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DISTRIBUTING THE CORPORATE INCOME TAX: REVISED U.S. TREASURY METHODOLOGY

Julie Anne Cronin, Emily Y. Lin, Laura Power, and Michael Cooper

The purpose of this analysis is to improve the U.S. Department of the Treasury's distributional model and methodology by defining new model parameters. We compute the percentage of capital income attributable to normal versus supernormal return, the percentage of normal return attributable to the "cash flow tax" portion of the tax that does not impose a tax burden, and the portion of the burdensome tax on the normal return to capital borne by capital income versus labor income. In summary, 82 percent of the corporate income tax burden is borne by capital income and 18 percent is borne by labor income.

Keywords: distributional analysis, corporate tax incidence

JEL Codes: H22, H25, D39

I. INTRODUCTION

In 2008, the Office of Tax Analysis (OTA), U.S. Department of the Treasury (Treasury) revised its incidence assumption for the corporate income tax. Prior to 2008, OTA assumed the corporate income tax was borne entirely by all (positive) capital income.[1] Currently, OTA assumes (1) the share of the corporate income tax that represents a tax on supernormal returns is borne by supernormal capital income; (2) the share of the corporate income tax that represents cash flow has no burden in the long run; and (3) the remainder of the corporate income tax is borne equally by labor and positive normal capital income. In the final analysis the new methodology assumes 82 percent

[1] Treasury had maintained this assumption since 1990, although some earlier Treasury studies took a shorter run view and distributed the corporate income tax to corporate shareholders.

Julie Anne Cronin: U.S. Department of the Treasury, Washington, DC, USA (julie.anne.cronin@treasury.gov)

Emily Y. Lin: U.S. Department of the Treasury, Washington, DC, USA (emily.lin@treasury.gov)

Laura Power: U.S. Department of the Treasury, Washington, DC, USA (laura.power@treasury.gov)

Michael Cooper: U.S. Department of the Treasury, Washington, DC, USA (michael.cooper@treasury.gov)

of the corporate tax burden is borne by supernormal or normal capital income and 18 percent is borne by labor.[2]

The change in distribution methodology was motivated by the desire to incorporate some of the more recent findings in the literature and to give Treasury the ability to more accurately capture the distributional effects of the existing tax system, which is a hybrid tax system that has features of a true income tax and of a consumption tax. Section I of this paper briefly reviews the literature. Section II summarizes the distribution assumptions of other tax policy offices. Section III gives a general description of our revised methodology. Section IV describes in detail how we used Treasury's Corporate Tax Model to measure the share of tax borne by supernormal returns and Section V describes how we used Treasury's Depreciation Model to measure the share of the corporate income tax that is not a burden in the long run. Section VI shows how the new assumptions affect the distribution of the corporate income tax, the distribution of certain proposed changes to the corporate income tax, and the distribution of all federal taxes in general.

II. LITERATURE REVIEW

Harberger (1962) develops a general equilibrium model of corporate tax incidence where the economy is assumed to be closed and have two sectors, corporate and non-corporate. His analysis shows that, under certain assumptions, a tax increase on the return to corporate capital would be borne entirely by all owners of capital, including non-corporate capital. In equilibrium, the after-tax return to capital must be the same in the two sectors. Subsequent research has extended Harberger's model and modified its assumptions to draw additional conclusions about corporate tax incidence. Depending on the time frame and assumptions under consideration, some studies conclude that the incidence falls more narrowly on corporate capital whereas some studies show that the incidence falls more broadly beyond capital. Auerbach (2005) and Gravelle (2013) provide reviews of these studies.

As indicated in Harberger's model, the answer to the question of who bears the burden of the corporate tax differs between the long run and the transition period. A corporate tax increase initially lowers the after-tax return to corporate capital, thereby reducing asset values through capitalization. In response, capital moves from the corporate to the non-corporate sector, reducing the pre-tax return to non-corporate capital. As capital flows take place, the corporate tax burden is shifted to non-corporate capital over time through reductions in the return to non-corporate capital until after tax returns in both sectors are equalized. As such, the tax burden initially falls on current owners of corporate capital and then on future investors of corporate and non-corporate capital.

[2] The percentages used from 2008 through 2011 were 76 percent to normal or supernormal capital income and 24 percent to labor. These percentages were based on estimates by Gentry and Hubbard (1996) and Randolph (2006). Beginning with the 2012 model year, these percentages have been modified to reflect the findings presented in this paper.

Auerbach (2005) points out that this different timing of incidence has generational distribution implications because the change in asset values is felt instantly by older asset holders who have shorter planning horizons whereas the future changes in the rates of return will matter more for younger individuals who have not accumulated much wealth.

Another factor affecting the incidence of the corporate tax is investment and capital cost recovery provisions. The Harberger model assumes that the corporate income tax is imposed on economic income generated by corporate capital. In the presence of investment provisions such as accelerated depreciation, the corporate tax base deviates from economic income, resulting in a layer of corporate tax incidence not considered in the Harberger model. Auerbach (1983) shows that, because of the investment provisions, changes in corporate tax rates alter the relative values of existing and new capital. This "surcharge" on existing assets imposes an additional burden of corporate tax on existing shareholders during the transition period.

One critical assumption in Harberger's model is that the economy is closed. If capital owners have the ability to move capital abroad and escape an increase in the corporate tax, some burden of the higher tax will fall on domestic labor, which is assumed to be relatively immobile, through reductions in wages. The extent to which the burden is shifted to domestic labor depends on several factors. First, the less mobile capital is across borders, the less burden is shifted to domestic labor as there will be a smaller reduction in the demand for domestic labor. Grubert and Mutti (1985) construct a simulation model demonstrating this relationship. In addition, the size of the U.S. capital stock relative to the rest of the world is important. As the United States is a large country, outflow of capital lowers the worldwide rate of return. This suggests that domestic capital cannot escape the burden of the corporate tax entirely, leaving a smaller share of the burden borne by domestic labor.

In the context of an open economy, the share of the corporate tax incidence borne by domestic labor depends also on the substitutability of tradable goods and the degree to which the tradable goods are corporate and capital intensive. If the tradable good is corporate and capital intensive and there is perfect product substitution, then the incidence of the corporate tax would fall relatively more on domestic labor as domestic capital can flow abroad to escape the tax. Randolph (2006) estimates these effects with a simulation model where various assumptions are made about country size and the degree of capital intensity of the corporate sectors. Gravelle and Smetters (2006) show that, in the long run, the extent to which the burden falls on domestic labor declines as foreign and domestic goods are less substitutable.

