

Statement of Jane G. Gravelle  
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on  
Tax Reform, Growth and Efficiency

Mr. Chairman and Members of the Committee, I am Jane Gravelle, a Senior Specialist in Economic Policy at the Congressional Research Service of the Library of Congress. I would like to thank you for the invitation to appear before you today to discuss tax reform, growth and efficiency.

Economists distinguish between efficiency effects, the cost of distortions, sometimes referred to as deadweight losses, and growth effects, the increase or decrease in labor or capital due to tax changes. For example, if a marginal tax rate cut increases labor supply the growth effect is the value of additional output. The efficiency gain is the increased income minus the loss in the value of leisure or unpaid work (such as child care).<sup>1</sup> Thus the efficiency gain would be smaller than the growth effect. Some efficiency gains might not increase output or would have a negligible effect, such as the substitution

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<sup>1</sup> The relationship between output effects and efficiency effects can change if average taxes are cut as well. Since increases in income decrease labor supply, if the average tax cut or the response to it is large enough, labor supply can be reduced, but an efficiency gain will remain.

of one type of capital investment or consumption item for another. They nevertheless increase well-being.

This testimony first discusses the magnitude of distortions arising from the income tax and identifies some specific areas of the tax code where efficiency gains might be achieved. It then discusses potential growth effects from both revenue neutral tax reform and tax cuts or increases.

### **Efficiency Gains from Reducing Tax Distortions**

It is first useful to review the economic literature on the cost of distortions in the income tax. Jorgenson and Yun,<sup>2</sup> using a dynamic growth model, estimated the total welfare cost of the income tax system as 2.4% of GDP, 0.6% due to the corporate income tax and 1.8% due to the individual income tax. For a variety of reasons, these estimates might be lower today.<sup>3</sup> Feldstein,<sup>4</sup> using a taxable income elasticity,<sup>5</sup> estimates the efficiency cost of individual income taxes at 2.4% of GDP. Subsequent studies of this elasticity have, however, found it much lower, yielding an estimate of the efficiency cost of the individual income tax of about 1% of GDP.<sup>6</sup>

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<sup>2</sup> Calculated from Dale W. Jorgenson and Kun-Young-Yun, *Investment: Lifting the Burden: Tax Reform, the Cost of Capital and U.S. Economic Growth*, MIT Press, Cambridge MA, pp. 287-288. They found their results difficult to compare to earlier studies but, in one case the estimates appear lower and in the other higher.

<sup>3</sup> Individual tax rates are lower than they were in the year of the study, which can be important because the deadweight loss rises with the square of the tax rate. In addition, the labor substitution elasticity (percentage change in labor supply divided by the percentage change in marginal wage) is generally lower today; Jorgenson and Yun had an elasticity 0.3, while the Joint Committee on Taxation uses elasticities in their in-house model of 0.1 and 0.2.

<sup>4</sup> Martin Feldstein, Tax Avoidance and the Deadweight Loss of the Income Tax, *The Review of Economics and Statistics*, Vol. 81, No. 4, November 1999, pp. 674-680.

<sup>5</sup> An elasticity is the percentage change in quantity divided by the percentage change in price. In this case, it is the percentage change in taxable income induced by a percentage change in tax rate.

<sup>6</sup> Congressional Budget Office, Recent Literature on Taxable Income Elasticities, by Seth H. Giertz, Technical Paper 2004-16, December, 2004. The central tendency of studies was 0.4, compared to an elasticity of 1.09 used in the Feldstein article. A subsequent review article found even smaller effects from central tendencies, while reviewing a range of associated issues. See Emmanuel Saez, Joel Slemrod and Seth H. Giertz, "The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review" *Journal of Economic Literature*, Vol. 50, No. 1, March 2012, pp. 3-50.

These estimates, which reflect eliminating the income tax system and replacing it with a head tax (the only type of tax that produces no distortions), provide the upper limit on potential efficiency gains. Thus, it is unlikely that efficiency gains from tax reform, which can only capture part of those effects, will be very large.

