.

among the top income classes than is observed for either corporate capital income or income received by owners of passthrough entity businesses.

**Table 1.—Estimated Distribution of Labor Compensation
(percentages, 2007)**

Expanded Income (prior method)	Percentage of total labor compensation
0 to 10,000	1.3
10,000 to 20,000	2.7
20,000 to 30,000	4.2
30,000 to 40,000	5.0
40,000 to 50,000	5.9
50,000 to 75,000	13.1
75,000 to 100,000	13.0
100,000 to 200,000	31.9
200,000 to 500,000	15.1
500,000 to 1,000,000	3.4
Over 1,000,000	4.5

Source: Joint Committee staff calculations.

C. Distributing Capital's Share of the Corporate Tax

As is the case with labor's share, capital's share of the corporate income tax must be allocated to individuals throughout the income distribution. However, individual income tax returns generally do not provide direct information about the value of individuals' assets. Instead, capital holdings must be estimated based on the reported income that capital assets generate for investors across a range of forms in which assets are held, some of which are taxed at accrual, some of which are taxed at the sale of the asset, and some of which (such as tax-favored accounts) may not be taxed for years after the asset is sold. Therefore, a more complex analysis is required for determining the distribution of capital's share of corporate income taxes than is the case for distributing labor's share.

In contrast to the approach for distributing labor's share, where it is assumed that wages equalize across the corporate and non-corporate sectors, the Joint Committee staff does not assume equalization of rates of return for corporate capital and capital of passthrough entities. As such, corporate tax changes are not assumed to be borne by owners of passthrough entities and tax changes with respect to passthrough entities are not assumed to be borne by corporate capital owners. This is partially because there are restrictions on entity choice for individuals forming a business, such as the restriction that S corporations may have no more than 100 shareholders, all of whom must be either individuals who are U.S. citizens or residents, or certain estates, trusts, or tax-exempt organizations. Such restrictions prevent after-tax rates of return from equalizing as between corporate and non-corporate capital. This determination is also consistent with the earlier observation that C corporations are more likely to have a greater international presence than passthrough entities have, reflecting the fact that entity forms are not completely interchangeable. For distributing capital's share, note that virtually all domestic corporate capital is held by individuals in taxable or tax-deferred accounts, by other corporations, by tax-exempt entities, or by foreign entities and individuals. The distributional effect of each of these types of holding is discussed below in turn.

The goal of the distributional analysis is to identify the incidence of taxes paid by individual taxpayers. In doing so, capital held by other corporations has no direct impact on the distribution of corporate income taxes. This is because, when Alpha Corporation holds stock in Beta Corporation, it is functionally economically equivalent to the shareholders of Alpha holding that portion of Beta shares directly. The return to Beta's capital simply flows through to Alpha's capital owners.²⁵ Because the method does not attempt to link capital owners to individual firms and instead focuses on the total level of capital individuals have invested across all firms, this secondary level of ownership does not impact the results and can therefore be ignored.

²⁵ While this approach is appropriate for determining the ultimate owners, the indirect nature of the ownership level does impact the tax level since corporations only receive a 70-percent deduction for dividends received. Alan J. Auerbach, "Who Bears the Corporate Tax?" in James Poterba, ed., *Tax Policy and the Economy Vol. 20*, Cambridge, MA: MIT Press, 2006, pp. 1-40. Given the limitations of data for tracing all intermediate ownership links, the Joint Committee staff abstracts away from this concern when estimating the tax distribution.

Capital held by tax-exempt entities is less straightforward, but similarly is assumed to have no effect on the distribution of capital's share. Although tax-exempt organizations have stakeholders rather than shareholders, it is assumed that the stakeholders reap the benefits of the returns to capital of the tax-exempt organization. These stakeholders are generally domestic individuals. Unfortunately, however, there is no clear way to identify the stakeholders in tax-exempt organizations. Therefore, for simplicity it is assumed that stakeholders in tax-exempt organizations are distributed through the population in a way that matches the distribution of domestic individual capital owners and no adjustment is made for capital ownership by tax-exempt organizations.²⁶ However, there are limitations of this assumption and the approach may be updated in the future based on continued research on the income distribution of tax-exempt organizations' stakeholders as well as additional data on the amount of tax exempt organizations' asset holdings.

In contrast to capital held by corporations or tax-exempt organizations, domestic capital held by foreign entities and individuals does have a distributional effect. This is because the foreign capital owner is the end-individual bearing the burden of the tax. Thus, to the extent that corporate capital is owned by foreign entities and individuals, the tax burden is borne by foreign citizens. This, in turn, reduces the share of the tax burden borne by U.S. citizens and residents.²⁷

**Table 2.—Foreign Ownership of U.S. Corporate Equity,
Including Mutual Funds (2005-2012)
[billions of dollars]**

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>Total</u>
Total U.S. Corporate Equity	23,941	26,508	31,710	28,714	22,647	24,633	30,998	31,254	27,551
Foreign Holdings	2,144	2,430	3,130	2,969	2,252	2,814	3,830	4,237	2,976
Percent Foreign	9.0	9.2	9.9	10.3	9.9	11.4	12.4	13.6	10.8

Source: Department of the Treasury, Federal Reserve Bank of New York and the Board of Governors of the Federal Reserve System. *Report on Foreign Portfolio Holdings of U.S. Securities as of June 30, 2011, 2012.*

Note: All values are calculated at the market value of holdings.

