CAPITAL INCOME TAXATION AND PROGRESSIVITY IN A GLOBAL ECONOMY

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The increase in international capital mobility over the past two decades has put pressure on the tax treatment of corporate equity income. Corporate-level taxes distort investment flows across locations and create opportunities for tax avoidance by shifting income across jurisdictions. Outward flows of capital shift part of the burden of the corporate-level tax on equity income from capital to labor, thereby making its incidence less progressive. Individual-level taxes on corporate equity income lower the after-tax return to savings but have less distorting effects on investment location and are more likely to fall on owners of capital than workers. This logic suggests there may be both efficiency gains and increases in progressivity from shifting taxes on corporate equity income from the corporate to the shareholder level. We estimate the distributional effects of a tax reform that raises shareholder-level taxes on corporate equity income and uses the revenue to cut the corporate tax rate. We find that taxing capital gains and dividends as ordinary income (subject to a maximum 28% rate on long-term capital gains) would finance a cut in the corporate tax rate from 35% to about 26%, assuming no behavioral response. While the distributional effect depends on what one assumes about the incidence of the corporate income tax, our results suggest that even if the corporate income tax were paid entirely by capital income, the reform would make the tax system more progressive.

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I. INTRODUCTION

Throughout the history of the U.S. income tax, income of equity owners of U.S. corporations has been subject to two levels of tax. Corporate income is first taxed under the corporate-profits tax, which allows deductions for wages and interest payments, but not for distributions to shareholders. Distributions are then taxed again as dividend income to shareholders, and a portion of retained earnings is also taxed a second time when shareholders realize capital gains that arise from those retentions.[1]

[1] The two levels of tax do not always, however, make the total combined marginal tax rate on corporate income higher than the marginal tax rate shareholders would otherwise pay on a dollar of fully taxed income. Some corporate-level income is taxed at rates less than the corporate statutory rate due to preferences such as accelerated depreciation of machinery and equipment, expensing of research expenditures and intangible drilling costs of oil, gas, and mineral development.

While both the corporate- and shareholder-level taxes on corporate equity income make pre-tax returns to corporate equity investments higher than after-tax returns to shareholders, the two levels of tax have very different economic effects in an open economy with internationally mobile capital. The corporate-level tax is largely a *source-based* tax on the returns to corporate investments in the United States. Both U.S. and foreign-owned multinationals are taxable on their income from investments in the United States, but U.S. multinational corporations pay little additional tax on profits from overseas investments because of provisions such as deferral and foreign tax credits.[2] This means that the corporate-level tax may raise the cost of corporate capital in the United States much *more* than it lowers after-tax returns to U.S. investors. As a result, some analysts have suggested that the corporate income tax is mostly shifted to U.S. workers through a decline in the capital-labor ratio in the United States,[3] although others dispute this finding.[4]

In contrast, shareholder-level taxes are *residence-based* taxes imposed on worldwide dividends and equity of U.S. citizens, but not foreign investors. This means that the shareholder-level tax may raise the cost of corporate capital in the United States by much *more* than it lowers after-tax returns to U.S. investors. The expected result is that U.S. shareholders continue to bear the burden of individual-level taxes on corporate equity, even if much of the burden of the corporate-level tax is shifted to labor.

Over the years, there have been many proposals in the United

Capital gains of individuals accrue tax free until realized and, upon realization, have been taxed at preferential rates for most of the history of the U.S. income tax. Additionally, capital gains and dividends accrued within qualified retirement plans are not subject to individual income tax.

[2] *See* Harry Grubert & Rosanne Altshuler, *Corporate Taxes in the World Economy: Reforming the Taxation of Cross-Border Income*, *in* FUNDAMENTAL TAX REFORM: ISSUES, CHOICES AND IMPLICATIONS 319, 324–25 (John W. Diamond & George R. Zodrow eds., 2008).

[3] *See, e.g.*, Arnold Harberger, *Corporate Tax Incidence: Reflections on What is Known, Unknown and Unknowable, in* FUNDAMENTAL TAX REFORM: ISSUES, CHOICES, AND IMPLICATIONS 283, 297–99 (John W. Diamond & George R. Zodrow eds., 2008); Arnold C. Harberger, *The ABCs of Corporation Tax Incidence: Insights into the Open-Economy Case*, *in* TAX POLICY AND ECON. GROWTH 51, 51–73 (1995); William Randolph, *International Burdens of the Corporate Income Tax*, Congressional Budget Office Working Paper 2006-09, 1–3 (2006).

[4] *See* Jane Gravelle & Kent A. Smetters, *Does the Open Economy Assumption Really Mean That Labor Bears the Burden of a Capital Income Tax?*, *in* 6 ADVANCES IN ECON. ANALYSIS & POLICY 1, 3–4 (2006).

States to reduce or eliminate the double taxation of corporate equity income so that corporate income would be taxed only once.[5] In 2003, the Bush Administration proposed eliminating the individual shareholder component of the corporate income tax and taxing all corporate income once by exempting dividends and capital gains paid out of previously taxed corporate profits. Congress, instead, reduced maximum tax rates on dividend income, allowing the tax benefit irrespective of whether any underlying corporate tax had been paid. The tax rate on capital gains, already lowered from 28% to 20% in 1997, was reduced further to 15%. At the same time, the top corporate tax rate has remained at 35% since 1993, so that almost all of the tax relief on corporate equity income has come at the individual shareholder — not the corporate — level, although some provisions have reduced the effective corporate tax rate by narrowing the tax base.

While the United States has recently emphasized tax cuts for shareholders, other countries — perhaps more attuned to cross-border competitive effects — have lowered their corporate tax rates while removing provisions that allow shareholder relief from dividend taxes. Since the 1986 tax reform act, the U.S. federal statutory corporate rate has remained virtually unchanged, rising from 34% to 35% in 1993 and then declining slightly for some corporate income to 31.85% by 2010 due to enactment of a phased-in deduction for domestic production activities in 2004. Most other OECD countries have lowered their top corporate rates substantially over the same period. The current U.S. combined federal-state average top rate (39.3%, excluding the effect of the domestic production deduction) is now higher than the rate in every other OECD country except Japan. It is substantially above the (un-weighted) average statutory rates for the rest of the G7 (32.2%) and for the rest of the OECD (26.2%).[6] In

[5] Proposals to eliminate the double taxation of dividends have been put forward by the Ford Administration in Congressional testimony, *see Tax Reform (Administration and Public Witnesses): Hearing Before the H. Committee on Ways and Means*, 94th Cong. 34–35 (1975) (statement of William Simon, Secretary of the Treasury), and a major tax reform study, *see* U.S. TREASURY DEPARTMENT, BLUEPRINTS FOR BASIC TAX REFORM 3–5 (1977), by the Reagan Administration in the original Treasury proposal that led eventually to enactment of the 1986 Tax Reform Act, *see* U.S. TREASURY DEPARTMENT, TAX REFORM FOR FAIRNESS, SIMPLICITY, AND ECONOMIC GROWTH 128 (1984), and by the administration of the first President Bush in a study of corporate tax integration options, *see* U.S. TREASURY DEPARTMENT, A RECOMMENDATION FOR INTEGRATION OF THE INDIVIDUAL AND CORPORATE TAX SYSTEMS 2 (1992).

[6] *See* Organisation for Economic Co-operation and Development, REVENUE

comparison, in 2000, the U.S. combined rate of 39.3% was lower than the average of the rest of the G7 (40.4%) and much closer to the rest of the OECD (33.4%).

While lowering their corporate rates, many European countries have eliminated provisions that provided relief to resident shareholders for the double taxation of corporate dividends. Since 2000, Finland, France, Germany, Italy, Norway, Sweden, and Turkey have abandoned imputation regimes that provided relief from the double taxation of dividends. The only countries remaining with full relief of double taxation for shareholders are Australia, Canada, Mexico and New Zealand (Korea and the United Kingdom provide modest partial relief). Australia considered restoring a second level of tax on dividends a part of a recent tax review,[7] and, had they done so, New Zealand would probably have followed them.

The result of these changes is a switch in the relative levels of tax rates on personal and corporate-level income from corporate equity between the United States and other major economies in this decade. The OECD calculates the personal tax ratio — *(PIT/PIT + CIT)* — which is the share of the overall tax rate on distributed profits that comes from the taxation of the dividends to individual shareholders.[8] In 2000, the U.S. personal tax ratio was 33.9%, slightly above the unweighted average ratios for the rest of the OECD (32.1%) and the rest of the G7 (30.7%). By 2008, these relative rates had flipped, with the U.S. personal tax ratio dropping to 21%, while the personal tax ratios increased to 33.0% in the rest of the OECD and to 35.2% in the rest of the G7.