There have also been some estimates, using dynamic models, of broad tax reforms such as replacing the income tax with a flat-rate broad-based income tax, consumption tax or wage tax. The latter two replacements eliminate the tax on capital income but increase the tax rate on labor income (especially in the move to a wage tax). The efficiency gains in these studies ranged from virtually zero to about 1% of GDP.<sup>7</sup>

While savings in compliance costs from simplification are not considered part of deadweight losses, it is reasonable to see those savings as an efficiency gain. A GAO study that reviewed estimates of compliance costs of the federal tax system, while noting the difficulty in measuring them, placed them at around 1% of GDP.<sup>8</sup> Uncertainty in the tax law also leads to less than optimal behavior, although the cost is not possible to quantify.

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<sup>7</sup> Jorgenson and Yun, op cit. found gains of 0.6% to 1.1% (p. 335). Two studies reported estimates in the Joint Committee On Taxation, *Tax Modeling Project And 1997 Tax Symposium Papers*, November 20, 1997, JCS-21-97. Diane Lim Rogers, "Assessing the Effects of Fundamental Tax Reform with the Fullerton-Rogers General Equilibrium Model," pp.81-82 found that a move to a proportional comprehensive income tax, would have welfare gains 0.05 to 0.7%, moving to a consumption tax would have gains of 0.06 to 1.0%, and moving to a wage tax, gains of 0.2% to 1%. Dale W. Jorgenson and Peter J. Wilcoxin, "The Effects of Fundamental Tax Reform and the Feasibility of Dynamic Revenue Estimation," p. 135, found gains that were essentially zero. For the document, see <https://www.jct.gov/publications.html?func=startdown&id=2940>.

Jane G. Gravelle, "Income Consumption and Wage Taxation in a Life-Cycle Model: Separating Efficiency from Redistribution," *American Economic Review*, Vol. 81, No. 4, September, 1991, pp. 985-995, found a gain of 0.4% for movement to a consumption tax and 0.15% for movement to a wage tax. This model, however, included a single uniform tax rate on capital income and thus did not capture gains from the reallocation of capital assets.

<sup>8</sup> GAO, Summary of Estimates of the Costs of the Federal Tax System, GAO-05-878, August 26, 2005, <http://www.gao.gov/products/GAO-05-878>.

What changes might lead to a reduction in distortions that might be considered in the context of an income tax reform? Examining the major tax expenditures and potential for reform, four areas of revision are discussed. Note that while policies that might reduce distortions are discussed, CRS does not make policy recommendations and there are many other aspects to consider in a tax change.

### *Reducing Differentials in Returns to Investment*

Returns to investment are differentially taxed by the income tax system based on the source of the return.<sup>9</sup> Owner-occupied housing is favored and subject to negligible or negative tax rates due to the exclusion of imputed rent and the deduction for mortgage interest and property taxes. The corporate sector is taxed more heavily than the noncorporate sector, but within the corporate sector debt-financed investment is also taxed at zero or negative rates, while the highest rates (around 35%) apply to corporate equity investments.

Within each industry different assets are taxed at different rates. Considering the corporate level tax on equity investment, which captures the effects of depreciation, buildings are taxed at close to statutory rates (35%) and residential buildings are taxed at somewhat lower rates, while equipment rates average around 75% of the statutory rate (26%). These differences arise from more favorable depreciation allowances for equipment. Bonus depreciation, which has expired, has lowered the tax rate for an investment in equity to 15% for the past seven years.<sup>10</sup> Certain industries, largely

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<sup>9</sup> For tax rates see *Corporate Tax Reform: Issues for Congress*, CRS Report RL34229, by Jane G. Gravelle and Congressional Budget Office, *Taxing Capital Income: Effective Marginal Tax Rates Under 2014 Law and Selected Policy Options*, December 2014, [http://www.cbo.gov/sites/default/files/cbofiles/attachments/49817-Taxing\\_Capital\\_Income\\_0.pdf](http://www.cbo.gov/sites/default/files/cbofiles/attachments/49817-Taxing_Capital_Income_0.pdf).