Another factor not considered in the Harberger model is the type of return to capital. Because the model assumes no risk and competitive markets, it applies if capital earns a normal rate of return. Since the real, normal rate of return to capital is close to zero, Gordon (1985) suggests that the corporate income tax imposes little burden because the revenue collected reflects only the expected returns to risk. However, given that corporate tax revenue is always positive, risk returns cannot be the only reason for the revenue collected. Depreciation allowances and limited loss offsets both contribute to explaining positive tax revenue. Positive corporate tax revenues can also be a result of economic rents. Auerbach (2005) describes how corporate tax incidence varies with

the source of rents. In some cases the entire burden falls on corporate capital whereas in other cases the standard Harberger analysis applies.

Different types of returns to capital suggest that corporate income tax revenue could be decomposed into two portions — one that is imposed on excess returns and another imposed on normal returns. Because normal returns to capital are exempt from tax under a consumption tax, several studies estimate the share of corporate tax revenue attributable to normal returns to analyze the effect of switching from the current tax system to a consumption tax system. Gordon and Slemrod (1998), Gordon, Kalambokidis, and Slemrod (2004), and Gordon et al. (2004) estimate the effect of replacing the corporate income tax with a modified cash flow tax and find the revenue change sensitive to tax law and economic conditions. Toder and Rueben (2007) subsequently estimate the revenue effect of switching to expensing and find that the new tax base is equal to 68 percent of the corporate tax system in 2004, implying that normal returns are roughly 32 percent of all corporate returns. Using stock market data, Gentry and Hubbard (1996) estimate that a substantial portion — about 60 percent — of the return to corporate capital is in excess of the normal return.

III. ASSUMPTIONS BY OTHER TAX POLICY GROUPS

Government agencies and policy analysts have used different incidence assumptions to distribute corporate income taxes. From 1990–2008 Treasury assumed that the corporate income tax was born by all (positive) capital income. Cronin (1999) describes Treasury's distributional analysis methodology and Nunns (1995) illustrates the methodology in an analysis of the Omnibus Budget Reconciliation Act of 1993 (OBRA93). Since 1996 the Congressional Budget Office (CBO) has allocated the corporate income tax burden to capital income. The methodology is documented in several papers and studies (CBO, 1996, 2001, 2011). From 1990–1995, CBO generally allocated half of the corporate income tax burden to labor income and half to capital income, as described in Kasten, Sammartino, and Toder (1994). In its original tax burden study and an update, CBO (1987, 1988) allocated the corporate tax burden in two ways, one in proportion to capital income and one in proportion to total labor compensation. The Joint Committee on Taxation (JCT) has not distributed the corporate income tax since 1995 due to the uncertainty concerning the incidence of the tax. In distribution tables released for its study of OBRA93, JCT (1993) distributed the burden to owners of corporate capital. The Urban-Brookings Tax Policy Center (TPC) has produced distribution tables since 2003 and during that time has allocated the corporate income tax to capital income. Browning and Johnson (1979) and Gale, Houser, Scholz (1996) allocate the corporate income tax to capital income, but also show an alternative distribution where the tax is allocated to half labor and half capital income. Pechman (1987) assumes that the burden of the corporate income tax is borne by capital income.

IV. GENERAL DESCRIPTION OF THE NEW METHODOLOGY

Treasury's new methodology is designed to model elements of expensing, as the current corporate income tax is not a pure income tax. For example, some assets

in service under the current corporate income tax have benefitted from accelerated depreciation. The methodology also differentiates among proposals that affect only supernormal returns, only normal returns, or both types of returns. Under the prior (1990–2008) methodology, a $10 billion increase in the corporate income tax had the same distributional effects whether it represented an increase in burden on rents or a decrease in depreciation deductions. Any revenue-neutral change in burdens did not change the distribution. Under the new methodology (as illustrated below), an increase in burdens due to a rate increase is not distributed identically to an increase in burdens due to a decrease in depreciation deductions. A change in rates would affect the normal returns to capital and labor and supernormal returns to capital, while a change in depreciation deductions would only affect the normal returns to capital and labor.

To improve the Treasury methodology, we have incorporated some of the findings in the recent literature including the observations that supernormal returns are taxed under a consumption tax while normal returns are not, and that labor may share some part of the burden of the corporate income tax. We have not attempted to account for all possibilities regarding the incidence of the corporate income tax. For example, some part of the U.S. corporate income tax may be exported to foreign labor or capital held by families not included in our tables, but we do not take this into consideration. Our analysis also focuses solely on long run incidence, and thus ignores short-run incidence or incidence in the transition from the short run to the long run. Our new methodology has the following three primary components:

63 Percent of the Corporate Tax is a Burden on Supernormal Capital Income

As described in Section V, we find that 63 percent of current corporate taxable income is due to supernormal returns. We distribute this share to corporate supernormal capital income.

Whether non-corporate returns also bear the burden of the tax on the supernormal return depends on the source of the supernormal returns (Auerbach, 2005). If the source of supernormal returns is economic rents, then the burden is only borne by corporate capital because pure economic rents in a competitive market do not respond to taxation. In contrast, if the source of supernormal returns is risk (and the tax system does not provide full loss offset), the burden would be borne by both non-corporate and corporate capital. We assume the source of the supernormal return is pure rent, not risk, and distribute the entire supernormal burden to supernormal corporate capital income.

1 Percent of the Corporate Tax is Not a Burden

As described in Section VI, of the remaining 37 percent of the corporate tax on the taxable income attributable to normal returns, we find that 3 percent (1 percent of the total corporate tax) is not a burden. The investments that produced the taxable income associated with this portion of the tax were allowed accelerated tax deductions in the year that they were put into service, so that the tax collected in the current year just reflects the tax that offsets the initial benefit, as always occurs

under a cash-flow tax, and imposes no tax burden. The present value of the tax savings arising from the initial favorable treatment offsets the present value of the tax collected on the normal return to the investment over its lifetime. We do not distribute this small "cash flow tax" portion of the corporate income tax, which changes for each different capital cost recovery proposal. We compute the change in the cash flow tax component versus the actual tax burden associated with each capital cost recovery proposal, and only distribute the burden portion of the change.