²⁶ An alternative would be not to distribute tax-exempt organizations' share of corporate taxes. However, this requires assuming that the taxes borne by tax-exempt organizations have no effect on the resources available to domestic individuals. The Joint Committee staff sees this as a tenuous assumption. Given the limited information available about stakeholders of tax-exempt organizations, the Joint Committee staff distributes their share of corporate taxes consistent with other capital owners' share.

²⁷ Conversely, foreign corporate taxes of corporations abroad are borne in part by U.S. citizens. However, as the Joint Committee staff is only distributing U.S. taxes with the intent of understanding the distributional impact of U.S. legislative changes, no attempt is made to estimate or distribute foreign taxes to U.S. taxpayers.

Table 2 illustrates the foreign ownership of U.S. corporate equity from 2005 through 2012 based on Federal Reserve Flow of Funds data, as reported by the Treasury, the Federal Reserve Bank of New York, and the Board of Governors of the Federal Reserve System.²⁸ Over this period, an average of 10.8 percent of U.S. corporate equity is held by foreign persons. Based on these findings, the Joint Committee staff assumes 10.8 percent of capital's share of corporate income taxes is borne by foreign persons and is not distributed to individual U.S. taxpayers.

The remaining 89.2 percent of capital's share of corporate income taxes is distributed to U.S. individuals based on their capital holdings. Capital holdings of individuals are held across a range of account types, each of which are reported differently in economic data including the tax data used for Joint Committee staff tax models. Specifically, capital holdings can be held as (1) taxable equities, (2) taxable and tax-exempt bonds, (3) assets in tax-deferred individual retirement accounts ("IRAs") and Roth IRAs, and (4) assets in defined contribution retirement plans. Assets in defined benefit retirement plans are discussed separately below. The Joint Committee staff estimates each individual's share of all assets held in each of these four holding types. The overall distribution of capital holdings is then determined based on each individual's share of assets in each holding type along with information on how assets are divided across the four holding types.

Table 3 illustrates, from the Federal Reserve Flow of Funds data, the division of assets held by individuals across these four types of asset holdings. Over the period from 2005 through 2012, 60.2 percent of individuals' capital holdings are corporate equity in taxable accounts, 9.5 percent are taxable corporate bonds, 16.8 percent are assets in tax-deferred and Roth IRA accounts, and 13.5 percent are assets in defined contribution retirement plans. These allocations illustrate how assets are divided across holding types, but, without information on the distribution of assets within each holding type, they yield no direct information on capital ownership by income level as is necessary to distribute capital's share of corporate taxes. To determine the relationship between capital holdings and income, the Joint Committee staff estimates the distribution of capital assets to all individuals for each of these four classes of asset holdings. The overall population-wide distribution of domestic capital's share of the corporate income tax burden is calculated as a weighted-sum of these four distributions. In other words, each individual's share of the corporate income taxes that fall on domestic owners of corporate capital equals 0.602 times their share of taxable corporate equity holdings in the population plus 0.095 times their share of taxable corporate bond holdings plus 0.168 times their share of IRA holdings plus 0.135 times their share of defined contribution plan holdings.

²⁸ Department of the Treasury, the Federal Reserve Bank of New York, and the Board of Governors of the Federal Reserve System. *Report on Foreign Portfolio Holdings of U.S. Securities as of June 30, 2011, 2012.*

**Table 3.—Fraction of Capital Holdings of Individuals by Asset Type
(percentages, 2005-2012)**

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>Average</u>
Taxable corporate equity	64.3	63.9	61.3	56.8	57.8	58.8	58.6	59.7	60.2
Taxable corporate bonds	7.4	7.2	8.6	12.4	11.4	10.1	10.1	9.2	9.5
IRA and Roth IRA holdings	14.8	15.7	16.7	17.8	17.4	17.4	17.4	17.3	16.8
Defined contribution holdings	13.5	13.2	13.4	13.0	13.5	13.8	13.9	13.8	13.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Federal Reserve Flow of Funds Data.

For such an approach to be valid, it requires that the asset holding classes closely represent the universe of capital asset holding types of individuals. If this were not true, then while the total level of corporate income taxes distributed is accurate, these taxes may be misallocated through the distribution. One area that therefore warrants further discussion is assets held in defined benefit retirement plans. For defined benefit plans, it is the firm, not the plan beneficiary, who bears the risk of underperformance and reaps the benefits of unexpectedly good performance. If the plan performance exceeds expectations, then the company may reduce future contributions to the plan and if, instead, it underperforms, it must increase contributions to fulfill its pension obligations. As such, if corporate income taxes increase, reducing the returns to investments in defined benefit funds, it is the firm rather than the plan beneficiaries that is impacted by the tax change and the resulting lower return to capital. Similarly, if corporate income taxes fall, it is the firm that benefits from the increased return to the capital held in these plans. For this reason, defined benefit plans are treated separately from defined contribution plans and the burden of the tax that falls on capital held in defined benefit plans is assumed to fall on the corporation or nonprofit sponsoring the plan. Thus, defined benefit plan assets are treated identically to corporate or nonprofit capital holdings discussed above. Specifically, the returns to capital assets held by defined benefit plans are assumed to increase the value of the company sponsoring the plan and therefore flow through to the owners of its capital.