<sup>10</sup> See *Bonus Depreciation: Economic and Budgetary Issues*, CRS Report R43432, by Jane G. Gravelle.

manufacturing, are favored over others due to the production activities deduction.<sup>11</sup> The extractive industries are also favored because of generous treatment of investments through expensing.

Some items that appear as tax expenditures may reduce distortions or be relatively neutral. For example, the favorable treatment of pension and retirement earnings, to the extent they are invested in corporate stock, reduce the tax on corporate equity and bring effective tax rates closer to those on owner-occupied housing and non-corporate investment. Investment in research and development, which is favored compared to other assets (because of expensing and, if made permanent, the research and experimentation credit), is often considered to be an appropriate target of tax benefits.<sup>12</sup> That is, an economy may underinvest in research because firms do not capture the full social benefits of their investments.<sup>13</sup> Lower taxes on the return to investment in advertising, another intangible, is, however, not justified on the same grounds.

Jorgenson and Yun also made estimates of the efficiency gains from eliminating certain asset distortions.<sup>14</sup> For differentials between assets (such as equipment and structures) within sectors, they estimated an efficiency gain of 0.1% of GDP. For eliminating the intersectoral distortion between corporate and non-corporate business, they estimated a gain of 0.02% of GDP. For eliminating the entire intersectoral distortion, which would include owner-occupied housing, they estimated a gain of 0.8% of GDP.

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<sup>11</sup> For a review of this provision see *The Section 199 Production Activities Deduction: Background and Analysis*, by Molly F. Sherlock, CRS Report R41988.

<sup>12</sup> For an overview of the credit see *Research Tax Credit: Current Law and Policy Issues for the 114th Congress*, CRS Report RL31181, by Gary Guenther; Joseph J. Cordes, "Research and Experimentation Credit," in the *Encyclopedia of Taxation and Tax Policy*, ed. Joseph J. Cordes, Robert D. Ebel, and Jane G. Gravelle, Washington D.C., The Urban Institute, 2005.

<sup>13</sup> See John C. Williams and Charles I. Jones, "Measuring the Social Return to R&D," *Quarterly Journal of Economics*, vol. 113, no.4, November 1998, pp. 1119-1135 for a review of the evidence showing the high social rates of return to research.

<sup>14</sup> Jorgenson and Yun, *op. cit.*, p. 277.

Gravelle estimated the cost of corporate tax distortions to be about 10% to 15% of corporate tax revenue, or about 0.3% of GDP, with about a third (0.1%) due to the debt-equity distortion and the remainder largely due to the distortion between corporate and all other investment.<sup>15</sup> These amounts would be expected to be lower than the Jorgenson and Yun study because of the lower rates on corporate dividends and capital gains enacted in 1997 and 2003. Also this estimate does not capture the distortion between owner-occupied and non-corporate capital or distortions across assets. Neither the Jorgenson and Yun nor the Gravelle estimates include the effects of the production activities deduction.

While the full set of changes that would eliminate these distortions is probably beyond the scope of a tax reform, there are some practical changes in a revenue-neutral tax reform that could capture some of these effects. These include disallowing part of the deduction for corporate interest, repealing or otherwise limiting the production activities deduction, and slowing depreciation and cost recovery in the extractive industries, while using these revenue gains to reduce the corporate rate. There are a number of smaller but significant provisions that favor certain types of investment such as the exemption of like-kind exchanges from the capital gains tax, exclusion of interest on private activity bonds, and deferral of gain in non-dealer installment sales, where repeal would also yield revenue for corporate rate reduction. Note, however, that slowing depreciation for equipment, while achieving greater neutrality, may also raise the cost of capital if exchanged for a rate reduction, since a corporate rate reduction produces a windfall for the return on existing capital.