36 Percent of the Corporate Tax is a Burden on Normal Capital Income and Labor

The remainder of the corporate tax on the normal return to capital is distributed equally to normal capital income and labor income. The open economy results of Randolph (2006), using factor shares and output shares for the U.S. economy, suggest that domestic labor bears as much as 70 percent of the long run burden of the corporate income tax. Gravelle and Smetters (2006) and Gentry (2007) both review these results. Allowing for imperfect product substitution, Gravelle and Smetters (2006) find a much smaller percentage of the tax being borne by labor, while Gentry (2007) argues for a more substantial burden remaining on labor. Given this lack of consensus, we have chosen an assumption that recognizes that some portion of the corporate tax may be on labor, although the overall share borne by labor is relatively small when considering both the normal and supernormal return.

The end result is that our revised methodology assigns 82 percent of the burden of the corporate income tax to capital, either normal or supernormal, and 18 percent to labor.[3]

V. ESTIMATING THE PERCENTAGE OF THE TAX BASE ATTRIBUTABLE TO NORMAL RETURNS

The first step of the new corporate distributional methodology is to identify the portions of corporate tax liability attributable to normal and supernormal returns. Supernormal returns arguably accrue to supernormal capital owners and so should be distributed solely to them, while normal returns accrue to both capital and labor.[4] Thus, we want to separate the percentage of corporate liability attributable to each of these types of returns so that they can be distributed appropriately.

In equilibrium, the present value of the normal return over the life of the investment is just equal to the cost of the investment. If the cost is expensed then the present value of the tax savings due to expensing offsets the present value of the tax collected on the normal return over the life of the investment. In contrast, income in excess of the normal return (the supernormal return) will still bear a burden. This fact can be used

[3] In earlier versions of the same modeling approach, we assumed that 76 percent of the burden of the corporate income tax was on capital and 24 percent was on labor. The resulting distributions however are virtually unchanged because the earlier version had a lower percentage of the burden on supernormal capital income. This paper replaces these assumptions with estimates from our model.

[4] By definition the supernormal return is the return in excess of the risk free rate of return, and in practice it has been measured (e.g., Gentry and Hubbard, 1996) based on the return available in the stock market.

to identify the portion of the current law corporate tax base attributable to the normal return to capital. This percentage has been estimated to be 40 percent by Gentry and Hubbard (1996) using stock market data and 32 percent by Toder and Rueben (2007) using aggregate tax data.

Gentry and Hubbard (1996) compare an average historical stock market rate of return of 16.5 percent (grossed up to 22 percent to reflect corporate taxes paid) to a riskless rate of return on bonds of 10 percent and conclude that a substantial portion of the return to equity is "supernormal." They use 60 percent. Toder and Rueben (2007) modify the approach of Gordon, Kalambokidis, and Slemrod (2004) and Gordon et al. (2004). They use estimates of aggregate 2004 data to adjust the current law corporate tax base. They remove all financial income from the tax base, and convert the corporate tax base from one that includes depreciation (and capitalization) of assets (and inventories) to one that provides for expensing. They attribute the change in the tax base to the normal return to capital, and conclude that, based on the percentage change in the tax base, 32 percent of current law corporate income is attributable to the normal return to capital. They effectively proxy the elimination of the tax on the normal return to capital with the elimination of taxes on capital and inventories (that is, with a move from depreciation and amortization[5] to expensing).

We use the Toder and Rueben (2007) approach as a starting point for our estimate, but we modify their approach in several respects. First, we conduct much of the analysis at the micro level using the Treasury's corporate tax micro-simulation model (CTM). The corporate tax model extrapolates the detailed 2007 tax return data of over 1.8 million C corporations in order to forecast baseline corporate tax receipts over the 10-year budget window (2013–2022), and to estimate how changes in tax policy affect corporate tax receipts. The model also contains some historical corporate tax return data (2001–2006). The remainder of the analysis is conducted using detailed aggregate corporate tax return data for nonfinancial corporations. Second, we use multiple years of actual data rather than 2004 estimated data. Third, we assume the steady-state capital cost recovery policy does not include 50 percent bonus depreciation for equipment, which was available to taxpayers in 2004 and which Toder and Rueben assumed would be permanent in a steady state. Fourth, we do not make an adjustment for a move from depletion to expensing due to limited data. Fifth, we remove total dividends (not only domestic dividends) from the baseline tax base.[6] Finally, we compare the change in our base to the pre-expensing corporate tax base.

The Treasury's corporate tax model (CTM) contains a corporate level tax calculator which can compute corporate tax liabilities under current law and under alternative tax policy specifications, as well as compute the changes in corporate net income, taxable

[5] Amortization is a type of capital cost recovery that is frequently less generous than the Modified Accelerated Cost Recovery depreciation system, and which is used primarily for intangible assets.

[6] The Gordon, Kalambokidis, and Slemrod (2004) and Gordon et al. (2004) data on which the Toder and Rueben study is based only removes domestic dividends received from the tax base. This is because they do not change the tax treatment of foreign dividends in their simulations, and so they do not remove them from the tax base. However, for our purposes, the appropriate tax base measure is taxable income net of total dividends, i.e., domestic and foreign dividends, and so our dividend adjustment is substantially larger than those in Gordon, Kalambokidis, and Slemrod (2004) and Gordon et al. (2004).

income, deficits, and tax liabilities, resulting from any given change in tax policy. The model is particularly useful for determining how much of any change in the tax base accrues to taxable firms versus deficit firms. It is also useful for making additional micro-level adjustments such as "purging" the data of the impact of bonus depreciation. Bonus depreciation was enacted late in 2001 and continued into 2002, 2003, and 2004. From September 2001 through May 2003 the tax code provided 30 percent expensing of equipment investment and between May 2003 and December 2004 it provided 50 percent equipment expensing.[7] It is arguably difficult to analyze the percentage of the tax base attributable to the normal return to capital during bonus depreciation years because the capital cost recovery system (which largely determines the taxation of the normal return to capital) during these years is so different from our "standard" capital cost recovery system (the modified accelerated cost recovery system (MACRS)), and because these tax law changes imply that the system is obviously not in a "steady state." We use the CTM to make adjustments to remove the impact of bonus depreciation and thus to construct a proxy for a "steady state" without bonus depreciation. Further, we compute the percentage of the tax base attributable to the normal return to capital in years in which there was no bonus depreciation.