Given the theoretical reasons for treating defined benefit retirement plan holdings as owned by the plan sponsor, it is appropriate to return to the original four individual holding classes listed previously. For taxable corporate equity holdings, individuals report on their tax returns the level of dividends and capital gains received in each year. However, the distribution depends not on the flow of income generated by assets but instead on the stock of taxable corporate equity held by each individual.

To determine the stock of taxable corporate equity held by each individual, the analysis focuses on the dividend receipts reported in tax return data. Unlike reported realized capital gains that represent the sale of an asset (which therefore is no longer held by the individual), dividends

are paid based on assets that an individual currently owns. Additionally, outside of closely-held corporations, dividend recipients are unable to time the receipt of payments in an effort to delay tax liabilities in the way that capital gains realizations may be timed. Furthermore, while the flow of realized capital gains is only loosely tied to the stock of an asset sold, varying based on the initial purchase price of a holding and which lots the capital owner chooses to sell, dividends are based completely on the current level of capital held. As a result, two individuals with equal amounts of equity in the same company on a given day receive the same level of dividends even though they might report dramatically different levels of capital gains (or capital losses) should each choose to sell the asset.

Of course, dividends are not a perfect measure of corporate equity capital holdings. Not all corporations pay dividends, and even among those that do the dividend yields are not uniform. While some investors certainly seek out assets that pay dividends and others seek out assets that do not, it is assumed that these differences are randomly distributed throughout the income distribution. Thus, while this approach may overestimate or underestimate the corporate equity capital holdings of specific individuals, it is assumed that this is not the case for the aggregate classes of individuals presented in the distribution tables.²⁹

To test this assumption and the sensitivity of the analysis to the use of dividends data, rather than capital gains or asset sale data, the Joint Committee staff compares the distribution of sales of taxable assets reported on Schedule D of the tax return from the 2007 Sale of Capital Assets (“SOCA”) data to the distribution of dividend receipts reported on 1040 tax returns. This data reports the sale price and capital gains realizations from all assets sold by individuals and reported on tax returns. This data is from a special study and is not available in every year, making it unsuitable to directly incorporate into the distributional analysis. However, it is valuable for testing the approach of using dividends to estimate the distribution of taxable equity holdings. As is the case with dividends data, the asset sales data is an imprecise measure of asset holdings, although the imprecision is different than that seen when considering using dividends data. The imprecision in the asset sales data arises because it includes only the value of the subset of assets that are sold rather than the value of all assets that are held. Because the sources of the imprecision in the two measures should be uncorrelated, to the extent that they produce similar results it supports the assumption that both dividend distributions and the asset sales distribution represent the true underlying distribution of asset holdings.

²⁹ The Joint Committee staff acknowledges that this may be a strong assumption. For example, John Graham and Alok Kumar, “Do Dividend Clienteles Exist? Evidence on Dividend Preference of Retail Investors” *The Journal of Finance*, 61, 2006, pp. 1305-1336, observe that high income individuals have a greater preference than low income individuals for stocks with low dividend yields. They attribute this result to the uneven tax treatment of dividends and capital gains. In an environment where capital gains are taxed at a lower rate than dividends, individuals in high marginal tax brackets prefer to receive returns on investments as capital gains rather than dividends. Such a dividend preference by income would bias our distribution of capital holdings downward in the income distribution. However, since 2003 capital gains and dividends have generally been taxed at the same marginal tax rate. As such, the concerns of tax preferences by income group should be mitigated, although the ability to defer recognition of capital gains may still result in such clientele as Graham and Kumar describe.

This comparison is provided in Table 4 which shows the 2007 distribution of dividends and asset sales by the original expanded income definition. Outside of the income classes with expanded incomes under \$10,000 or over \$1 million, dividend distributions are relatively well aligned with the distribution of asset sales. However, asset sales show that a lower fraction of assets is held by taxpayers with expanded income greater than \$1 million than that observed based on dividend payments. This partially reflects the fact that dividends are included in expanded income, creating a natural correlation of dividends appearing higher in the income distribution than asset sales. However, it may also reflect the fact that the SOCA data only includes assets that are actually sold. To the extent that individuals tend not to sell assets to take advantage of the step-up in basis at death or other tax-minimization and tax-deferral techniques, such behavioral responses to tax rules could explain the drop-off in asset sales for high-income individuals. As a result, one may expect the share of asset sales at the top of the distribution to be relatively low compared to the share of asset holdings. Given the general consistency of these two measures for the vast majority of the AGI distribution and the expected divergence for the top, the Joint Committee staff uses dividends data to estimate the distribution of taxable capital assets.³⁰

Table 4.—Comparison of the Distribution of Dividends by AGI to the Distribution of Asset Sales Reported on Schedule D by AGI (2007)

Expanded Income (prior method)	Percent of total dividend receipts	Percent of asset sales reported on Schedule D
0 to 10,000	2.6	6.2
10,000 to 20,000	0.7	1.6
20,000 to 30,000	1.0	2.1
30,000 to 40,000	1.5	1.3
40,000 to 50,000	2.0	2.1
50,000 to 75,000	6.0	6.8
75,000 to 100,000	6.4	6.8
100,000 to 200,000	18.6	21.1
200,000 to 500,000	21.7	22.1
500,000 to 1,000,000	10.7	9.9
Over 1,000,000	29.1	20.0

Source: Joint Committee staff calculations using IRS Statistics of Income data from the sales of capital asset (“SOCA”) study.