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<sup>15</sup> *Corporate Tax Reform: Issues for Congress*, CRS Report RL34229, by Jane G. Gravelle.

In the individual tax system, repealing the deduction for property taxes and capping, otherwise limiting, or repealing the mortgage interest deduction would reduce (although not eliminate) the favorable treatment of owner occupied housing. Changes that appear relatively unrelated (such as eliminating the deduction for state and local income taxes and increasing the standard deduction), as was proposed in former Chairman of the Ways and Means Committee Dave Camp's tax reform proposal, H.R. 1, 113<sup>th</sup> Congress, would help to reduce this distortion by reducing the number of itemizers.

#### *Exclusion of Employer Subsidies for Health Care*

Among the major items in individual tax expenditures is the exclusion of employer provided health benefits from employee's income. Calculations suggest that the efficiency cost of subsidizing health insurance and health spending might be about 0.02% of GDP.<sup>16</sup> The Cadillac tax, enacted as part of the Affordable Care Act and scheduled to go into effect in 2018 will reduce this distortion. Further reduction could be achieved by lowering the level at which the tax applies. Another option to consider is to eliminate the benefits for cafeteria plans which may largely be used to exclude the employee's portion of health insurance.

While a straightforward calculation of welfare costs can produce a value, caution is suggested in interpreting these measures, since so many complications in the health

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<sup>16</sup> The deadweight loss is approximately the triangle in a supply and demand curve intersection that is  $\frac{1}{2}$  the change in quantity times the change in price. The rule of thumb formula for the deadweight loss as a percent of spending is  $\frac{1}{2}E(t^2)$ , where E is the elasticity and t is the tax rate. The elasticity is assumed to be -0.2. See Su Liu and Deborah Chollet, *Price and Income Elasticity of the Demand for Health Insurance and Health Care Services: A Critical Review of the Literature*, Mathematica Policy Research, Inc., March 24, 2006, at <http://www.mathematica-mpr.com/publications/pdfs/priceincome.pdf>. The assumed tax rate is 25%. To determine current spending on health insurance, C\*, divide the tax expenditure for FY2014 of \$143 billion by 0.25, which yields \$572 billion. Rather than use the formula which technically applies only to a small change, the calculation used a discrete change based on a constant elasticity of substitution formula  $C = A(1-t)^{-E}$ . That result yielded \$540 billion, and a change in quantity of \$32 billion. Multiplying this amount by the tax and by  $\frac{1}{2}$  yields \$8 billion, which, divided by GDP of \$17 trillion is 0.02%.

market make it different from ordinary markets. Nevertheless, it is likely that reducing spending on very generous health insurance would increase efficiency

### *Itemized Deduction for Charitable Contributions*

The main individual tax expenditure not already mentioned that affects behavior is the deduction for charitable contributions.<sup>17</sup> Applying the same methodology used for health insurance but with different parameters yields an estimate of 0.03% of GDP.<sup>18</sup> Subsidies for charitable giving, however, may increase rather than decrease efficiency. The level of private charitable contributions is generally assumed to be underprovided because individuals can “free-ride” on others for funding charitable objectives such as low-income assistance, education, medical research, and hospitals. At the same time, an argument can be made that the induced contributions from the revenue loss are likely smaller than the loss itself<sup>19</sup> and these objectives could also be addressed by additional government spending.

There may be more limited changes outside of repealing the deduction, such as allowing only the basis of appreciated property to be deducted (or imposing a capital gains tax at the time of gift), imposing a floor on the deduction, or requiring payouts for certain institutions that hold charitable contributions without distributing them that might enhance the efficiency of the tax provision.

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<sup>17</sup> Other provisions in the ten largest individual tax expenditures not already addressed are largely motivated by distributional objectives: the earned income credit, the child credit, and the exclusion of Social Security benefits.