Like Toder and Rueben (2007), the baseline against which we conduct the analysis is the consumption tax base associated with only real assets, or an R base.[8] In order to construct the R base, we remove interest received, dividends received, and net capital gains from each nonfinancial corporate taxpayer's total income (reported on their annual Form 1120 tax return), and we add back their interest paid deduction. These steps are detailed in Table 1. Note that in all years, for nonfinancial corporations, interest paid exceeds interest received (nonfinancial corporations are net borrowers), and in all years except the recession year, the deduction associated with net interest is less than dividend and capital gain income. This implies that, in all years except the recession year, the adjustment to convert taxable income to an R base is negative; the R base is smaller than the taxable income base.

Our analyses include the years 1999, 2000, 2001, 2004, and 2007. For 2004 and 2007, the CTM is used to estimate the changes in the corporate tax base associated with expensing of inventories, investment, and intangibles, as well as to construct the R base as described above. For reasons described above, the data are also adjusted to remove the impact of bonus depreciation.[9] Aggregate data analyses using totals of nonfinancial tax return data were used for 1999–2001. Note that 1999 and 2000 were

[7] There was no bonus depreciation in 2005, 2006, and 2007, but it was reinstated for 2008 and has been extended since that time, currently through 2013. From January 2008 through the beginning of September 2010, the tax code provided 50 percent bonus depreciation for equipment. From September 2010 through December 2011, it provided 100 percent bonus depreciation for equipment. Bonus depreciation for 2012 and 2013 is 50 percent for equipment.

[8] Gordon, Kalambokidis, and Slemrod (2004) and Gordon et al. (2004) provide discussions of the R base.

[9] In particular, for 2004, the bonus depreciation deduction was replaced with MACRS depreciation for bonus property. Then prior year deductions were increased by roughly 15 percent to reflect the fact that prior year deductions are lower than they would have been in the absence of bonus depreciation (because some 2001, 2002, and 2003 investment was already expensed). The 15 percent adjustment was derived by assuming all bonus depreciation property is seven year property (midpoint of MACRS equipment distribution) and then computing the "missing" depreciation deductions by multiplying the bonus depreciation amount by the seven year deduction percentage implied for 2004 for the bonus vintages. The true

chosen in order to analyze periods completely free of bonus depreciation, and 2001 was chosen to analyze the tax on the normal returns to capital during a recession year. Aggregate analyses were used because it is somewhat cumbersome to adapt the model to historical years, and in years without bonus depreciation the aggregate data suffice.[10]

For each of these years, we identify (either using the CTM or aggregate data) the change in the corporate tax base resulting from a change from depreciation and amortization of intangible capital, tangible capital, and inventories, to expensing. We replace the current law value of deductions for all MACRS classes (including the bonus depreciation adjustment), for section 197 intangibles (which are acquired intangibles that include goodwill, workforce in place, patents, copyrights, licenses, permits, franchises, trademarks, customer-based intangibles, and supplier-based intangibles), for software, and for the cost of goods sold which are reported on the corporate tax return with their expensing value, that is, with the level of investment associated with these deductions.[11]

distribution of bonus depreciation by MACRS class is not known and therefore the adjustment is rough. It results in an approximately $50 billion increase in prior year deductions that could be too low if more bonus depreciation property is five year property and too high if more bonus depreciation property is longer lived. For 2007, prior year deductions were increased by roughly 8 percent to reflect the fact that prior year deductions are lower than they would have been in the absence of bonus depreciation (because some 2001, 2002, 2003, and 2004 investment was already expensed). The 8 percent was derived by assuming all bonus depreciation property is seven year property (the midpoint of MACRS equipment distribution) and then computing the "missing" depreciation deductions by multiplying the bonus depreciation amount by the seven year deduction percentage implied in 2007 for the bonus depreciation vintages. The true distribution of bonus depreciation by MACRS class is not known and therefore the adjustment is rough. It results in an approximately $30 billion increase in prior year deductions, which could be over-stated or under-stated if property is shorter or longer lived than is assumed.

[10] Bonus depreciation was enacted at the end of 2001, and therefore there was a small amount of equipment expensing associated with bonus depreciation in 2001. We make an adjustment to remove bonus depreciation at the aggregate level by decreasing deductions associated with bonus depreciation by 85 percent (using the seven year MACRS class first year deduction as representative). We do not use the CTM to reallocate bonus depreciation in 2001 because bonus depreciation in 2001 is much less significant than in 2004 (the 2001 bonus depreciation is about 15 percent of the 2004 value).

[11] Taxpayers are required to report the investment amount associated with their tangible capital depreciation deductions. Sometimes taxpayers fail to report the actual investment level but only report the deduction. In these cases, we back out the investment amount from the deduction amount. To proxy for the value of software investment to be expensed we use the total reported software deductions across all investment vintages. Note that this is a conservative estimate because it assumes no growth. For intangible investment, we gross up reported current year vintage section 197 intangible amortization by 15 (since intangibles are amortized over 15 years) to estimate the investment amount associated with 197 intangibles that is to be expensed. Note that this estimate of intangible expensing is conservative because it assumes only section 197 intangibles receive expensing and the gross up factor is conservative (one could argue that a factor as high as 30 should be used if intangible property is placed in service evenly throughout the year). Finally, we do not change the treatment of certain types of capital, including tax exempt use property, foreign use property, listed property, motion picture, sound, and video recording property, and section 168 property. Section 179 expensing deductions and the minor amount of bonus depreciation reported in 2007 are assumed permanent. For inventories, we replace the current year cost of goods sold deduction with the reported value of current year purchases, cost of labor, section 263a costs, and all other relevant costs. Finally, as discussed more thoroughly in Gordon, Kalambokidis, and Slemrod (2004) and Gordon et al. (2004), the elimination of taxation on the normal return to capital can be proxied either by expensing new capital investment and removing all gains and losses associated with the disposition of tangible property from the tax base or by expensing both new and used capital and including the gains and losses from tangible property disposition in the tax base. We chose the latter strategy.

