DYNAMIC MACROECONOMIC ESTIMATES OF THE EFFECTS OF CHAIRMAN CAMP'S 2014 TAX REFORM DISCUSSION DRAFT

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EXECUTIVE SUMMARY

In response to widespread concerns that the income tax system in the United States is highly inefficient, unfair, unnecessarily complicated, and discourages economic growth while putting US multinational companies at a disadvantage relative to their foreign competitors, numerous proposals for sweeping reforms have been advanced in recent years. The most recent is the comprehensive discussion draft for reform of the business and individual income tax systems released by Representative Dave Camp, Chairman of the House Ways and Means Committee. The Camp discussion draft follows in the long tradition of base-broadening, rate-reducing reforms that finance reductions in corporate and individual income tax rates with the elimination of a wide variety of tax expenditures.

Such proposals have a broad range of complex and interacting effects on the performance of the US economy. One commonly used way to investigate the net results of all of these interactions, including their dynamic effects on economic growth and other macroeconomic variables, is to simulate them within the context of a dynamic computable general equilibrium model. In this report, we present the results of such a simulation, using the Tax Policy Advisers Model.

The simulation suggests that implementing the proposals of the Camp discussion draft would have positive net effects on the macroeconomic performance of the economy. For example, the simulation suggests that the level of real GDP would be 2.2 percent higher ten years after enactment of reform and 3.1 percent higher in the long run. These increases are attributable to many factors, including a significant reallocation of firm-specific capital that earns above normal economic rents to the United States and a sizable reversal of income shifting, as well as modest increases in labor supply and larger increases in labor compensation. The gains from reform are sufficiently large that if all the resulting revenues were devoted to further reductions in the corporate income tax rate, that rate could decline to roughly 20 percent in the long run.

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I. OVERVIEW

The income tax system in the United States is ripe for reform. The last fundamental reform of the system was the much-celebrated Tax Reform Act of 1986 (TRA86), which followed the classic model of a base-broadening, rate-reducing (BBRR) reform that financed significant corporate and personal rate cuts with the elimination of a wide variety of tax preferences. In the interim, however, many countries around the globe have reformed their tax structures. This is especially true for corporate income taxes abroad, where many nations – at least partly in response to the inexorable forces of globalization and international tax competition (Zodrow, 2010) – have dramatically reduced statutory rates while enacting base broadening measures that have kept corporate tax revenues roughly constant as a share of GDP (Bilicka and Devereux, 2012). As a result, the United States, which was a relatively low tax country after TRA86, now has the highest statutory corporate tax rate in the industrialized world, and has also lost its advantage in marginal effective corporate tax rates (which take into account other features of a tax system, including accelerated deductions for depreciation and other investment allowances).

Proponents of corporate income tax reform argue that such high tax rates (1) discourage investment and capital accumulation and thus reduce productivity and economic growth, (2) discourage foreign direct investment in the United States while encouraging US multinational companies (MNCs) to invest abroad, and (3) encourage US – and foreign multinationals investing in the US – to engage in income shifting, using a variety of techniques to move revenues to low tax countries and deductions to the relatively high tax United States. In addition, the combination of a high statutory tax rate coupled with a wide variety of tax preferences distorts the allocation of investment across asset types and industries and reduces the productivity of the nation's assets, while exacerbating the many inefficiencies of the corporate income tax, including distortions of business decisions regarding the method of finance (debt vs. equity in the form of retained earnings or new share issues), organizational form (corporate vs. non-corporate), and the mix of retentions, dividends paid, and share repurchases (Gravelle, 1994; Nicodème, 2008).

A separate issue that has attracted a great deal of attention is the tax treatment of US and foreign MNCs under current law. Following recent reforms in the United Kingdom and Japan, the United States is now the only major industrialized country that operates a worldwide tax

system under which the foreign-source income earned by US subsidiaries is subject to a residual US tax when repatriated to the US parent, subject to a credit for foreign taxes paid. By comparison, most other countries (e.g., 28 of the 34 OECD nations) operate a territorial system under which the active foreign-source income of their domestically headquartered MNCs is largely exempt from any residual domestic taxation. Proponents of a move toward a territorial tax system in the United States argue that it would improve the international competitiveness of US multinationals and end the current tax disincentive for the repatriation of foreign-source income that arises as firms defer repatriation to avoid paying residual US taxes.