³⁰ An alternate approach employed by other organizations, including the CBO, is to combine dividend receipts and realized capital gains. However, the Joint Committee staff believes such a hybrid approach likely introduces biases from the substantial disconnect between assets and realized capital gains that outweigh the additional information that capital gains holdings provide to the analysis. The inclusion of taxable realized capital gains results in a higher share of corporate taxes being borne by the top of the income distribution, which diverges from the distribution of equity-based taxable capital assets observed in either the asset sale data or the dividends data.

As previously mentioned, taxable corporate equity is just one form in which capital can be held. A second way is through holding taxable debt. If the after-tax returns to capital increase as a result of a tax decrease, then the rate of return that lenders can demand increases accordingly as corporations increase their demand for capital. To determine the holders of this form of capital, the analysis focuses on receipts of interest income reported in tax return data. The analysis assumes that equalization of after-tax risk-adjusted returns on interest bearing assets results in all interest-bearing assets being affected by corporate income taxes. Therefore, both taxable and tax-exempt interest receipts are included, which includes interest not just from corporate bonds but also from Federal, State, and local government bonds. As is the case with estimating equity holdings based on dividend receipts, this is an imperfect measure given that individuals may have different risk preferences in financing capital and therefore receive different levels of interest for the same cash investment. Nevertheless, in the absence of wealth reporting on tax returns, this should closely approximate the distribution of bonds and other forms of debt.

Recognizing that not all capital holdings are held in taxable accounts, the analysis also incorporates the major tax-preferred avenues for holding capital: personally held IRAs and employer-sponsored defined contribution retirement accounts such as 401(k) retirement plan accounts. In contrast to all other holdings of capital, IRA custodians are required to report the fair market value of each IRA account at the end of each year, providing direct information about IRA assets. The 16.7 percent of capital held in IRA accounts is distributed to individuals based on the end-of-year fair-market value of IRA holdings.³¹

Finally, for 401(k) and other employer-sponsored defined contribution retirement accounts, the distribution is imputed based on the age and estimated current 401(k) contribution level for each individual. Thus, as one may expect, as individuals age or increase their incomes (and thus their 401(k) contribution amounts), the expected balances in their defined contribution retirement accounts grow. For the population as a whole, 13.4 percent of capital assets are held in defined contribution retirement plans such as 401(k) accounts.

The distribution of corporate capital by holding type, calculated as described above, is shown in Table 5, which presents the 2007 capital holdings by income source by the prior expanded income classes, along with the overall distribution of capital across all holding types. Each class of corporate capital holdings is predominantly concentrated among the top expanded income classes. The taxable equity holdings and the taxable and tax-exempt bond holdings in particular are held predominantly by the top income groups, with approximately 30 percent of each being held by tax-units with expanded incomes over \$1 million. In contrast, tax units with expanded incomes over \$1 million hold just 3.3 and 2.0 percent of the tax-deferred IRA and

³¹ The end-of-year fair market value is determined for each year in the ten-year budget window based on an extrapolation of the reported amounts in IRS tax data using the Joint Committee staff individual tax model. The distribution of capital assets held in these accounts in each year for estimating the corporate income tax distribution are based directly on this extrapolation using the actual reported end-of-year values along with Joint Committee staff and CBO estimates of economic growth.

401(k) assets respectively. This is expected since the income and contribution limits for contributing to IRA accounts and the contribution limits for contributing to 401(k) accounts both limit the ability for these tax-preferred assets to be highly concentrated among a small number of individuals.

Because the primary objective of distributing corporate income taxes is to understand the distributional effects of tax legislation, the Joint Committee staff imputes the growth of capital and wages over the course of the 10-year budget window in a manner consistent with the Joint Committee staff's individual income tax model. This imputation is calibrated annually to match the Joint Committee staff's and CBO's targets for gross domestic product, tax receipts, number of tax units, and a wide range of other economic and demographic variables. Using this imputation, the Joint Committee staff can estimate the distributional effects of corporate tax changes for each of the 10 years in the budget window.

**Table 5.—Estimated Distribution of Capital Holdings by Holding Type
(percentages, 2007)**

Expanded Income (prior method)	Taxable corporate equity holdings	Taxable and tax- exempt corporate debt holdings	IRA holdings	401(k) holdings	Overall corporate capital distribution
0 to 10,000	2.6	4.1	1.2	0.2	2.2
10,000 to 20,000	0.7	0.6	0.7	0.3	0.6
20,000 to 30,000	1.0	0.9	1.2	0.8	1.0
30,000 to 40,000	1.5	1.6	2.0	1.6	1.6
40,000 to 50,000	2.0	2.5	3.0	2.8	2.3
50,000 to 75,000	6.0	7.4	10.0	9.0	7.2
75,000 to 100,000	6.4	7.8	12.8	12.2	8.4
100,000 to 200,000	18.6	18.6	36.6	42.6	24.9
200,000 to 500,000	21.7	17.2	23.9	24.8	22.0
500,000 to 1,000,000	10.7	8.8	5.3	3.8	8.7
Over 1,000,000	29.1	30.4	3.3	2.0	21.2

Source: Joint Committee staff calculations using IRS Statistics of Income data.