Table 1

The Percentage of the Tax Base Attributable to the Normal Return to Capital, and the Steps Necessary to Estimate It (Estimated Using Tax Return Data of Nonfinancial Corporations)

	1999	2000	2001	2004	2007	Average
Current law cost of goods sold	7,069,199	7,996,933	7,884,327	8,602,716	10,591,838	8,429,003
Expensing of purchases	7,120,279	8,106,781	7,845,599	8,692,201	10,642,781	8,481,528
Change in deductions associated with inventories	*51,080*	*109,849*	*–38,729*	*89,484*	*50,943*	*52,526*
Current law depreciation deductions	456,674	477,928	501,413	478,749*	494,173*	481,788
Expensing of investment	590,454	608,058	594,414	560,498	684,405	607,566
Change in capital cost recovery deductions	*133,780*	*130,129*	*105,037*	*81,749*	*190,232*	*125,778*
Change in deductions associated with the expensing of Section 197 intangibles	*25,096*	*29,057*	*22,090*	*19,863*	*39,090*	*27,039*
Total change in deductions associated with full expensing of investment, inventories, and intangibles	*209,956*	*269,035*	*76,362*	*191,096*	*280,265*	*205,343*
Changes required to construct an "R" Base						
Eliminate net interest (add back absolute value)	–185,246	–213,539	–214,542	–169,399	–246,335	–205,812
Eliminate net gains (subtract)	108,544	126,028	83,645	67,325	116,572	100,423
Eliminate total dividends (subtract)	119,932	124,515	111,146	137,596	186,657	135,969
Total change in the tax base: current law to R Base	–43,229	–37,003	19,750	–35,522	–56,894	–30,580
Net income (R Base)	336,040	301,754	*141,613*	*439,551*	711,290	
Change in net income due to expensing (R Base)				*–191,096*	*–280,265*	

Taxable income (R Base)	478,283	522,674	463,333	529,289	779,121	554,540
Change in taxable income due to expensing (R Base)				*–65,927*	*–98,687*	
Net operating loss deduction (R Base)				117,189	136,994	
Deficits (R Base)				–228,491	–210,860	
Change in deficits (R Base)				*–122,903*	*–173,976*	
Percentage of the tax base attributable to the normal return to capital	0.439	0.515	0.165	0.361	0.360	0.370

Notes: Values denoted by * have been adjusted to remove the impact of bonus depreciation. See text for full description.

As noted above, we do not make an adjustment to the depletion deduction, since current law depletion laws are complex and our data do not allow us to accurately estimate the investment tax bases associated with depletion deductions.[12] However, the depletion deduction is very small relative to total depreciation, so that leaving it unchanged is not likely to substantially affect the results. The change in the tax base resulting from expensing of tangible capital, intangible capital, and inventories, and also from the change to an R base, are also reported in Table 1.

On average across all years in the analysis, the tax base net of financial income and including expensing is about 37 percent of the baseline tax base.[13] This implies that 37 percent of our current corporate tax base is attributable to the normal return to capital, which is roughly in line with other estimates. This percentage varies considerably by year, and is substantially lower during the recession year (2001). The impact of inventory expensing is somewhat smaller than that of the expensing of capital, though it is even more volatile.[14] It is largely the negative impact of inventory expensing during the recession that causes the percentage of taxable income attributable to the normal return to capital during the recession year to be so small. The negative value reflects the fact that inventories are drawn down during a recession, and hence expensing is actually inferior to the cost of goods sold deduction during a recession.[15] The impact of inventory expensing in other years varies somewhat, and on average, about a quarter of the tax on the normal return to capital is attributable to inventory capitalization.

The change from depreciation to expensing of investment also varies by year, though not in a predictable fashion. This time period is a particularly challenging one in which to analyze the impact of changes in capital cost recovery policy. In addition to the

[12] Depletion is a method of depreciating property that is widely applicable in the oil and gas and mining industries. Under current law, the majority of corporations in these industries that take depletion deductions use percentage depletion, which allows the company to deduct a percentage of its gross receipts as a proxy for its depletion expense. The deduction can be taken even if the company no longer has any tax basis in the mine or oil well. Thus, in principle, percentage depletion could be even more generous than expensing. Only the largest firms use cost depletion, which is analogous to economic depreciation. Given that there are two very different depletion methods not separated in the data, and the additional complication that firms can and do switch between cost and percentage depletion (depending on which is more advantageous), there is no accurate way to estimate the change that would occur under a system that allowed expensing. However, total depletion deductions are small in comparison to total tangible capital and therefore ignoring depletion is not likely to meaningfully distort the results.

[13] This average is computed by averaging the baseline and proposed law values for all relevant variables, then computing the changes associated with these averages, and finally computing the ratio of the total change to the average of the taxable income bases. The average is obviously designed to smooth any anomalies in the data.

[14] The current cost of goods sold deduction allows firms to write off expenses associated with merchandise that is sold in the current year, but requires firms to capitalize expenditures associated with inventories. Expensing of inventories essentially means that all current year purchases are expensed, regardless of whether these purchases are used to produce goods for sale or inventory.

[15] We also compute the percentage of the tax base attributable to normal capital (and a new average) assuming that inventory expensing is equal to the cost of goods sold deduction in a recession. As shown in the table, this raises both percentages somewhat.

existence of bonus depreciation, investment in the U.S. economy fell in 2002 and again in 2003, and barely began to recover in 2004. As can be seen in Table 2, it then grew rapidly from 2004–2007 and beyond. This investment pattern in part explains why the 2004 change from depreciation to expensing seems low compared to other years, while the 2007 change appears somewhat high. That said, the adjustments to remove bonus depreciation are by their nature imperfect so it is possible that this imperfection distorts somewhat the 2004 and 2007 values. We performed sensitivity testing in which we increased or decreased the prior year deductions by different percentages. Within a reasonable range of prior year deduction values, these sensitivity tests increased or decreased the percentage of the tax base attributable to the normal return to capital by a few percentage points in either direction.

The expensing of section 197 intangibles has a small impact in the total change from depreciation to expensing, which implies that amortization of intangibles contributes modestly to the taxation of the normal return to capital. Typically section 197 intangibles are amortized over 15 years, so a change to expensing represent a significant change in their capital cost recovery, but they continue to represent a fairly small portion of the capital base, so the overall impact is not too large. There are other types of amortizable intangibles, but their treatment was left unchanged either because they were too small to matter or because we were unable to identify the type of amortizable and/or the amortization period, and therefore could not compute a change.

As mentioned previously, on average the normal return to capital represents about 37 percent of the taxable income base. This percentage varies considerably from a low of 16.5 percent during the recession to a high of 51 percent in the year 2000. However, it is worth mentioning that this analysis implicitly assumes that all of the change in the move from depreciation to expense accrues to taxable income. In fact, as can be seen from the decomposition of the change into the portion attributable to taxable firms and the portion attributable to deficit firms provided by the CTM and reported in Table 1, at least two thirds of the change from depreciation to expensing accrues to deficit firms. Cooper and Knittel (2010) demonstrate that, in present value terms, on average only 50 percent of the dollar value of deficits ever gets used to reduce taxable income. This loss of the value of the deficit implicitly represents an additional tax on the normal return to capital. It is worth considering how one might take into account this additional tax on the normal return to capital in the estimates, to be certain that the appropriate portion of the current taxable income base attributable to the normal return to capital is identified.