The shift to corporate-level taxation of corporate equity in the United States affects domestic investment (through an outflow of capital), tax avoidance (through transfer pricing and other methods of income shifting), economic efficiency, and income distribution. This paper focuses on the potential effect of a corporate tax shift on income distribution. We estimate the distributional effects of repealing recent tax cuts on capital gains and dividend income while

STATISTICS 1967-2007, 2008.

[7] Australian Treasury Secretary Ken Henry provided a cogent argument for reducing the corporate tax rate and restoring a second tax on dividends in a speech to the Australian Business Tax Reform in Retrospect and Prospect Colloquium on February 23, 2009. *See* Ken Henry, Secretary to the Treasury, Speech to Australian Business Tax Reform in Retrospect and Prospect Colloquium: *A Tax System for Australia in the Global Economy* (Feb. 23, 2009).

[8] PIT is the top personal income tax rate on dividends (net of imputation credits), while CIT is the top rate on corporate income.

using the revenue generated to reduce the corporate income tax rate. We perform these estimates using two alternative assumptions of the incidence of the corporate income tax: the traditional assumption currently used by federal agencies and the Urban-Brookings Tax Policy Center (TPC) that 100% of the tax is paid by recipients of capital income and an alternative assumption that, due to an outflow of capital caused by the tax, only 30% of the corporate tax is paid by recipients of capital income and 70% is paid by recipients of labor income.

II. WHO PAYS THE CORPORATE INCOME TAX?

Understanding how an income tax reform that shifts the tax on capital from the corporate level to the individual level will affect the distribution of income requires information on who bears the final burden of both the corporate and the personal income tax. While the accepted methodology for assigning the economic burden of personal income taxes is uncontroversial and straightforward (the individual who actually pays the tax is assumed to bear the burden of the tax), the same is not true for the corporate income tax. Assigning the burden of the corporate income tax has proven to be a difficult and controversial exercise. This controversy has divided the main government agencies charged with producing distributional analyses of the federal tax system. Faced with the uncertainty in economic literature over who bears the burden of the corporate income tax, the staff of the Joint Committee on Taxation has chosen to ignore the tax in its distributional analyses. Meanwhile, published estimates by the staffs of the Congressional Budget Office (CBO) and Treasury's Office of Tax Analysis assign the entire burden of the corporate tax to capital owners in proportion to their share of aggregate capital income.[9] This section offers a selective review of the literature that informs our choice of incidence assumptions for our analysis of capital income tax reforms.[10]

[9] *See generally* Julie-Anne Cronin, *U.S. Treasury Distributional Analysis Methodology,* 85 Office of Tax Analysis Paper, 1, 25–26 (1999); STAFF OF JOINT COMM. ON TAXATION, 103D CONG., METHODOLOGY AND ISSUES IN MEASURING CHANGES IN THE DISTRIBUTION OF TAX BURDENS 1, 48–49 (1993).

[10] Others have compiled outstanding reviews of the literature. *See, e.g.* George Zodrow, *Incidence of Taxes, in* THE ENCYCLOPEDIA OF TAXATION AND TAX POLICY (1999) (providing an overview of the issues surrounding economic modeling of tax incidence); William Gentry, *A Review of the Evidence on the Incidence of the Corporate Income Tax*, 101 Office of Tax Analysis Working Paper, (2007) (surveying recent empirical studies of corporate tax incidence); Jane Gravelle & Thomas

Changes to the taxation of capital income at the corporate level can affect many business decisions and, as a consequence, make incidence analysis a difficult endeavor. The corporate income tax can influence risk-taking behavior and managerial incentives, as well as how companies select investments, how investment is financed and allocated across locations, and how businesses are organized. These effects can vary across sectors and will depend on how any corporate reform is structured (for instance, rate changes versus changes in investment incentives). All of these behavioral responses will, in turn, affect wages, output prices, and levels of investment. To further complicate matters, a corporate tax reform in one country can trigger reforms in other countries. This complex set of economic interactions makes it difficult to isolate the impact of corporate income taxation on the returns to capital, land, and labor, as well as on relative prices of goods and services made in corporate and non-corporate firms. Further, as Alan Auerbach points out, there is an important dynamic dimension that must be taken into account in any incidence analysis of the corporate tax.[11] In the short-run, the burden of the tax likely sticks with shareholders. Over time, the tax will be shifted to other capital owners and labor. But, for a variety of reasons, even in the long-run most of the tax (and even all) may be borne by shareholders.

In his seminal study of corporate tax incidence, Arnold Harberger shows that in a simple closed-economy model with two perfectly competitive sectors and fully mobile factors of production, imposing a tax on the return to capital in one sector (the corporate sector) would cause investors to shift capital from the taxed to the untaxed sector.[12] This initial reallocation of capital leads to a new allocation of labor across sectors, and new levels of output in each sector that further modify the initial effects of the tax on factor and output prices.

Harberger finds that the pattern of factor reallocation and associated price changes depends critically on the initial proportional

Hungerford, *Corporate Tax Reform: Issues for Congress* (2007) (critiques recent empirical studies of corporate tax incidence); Alan Auerbach, *Who Bears the Corporate Tax? A Review of What We Know, in* 20 TAX POLICY AND THE ECON. 1 (2006) (discussing many of the complications of determining corporate tax incidence including dynamics, investment incentives in the corporate income tax, corporate financial policy, risk, imperfect competition, the choice of organizational form, international capital flows, and managerial incentives).

[11] Alan Auerbach, *Who Bears the Corporate Tax? A Review of What We Know, in* 20 TAX POLICY AND THE ECON. 1, 10–13 (2006).

[12] Arnold Harberger, *The Incidence of the Corporate Income Tax,* 70 J. POL. ECON. 215, 217–19 (1962).

allocations of labor and capital in the corporate and non-corporate sectors, the degree to which firms in the corporate and non-corporate sectors can substitute labor for capital, and the elasticities of demand for corporate and non-corporate output. Harberger demonstrates how these allocations and elasticities determine the division of the corporate tax burden between labor and capital. Using parameters that are reasonable for the U.S. economy, Harberger finds that capital bears approximately the full burden of the corporate income tax. Subsequent computable general equilibrium models with multiple output sectors generate similar findings.

Researchers have considered the sensitivity of the Harberger model to the relaxation of all the key assumptions, especially the assumption of a closed economy with no international capital flows. Given the importance of international trade and capital flows, it seems artificial to work with closed-economy models.[13] Once we allow for international capital mobility, domestic owners of capital may be able to escape the tax by moving capital abroad, turning the original Harberger result on its head.[14]

Researchers have traditionally followed two broad approaches to study the incidence of the corporate income tax in an open economy. One method extends the Harberger model to determine how a hypothetical corporate tax might affect the equilibrium return to capital and labor; the other method relies on observed empirical evidence relating corporate tax rates to changes in wage rates. While the theoretical studies obtain mixed results, the empirical work suggests that the corporate income tax may depress wages.

A. Open Economy Incidence in General Equilibrium Models

William Randolph builds a two-country, five-sector model with

[13] *See, e.g.*, Arnold Harberger, *Corporate Tax Incidence: Reflections on What is Known, Unknown and Unknowable*, *in* FUNDAMENTAL TAX REFORM: ISSUES, CHOICES, AND IMPLICATIONS 7 (2006) [hereinafter Harberger (2006)]. Harberger notes, however, that closed-economy models are not necessarily inappropriate. He argues that a closed-economy model is appropriate if all countries, or alternatively, a set of countries that make up a large part of the world economy, enact tax reforms that raise or lower corporate tax rates in a similar fashion. If only one country, or a small set of countries, raise or lower their corporate rate, an open-economy model is necessary.

[14] *See, e.g.*, John Mutti & Harry Grubert, *The Taxation of Capital Income in an Open Economy: The Importance of Resident-Nonresident Tax Treatment*, 27 J. PUB. ECON. 291 (1985).

three factors of production (capital, labor, and land).[15] The five sectors include a corporate sector producing tradable goods that are perfect substitutes with foreign goods; a corporate sector producing tradable goods that are not perfect substitutes with foreign goods; a corporate sector with goods that are not internationally tradable (e.g., utilities); a non-corporate sector producing tradable goods (e.g., agriculture); and a non-corporate sector producing non-tradable goods (e.g., residential housing). The corporate income tax is modeled as an add-on tax on capital income in the domestic corporate sectors. Randolph assumes that capital is perfectly mobile across countries, labor is immobile, land is used in the agricultural sector only, and markets are perfectly competitive. Worldwide supplies of capital and labor are fixed.

The incidence results in Randolph's model are straightforward. The corporate tax induces a reallocation of capital abroad that increases the productivity of foreign labor and consequently raises wages abroad. Because domestic workers are not able to follow the capital abroad, they suffer as the domestic capital stock falls. Changes in land values are determined in the agricultural sector. Randolph assumes that the agricultural sector at home is not big enough to affect output prices and, as a result, any change in land values will be offset by changes in the after-tax costs of labor and capital. Since the cost of labor and the cost of capital in the non-corporate sector fall in equilibrium due to the tax, land values increase at home. In contrast, since foreign wages increase and returns to capital fall, land values may increase or decrease abroad.