<sup>18</sup> Although the size of the tax expenditure was smaller than the health exclusion, the elasticity was assumed to be larger, at 0.5. See *Charitable Contributions: The Itemized Deduction Cap and Other FY2011 Budget Options* by Jane G. Gravelle and Donald Marples, CRS Report R40518 for a review of the empirical evidence on elasticities. The estimate also assumed a higher tax rate of 35% given the concentration of giving in high income classes.

<sup>19</sup> If the elasticity is less than one, the induced spending will be smaller than the reduced taxes.

## *International Tax Issues*

The largest corporate tax expenditure is the deferral of tax on income from foreign corporations. This provision is probably not associated with a significant economic distortion. Evidence suggests that, in most cases, the areas where real investment is likely to be made, the developed countries, tend to have marginal effective tax rates that are relatively similar to those in the United States.<sup>20</sup> While deferral may cause a misallocation of capital, that effect is likely to be relatively small compared to GDP. It is more likely, especially given the dramatic concentration and growth in profits abroad in tax havens,<sup>21</sup> that this tax expenditure is reflective of profit shifting that largely affects revenues rather than the physical location of investment.

Repatriation of income held overseas does trigger a repatriation tax, although economic analysis has not settled on the importance, or even existence, of that distortion and it has not been measured.<sup>22</sup> The repatriation tax could be eliminated by moving to a territorial tax, eliminating deferral and taxing all income currently, or imposing a current tax at a lower rate. All are proposals that have been made, although repealing deferral would yield enough revenues to reduce the corporate tax rate by three percentage points. Such a change might need to be accompanied by a provision to further restrict corporate inversions. A fully territorial tax might worsen the profit shifting problem and additional anti-abuse provisions may be needed.

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<sup>20</sup> See *International Corporate Tax Rate Comparisons and Policy Implications*, CRS Report R41743, by Jane G. Gravelle.

<sup>21</sup> *Tax Havens: International Tax Avoidance and Evasion*, CRS Report R40623, by Jane G. Gravelle and Senior Specialist in Economic Policy and Gabriel Zucman, "Taxing across Borders: Tracking Personal Wealth and Corporate Profits," *Journal of Economic Perspectives*, Vol. 28, No. 4, Fall 2014, pp. 121–148.

<sup>22</sup> For a review of the literature on repatriations see *Moving to a Territorial Income Tax: Options and Challenges*, CRS Report R42624, by Jane G. Gravelle.

## *A Note on Labor Supply and Savings*

A revenue-neutral tax reform is unlikely to have much effect on the overall distortions in labor supply (or, rather, a distortion between consumption and leisure) or savings (a distortion between present and future consumption). As an illustration, consider the recent proposal by former Chairman of the Ways and Means Committee Dave Camp. Although rates, particularly the corporate tax rate, were cut, the overall effective tax rate on the return to savings, once provisions are phased in, is slightly increased, and the capital stock falls according to analysis by the Joint Committee on Taxation (JCT).<sup>23</sup> Base broadening provisions such as slower depreciation, other capital cost recovery changes, and the elimination of the production activities deduction increased the tax base and more than offset the rate cuts.

With respect to labor supply, although the marginal tax on labor income was reduced about four percentage points, the effect on distortions is small, estimated at 0.02% of GDP.<sup>24</sup> This small effect is partly due to the small effect of the proposal on tax rates and partly due to the small size of the behavioral response. It might also be somewhat overstated because some base broadening provisions, which were not incorporated, increase the marginal tax rate (such as the disallowance of a deduction for state and local income taxes).

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<sup>23</sup> Joint Committee on Taxation, Macroeconomic Analysis of the “Tax Reform Act of 2014,” JCX-22-14, February 26, 2014, <https://www.jct.gov/publications.html?func=startdown&id=4564>.