VI. ESTIMATING THE "CASH FLOW TAX" SHARE OF THE CORPORATE TAX

A country's capital cost recovery policy impacts the burden imposed by its corporate tax. A pure cash flow tax (imposed on the normal return to capital), which taxes total income minus total expenses in a given year, collects no tax on capital in present value terms. Expensing the full cost of an investment results in a loan that the government provides the taxpayer for his investment, and the future tax revenue associated with that investment represents the repayment of that loan. By contrast, an income tax system

Table 2

Corporate Sector Investment and Depreciation: 2001–2008

Year	2001	2002	2003	2004	2005	2006	2007	2008
Total corporate investment	636,987	547,932	516,418	543,485	578,873	635,353	682,773	685,021
Corporate depreciation	531,624	586,496	585,637	583,988	457,452	503,623	542,737	680,383
Corporate expensing	25,031	90,395	123,214	149,856	8,618	9,114	10,238	143,616

Notes: Estimates are from Treasury's Depreciation Model. The original data source is BEA historical cost investment, which is altered to be consistent with taxable capital.

does not allow expensing, so taxpayers lose the time value of money associated with the "extra" taxes that they must pay, and in this sense the tax system imposes a burden on capital. But in terms of tax revenue collected (in a steady state), these two different tax systems, which impose two very different burdens on taxpayers, appear similar.

Treasury's prior (1990–2008) methodology viewed all corporate tax payments as being borne by some class of individuals. But for accurate distributional analysis, we want to identify and distribute only the portion of the corporate tax on capital that actually imposes burden, and also only distribute the change in burden associated with any capital cost recovery proposal. The portion of corporate liabilities that impose burden can be identified by computing the "burden revenue," that is, the revenue attributable to a tax on economic income at the true marginal effective tax, and then comparing that to actual revenue collected under the current income tax. The ratio of these two amounts is the percentage of current taxes that impose burden, while one minus that ratio is the proportion of the tax that represents a cash flow tax.[16] We use Treasury's depreciation model (DM) to compute these ratios, as well as the intermediate steps required for their computation, for 80 different asset types (i.e., Bureau of Economic Analysis depreciation classes as estimated by Hulten and Wykoff) with eight different tax depreciation rates in four different tax sectors.

The depreciation model, which is based on National Income and Product Account (NIPA) annual investment flow data, is a multi-vintage model designed to measure the effect on tax liabilities of changes in capital cost recovery law. This model forecasts current law depreciation deductions, as well as deductions associated with any proposed change in law, and then, with the help of the corporate tax micro-simulation model (CTM) and the individual tax model (ITM), it calculates the change in tax liabilities associated with the proposed changes. The model also has the capability to estimate economic depreciation using the same NIPA data, and these economic depreciation estimates are used in several of the computations required for the corporate distributional estimates. The ultimate goal of the distributional computations on the DM is twofold: (1) to determine the percentage of baseline corporate tax receipts that represent a burden imposed by the tax system (versus a cash flow tax on the governments implicit loan to investors), and (2) to determine the changes in burden associated with various capital cost recovery proposals.

Table 3 summarizes each of the calculations made by the DM in arriving at the baseline corporate tax receipt percentages (the first goal of the analysis). The depreciation model computes each of the listed formulas at the asset — MACRS class — and sector levels. The rows of the table describe the intermediate steps required to compute the final output of the exercise — the percentage of corporate tax liability (on the normal return to capital) that constitutes a burden. The aggregate burden percentage is obtained by computing the micro-level "burden revenue" and "actual revenue" amounts, summing

[16] This methodology builds on the insights of Auerbach (1993), Auerbach and Kotlikoff (1987), and JCT (1993), see the discussion of the current tax system as a hybrid between a pure income tax and a deduction for investment.

Table 3

Steps for Computing the Percentage of the Normal Return to Capital Attributable to a Cash Flow Tax

Description of Variable	Source or Formula for Computation	Aggregate Values (Sum Across Asset Types)
PV of tax depreciation, 2013 investment	$\Sigma_t\{[1/(1+i)]^t*(2013\ tax\ depreciation_t)\}$, DM output	767,488
PV capital stock, 2013	$[1/(\delta+r)]*(2013\ investment)$	7,730,357
PV economic depreciation, 2013 investment	$[\delta/(r+\delta)]*(2013\ investment)$	655,271
Computation of user cost of capital = μ:	numerator/denominator	0.120
Numerator	{(2013 Investment)- [u*(PV tax depreciation, 2013 vintage)]}	
Denominator	{(1-u)*(PV capital stock, 2013)}	
PV after tax cash flow	first part +second part	17,183
First part	(PV capital stock, 2013)*(1-u)*μ	
Second part	(PV tax depreciation, 2013)*u	
Total investment in 2013	DM model output	922,742
Pre-Tax Return = PV(PTCF - Econ Deprec)	{pre-tax cash flow - (PV economic depreciation, 2013)}	
Pre-tax cash flow	PV capital stock, 2013*μ	
PV After tax income	PV after tax cash flow - PV economic depreciation, 2013	
METR	(pre-tax return-after tax Income)/ (pre-tax return)	0.269
Capital stock = K	$\Sigma_{age}\ (1-\delta)^{age}*(Investment_{age})*inflrt^{age}$, DM output, across prior vintages in 2013	8,872,194
CK get from model in 2013	μ*capital stock	1,038,624
DD = tax depreciation deductions	(depreciation deductions 2013), DM output = sum of tax depreciation deductions in 2013 for all prior vintages	684,824
ED = economic depreciation	$\Sigma_{age}\ (\delta)*(1-\delta)^{age}*(Investment_{age})*inflrt^{age}$, DM output, across prior vintages in 2013	555,468
Estimated tax base	(CK-DD)	353,800
Estimated taxes paid	u*(CK-DD)	123,830
Estimated burdensome tax base	(CK-ED)	483,156
Estimated burdensome taxes paid	METR*(CK-ED)	120,352
Cash flow percentage	1-Burden Percentage	0.03
Burden percentage	Estimated Burdensome Taxes Paid/ Estimated Taxes Paid	0.97