The final allocation of burdens between factors of production depends on model parameters. For example, the larger the domestic economy is as a percent of the world economy, the larger domestic capital's share of the burden. In the limit, as the domestic economy's share of world output approaches 100%, capital bears the full burden of the tax, as in the original Harberger model with a closed economy. Similarly, as the size of the domestic corporate sector increases, the share of incidence of the corporate tax borne by capital also increases. Randolph finds that under reasonable baseline assumptions for the size of the U.S. economy, initial capital and labor shares and behavioral responses, domestic labor bears the bulk of the tax — slightly more than 70% — while domestic capital bears slightly more

[15] *See* William Randolph, *International Burdens of the Corporate Income Tax* 5 (Congressional Budget Office, Working Paper 2006-09, August 2006), *available at* http://www.cbo.gov/ftpdocs/75xx/doc7503/2006-09.pdf.

than 30% of the burden (expressed as a share of revenue). Domestic land enjoys a small benefit. Owners of foreign capital bear about 70% of the burden, but this burden is exactly offset by the benefits to foreign labor (about 70%) and landowners (about 1%).[16]

Randolph's model followed earlier work by Harberger,[17] as well as Jane Gravelle and Kent Smetters.[18] As Randolph explains in a useful appendix, his model is based on Harberger's contribution. However, Harberger finds that domestic labor bears much more than the full burden of the corporate income tax — from 200% to 250%. There are three reasons for the striking difference in results between the two models. First, and most importantly, Harberger considers only changes in sources of income in his analysis, while Randolph considers both the sources and uses of income. Second, Harberger uses a somewhat different parameterization of the U.S. economy. Finally, Harberger assumes that the imposition of the corporate income tax reduces worldwide capital income by exactly 100% of revenues. Randolph does not impose this constraint in his analysis.

Using assumptions that are consistent with Harberger's parameterization of the U.S. economy and allowing the combined burden to exceed 100% of revenues, Randolph's model predicts that domestic labor bears 87% of the corporate income tax.[19] The main conclusion to draw from these models is that, in an open-economy setting, the imposition of a tax on capital in the corporate sector can be substantially shifted from domestic capital to domestic labor.

Gravelle and Smetters draw very different conclusions from their open economy model.[20] They estimate corporate tax incidence in a model that allows for less than perfect capital mobility. By varying the degree of demand substitution for tradable goods produced in the corporate sector, the authors set up a mechanism by which capital mobility may be limited. They also allow capital mobility to be constrained by imperfect portfolio substitution between foreign and domestic assets.

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[16] *See id.* at 25, 35. Randolph also produces estimates assuming different relative capital intensities of the domestic corporate sectors, and finds that the burden falling on domestic labor can vary between about 60% to 90%, while the burden falling on domestic capital can vary between about 30% to 40%.

[17] *See, e.g.*, ARNOLD HARBERGER, *supra* note 3.

[18] *See, e.g.*, GRAVELLE & SMETTERS, *supra* note 4.

[19] *See, e.g.*, Harberger (2006) (considering how both uses and sources of income are affected by the corporate income tax and finding that domestic labor bears almost 100% of the tax).

[20] *See, e.g.*, GRAVELLE & SMETTERS, *supra* note 4.

The Gravelle and Smetters model generates similar results to Randolph's model when both foreign and domestic assets in investors' portfolios, as well as foreign and domestic tradable goods, are close to perfect substitutes. Under these assumptions, domestic labor bears 71% of the burden, owners of domestic capital bear 36% of the burden, foreign labor bears -67% of the burden and owners of foreign capital bear 66% of the burden (land rents change little in both the domestic and foreign economies). At the other extreme, if foreign and domestic portfolio assets and domestic and foreign tradable goods are not close substitutes, domestic labor bears -3% of the burden and domestic capital bears 91%, while foreign factors bear very little burden. The authors argue that prior empirical research supports adopting a product substitution elasticity of 1 between foreign and domestic tradable goods, which indicates that domestic capital bears between 71% of the corporate income tax burden (for high capital portfolio substitution elasticities) and 91% (for low capital portfolio substitution elasticities).

Randolph, Harberger, and William Gentry[21] critique the parameterization used in the Gravelle and Smetters study. They note that the long-run substitutability between domestic and foreign goods is likely large, so assuming that product substitution elasticity is high may be more appropriate for a model of the long-run impacts of the corporate income tax. Randolph shows that adding additional corporate sectors to the model can mitigate the impact of low product substitution elasticities and raise the share of incidence that falls on labor. Randolph, Harberger, and Gentry also question the low capital portfolio substitution elasticity in Gravelle's and Smetters' preferred case.

Despite the complexity inherent in relevant general equilibrium models, the fundamental conclusions remain the same: if it is feasible and profitable for capital to avoid a tax by shifting to other sectors (and abroad in an open-economy model), then the burden will fall primarily on labor, assuming labor is immobile. The extent to which a shift is feasible and profitable depends on a variety of assumptions, which drive any conclusions about corporate tax incidence. Because there is no consensus on the size of the underlying behavioral responses, there is no consensus on tax incidence.

[21] William Gentry, *A Review of the Evidence on the Incidence of the Corporate Income Tax* 22–24 (Office of Tax Analysis, Working Paper 101, December 2007), *available at* http://www.ustreas.gov/offices/tax-policy/library/ota101.pdf.

B. Empirical Incidence Analysis[22]

Empirically estimating corporate tax incidence avoids the problem of determining what behavior to assume in a general equilibrium model. Several recent papers have used international panel data to estimate the impact of corporate taxes on employee wages and earnings. With one exception discussed below, these papers do not provide direct information on the shares of the corporate tax paid by labor and capital. They do, however, shed some light on the mobility of capital across borders.

Kevin Hassett and Aparna Mathur[23] use a panel data set of seventy-two countries over twenty-five years to estimate the effect of corporate taxes on manufacturing wages. Using average nominal wages over five-year periods as the dependent variable, the authors estimate that a ten percentage-point increase in the top statutory corporate rate leads to a 25% reduction in wages. While this is a substantial effect, the authors report that the use of average and effective corporate tax rates produces weaker relationships.

R. Alison Felix[24] uses household survey data from nineteen different countries between 1979 and 2002 to estimate the effect of differences in corporate tax rates across countries on annual household earnings. Felix includes a measure of an economy's openness as an explanatory variable. She finds no statistically significant relationship when she accounts for an economy's openness and reports that a one percentage-point increase in the top corporate statutory rate leads to a -0.71 to -1.23 percentage-point decrease in the average household annual wage.

Gravelle and Thomas Hungerford,[25] among others, dispute the methods and findings of these studies. They re-estimate the Hassett and Mathur model using both purchasing power parity (PPP) and

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[22] This section borrows heavily from Benjamin Harris, *Corporate Tax Incidence and Its Implications for Progressivity* (Urban-Brookings Tax Policy Center, Working Paper, November 2009), *available at* http://www.urban.org/UploadedPDF/1001349_corporate_tax_incidence.pdf.

[23] *See, e.g.*, Kevin Hassett & Aparna Mathur, *Taxes and Wages* 9, 10 (Am. Enterprise Inst., Working Paper 128, March 2006), *available at* http://www.aei.org/docLib/20060602_HassettMathur.pdf.

[24] *See, e.g.*, R. Alison Felix, *Passing the Burden: Corporate Tax Incidence in Open Economies* 11, 28 (Fed. Res. Bank of Kansas City, Working Paper RRWP 07-01, 2007), *available at* http://www.kc.frb.org/Publicat/RegionalRWP/RRWP07-01.pdf.

[25] *See* Jane Gravelle & Thomas Hungerford, *Corporate Tax Reform: Issues for Congress,* CONGRESSIONAL RESEARCH SERVICE REPORT FOR CONGRESS, Oct. 31, 2007, at 16.

inflation-adjusted PPP to adjust wages, as opposed to Hassett and Mathur's approach of using exchange rates. This specification generates much weaker relationships between the corporate tax and manufacturing wages. Gravelle and Hungerford also note that about one-third of Hassett and Mathur's five-year observations were based on less than five years of data due to missing data and re-estimate the model using only observations for which the five years of data exist. They then find no significant effect of the corporate tax on manufacturing wages. Finally, Gravelle and Hungerford estimate the model using annual data, rather than five-year averages, and find no significant effect.

Gravelle and Hungerford list several problems with the study by Felix. They note that the study does not control for country-fixed effects and uses an unusual patchwork sample of observations with many countries having only one or two years of data. Finally, Gravelle and Hungerford note that both studies produce estimates of corporate tax burdens (about $4 in tax burden for every $1 in tax revenue collected in the Felix study) that are far too large to be predicted by any reasonable theoretical model.