D. Distributing Taxes on Businesses Conducted in Passthrough Entities and Sole Proprietorships

In addition to distributing taxes paid by corporations, the Joint Committee staff is revising its approach for distributing taxes paid on income earned by passthrough entities, sole proprietorships, and rental income reported by individuals on Schedule E of Form 1040. Under the new approach, any Federal tax legislative change affecting income of passthrough entities that impacts the level of income passed through to individual returns is reflected in distribution tables. For example, if a legislative proposal reduces the amount of depreciation that businesses can report, then this increases the tax paid by owners of the passthrough entity or by sole proprietors. This increase in taxes is taken into account in the Joint Committee staff's distributional analysis of tax changes with respect to business income of passthrough entities and sole proprietorships.

The Joint Committee staff has also reexamined the incidence assumption used for distributional analysis of tax changes with respect to business income of passthrough entities and sole proprietorships. The revised analysis assumes that 95 percent of a tax change is borne by the business owner and five percent by labor. As described above in the context of attributing labor's share of corporate tax incidence to individuals, wages are expected to equalize across business sectors. The same analysis applies in the attribution to individuals of labor's share of taxes on business income of passthrough entities and sole proprietorships. In other words, labor's share of the taxes affecting income earned through passthrough entities is distributed to all workers in proportion to their total compensation, including wages as reported on the tax return, payroll taxes paid by the employer on behalf of the worker, employer contributions to health insurance plans, and untaxed voluntary contributions to retirement plans made by the worker.

For capital's share of the taxes affecting income earned through passthrough entities and sole proprietorships, it is assumed that this tax is borne by the passthrough owners or the sole proprietor. This tax, therefore, falls on individuals who report income from the passthrough entity or sole proprietorship on their individual tax returns. This is calculated as the sum of reported business income and Schedule E income on individual tax returns. Like the procedure for distributing corporate tax changes, the growth pattern of passthrough income and sole proprietorship income is imputed to the Joint Committee staff's individual tax model over the 10-year budget window for estimating purposes.

E. Incorporating Business Taxes into Economic Income

Distributional analyses prepared by the Joint Committee staff are based on the expanded income of individuals. As used by the Joint Committee staff, the concept of expanded income is a current-year, pre-tax and transfer income concept, expressed in nominal dollars.³² In the absence of business taxes, capital owners receive higher incomes than they report on their individual tax returns and wage earners receive higher wages. Therefore, consistent with the pre-tax and transfer income concept, the Joint Committee staff increases income shown on the tax return by the amount of corporate income taxes that are effectively borne by individuals. This is analogous to the current treatment of the employer's share of payroll taxes, which is included in individuals' expanded income, reflecting the consensus in the economic literature that workers' wages would be higher in the absence of the payroll taxes paid by their employers on their behalf.³³ Retained earnings are not included in expanded income, however, on the basis that the income already appears on individual tax returns through dividends, interest, and capital gains. Therefore, incorporating retained earnings would potentially double-count income for capital owners in the expanded income definition.

Expanded income is further adjusted to reflect the revised treatment of taxes with respect to business income of passthrough entities and sole proprietorships. Since passthrough owners report the passthrough income on their individual tax returns and then pay the tax with their personal income taxes, this treatment accurately reflects a pre-tax and transfer income concept if the tax burden were borne entirely by the passthrough owner. However, since the Joint Committee staff estimates that five percent of the passthrough tax is actually borne by workers rather than owners, the income reported by passthrough owners on their individual tax returns actually exceeds that in a pre-tax environment. Thus, taxes attributable to business activities of passthrough entities are accounted for in expanded income by reducing the expanded income of passthrough owners by five percent of the amount of taxes attributable to their passthrough entities and increasing the expanded income of workers by that same amount. The same is true for income received by owners of sole proprietorships. Combining these modifications with the prior expanded income definition described in JCX-15-12 results in expanded income being defined as follows:

³² Joint Committee on Taxation, *Overview of the Definition of Income Used by the Staff of the Joint Committee on Taxation in Distributional Analyses*, (JCX-15-12), February 8, 2012, p. 3.

³³ Don Fullerton and Gilbert E. Metcalf, "Tax Incidence" in Alan J. Auerbach and Martin Feldstein, eds., *Handbook of Public Economics, Vol 4*, Amsterdam: North Holland, 2002.

Expanded Income =

Adjusted Gross Income

+ tax-exempt interest

+ workers' compensation

+ nontaxable Social Security benefits

+ excluded income of U.S. citizens living abroad

+ minimum tax preferences

+ employers' contributions for health plans and life insurance

+ employers' share of payroll taxes

+ workers' and domestic capital owners' share of corporate
income taxes

+ workers' share of passthrough taxes

– passthrough and sole proprietorship taxes remitted by owners
but borne by workers

The last three lines of the definition of expanded income (above) reflect the changes discussed in this document related to improving the modeling of the distribution of taxes on business income. The last two lines sum to zero. Therefore the effect of the changes is to increase aggregate expanded income by workers' and domestic capital owners' shares of corporate income taxes. The expanded income of any individual tax filing unit will reflect its share of these last three components.