Notes: δ is the economic depreciation rate (BEA's modified Hulten and Wykoff rates, which are asset specific); r is the real interest rate (3.5%); I is the nominal discount rate (with a value of 5 percent); u is the statutory tax rate; μ is the user cost of capital; METR is the marginal effective tax rate; inflrt are the inflation rates, which are BEA asset specific rates. All computations, including the METR, user cost, steady state capital stock, taxes paid, cash flow piece, and burden piece, are made for each unique economic depreciation rate — MACRS class — sector combination. Then the cash flow and burden percentages are aggregated to the sector level by computing the weighted average of the micro-level percentages, where the weights are micro-level taxes paid as a percentage of total taxes paid in the sector. There are 80 unique economic depreciation rates, eight unique MACRS classes, and four unique sectors.

them to the aggregate level, and dividing.[17] The percentage of the corporate tax on the normal return that imposes a burden — 97 percent according to our computations — is then applied to the corporate tax receipts associated with the normal return to capital (i.e., excluding receipts associated with supernormal returns) to arrive at the amount of corporate tax receipts to be distributed. Thus, the implied 3 percent of the normal return associated with a cash flow tax (which does not impose burden) is not distributed.

When estimating changes in the tax burden associated with changes in capital cost recovery legislation (the second goal of the analysis), the objective is to determine the magnitude of the tax liability change to distribute. For short run analyses, we essentially calculate the annuity that provides the same present value as the tax savings from the proposal for 2013 investment. For our long run analyses, we also calculate the annuity that provides the same present value as the tax savings over all investments.

We compute these values as follows. For the short run, we calculate the cost of capital by subtracting the economic depreciation rate from the user cost of capital (μ-δ). Then we calculate economic income by multiplying the cost of capital times the level of investment in 2013 (for the short run calculations). Then we multiply this pre-tax income by the marginal effective tax rate (METR).[18] This is the short run current law burden amount. Holding pre-tax income constant, we then multiply it by the new METR — that is, the METR associated with the new capital cost recovery law to get proposed law short run burden. The difference is the magnitude of the tax liability change to be distributed.

For the long run analysis we calculate the cost of capital by subtracting the economic depreciation rate from the user cost of capital (μ-δ). We then calculate economic income by multiplying the cost of capital times the level of the capital stock in 2013. Finally, we multiply economic income by the METR. This is the long run current law burden amount. Holding economic income constant, we then multiply it by the new METR — that is, the METR associated with the new capital cost recovery law to get the "proposed law long run burden." The difference is the magnitude of the tax liability change to be distributed. The percentage of corporate tax liability that constitutes a burden (as contrasted with the portion that constitutes a cash flow tax) will be different under different capital cost recovery systems. Our methodology will capture the change in burden from moving to alternative capital cost recovery systems.

VII. DISTRIBUTION RESULTS

The distribution of the burden of the corporate income tax among families is dependent on each family's share of labor income, normal capital income, and supernormal

[17] Note this methodology provides the same answer as computing the burden percentage at the micro-level and then taking the weighted average of the micro-level percentages, using the share of actual taxes paid as the weight.

[18] The marginal effective tax rate is the difference between the cost of capital and the required after-tax return divided by the cost of capital. It is the implied tax rate that would offer the same after-tax return as is offered by the existing tax code if it were applied to true economic income. Therefore, it takes into account features of the tax system such as depreciation rules.

corporate capital income. Treasury uses cash income to measure a family's ability to pay and to group families into income classes. Cash income consists of wages and salaries, net income from a business or farm, taxable and tax-exempt interest, dividends, rental income, realized capital gains, cash transfers from the government, retirement benefits, and employer-provided health insurance. Employer contributions for payroll taxes and the federal corporate income tax are added to put cash income on a pre-tax basis. Treasury's measure of capital income is constrained to the components of cash income so, for example, accrued but unrealized capital gains are not part of Treasury's measure of capital income.

Supernormal capital income is measured as 63 percent of positive realized capital gains, 63 percent of dividends, and 63 percent of the capital share of active income from closely held businesses. In Treasury's model, inside build-up in defined contribution pension plans is also assumed to be capital income and a small portion of this income is assumed to be supernormal. In total, 10 percent of retirement distributions are assumed to be attributable to supernormal income.[19]

Normal capital income is measured as 37 percent of positive realized capital gains, 37 percent of dividends, 37 percent of the capital share of active income from closely held businesses, the capital share of passive income from closely held businesses, taxable and tax exempt interest, and 30 percent of retirement distributions.

Labor income is measured as wages and salaries, earnings from self-employment, employer-provided health insurance, 60 percent of retirement distributions, and employer contributions to payroll taxes.

Table 4 shows the distributions of income by source. As expected, a greater share of supernormal than normal capital income accrues to families in the top income quintile.

Families in the top 1 percent of the income distribution receive 51.2 percent of corporate supernormal capital income, 64.3 percent of non-corporate supernormal capital income, and 45.6 percent of normal capital income. These shares are significantly higher than in the distribution of labor income. Families in the top 1 percent of the income distribution receive only 11.5 percent of all labor income.

Table 5 shows the distribution of the corporate income tax under the new methodology (63 percent attributed to supernormal corporate capital income, 18 percent to normal capital income, and 18 percent to labor), under the prior (1990–2008) methodology (100 percent to all capital income), and under an alternative distribution that assumes half the burden is borne by labor and half by capital.

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[19] We assume 60 percent of pension distributions labor income, 30 percent normal capital income, and 10 percent is supernormal capital income. All distributions from defined benefit plans are included as labor income. The share of distributions from defined contribution plans that represents labor compensation is included as labor income. Inside build-up on defined contribution plans is counted as capital income. The portfolios of defined contribution plans were considered to split accruals between normal and supernormal capital income.

Table 4

Percent Distribution of Cash Income by Source
(2012 Income Levels)

Family Cash Income Quintile	Family Cash Income	Transfer Income	Labor Income	Positive Capital Income			
				Total	Normal	Supernormal Corporate	Supernormal Non-Corporate
Lowest	2.3	9.9	1.9	0.8	0.9	0.9	0.3
Second	6.8	18.1	6.8	2.3	2.5	2.4	1.1
Third	11.8	22.2	12.4	5.2	5.9	5.1	2.2
Fourth	19.7	23.6	21.8	9.7	11.0	9.4	4.9
Highest	59.9	26.1	56.8	80.9	78.5	80.7	91.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Top 10%	44.5	14.4	39.1	72.8	69.6	72.8	86.4
Top 5%	33.4	7.3	26.8	65.6	61.8	65.8	81.3
Top 1%	18.6	1.2	11.5	49.8	45.6	51.2	64.3

Notes: Quintiles begin at cash income of Second: $18,094; Third: $34,910; Fourth: $57,714; Highest: $99,912; Top 10%: $145,011; Top 5%: $205,697; and Top 1%: $499,329. Families with negative incomes are excluded from the lowest income quintile but included in the total line.