Mihir Desai, Fritz Foley, and James Hines[26] use multinational firm-level data to estimate the extent to which the corporate tax burden is shared between labor and capital. The authors attempt to estimate directly the distribution of corporate tax burdens. To do so, they jointly estimate the impact of corporate taxes on wages and the return to capital, while imposing a restriction that the sum of the burden on wages and capital must equal the total tax effect. They find that between 45% and 75% of the corporate tax burden falls on labor (57% in the baseline specification).

Wiji Arulampalam, Michael Devereux, and Giorgia Maffini[27] attempt to estimate the effects of the corporate tax on wages through the bargaining process. They hypothesize that firms and workers bargain over economic rents and that the corporate tax can change the outcome. Using data on more than 50,000 firms operating in nine European countries, they measure the effect of taxes paid by firms (as opposed to corporate tax rates) on employee compensation. Since they use firm-level data, they cannot measure the general equilibrium effects on the wage rate, but rather the impact on the outcome of the

[26] Mihir Desai, Fritz Foley, & James Hines, *Labor and Capital Shares of the Corporate Tax Burden: International Evidence* (draft manuscript, December 2007).

[27] Wiji Arulampalam, Michael P. Devereux, & Giorgia Maffini, *The Direct Incidence of Corporate Income Tax on Wages* (Oxford University Centre for Business Taxation Working Paper 09/17, 2009).

worker and firm bargain over economic rents. The authors find that, under their preferred specification, the elasticity of employee compensation with respect to corporate tax rates per worker is -0.120 in the short-run and -0.093 in the long-run. They conclude that labor bears between 60% and 100% of the corporate income tax.

Gravelle and Hungerford dispute studies using the firm-level approach. They criticize the Desai, Foley, and Hines study on several counts, including the use of firm-level changes in wages to measure the reduction in economy-wide wages and the use of changes in interest income to measure the reduction in capital income. They also note that the study's results are driven by the restriction that the combined estimated (labor and capital) burden of the corporate income tax equals 1; relaxing that restriction makes the estimates statistically insignificant.[28]

Gravelle and Hungerford also criticize the Arulampalam, Devereux, and Maffini study. They note that the authors' estimation strategy measures only the short-run effects of the corporate tax on wages, not the long-run impact on the equilibrium division of economic rents. They find the results implausible, noting that the short-run elasticity of corporate taxes on wages cannot be that high in the presence of multi-year wage contracts.[29]

Gentry also finds problems with the recent empirical literature. He agrees with Gravelle's and Hungerford's assertion that these studies capture the short-run impact of the corporate tax, while theory indicates that the mechanism by which the tax affects labor (notably an adjustment in equilibrium wage levels) would likely require several years to adjust. Gentry also agrees with Gravelle and Hungerford that the use of firm-level data can only partially measure wage changes because it ignores economy-wide price effects. He raises concerns about the assumed direction of causality between corporate tax rates and wages, noting instead that governments could shift toward higher capital taxation immediately before returns to wages fall. Finally, Gentry notes, as do Gravelle and Hungerford, that the findings in these papers are much larger than the *a priori* expectations would suggest and that these magnitudes far exceed the plausible ranges predicted by general equilibrium models.

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[28] The authors refer to comments at a March 2008 seminar at the American Enterprise Institute, where Randolph stated that, without the restriction, the DESAI, FOLEY, & HINES, *supra* at 26, results were no longer significant.

[29] GRAVELLE & HUNGERFORD, *supra* note 25, also criticizes the use of short-run panel data and the "widely varying" results obtained by the paper.

The empirical studies are certainly innovative and have rejuvenated the study of corporate tax incidence in open economies. The serious concerns raised by Gravelle and Hungerford, as well as Gentry, suggest that the empirical studies to date contribute little, if anything, to resolving the question of who actually bears the burden of the corporate income tax. We are left to rely on theoretical models, which generate a wide range of results for the burden of the corporate tax in an open economy. Some studies find that most of the burden of a domestic corporate income tax is borne by domestic labor, while others find that almost all the burden is borne by domestic capital, as in Harberger's groundbreaking 1962 study of a closed economy.

C. Other Considerations

Our discussion of the literature so far may give the impression that if we were to find the perfect dataset and refine the estimation technique for an empirical analysis or agree on a parameterization of a preferred open economy general equilibrium model, we will have answered the incidence question for the corporate income tax. Unfortunately, there are many considerations that prevent us from drawing this conclusion.

Auerbach[30] provides an excellent discussion of why the incidence question may, for all practical purposes, ultimately be unanswerable. First, there is an important timing element. The initial burden of any change in the corporate income tax falls on existing shareholders through an initial drop in asset values. The tax also induces a change in the rate of return on capital which will be borne by future investors in corporate and non-corporate capital. One can think of this in terms of generational incidence. The old — or existing — shareholders suffer a decrease in asset values and the young — or future — holders of capital suffer a reduction in rates of return. When the incidence is passed to the young depends on the speed of adjustment which adds another dimension of uncertainty to the incidence question. If adjustment is not instantaneous, it may be misleading to look at a one-period, cross-sectional distributional analysis. We implicitly assume in our analysis that current capital owners are identical in terms of asset holdings to future capital owners and, further, that the full burden of the tax can be shifted from existing shareholders.

The presence of investment incentives creates another problem for incidence analysis. Due to the accelerated depreciation schedules

[30] AUERBACH, *supra* note 11.

in the tax code, new capital will always be worth more than old capital of equal productivity. The resulting "old capital" discount, capitalized into existing asset values, increases when the corporate tax rate is increased. The incidence of the reduction in existing asset values due to the tax change is difficult (and may even be impossible) for existing shareholders to avoid. Thus, a portion of any corporate tax increase may be borne indefinitely by existing shareholders.

Auerbach discusses other factors that may prevent existing shareholders from shifting the corporate tax. For example, to the extent that the corporate income tax is a tax on economic profits, a change in the tax will not be passed on to all capital owners (or labor). Further, any change in the advantages of using the corporate form to organize business due to changes in the corporate tax may not be shifted.

A final problem with the type of distributional analysis we present (and that is presented by government agencies) is the omission of consideration of the excess burden associated with taxes. This problem is well-known. Standard distribution tables distribute the tax revenue and not the total burden of the tax, which likely results in an understatement of the total tax burden. Whether or not the total burden of a tax *change* exceeds the total revenue change depends on the extent to which excess burden is altered by the tax reform. If, for example, excess burden is reduced by a tax cut, then a static estimate of the tax saving understates the reduction in the total tax burden.

With all these caveats in mind, we present a distributional analysis of a change in the taxation of capital income.[31] We address the uncertainty surrounding the incidence of the corporate tax by presenting analyses under different assumptions concerning who bears the ultimate burden of the tax.

III. EFFECTS OF A TAX SHIFT FROM THE CORPORATE TO THE INDIVIDUAL LEVEL

A. Distributional Effects

The central focus of this paper is to measure the distributional effects of a tax shift from corporate taxation to individual-level taxation of capital income. For individual taxpayers, the net effect of this reform is a combination of the higher taxes paid on long-term

[31] We have ignored the problem of how taxes on capital affect capital accumulation. This is relevant since our reform will impact personal saving decisions and corporate investment.

capital gains and qualified dividends plus the benefits of lower taxation of corporate profits. Who benefits from the latter part of the reform — the reduced corporate tax burden — depends critically on our corporate tax incidence assumptions.

We assume that the higher tax rates on capital gains and dividends are borne directly by those taxpayers who report these types of income on their tax returns. Long-term capital gains and qualified dividends are more concentrated among the highest income taxpayers than other forms of capital income, such as interest income and gains attributed to retirement saving accounts. Consequently, repealing the preferred rates on capital gains and dividends and using the revenue to reduce taxes on capital income broadly should make the tax system more progressive.

If one assumes that the economic burden of the corporate tax falls exclusively on owners of capital — who tend to be wealthier than non-capital owners — then a reduction in the corporate tax by itself is regressive. But even then, reducing the corporate income tax and substituting higher taxes on capital gains and dividends could make the tax system more progressive. If, instead, corporate tax incidence is divided between wage earners and capital owners alike instead of falling all on capital, substituting higher capital gains and dividend taxes for corporate taxes would be even more progressive because wage earners would also benefit from the tax shift.