The impacts of this change on the 2013 distribution of expanded income and the taxes paid by expanded income level are presented in Table 6 through Table 9. Because of the additions to the pre-tax definition of expanded income, these changes shift the overall expanded income distribution upwards, decreasing the number of returns in the expanded income classes below \$75,000 and increasing the number in the classes above \$75,000 (Table 6). This movement of tax returns up the income distribution similarly increased the total level of expanded income reported by each of the income classes above \$75,000 (Table 7). Furthermore, when considering the tax liabilities by economic income group, including the corporate income taxes also increases the total taxes (Table 8) and average tax rate (Table 9) of individuals throughout the distribution, but particularly among the higher income groups.

**Table 6.—Impact of New Distribution Methods on the Baseline
Distribution of Tax Returns (2013)**

<i>[Thousands of Returns]</i>			
Expanded Income	Prior Method	New Method	Percent Change
0 to 10,000	18,660	18,506	-0.8
10,000 to 20,000	18,498	18,328	-0.9
20,000 to 30,000	20,531	20,427	-0.5
30,000 to 40,000	16,152	15,853	-1.9
40,000 to 50,000	14,694	14,654	-0.3
50,000 to 75,000	24,409	24,357	-0.2
75,000 to 100,000	16,793	16,860	0.4
100,000 to 200,000	23,884	24,334	1.9
200,000 to 500,000	5,823	6,094	4.7
500,000 to 1,000,000	702	743	5.8
Over 1,000,000	348	362	4.0
Total	160,494	160,518	0.0

Source: Joint Committee staff calculations.

Notes: The small difference in the total number of returns under the two methods reflects the change in the number of returns excluded from the table because their expanded income is negative.

**Table 7.—Impact of New Distribution Methods on the
Baseline Distribution of Income (2013)
[millions of dollars]**

Expanded Income	Prior Method	New Method	Percent Change
0 to 10,000	81,177	80,476	-0.9
10,000 to 20,000	280,030	277,369	-1.0
20,000 to 30,000	505,759	503,472	-0.5
30,000 to 40,000	564,656	554,348	-1.8
40,000 to 50,000	658,893	657,243	-0.3
50,000 to 75,000	1,506,735	1,503,844	-0.2
75,000 to 100,000	1,451,434	1,459,798	0.6
100,000 to 200,000	3,229,874	3,303,188	2.3
200,000 to 500,000	1,629,880	1,708,978	4.9
500,000 to 1,000,000	470,058	497,484	5.8
Over 1,000,000	1,125,634	1,173,450	4.2
Total	11,504,130	11,719,650	1.9

Source: Joint Committee staff calculations.

**Table 8.—Impact of New Distribution Methods on the
Baseline Distribution of Tax Liabilities (2013)
[millions of dollars]**

Expanded Income	Prior Method	New Method	Percent Change
0 to 10,000	5,528	6,513	17.8
10,000 to 20,000	5,875	7,879	34.1
20,000 to 30,000	30,949	34,666	12.0
30,000 to 40,000	52,406	56,225	7.3
40,000 to 50,000	75,676	82,227	8.7
50,000 to 75,000	196,480	213,051	8.4
75,000 to 100,000	218,190	237,769	9.0
100,000 to 200,000	622,985	682,788	9.6
200,000 to 500,000	392,119	439,925	12.2
500,000 to 1,000,000	131,340	148,679	13.2
Over 1,000,000	337,506	375,042	11.1
Total	2,069,053	2,284,763	10.4

Source: Joint Committee staff calculations.

Notes: Under the prior method, tax liabilities include individual income taxes, payroll taxes, excise taxes, and taxes on passthrough entities paid by the owner. Under the new method, tax liabilities and average tax rates include individual income tax, payroll taxes, excise taxes, corporate income taxes, and taxes on passthrough business income distributed to both labor and the capital owner.

**Table 9.—Impact of New Distribution Methods on the Baseline
Distribution of Income and Taxes (2013)**

	Prior Method				New Method			
	Number of Returns (thousands)	Expanded Income (\$ millions)	Tax Liability ^[1] (\$ millions)	Average Tax Rate ^[1]	Number of Returns (thousands)	Expanded Income (\$ millions)	Tax Liability ^[1] (\$ millions)	Average Tax Rate ^[1]
0 to 10,000	18,660	81,177	5,528	6.8	18,506	80,476	6,513	8.1
10,000 to 20,000	18,498	280,030	5,875	2.1	18,328	277,369	7,879	2.8
20,000 to 30,000	20,531	505,759	30,949	6.1	20,427	503,472	34,666	6.9
30,000 to 40,000	16,152	564,656	52,406	9.3	15,853	554,348	56,225	10.1
40,000 to 50,000	14,694	658,893	75,676	11.5	14,654	657,243	82,227	12.5
50,000 to 75,000	24,409	1,506,735	196,480	13.0	24,357	1,503,844	213,051	14.2
75,000 to 100,000	16,793	1,451,434	218,190	15.0	16,860	1,459,798	237,769	16.3
100,000 to 200,000	23,884	3,229,874	622,985	19.3	24,334	3,303,188	682,788	20.7
200,000 to 500,000	5,823	1,629,880	392,119	24.1	6,094	1,708,978	439,925	25.7
500,000 to 1,000,000	702	470,058	131,340	27.9	743	497,484	148,679	29.9
Over 1,000,000	348	1,125,634	337,506	30.0	362	1,173,450	375,042	32.0
Total	160,494	11,504,130	2,069,053	18.0	160,518	11,719,650	2,284,763	19.5

Source: Joint Committee staff calculations.