A lower share of the corporate tax is borne by the highest income families under the new methodology than the prior methodology. Under the assumption that the tax is borne by all capital income, families in the top 1 percent of the income distribution bore 50 percent of the burden of the corporate income tax. Under the new methodology they bear 43 percent of the burden. The increase in progressivity from attributing a large portion of the tax to corporate supernormal income that accrues disproportionately to the highest income families is more than offset by the decrease in progressivity from attributing a small portion of the corporate income tax to labor income that is less skewed to the high end. Thus, on net, the change is fairly small. The distribution under the assumption that half of the corporate tax burden is borne by labor and half is borne by capital income has the least progressive distribution.

Table 6 shows the distribution of all federal taxes under the same alternate assumptions shown in Table 5. The new methodology results in almost the same distribution as the prior methodology that assumed the burden was borne by all capital income. Even the distribution of all federal taxes that assumes that the corporate income tax is borne half by labor and half by capital income generally is only slightly less progressive than the other two distributions. The corporate income tax under 2012

Table 5

Percent Distribution of the Corporate Income Tax
Under Alternate Assumptions
(2012 Income Levels)

Family Cash Income Quintile	New Methodology	100% Positive Capital	50% Positive Capital and 50% Labor
Lowest	1.1	0.8	1.4
Second	3.2	2.3	4.6
Third	6.6	5.2	8.8
Fourth	12.0	9.7	15.8
Highest	76.0	80.9	68.9
Total	100.0	100.0	100.0
Top 10%	66.1	72.8	56.0
Top 5%	58.0	65.6	46.2
Top 1%	43.0	49.8	30.6

current law (with an Alternative Minimum Tax patch) and projected income levels is only expected to be 14 percent of total Federal taxes. In contrast, Federal individual income taxes are expected to be 42 percent of the total federal burden and payroll taxes are expected to be 38 percent of the burden. The small weight of the corporate income tax combined with the fact that the alternate corporate distributions are all generally progressive results in very small differences when all federal taxes are considered.

One benefit of the new methodology lies in its ability to differentiate among proposals that affect normal returns and supernormal returns differently. Consider two proposals: (1) a decrease in the corporate rate, and (2) bonus depreciation. Under the prior methodology, both proposals would be treated identically. Under the new methodology, a change in the corporate tax rate would be distributed in proportion to the corporate tax burden. In contrast, changes in depreciation rules only affect the taxable normal return and hence the burden falls on normal capital and labor.

Table 7 shows the percentage distribution of the change from current law capital cost recovery rules to 50 percent bonus expensing under the new methodology. The distribution of the depreciation change is less regressive than the distribution of a corporate rate cut. Because the top 1 percent receives a larger share of supernormal returns than normal returns, they benefit more from a rate cut (which reduces the burden on normal and supernormal returns) than bonus expensing (which only reduces the burden on normal returns). They receive 43.0 percent of the benefit of a rate cut but only 28.5 percent of the benefit of an increase in bonus expensing. So while the overall distribution of the corporate income tax is not very different under the new methodology, the distributions of certain proposals will be very different.

Table 6

Percent Distribution of All Federal Taxes
Under Alternate Corporate Income Tax Assumption
(2012 Income Levels)

Family Cash Income Quintile	New Methodology	100% Positive Capital	50% Positive Capital and 50% Labor
Lowest	0.6	0.5	0.6
Second	2.8	2.7	3.0
Third	7.9	7.7	8.2
Fourth	17.2	16.9	17.8
Highest	71.2	71.9	70.2
Total	100.0	100.0	100.0
Top 10%	55.8	56.8	54.4
Top 5%	43.7	44.8	42.0
Top 1%	25.9	26.9	24.2

Notes: The taxes included are individual and corporate income, payroll (Social Security, Medicare, and unemployment), excises, customs duties, and estate and gift taxes. The individual income tax is assumed to be borne by payers, payroll taxes (employer and employee shares) by labor (wages and self-employment income), excises on purchases by individuals in proportion to relative consumption of the taxed good and proportionately by labor and capital income, and excises on purchases by businesses and customs duties proportionately by labor and capital income, and the estate and gift taxes by decedents.

Table 7

Percent Distribution of Proposed 50 Percent Bonus Expensing
(2012 Income Levels)

Family Cash Income Quintile	Distribution of Burden on Normal Return (50% Normal Capital Income and 50% Labor)
Lowest	1.4
Second	4.7
Third	9.1
Fourth	16.4
Highest	67.7
Total	100.0
Top 10%	54.4
Top 5%	44.3
Top 1%	28.5

VIII. CONCLUSION

The purpose of this analysis is to improve the Treasury distributional model and methodology by defining new, or redefining existing, model parameters. We surveyed the extensive literature on this topic and also performed our own computations in order to identify and estimate (1) the percentage of capital income attributable to normal versus supernormal returns (37 percent of the corporate tax versus 63 percent of the corporate tax); (2) the percentage of normal return attributable to a cash flow tax versus a "burdensome" capital tax (1 percent of the corporate tax versus 99 percent of the corporate tax); and (3) the portion of the "burdensome" normal return to capital (36 percent of the corporate tax) to distribute to capital income rather than to labor income (18 percent of the corporate tax versus 18 percent of the corporate tax). The end result is that our revised methodology assigns 82 percent of the burden of the corporate income tax to capital, either normal or supernormal, and 18 percent to labor. Accounting for these important realistic factors in distributional analysis improves the accuracy of our estimates and provides greater flexibility and specificity in the distributional analysis. On the whole, these changes do not alter the current law baseline distribution substantially**,** relative to Treasury's prior (1990–2008) distributional methodology. This is because some of the changes are offsetting, and corporate taxes comprise a relatively modest portion of the total federal tax base. However, the implications of the new methodology could be very important for many types of tax reform proposals. The new methodology will allow estimation of the differential impacts of various types of proposals because it appropriately distributes different types of corporate tax changes to supernormal versus normal capital income, and because it appropriately only distributes the burdensome portion of changes in capital cost recovery policy. Further, if tax reform were to be enacted, the new methodology will provide a more accurate baseline distribution of corporate tax burdens than the old methodology.

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