Note that even if some or all the burden of the corporate tax is borne by labor, a cut in corporate revenues alone would make the tax system less progressive. Wages are also a higher share of income for higher-income than for low- and middle-income taxpayers, who receive a relatively larger share of their income from transfer payments. The corporate tax incidence assumption affects the *degree* of regressivity of a corporate tax cut, not whether a corporate tax cut alone is progressive or regressive.[32]

The net shift in tax burden is then the combination of an extremely progressive tax increase (repealing preferred rates on capital gains and dividends) combined with either an extremely regressive tax cut (when the corporate burden is assumed to fall on all capital) or a mildly regressive tax cut (when the corporate burden falls on both labor and capital). As we will show in the following sections, the net effect of this reform is undoubtedly progressive, although the

[32] HARRIS, *supra* note 22, shows that the corporate tax is generally progressive, so that, absent other changes, a reduction in the corporate tax would make the tax system less progressive.

degree of progressivity depends on the corporate tax incidence assumptions.

B. Behavioral Responses and Revenue

We argue that decreasing the taxation of capital income at the corporate level while increasing the burden at the shareholder level may be an appropriate response to increased capital mobility. The reform we model, raising the individual rate on dividends and long-term capital gains and decreasing the corporate statutory rate, while holding revenue constant, will induce a wide range of behavioral responses. We recognize that behavioral responses will impact the revenue estimates of both capital gains and dividend tax rate increases and corporate tax rate cuts and, if these behavioral responses are not perfectly offsetting, would affect the size of the corporate-rate reduction that increasing rates on capital gains and dividends could finance. In the simulations in this paper, we assume no behavioral responses to the tax rate changes. We leave investigation of any feedback effect on estimated revenue to future work, but below we outline some of the potential behavioral responses.

As Harry Grubert and Rosanne Altshuler[33] point out, shifting more of the taxation of corporate income to the personal level would increase the attractiveness of the United States for investment by both foreign and domestic companies and reduce the incentive for individual U.S. shareholders to escape the impact of the U.S. corporate tax by investing in lightly taxed foreign companies.[34] The reduced differential between statutory rates at home and abroad would also decrease the incentive for companies operating in the U.S. to shift reported income to their non-U.S. affiliates. Grubert[35] reports that foreign tax rates fell by about five percentage points between 1996 and 2004. Using data from tax returns of U.S. multinational corporations, he estimates that this drop in foreign rates induced an increase in the share of income held in foreign affiliates of U.S. multinationals of about eight percentage points in 2004. This suggests

[33] GRUBERT & ALTSHULER, *supra* note 2.

[34] A reform that reduces the corporate rate could be part of a broader reform of taxation of U.S. multinational corporations that ends deferral and, as a result, eliminates many of the distortions in the current system (*see* GRUBERT & ALTSHULER, *supra* note 2), but this paper assumes no changes in international tax rules.

[35] Harry Grubert, *Foreign Taxes, Domestic Income, and the Jump in the Share of Multinational Company Income Abroad: Sales Aren't Being Globalized, Only Profits* (Draft Manuscript, 2009).

a loss of U.S. tax revenues of at least $20 billion a year. Kimberly Clausing[36] reports estimates from Bureau of Economic Analysis data suggesting an even larger impact of tax differentials. She finds that every one percentage-point differential between the U.S. and a particular foreign corporate tax rate is associated with a one-half percentage-point increase in reported profits abroad. An effect of this magnitude implies that in 2004 the corporate tax rate differential induced U.S. and foreign-owned multinational corporations to shift more than $180 billion in profits — and more than $60 billion in tax revenues — out of the United States. Finally, a cut in the statutory corporate rate could increase repatriations of profits of foreign subsidiaries of U.S. multinational corporations. All of these behavioral changes would cause corporate revenues to fall by less than they would under our static assumptions.

Lowering the corporate rate would increase the attractiveness of operating in the corporate form relative to the non-corporate form. Altshuler, Auerbach, Michael Cooper, and Matthew Knittel[37] report that between 1982 and 2001 the share of net income in S corporations increased from 3% to 40%. A reduced corporate rate may induce businesses operating as pass-through enterprises to incorporate and reverse some of this trend. This would raise corporate tax revenue, but lower individual tax revenue. The continued double-taxation of corporate profits combined with the higher rate on distributions would mitigate the incentive for individuals to shelter income in the corporate form in order to take advantage of a corporate rate that would be lower than the top individual rate.[38] If the revenue-neutral corporate rate was 25%, for example, and the top tax rate on dividends was set to 35%, the combined tax rate on distributed corporate profits would be 51.25%, still significantly higher than the top rate on personal income of 35%. If, however, individuals wanted to accrue and reinvest profits or could find ways to convert labor income to corporate income, the lower rate would make corporations an attractive tax shelter that would erode the individual income tax base.

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[36] Kimberly Clausing, *Multinational Firm Tax Avoidance and Tax Policy*, 62 NAT'L TAX J. 703 (2009).

[37] Rosanne Altshuler, Alan Auerbach, Michael Cooper & Matthew Knittel, *Understanding U.S. Corporate Tax Losses*, 23 TAX POLICY AND THE ECON. 73, 99 (2009).

[38] For further discussion see Daniel Halperin, *Mitigating the Potential Inequity of Reducing Corporate Rates* (July 29, 2009) (Urban-Brookings Tax Policy Center Working Paper).

Shifting the taxation of capital income to the individual level may lead to a decrease in both capital gains realizations and dividend payouts. Many studies have examined the effects of capital gains tax rates on realizations of capital gains, with highly varying estimates.[39] In addition, even though capital gains rates would be higher, the restoration of pre-1997 rates on gains and dividends would, on balance, increase the incentive for corporations to retain profits, leading to lower revenues from taxation of dividend income. A number of recent studies of the 2003 dividend tax cut show large and rapid increases in dividend payouts, which suggest the possibility that revenues from dividends may be substantially lower than our static model predicts.[40] An increase in the tax rate on dividends may also lead to an increase in share repurchases as an alternative to dividends, since share repurchases would continue to be tax-advantaged (both from deferral and the lower rate on long-term capital gains) under our reform.[41]

IV. SIMULATIONS AND METHODOLOGY

A. Simulations

We estimate the distributional effects of a revenue-neutral tax reform that lowers corporate tax revenues while increasing individual-level taxation of capital gains and dividends. Our simulation procedure is divided into two steps. The first part of our simulation models the effects of taxing capital gains and dividends as ordinary income — rather than under preferred rates — subject to a maximum 28% rate imposed on long-term capital gains. This tax law corresponds to the tax code prior to the passage of the Taxpayer Relief Act of 1997.

The second part of our simulation reduces the aggregate corporate tax burden by an amount equal to the revenue raised by the higher taxation of long-term capital gains and dividends. Such a

[39] For a review of studies on the effects of capital gains tax rates on realizations of capital gains, *see* George Zodrow, *Economic Analyses of Capital Gains Taxation: Realizations, Revenues, Efficiency and Equity*, 48 TAX L. REV. 419 (1993).

[40] *See, e.g.*, Raj Chetty & Emmanuel Saez, *Dividend Taxes and Corporate Behavior: Evidence from the 2003 Dividend Tax Cut*, 120 Q. J. OF ECON. 791 (2005); Jeffrey Brown, Nellie Liang, & Scott Weisbenner, *Executive Financial Incentives and Payout Policy: Firm Responses to the 2003 Dividend Tax Cut*, 62 J. FIN. 1935 (2007).

[41] For empirical work on the substitutability of dividends and share repurchases, *see* Gustavo Grullon & Roni Michaely, *Dividends, Share Repurchases, and the Substitution Hypothesis*, 57 J. FIN. 1649 (2002).

reduction in revenue could be achieved through a variety of reforms to the corporate tax code, although we interpret the reduction in revenue to represent a lower corporate tax rate. We use calendar year 2012 for our simulations to abstract from any temporary effects the current economic downturn may have on the returns to capital and/or the distribution of capital income.

The two reforms are, by design, exactly offsetting in terms of tax revenues. We first estimate the increase in revenue generated by increasing the taxation of capital gains and dividends. We find this reform raises individual income tax receipts by $87.2 billion in 2012. We then model the effects of reducing corporate revenues by $87.2 billion, a reform that could be achieved by lowering the corporate tax rate to 25.9% (assuming no economic or behavioral responses). Although we simulate the simultaneous implementation of these reforms, the magnitude of the corporate-rate cut is determined wholly by the increased tax revenues at the individual level. As noted above, we model these reforms in a static environment with no behavioral response from taxpayers. In other words, there is no change in reported income among taxpayers, and no change in aggregate before-tax corporate profits.