<sup>24</sup> The results from the overlapping generation model used by JCT, which does not allow income effects, can be used to determine the percentage change in the marginal wage. In that model the labor substitution elasticity (percentage change in labor supply divided by percentage change in marginal wage) is 0.24 and the effect on labor supply is 1.3%. Thus the percentage change in wage is  $1.3/0.24$ , or 5.41%. Since the percentage change in wage is the change in tax divided by one minus the tax rate, the rate change, assuming a marginal tax rate of 25%, is 4 percentage points (0.75 times 0.0541). The excess burden, using a 0.2 elasticity which is the higher elasticity in the JCT’s in-house model is  $(1/2)$  times 0.2 times  $(0.0541)^2$ , and multiplied by labor’s share of income of approximately two-thirds, is 0.02% of GDP. At the lower elasticity of 0.01, it is 0.01% of GDP.

Because of the constraints on revenue neutral tax reform, it is difficult to achieve significant efficiency gains for the basic distortions (in labor supply and saving) in imposing any income tax.

### **Effects on Growth**

The effects of a tax reform on economic growth depend on whether the tax reform is revenue neutral (especially in the longer run) or also raises or loses revenue.<sup>25</sup> It is easiest to explain the expected effects on growth by beginning with a simple tax cut, and then proceeding to the effect of a revenue neutral proposal.<sup>26</sup>

Three types of effects may influence the output effects of a tax change: (1) the short run demand side stimulus effect, (2) the crowding-out effect, where the increase or decrease in the deficit reduces or increases funds available for investment, and (3) supply side effects, where labor supply and savings respond to changes in tax rates. Demand stimulus effects from a tax cut or tax increase are transitory. The crowding out (or in) effect happens gradually over time but grows continually. Supply side effects are typically primarily due to labor supply in the budget horizon as capital takes some time to accumulate or decline (unless investment flows in or out from abroad).

The magnitude of the stimulus effect from a tax cut is uncertain. If the Federal Reserve is targeting inflation and interest rates, it may take actions to offset the stimulus effect. As a result the JCT typically reports two effects: one where the Fed takes no action and a demand side effect occurs, and another where the Fed offsets the stimulus.

They also generally consider two measures of the labor substitution elasticity: 0.2 and

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<sup>25</sup> Note that growth effects are a one-time change in output and not a change in the growth rate. The growth rate is determined by factors such as technological advance, labor productivity growth, and the growth in the labor force.

<sup>26</sup> For a detailed review of macroeconomic modeling see *Dynamic Scoring for Tax Legislation: A Review of Models*, CRS Report R43381, by Jane G. Gravelle.

0.1. That is the elasticity that measures the response to the marginal wage, and therefore to the marginal effective tax rate.

To illustrate how these effects work, consider a simulation that the Joint Committee on Taxation prepared in 2005 of a \$500 billion ten-year tax cut (a tax cut of about 0.3% of GDP) using their in-house macroeconomic general equilibrium mode (MEG).<sup>27</sup> First, consider the effect where the Federal Reserve takes no action. A cut in individual rates increases output by 0.1% of GDP in the first five years. In the second five years output increases by 0.1% of GDP in the high elasticity case and by 0.0% in the low elasticity case. By the long run (30 years) the tax cut has reduced output of 0.5% and 0.6% respectively. Thus the crowding out effect eventually overwhelms the supply side effect as the horizon lengthens. When stimulus effects are included the effects are larger during the budget horizon (by 0.2 to 0.4 percent) but the effects are still to reduce output (by 0.2% and 0.3% of GDP) by 30 years. The fiscal offset delayed the effects of crowding out but did not eliminate them. These negative effects will continue to grow.

For a corporate rate reduction, output increases by 0.1% in the first five years and 0.2% in the second five years, but is zero after 30 years without stimulus effects. With stimulus effects the results are larger by about 0.2% and still positive after 30 years, but decreasing.

For a tax cut, the crowding out effect dominates eventually because it continues to grow indefinitely as long as the tax cut that loses revenue is in place. A tax increase would have the opposite effect: it would produce some contraction in the short run, but would eventually increase output.

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<sup>27</sup> Joint Committee on Taxation, Macroeconomic Analysis of Various Proposals to Provide \$500 Billion in Tax Relief, JCX-4-05, March 1, 2005, <https://www.jct.gov/publications.html?func=startdown&id=1189>.