Notes: The small difference in the total number of returns under the two methodologies reflects the change in the number of returns excluded from the table because their expanded income is negative.

[1] Under the prior method, tax liabilities include individual income taxes, payroll taxes, excise taxes, and taxes on passthrough entities paid by the owner. Under the new method, tax liabilities and average tax rates include individual income tax, payroll taxes, excise taxes, corporate income taxes, and taxes on passthrough business income distributed to both labor and the capital owner.

III. ILLUSTRATIVE EXAMPLES

To illustrate the impact of distributing changes in business taxes, this part demonstrates the estimated distributional impacts of two hypothetical tax reform packages. The first reduces the allowable deductions of C corporations such that it increases the taxes paid by corporations by \$10 billion per year. The second reduces the allowable deductions of passthrough entities such that it increases the taxes paid by passthrough owners by \$10 billion per year. The specific nature of the tax changes are inconsequential to the distributional analysis given that the distribution procedure considers only the yearly change in tax revenues to distribute to capital and labor rather than the specific businesses that gain or lose from any individual change.

Example One: Increase in taxes on the income of C corporations

Table 10 provides the distribution of the hypothetical corporate income tax proposal. While under the prior distribution methods, the changes would have been left undistributed, the increase in corporate income taxes is now treated as increasing the tax burden of individuals. As noted previously, in the first year 100 percent of the tax burden is distributed to owners of capital, with a portion of that going to foreign owners of capital who are not included on the domestic income tax distribution. Of the \$10 billion increase in corporate income taxes in 2013, the foreign allocation is approximately \$1.1 billion.³⁴ Since domestic owners of capital are predominantly in the income classes with over \$100,000 of income, \$6.8 billion of the tax change is allocated to individuals in these income classes. This represents 78 percent of the domestically distributed corporate tax. Additionally, just over 23 percent of the domestically distributed corporate tax is borne by individuals with expanded incomes over \$1 million.

Over the course of the budget window, the fraction of the tax change allocated to owners of capital and bond holders gradually declines to 75 percent, with the fraction allocated to domestic labor increasing from zero to 25 percent. Because the fraction of corporate taxes distributed to all owners of domestic capital declines, the fraction allocated to foreign owners of capital also declines. Therefore, by 2023, the last year of the budget window, only around \$0.8 billion of the \$10 billion increase in corporate income taxes is distributed to foreign persons and excluded from the domestic income tax distribution table. Considering the distributions to domestic individuals, since workers tend to be lower in the income distribution than capital owners, the shift of a portion of the burden to labor slightly reduces the extent to which the corporate income tax increase is borne by individuals in the top income classes. In 2023, 77 percent of the domestically distributed corporate income tax increase is allocated to individuals with expanded incomes over \$100,000 and slightly less than 23 percent is allocated to individuals with expanded incomes over \$1 million.

³⁴ A small portion of the \$10 billion corporate tax increase is not presented on the distribution table since taxpayers with negative expanded incomes bear a small portion of the tax burden but are excluded from the distribution results. As a result, the total tax distributed to domestic persons with positive expanded incomes and to foreign persons is below the \$10 billion tax increase.

**Table 10.—Distribution of a \$10 Billion Per Year Increase
in Corporate Income Taxes**

	Fiscal Years										
	[Millions of Dollars]										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
0 to 10,000	33	26	25	25	24	26	26	27	28	29	29
10,000 to 20,000	59	50	51	55	57	62	67	71	75	79	83
20,000 to 30,000	80	88	92	95	100	107	114	120	125	128	133
30,000 to 40,000	145	132	131	135	136	145	152	156	159	161	166
40,000 to 50,000	204	198	194	195	197	205	215	224	232	241	249
50,000 to 75,000	635	589	567	570	563	577	595	614	627	638	655
75,000 to 100,000	754	723	703	697	694	702	719	730	740	747	760
100,000 to 200,000	2,192	2,135	2,130	2,114	2,095	2,113	2,136	2,170	2,193	2,233	2,275
200,000 to 500,000	1,830	1,913	1,927	1,933	1,938	1,918	1,887	1,894	1,906	1,903	1,889
500,000 to 1,000,000	749	790	812	815	822	794	767	768	751	741	733
Over 1,000,000	2,040	2,123	2,163	2,184	2,215	2,226	2,228	2,159	2,126	2,095	2,051
Total	8,721	8,766	8,794	8,818	8,841	8,872	8,906	8,933	8,963	8,994	9,022

Source: Joint Committee staff calculations.

Note: Total is less than the \$10 billion per year increase in corporate income taxes due to a portion of the tax burden attributed to international individuals, and a portion being attributed to returns with negative expanded income, which are excluded from distribution tables. The increase in the fraction distributed over the course of the budget window is primarily attributable to the shift from the short-run, when a larger fraction is allocated to capital including capital held by foreign individuals, to the long-run when a smaller fraction is allocated to capital including that held by foreign individuals.