B. Methodology

We use the TPC microsimulation model to simulate the distributional effects of tax reforms described above. The TPC tax model uses two data sources: the 2004 public-use file (PUF) produced by the Statistics of Income Division of the Internal Revenue Service (SOI) and the 2005 Current Population Survey (CPS). The PUF contains 150,047 income tax records with detailed information from federal individual income tax returns filed during 2004. It provides key data on the level and sources of income and deductions, income tax liability, marginal tax rates, and use of particular credits. It excludes most information about pensions and IRAs, as well as demographic information such as age. TPC uses a constrained statistical match with the March 2005 CPS of the U.S. Census Bureau to map non-tax information onto the PUF.[42] The model also includes imputations of

[42] The statistical match provides important information not reported on tax returns, including measures of earnings for head and spouse separately, their ages, the ages of their children, and transfer payments. The statistical match also generates a sample of individuals who do not file income tax returns (non-filers). By combining the data set of filers with the dataset of estimated non-filers from the CPS, we are able to carry out distributional analysis on the entire population, rather than just the

wealth in tax-deferred retirement plans from the Survey of Consumer Finances.

We assume extension of 2009 tax law in our baseline.[43] That is, we assume the provisions introduced in the major tax bills of 2001 and 2003 (i.e., the Economic Growth and Tax Relief Reconciliation Act of 2001 and the Jobs and Growth Tax Relief Reconciliation Act of 2003) have been extended, including the maximum 15% tax rates on long-term capital gains and qualified dividends, the lower statutory tax rates on individual income, the higher Child Tax Credit, and the marriage penalty abatement. We further assume that estate tax law is at its 2009 levels and that the Alternative Minimum Tax (AMT) has been indexed to inflation.

Simulating the taxation of capital gains and dividends as ordinary income — with a 28% cap on capital gains — is straightforward. All dividends are treated as ordinary income, as are short-term capital gains. Long-term capital gains are treated as ordinary income, except for taxpayers subject to the 33% or 35% statutory tax rates. In these cases, long-term capital gains are taxed as ordinary income with a maximum tax rate of 28%.

Simulating the reduction in corporate tax receipts is more complicated because it requires some assumptions about the incidence of the corporate income tax. We model the distributional effects of cutting the corporate tax rate under one scenario where the whole corporate tax is borne by capital and a second where it is divided between capital and labor. Under the second scenario, we assign 70% of the corporate tax burden to labor and 30% to capital.[44] Such a division closely follows the conclusions presented by William Randolph.[45]

We attempt to define each household's capital and labor share under as broad a measure as possible.[46] For the purposes of

subset that files individual income tax returns.

[43] This analysis was completed before the recent healthcare reform was passed. As a result, we do not take into account any tax changes embedded in the reform in our baseline.

[44] By design, the sum of the proportions equals 1, although this could theoretically be adjusted to allow the burden of the U.S. corporate tax on U.S. taxpayers to differ from the revenues collected.

[45] RANDOLPH, *supra* note 15.

[46] Due to data constraints, the imputed value of owner-occupied rent is omitted from our definition of capital income. Rental income is included in our definition of capital income, either as corporate profits or as a portion of business pass-through income.

determining each household's share of capital income, we define capital income as the sum of (1) taxable and tax-exempt interest; (2) dividends; (3) realized capital gains;[47] (4) net income from rents, royalties, and estates or trusts; (5) interest, capital gains, and dividends accruing to defined-contribution retirement accounts; and (6) the proportion of business pass-through income attributable to capital.[48]

To determine each household's share of labor compensation, we define compensation as the sum of (1) wages and salaries; (2) the employer portion of OASDI payroll taxes; (3) employer contributions to retirement accounts; and (4) the proportion of business income attributable to labor.

Under the scenario where corporate tax incidence falls entirely on capital, each tax unit's corporate tax burden equals total corporate tax liability multiplied by the unit's share of aggregate capital income.[49] Thus, a tax return that reports 0.05% of aggregate capital income incurs 0.05% of aggregate corporate tax liability. When corporate tax incidence is divided between labor and capital, each tax unit's corporate tax liability is the sum of each unit's labor share and capital share of the corporate income tax. A tax unit's labor share is the unit's share of aggregate labor income, multiplied by the aggregate portion of the corporate income tax deemed to be borne by labor. Capital share is defined analogously.

[47] In order to temper the wide variations in realized capital gains that can occur across years, TPC adjusts each record's reported realization of long-term and short-term capital gains by a factor accounting for aggregate trends in capital gains realizations. For greater detail see Jeffrey Rohaly, Adam Carasso, & Mohammed Adeel Saleem, *The Urban-Brookings Tax Policy Center Microsimulation Model: Documentation and Methodology for Version 0304*, (Urban-Brookings Tax Policy Center Manuscript, 2005), *available at* http://www.taxpolicycenter.org/UploadedPDF/411136_documentation.pdf.

[48] We assign 20.8% of positive business pass-through income — defined as income reported on IRS Schedules C, E, or F — to capital and 79.2% of business income to labor. These proportions are based on the shares of corporate sector output reported as corporate profits and labor compensation in the National Income and Product Accounts.

[49] In the TPC model, aggregate corporate tax receipts are derived from CBO estimates. We derive the 2012 estimate of baseline corporate tax receipts from Congressional Budget Office, *Effective Tax Rates*, (CBO Director's Blog) (December 11, 2009), *available at* http://cboblog.cbo.gov/?p=40.

V. RESULTS

On average, people in the lower- and middle-income groups receive very little income from capital. Even in the fourth quintile of the income distribution, average capital income is only about $6,730, compared with labor income of over $55,000 (Table 1). But capital income rises sharply at the very top of the distribution. Taxpayers in the top 1% of the income distribution receive almost ten times as much capital income per return as those in the 95th–99th percentiles of the distribution and, in contrast to all groups in the bottom 99%, they report more income from capital than income from labor.[50]

Overall, roughly 75% of factor incomes (the sum of labor and capital income) come from labor and only 25% from capital (Table 2). But, income from capital is 54% of all factor incomes in the top 1% of the income distribution and 63% in the top 0.1%.

Among all tax units, capital income from tax-favored sources (qualified dividends and long-term capital gains) accounts for 30% of all capital income, fully taxable income (interest, non-qualified dividends, short-term gains, and other capital income taxed at ordinary rates) is 23%, tax-exempt income (income accrued within qualified defined contribution retirement plans and tax-exempt interest) is 40%, and business income (the capital share of net income from sole proprietorships and pass-through business entities) is approximately 7%. But the proportions of capital income sources are very different for the highest income taxpayers. Capital income recipients in the top 1% of the income distribution receive a much higher share of their capital income from long-term capital gains and qualified dividends (40%) and a substantially lower share of capital income from tax-exempt sources (33%) than other capital income recipients.

Because capital income from long-term gains and qualified dividends is so concentrated at the very top of the income distribution, restoring the pre-1997 rates on dividends and capital gains and using the revenue to finance corporate-rate reduction makes the income tax more progressive even if one assumes that the burden of the corporate income tax falls entirely on capital income (Table 3). Raising the top rate on long-term capital gains to 28%, taxing dividends at ordinary income rates, and reducing the top corporate tax rate to 25.9% would raise after-tax incomes by between 0.2% and 0.3% in the bottom four

[50] See Table 7 for information on median levels of labor and capital income by income quintiles.

quintiles and by between 0.3% and 0.4% in the bottom three-fourths of the top quintile (the 80th through 95th percentiles). All income groups below the top 1% would be net winners, but tax returns in the top 1% would see their after-tax incomes decline on average by 1.3%, and those in the top 0.1% would see their after-tax incomes decline by 2.3%.

These results reflect the extreme concentration of capital gains and dividends among very high-income taxpayers. The top 1% of returns would bear 70% of the burden of the increase in tax rates on capital gains and dividends, while receiving 44% of the benefits from a lower corporate tax rate (Table 4). The corporate tax cut alone would still be very regressive. It would increase after-tax income by 1.3% in the top quintile and 2.2% for the top 1%, compared with gains of 0.4% or less in the bottom four quintiles. But the benefits from corporate-rate reduction would be less concentrated at the top than the burdens from raising capital gains and dividend taxation because taxpayers below the very top of the distribution would benefit to some degree from lower tax burdens on retirement income assets invested in corporate equities and from higher returns on other capital assets as capital shifts into the corporate sector in response to a corporate-rate cut.

The shift from taxing corporate-source income at the corporate level to taxing it at the individual level raises progressivity even more if one assumes that much of the corporate income tax burden falls on workers in the form of reduced wages. With labor bearing 70% of the corporate tax burden, the tax shift would increase after-tax incomes by between 0.6% and 0.7% in the bottom four quintiles, compared to an increase in income of 0.3% or less for these groups if the corporate income tax falls entirely on capital (Table 5). The average taxpayer in the top 1% experiences almost twice the tax increase — an increase of $31,616 per return (2.3% of after-tax income), compared to only $16,781 (1.3% of after tax income) when labor income bears more of the corporate tax because she benefits less from the corporate-rate cut. Cutting the corporate tax rate continues to benefit higher-income groups more as a share of their after-tax income than lower-income groups (Table 6), but the concentration of gains among the top income groups is much less than when capital income pays the entire corporate tax. With the 30–70 capital-labor division of corporate tax burden, the top quintile receives 61% of the benefits of a corporate-rate cut and the top 1% receives 22% of the benefits, much less than the corresponding shares of 81% and 44% of the benefits of a corporate-rate cut when capital income bears 100% of the corporate

tax burden.