For a truly revenue neutral tax change the stimulus effects and crowding out effects should be minimal. In that case, the effects are largely due to supply side effects. To illustrate the magnitude of these effects consider the JCT's analysis with their in house model of former Ways and Means Chairman Dave Camp's tax proposal.<sup>28</sup> In that simulation, with no stimulus effects, the effect on GDP through a labor supply effect over the first ten years was 0.1% with the low elasticity and 0.2% with the high elasticity. There was, surprisingly, a stimulus effect of about 0.3% when it was permitted, which may have been because the proposal reduces labor income taxes. No long run estimates were provided, but it is likely that the Camp proposal loses significant revenue in the long run and would eventually cause a reduction in output.<sup>29</sup>

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<sup>28</sup> Joint Committee on Taxation, Macroeconomic Analysis of the "Tax Reform Act of 2014," JCX-22-14, February 26, 2014, <https://www.jct.gov/publications.html?func=startdown&id=4564>. JCT found larger effects, of around 1.5% of output when using an alternative overlapping generation (OLG) model. This model cannot permit either crowding out or stimulus effects. About half the difference between the effects in this model and the MEG model is a larger increase in the labor supply response in the OLG model and the remainder to a new aspect of the OLG model that treats the shift in the ownership of intangible assets (e.g., patents and copyrights) due to changes in corporate taxes as having real effects on output. This innovation has been used in a European model without explanation or justification. See Michael P. Devereux and Ruud de Mooij in "An Applied Analysis of ACE and CBIT Reforms in the EU," *International Tax and Public Finance*, vol. 18, no. 1, 2011, pp. 93-120 and Leon Battendorf, Michael P. Devereux, Albert van der Horst, Simon Loretz and Ruud de Mooij, "Corporate Tax Harmonization in the EU," *Economic Policy*, vol. 63, 2010, 537-590. The authors do not present any empirical evidence to support entering what they refer to as firm-specific capital into the production function, or the importance of it in the economy. Since intangible assets can already be used costlessly in every location, there is no reason that a shift in ownership of an intangible should have an output effect. That is, the location of ownership should not change productivity. This point has been also been made by William McBride, *Some Questions Regarding the Diamond and Zodrow Modeling of Camp's Tax Plan*, Tax Foundation, March 17, 2014, <http://taxfoundation.org/blog/some-questions-regarding-diamond-and-zodrow-modeling-camps-tax-plan>. The larger labor supply response is in small part due to a larger substitution elasticity, but largely more likely explained by the constraints of the OLG model and how it is closed, since it cannot permit offsetting labor income effects and treats each generation as represented by a single individual. The OLG model cannot be used to model a stand-alone tax change because it cannot be solved with long run changes in deficits.

<sup>29</sup> This longer run revenue loss has been widely discussed. See Leonard Burman, "Hidden Taxes in the Camp Proposal," February 27, 2014, <http://taxvox.taxpolicycenter.org/2014/02/27/hidden-taxes-in-the-camp-proposal/>; Robert S. McIntyre, "Camp Is Hiding the True Effects of His Tax Plan," *Tax Notes*, April 27, 2014, pp. 91-93, who calculates the effects for the second decade of the Camp plan, finding an average of \$170 billion in losses per year (which would be roughly at 2028 levels of income); Joseph Rosenberg, "How Does Dave Camp Pay for Individual Tax Cuts? By Raising Revenue from Corporations," *Urban-Brookings Tax Policy Center*, February 27, 2014, <http://taxvox.taxpolicycenter.org/2014/02/27/how-does-dave-camp-pay-for-individual-tax-cuts-by-raising-revenue-from-corporations/>; Chye-Ching Huang, "Camp