Example two: Increase in taxes on the income of pass-through entities and sole proprietorships

Similarly, Table 11 provides the distribution of the hypothetical passthrough business tax proposal. As is the case for the corporate tax change, under our previous methods this tax would have been undistributed. However, under the new methods, this tax proposal increases the tax burden of individuals throughout the income distribution. Because foreign persons are assumed to bear none of the burden of taxes with respect to income of passthrough entities, a greater share of the tax increase with respect to businesses in passthrough entities is distributed to U.S. taxpayers than was the case for the distribution of the corporate income tax increase.³⁵

As was the case for a corporate income tax increase, the burden of a tax increase on income of passthrough entities is concentrated on higher income individuals. However, this concentration is even greater when considering taxes with respect to businesses in passthrough entities than it was for the corporate income tax increase in Table 10. In the short-run, the tax

³⁵ Similar to that seen for the distribution of the corporate income tax, a small portion of the \$10 billion tax increase on passthrough entities is not presented on the distribution table since taxpayers with negative expanded incomes bear a small portion of the tax burden but are excluded from the distribution results.

increase is completely borne by the owners of passthrough entities. However, by 2023, the last year of the budget window, five-percent of the burden is assumed to fall on labor.

The increased share of the tax increase borne by labor in the long-run relative to the short-run also slightly increases the share of the tax increase distributed to individuals lower in the income distribution in the latter years of the budget window. However, this shift in the burden towards labor is overwhelmed by the Joint Committee staff's estimation that passthrough ownership will be increasing among individuals in the highest income classes. As a result, the share of the tax increase with respect to income earned in passthroughs that is borne by individuals with expanded incomes over \$1 million is the highest in 2023, when approximately 47 percent of the tax increase is borne by individuals in this income class. This is an increase from approximately 40 percent being distributed to individuals with expanded incomes over \$1 million in 2013.

In all years of analysis the share of the tax increase distributed to the highest income classes is greater for the tax increase with respect to income of passthrough entities than was seen for the corporate tax increase. For example, in 2023 approximately 84 percent of the tax increase with respect to income of passthrough entities falls on individuals with expanded incomes over \$100,000. In contrast, only 77 percent of the corporate tax increase in that year fell on these individuals. The larger concentration of the tax burden with respect to income of passthroughs borne by individuals in the top income classes results from two principal factors. One factor is that labor's share of the the tax burden with respect to income of passthroughs is smaller than it is for the corporate income tax burden. The other factor is that passthrough owners are more heavily represented among higher income groups than are corporate capital owners.

**Table 11.—Distribution of a \$10 Billion Per Year Increase
in Taxes on Passthrough Entities**

	Fiscal Years [Millions of Dollars]										
	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
0 to 10,000	123	115	114	115	118	126	126	129	131	130	127
10,000 to 20,000	275	249	234	226	217	222	218	216	217	211	200
20,000 to 30,000	181	168	162	156	156	159	160	156	155	150	143
30,000 to 40,000	174	163	156	160	164	167	164	162	161	161	157
40,000 to 50,000	176	161	162	163	161	156	156	156	158	158	154
50,000 to 75,000	438	402	397	385	381	383	381	383	383	378	373
75,000 to 100,000	435	417	412	412	409	406	404	399	399	400	399
100,000 to 200,000	1,306	1,242	1,219	1,207	1,188	1,191	1,190	1,194	1,197	1,197	1,187
200,000 to 500,000	1,773	1,717	1,691	1,670	1,645	1,630	1,601	1,585	1,582	1,580	1,532
500,000 to 1,000,000	1,038	1,018	1,012	1,007	999	990	978	969	961	950	929
Over 1,000,000	3,964	4,218	4,310	4,370	4,434	4,444	4,497	4,527	4,519	4,561	4,672
Total	9,882	9,869	9,869	9,870	9,871	9,873	9,874	9,875	9,863	9,876	9,873

Source: Joint Committee staff calculations.

Note: Total is less than the \$10 billion per year increase in taxes on passthrough entities due to a portion of the tax burden being attributed to returns with negative expanded income, which are excluded from distribution tables.

IV. CONCLUSION

The new methods adopted by the Joint Committee staff for distributing taxes on corporations and taxes with respect to income of passthrough entities reflect the current understanding in the economics profession that domestic individuals ultimately bear the majority of the burden of these taxes. Given the general economic consensus that these taxes should be distributed to individuals, the Joint Committee staff believes that estimating the distribution is appropriate. In the short run the new method distributes 100 percent of both types of taxes to owners of capital. In the long run it distributes 75 percent of corporate income taxes and 95 percent of the taxes attributable to passthrough business income to owners of capital. A portion of capital's share of the corporate tax burden is borne by international capital owners, so in both the short run and the long run the distribution of tax burdens borne by domestic owners of capital is less than the burden borne by all capital owners. The portion of the corporate income tax burden borne by foreign capital owners is not distributed to domestic individuals on tax distribution tables. The remainder of the tax burden that is not distributed to foreign and domestic capital owners is distributed to labor, reflecting the compensation adjustment that results from corporate income taxes reducing the after-tax revenue that each worker generates for his firm. Given no definitive economic literature on the duration of the short run, the Joint Committee staff generally assumes that the long run is reached by the end of the 10-year budget window. These distributions between capital and labor reflect the middle of the range of estimates for distributing business taxes in the economic literature. The Joint Committee staff will use the updated distribution methods in this report to estimate tax distributions for all future estimates of the distribution of Federal income taxes. The Joint Committee staff will continue to evaluate and refine this approach to be consistent with new research findings as they arise.