VI. CONCLUSION

In recent years, methods of taxing equity income of corporations have moved in opposite directions in the United States and the rest of the OECD. While other OECD countries have reduced their top statutory corporate tax rate, the top federal corporate tax rate in the United States has remained unchanged. While the United States has cut its tax rates on dividends and capital gains, other countries have increased taxation of corporate equity income at the personal level by scaling back or eliminating provisions that integrated corporate and personal income taxes.

In a world with increased international capital mobility, there is increased logic for taxing corporate-source income at the individual level, instead of the corporate level. Corporate-level taxes are based on the location of investment and may thereby distort investment flows and create opportunities to avoid tax by shifting the reporting of income to other jurisdictions. Individual-level taxes are residence-based and therefore have less distorting effects on investment location, while reducing after-tax income of savers. If private saving were less responsive to changes in after-tax returns than location-specific investment is to changes in required pretax returns, then individual-level taxation would entail less efficiency loss per dollar of revenue collected than corporate-level taxation. In addition, because taxpayers cannot escape residence-based taxes by shifting income overseas, residence-based taxes on capital income are more likely to be borne by owners of capital and less likely to be shifted to less internationally mobile factors such as labor through capital outflows. As a result, taxing capital income at the individual-shareholder level may be more progressive than taxing at the corporate level.

This paper provides estimates of the distributional effects of raising shareholder-level taxes and using the revenue to cut the corporate tax rate in the United States. We find that restoring the pre-1997 tax rules applying to dividends and capital gains would finance a cut in the top corporate tax rate from 35% to about 26%, assuming no behavioral responses. The distributional effects depend on what one assumes about the incidence of the corporate income tax, but even if the corporate income tax is paid entirely by capital, low- and middle-income groups would benefit from the shift and taxpayers at the very top of the income distribution would pay more. The distributional shift in tax burdens to the very top and away from others would be

even larger if one assumes that a portion of the corporate income tax is shifted to labor through outward capital mobility.

Taking account of behavioral responses could alter these estimates, but the net effect of behavioral effects on revenues is unclear. Lower corporate rates would produce some positive revenue feedbacks in the form of capital inflows and a shift in reported profits from overseas jurisdictions to the United States. However, they could also result in negative feedbacks to the extent the new differential between the top corporate and individual rates enables high-tax-bracket individuals to shelter some of their income within corporations. Higher marginal rates on capital gains and dividends could lead to reduced capital gains realizations and lower corporate dividend payout ratios. An analysis of the net effect of all these feedbacks is beyond the scope of this paper, but is an important topic for future research.

Although the effects on economic efficiency are complex, and creating a differential between top corporate and individual rates gives rise to new problems, it seems nonetheless that shifting a larger share of corporate tax liability from the corporate to the shareholder level is worth considering. The way we tax corporate income may be one of many ways that "American exceptionalism" has led us astray in recent years. A shift in taxes on corporate equity income from the corporate to the shareholder level could increase the attractiveness of the United States as an investment location *and* make the tax system more progressive.

APPENDIX

TABLE 1. MEAN INDIVIDUAL INCOME FROM CAPITAL AND LABOR, 2012

Modified Cash Income Percentile	*Components of Capital Income*				*Capital Income*	*Labor Income*
	Tax-Favored	*Taxable*	*Tax-Exempt*	*Business Income*		
Lowest Quintile	284	416	162	793	1,027	10,397
Second Quintile	269	680	300	1,105	1,478	19,583
Middle Quintile	480	1,130	613	1,478	2,531	33,920
Fourth Quintile	1,277	2,304	2,633	2,486	6,730	55,368
Top Quintile	24,200	16,114	31,612	22,961	76,701	148,317
All	5,302	4,129	7,064	5,765	17,694	53,519
Detail on Top Quintile						
80-90	3,332	4,261	8,907	4,440	17,424	85,779
90-95	6,770	7,656	19,294	9,190	35,632	130,526
95-99	21,195	18,011	44,518	28,864	89,728	191,538
Top 1%	332,049	169,345	268,617	253,426	822,724	690,113
Top 0.1%	2,179,584	954,934	1,229,742	1,222,145	4,618,466	2,706,586

Source: Urban-Brookings Tax Policy Center Microsimulation Model.

Notes: Modified cash income is cash income plus income earned in defined contribution pension accounts. Tax-favored capital income includes long-term capital gains and qualified dividends. Taxable income is all capital income taxed at ordinary rates. Tax-exempt capital income consists of income from defined-contribution pension accounts and tax-exempt interest. Business income includes net income from sole-proprietorships and all entities that pass-through earnings to shareholders. Capital income is the total of tax-favored, taxable, and tax-exempt income, plus 20.8% of business income. Labor income is the sum of all compensation plus 79.2% of business income. Baseline is current law.

TABLE 2. MEAN SHARES OF INDIVIDUAL INCOME FROM CAPITAL AND LABOR, 2012

Modified Cash Income Percentile	*Labor Income*	*Capital Income*	*Shares of Capital Income*			
			Tax-Favored	*Taxable*	*Tax-Exempt*	*Business Income*
Lowest Quintile	91.0%	9.0%	27.6%	40.6%	15.7%	16.1%
Second Quintile	93.0%	7.0%	18.2%	46.0%	20.3%	15.5%
Middle Quintile	93.1%	6.9%	19.0%	44.7%	24.2%	12.1%
Fourth Quintile	89.2%	10.8%	19.0%	34.2%	39.1%	7.7%
Top Quintile	65.9%	34.1%	31.6%	21.0%	41.2%	6.2%
All	75.2%	24.8%	30.0%	23.3%	39.9%	6.8%
Detail on Top Quintile						
80-90	83.1%	16.9%	19.1%	24.5%	51.1%	5.3%
90-95	78.6%	21.4%	19.0%	21.5%	54.1%	5.4%
95-99	68.1%	31.9%	23.6%	20.1%	49.6%	6.7%
Top 1%	45.6%	54.4%	40.4%	20.6%	32.6%	6.4%
Top 0.1%	36.9%	63.1%	47.2%	20.7%	26.6%	5.5%

Source: Urban-Brookings Tax Policy Center Microsimulation Model.

Notes: Modified cash income is cash income plus income earned in defined contribution pension accounts. Tax-favored capital income includes long-term capital gains and qualified dividends. Taxable income is all capital income taxed at ordinary rates. Tax-exempt capital income consists of income from defined-contribution pension accounts and tax-exempt interest. Business income includes net income from sole-proprietorships and all entities that pass-through earnings to shareholders. Capital income is the total of tax-favored, taxable, and tax-exempt income, plus 20.8% of business income. Labor income is the sum of all compensation plus 79.2% of business income. Baseline is current law.

TABLE 3. DISTRIBUTIONAL ANALYSIS OF REVENUE NEUTRAL CHANGE IN TAXATION OF CAPITAL INCOME, 2012

(Raise tax rates on capital gains and dividends and use revenue to lower corporate tax rate)
Assumes capital bears 100% of burden of corporate income tax

	Percent of Tax Units				*Average Federal Tax Rate*	
Modified Cash Income Percentile	*With Tax Cut*	*With Tax Increase*	*% Change in After-Tax Income*	*Average Federal Tax Change ($)*	*Change (% Points)*	*Under the Proposal*
Lowest Quintile	62.4	0.3	0.3	-31	-0.3	4.6
Second Quintile	87.8	1.7	0.2	-60	-0.2	9.9
Middle Quintile	92.9	2.8	0.2	-101	-0.2	15.8
Fourth Quintile	93.7	4.9	0.3	-184	-0.2	18.4
Top Quintile	89.6	10.2	-0.2	454	0.2	23.3
All	83.6	3.5	0.0	-1	0.0	19.7
Detail on Top Quintile						
80-90	93.2	6.5	0.3	-319	-0.2	20.3
90-95	91.8	8.2	0.4	-585	-0.3	21.2
95-99	84.7	15.2	0.2	-545	-0.2	22.8
Top 1%	67.6	32.4	-1.3	16,781	1.0	26.9
Top 0.1%	49.9	50.1	-2.3	136,458	1.7	29.2

Source: Urban-Brookings Tax Policy Center Microsimulation Model.