The supply side effects in the analysis of the Camp proposal may have been somewhat overstated. The JCT analysis captured the direct statutory tax rate changes as well as the implicit tax increases from phase outs. It also accounted for increases in the marginal tax burden due to base broadening, such as the slowing of depreciation. It, however, did not account for the effect of base broadening on effective marginal tax rates on labor income. For example, disallowing the deduction for state and local taxes would increase the marginal tax burden on labor income for itemizers. Other base broadening changes may be marginal as well. A number of analysts have commented on the importance of considering the effects of base broadening on marginal effective tax rates and in some cases have questioned whether any revenue neutral tax reform could have significant supply side effects.<sup>30</sup>

It should not be surprising that a revenue neutral tax reform is unlikely to have a significant effect on output, given the necessity of base broadening to lower rates. Alan Auerbach and Joel Slemrod, for example, found that the Tax Reform Act of 1986, a

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Tax Reform Plan Likely Means Bigger Deficits After First Decade,” Citizens for Budget Policies and Priorities, February 26, 2014, <http://www.offthechartsblog.org/camp-tax-reform-plan-likely-means-bigger-deficits-after-first-decade/>; Committee for a Responsible Federal Budget, “Revenue Impacts of Camp’s Tax Reform Proposal,” February 26, 2014, <http://crfb.org/blogs/revenue-impacts-camps-tax-reform-proposal/>; statement of John S. Buckley in U.S. Congress, Senate Committee on the Budget, Supporting Broad-Based Economic Growth and Fiscal Responsibility Through a Fairer Tax Code, April 8, 2014, <http://www.budget.senate.gov/democratic/public/index.cfm/hearings?ID=d7254a33-dbd4-44c1-9fcc-7ea85f803f5e>, which discusses the transitory effects of a number of business provisions; Jane Gravelle, The Dynamics of Congressional Policy-Making, in United States Senate, Committee on Rules and Administration, *The Evolving Congress*, S. Prt. 113-30, December 2014, pp. 457-478.

<sup>30</sup> Alex Brill and Alan Viard, The Benefits and Limits of Income Tax Reform, AER Tax Policy Outlook, No. 2, September 2011, <http://www.aei.org/wp-content/uploads/2011/10/TPO-Sept-2011.pdf>. For further discussion of the issues of base broadening and marginal effective rates see Jane G. Gravelle and G. Thomas Woodward, Clarifying the Relation Between Base-Broadening and Effective Marginal Tax Rates, by Jane G. Gravelle and G. Thomas Woodward, presented at the 2013 meetings of the National Tax Association; Congressional Budget Office, Analysis of the President's Budgetary Proposals for 2008, Publication 2908. March 2007; and Restrictions on Itemized Tax Deductions: Policy Options and Analysis, CRS Report R43079, by Jane G. Gravelle and Sean Lowry. With respect to corporate reform and base broadening, see Alan Viard, The Quickest Way to Wreck Corporate Tax Reform, *Real Clear Markets*, March 27, 2013, [http://www.realclearmarkets.com/articles/2013/03/27/the\\_quickest\\_way\\_to\\_wreck\\_corporate\\_tax\\_reform\\_100226.html](http://www.realclearmarkets.com/articles/2013/03/27/the_quickest_way_to_wreck_corporate_tax_reform_100226.html).

widely hailed tax reform, left incentives roughly unchanged.<sup>31</sup> It is simply difficult, if not impossible, to design such a reform, especially if the reform is also pursuing other goals such as distributional neutrality and simplicity. Many economists see the primary goals of tax reform as achieving equity, efficiency and simplicity, rather than growth.

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<sup>31</sup> See "The Economic Effects of the Tax Reform Act of 1986," *Journal of Economic Literature*, Vol. 35, No. 2, June 1997, pp. 589-632. Alan Viard, in "Statutory and Effective Tax Rates: Part 1, *Tax Notes*, August 20, 2012, pp. 943-947; and Bruce Bartlett, Misunderstanding Tax Expenditures and Tax Rates, *Tax Notes*, November 22, 2010, pp. 931-932, also make the general point that revenue neutral tax reform is unlikely to alter work incentives.