Notes: The simulation shows the distributional effect of taxing dividends and capital gains as ordinary income, capped at 28% for long-term capital gains, and using the revenue raised to lower the corporate income tax rate. Modified cash income is cash income plus income from defined-contribution pension plans. Tax units with negative cash income are excluded from the lowest income class but are included in the totals. For a description of cash income, see http://www.taxpolicycenter.org/TaxModel/income.cfm. The income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The table includes both filing and non-filing units but excludes those that are dependents of other tax units. After-tax income is modified cash income less: individual income tax net of refundable credits; corporate income tax; payroll taxes (Social Security and Medicare); and estate tax. The average federal tax rate is the sum of all federal taxes — including individual and corporate income tax, payroll taxes for Social Security and Medicare, and the estate tax — as a percentage of average cash income.

TABLE 4. DISTRIBUTIONAL ANALYSIS OF COMPONENTS OF REVENUE NEUTRAL CHANGE IN TAXATION OF CAPITAL INCOME, 2012

(Raise tax rates on capital gains and dividends and use revenue to lower corporate tax rate)
Assumes capital bears 100% of burden of the corporate income tax

	Increase in Individual Level Tax on Capital Gains and Dividends			*Decrease in Corporate Income Tax*		
Modified Cash Income Percentile	*% with Tax Increase*	*% Change in After-Tax Income*	*Share of Total Tax Change*	*% with Tax Decrease*	*% Change in After-Tax Income*	*Share of Total Tax Change*
Lowest Quintile	1.1	0.0	0.1	62.7	0.3	1.4
Second Quintile	5.2	0.0	0.5	89.6	0.3	2.8
Middle Quintile	10.9	-0.1	1.3	95.8	0.3	4.9
Fourth Quintile	23.5	-0.2	3.5	98.6	0.4	9.1
Top Quintile	49.6	-1.5	94.7	99.8	1.3	81.2
All	15.6	-0.9	100.0	87.1	0.9	100.0
Detail on Top Quintile						
80-90	35.5	-0.3	4.1	99.6	0.6	8.6
90-95	50.4	-0.4	4.5	100.0	0.8	8.8
95-99	70.2	-1.0	16.1	100.0	1.2	19.6
Top 1%	88.2	-3.5	70.0	100.0	2.2	44.3
Top 0.1%	94.7	-5.2	45.3	100.0	2.9	25.1

Source: Urban-Brookings Tax Policy Center Microsimulation Model.

Notes: The simulation shows the distributional effect of taxing dividends and capital gains as ordinary income, capped at 28% for long-term capital gains, and using the revenue raised to lower the corporate income tax rate. Modified cash income is cash income plus income from defined-contribution pension plans. Tax units with negative cash income are excluded from the lowest income class but are included in the totals. For a description of cash income, see http://www.taxpolicycenter.org/TaxModel/income.cfm. The income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The table includes both filing and non-filing units but excludes those that are dependents of other tax units. After-tax income is modified cash income less: individual income tax net of refundable credits; corporate income tax; payroll taxes (Social Security and Medicare); and estate tax.

TABLE 5. DISTRIBUTIONAL ANALYSIS OF REVENUE NEUTRAL CHANGE IN TAXATION OF CAPITAL INCOME, 2012

(Raise tax rates on capital gains and dividends and use revenue to lower corporate tax rate)
Assumes capital bears 30% of burden of the corporate income tax

	Percent of Tax Units				*Average Federal Tax Rate*	
Modified Cash Income Percentile	*With Tax Cut*	*With Tax Increase*	*% Change in After-Tax Income*	*Average Federal Tax Change ($)*	*Change (% Points)*	*Under the Proposal*
Lowest Quintile	91.8	0.4	0.6	-59	-0.5	5.3
Second Quintile	95.7	2.1	0.6	-158	-0.6	10.9
Middle Quintile	96.3	3.4	0.7	-296	-0.6	16.8
Fourth Quintile	93.6	6.3	0.7	-469	-0.5	19.3
Top Quintile	86.7	13.3	-0.5	1,147	0.4	22.6
All	92.8	4.4	0.0	-2	0.0	19.8
Detail on Top Quintile						
80-90	91.7	8.3	0.6	-664	-0.5	21.0
90-95	88.3	11.6	0.5	-784	-0.4	21.5
95-99	79.6	20.3	0.0	72	0.0	22.3
Top 1%	62.5	37.5	-2.3	31,616	1.8	24.5
Top 0.1%	45.3	54.7	-3.7	234,342	2.9	25.8

Source: Urban-Brookings Tax Policy Center Microsimulation Model.

Notes: The simulation shows the distributional effect of taxing dividends and capital gains as ordinary income, capped at 28% for long-term capital gains, and using the revenue raised to lower the corporate income tax rate. Modified cash income is cash income plus income from defined-contribution pension plans. Tax units with negative cash income are excluded from the lowest income class but are included in the totals. For a description of cash income, see http://www.taxpolicycenter.org/TaxModel/income.cfm. The income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The table includes both filing and non-filing units but excludes those that are dependents of other tax units. After-tax income is modified cash income less: individual income tax net of refundable credits; corporate income tax; payroll taxes (Social Security and Medicare); and estate tax. The average federal tax rate is the sum of all federal taxes — including individual and corporate income tax, payroll taxes for Social Security and Medicare, and the estate tax — as a percentage of average cash income.

TABLE 6. DISTRIBUTIONAL ANALYSIS OF COMPONENTS OF REVENUE NEUTRAL CHANGE IN TAXATION OF CAPITAL INCOME, 2012

(Raise tax rates on capital gains and dividends and use revenue to lower corporate tax rate)
Assumes capital bears 30% of burden of the corporate income tax

	Increase in Individual Tax on Long-term Capital Gains and Dividends			*Decrease in Corporate Income Tax*		
Modified Cash Income Percentile	*% with Tax Increase*	*% Change in After-Tax Income*	*Share of Total Tax Change*	*% with Tax Decrease*	*% Change in After-Tax Income*	*Share of Total Tax Change*
Lowest Quintile	1.1	0.0	0.1	92.3	0.6	2.7
Second Quintile	5.2	0.0	0.5	97.9	0.7	6.7
Middle Quintile	10.9	-0.1	1.3	99.6	0.8	11.9
Fourth Quintile	23.5	-0.2	3.5	99.9	0.8	17.7
Top Quintile	49.6	-1.5	94.7	100.0	1.0	60.8
All	15.6	-0.9	100.0	97.2	0.9	100.0
Detail on Top Quintile						
80-90	35.5	-0.3	4.1	100.0	0.9	13.3
90-95	50.4	-0.4	4.5	100.0	0.9	10.3
95-99	70.2	-0.9	16.1	100.0	0.9	15.6
Top 1%	88.2	-3.4	70.0	100.0	1.0	21.6
Top 0.1%	94.7	-4.9	45.3	100.0	1.2	10.7

Source: Urban-Brookings Tax Policy Center Microsimulation Model.

Notes: The simulation shows the distributional effect of taxing dividends and capital gains as ordinary income, capped at to 28% for long-term capital gains, and using the revenue raised to lower the corporate income tax rate. Modified cash income is cash income plus income from defined-contribution pension plans. Tax units with negative cash income are excluded from the lowest income class but are included in the totals. For a description of cash income, see http://www.taxpolicycenter.org/TaxModel/income.cfm. The income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The table includes both filing and non-filing units but excludes those that are dependents of other tax units. After-tax income is modified cash income less: individual income tax net of refundable credits; corporate income tax; payroll taxes (Social Security and Medicare); and estate tax.

TABLE 7. MEDIAN INDIVIDUAL INCOME FROM CAPITAL AND LABOR, 2012

Modified Cash Income Income Level	*Components of Capital Income*				*Capital Income*	*Labor Income*
	Tax-Favored	*Taxable*	*Tax-Exempt*	*Business Income*		
Lowest Quintile	0	0	0	0	182	11,124
Second Quintile	0	0	0	0	65	22,540
Middle Quintile	0	0	0	0	77	37,093
Fourth Quintile	0	39	406	0	2,895	59,812
Top Quintile	0	467	15,181	0	20,507	107,916
All	0	0	0	0	757	31,485
Detail on Top Quintile						
80-90	0	135	7,355	0	10,881	95,293
90-95	0	623	18,183	0	23,547	147,259
95-99	650	2,021	36,699	0	54,140	190,079
Top 1%	15,738	20,750	140,852	4,798	295,788	458,998
Top 0.1%	265,060	185,570	669,192	65,695	1,943,684	1,616,541

Source: Urban-Brookings Tax Policy Center Microsimulation Model.

Notes: Modified cash income is cash income plus income earned in defined contribution pension accounts. Tax-favored capital income includes long-term capital gains and qualified dividends. Taxable income is all capital income taxed at ordinary rates. Tax-exempt capital income consists of income from defined-contribution pension accounts and tax-exempt interest. Business income includes net income from sole-proprietorships and all entities that pass-through earnings to shareholders. Capital income is the total of tax-favored, taxable, and tax-exempt income, plus 20.8% of business income. Labor income is the sum of all compensation plus 79.2% of business income. Baseline is current law.