There is also widespread discontent with the individual income tax system. The top marginal tax rate has increased to 39.6 percent from the 28 percent enacted under TRA86, while the number and value of individual tax preferences has grown substantially. Indeed, individual tax expenditures – the estimated revenue costs of differences in the individual tax system relative to a benchmark comprehensive personal income tax – as calculated by the Joint Committee on Taxation (2012) are the same order of magnitude as total personal income tax revenues. The arguments for reform are the same as those made during the debates surrounding TRA86 (US Department of the Treasury, 1984; McLure and Zodrow, 1987; Diamond and Zodrow, 2011): high individual tax rates coupled with widespread tax preferences inefficiently distort decisions regarding labor supply, saving, consumption patterns, and methods of compensation, significantly complicate administration of and compliance with the tax system, encourage tax avoidance and evasion, and result in a tax system that is widely perceived to be fundamentally unfair.

These developments have by no means gone unnoticed in the United States. Numerous proposals for reform have emerged, all of which have generally followed the example of TRA86 and taken the form of traditional BBRR reforms. These include the reports of the President's Advisory Panel on Federal Tax Reform (2005), the National Commission on Fiscal Responsibility and Reform (2010), and the Debt Reduction Task Force of the Bipartisan Policy Center (2010).

The most comprehensive proposal for reforming the corporate and individual income tax systems – and the focus of this report – was put forth as a legislative discussion draft on February 26, 2014 by Representative Dave Camp (R-MI), Chairman of the House Ways and Means Committee.[1] Specifically, we report the results of a numerical simulation of the macroeconomic effects of the Camp discussion draft, using the Tax Policy Advisers (TPA) model, a dynamic

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[1] The legislative text of the discussion draft is available at http://waysandmeans.house.gov/UploadedFiles/Statutory_Text_Tax_Reform_Act_of_2014_Discussion_Draft__022614.pdf. Analysis of the draft legislation by the Joint Committee on Taxation is available at https://www.jct.gov/.

overlapping generations, computable general equilibrium (CGE) model that is designed to analyze both the short-run and long-run macroeconomic effects of tax reforms.

The report proceeds as follows. In the following section, we outline the Camp discussion draft that we simulate. Section III provides a brief description of the TPA model while the simulation results are reported in Section IV. The final section offers some conclusions and caveats.

II. THE CAMP DISCUSSION DRAFT

In this report, we simulate the effects of the comprehensive reform of the business and individual income tax systems in the United States proposed by Representative Dave Camp, Chairman of the House Ways and Means Committee. The Camp discussion draft provides for a comprehensive base-broadening, rate-reducing (BBRR) revenue neutral reform of both the business and individual income taxes. The specific provisions of the discussion draft and the estimates of their revenue effects that we use in our analysis are provided in Joint Committee on Taxation (2014). The main features of the discussion draft are as follows.

Business Tax Reforms

For businesses, the Camp discussion draft would phase in over five years a reduction in the top corporate rate to 25 percent, financing this rate reduction with the elimination of a wide range of business tax preferences. It would also follow virtually all of our main trading partners by moving the United States to a participation exemption international tax system, under which the active foreign-source income of US multinationals is largely untaxed; foreign-source income from intangibles derived from sales to foreign markets, however, would be taxed in the year earned at a 15 percent rate, subject to credits for foreign taxes paid, while foreign-source income from intangibles derived from sales to the US market would be taxed in the year earned at a 25 percent rate. The corporate alternative minimum tax would also be eliminated.

The primary business tax base-broadeners would be (1) the replacement of accelerated depreciation (in 2017) with deductions taken over a longer period with partial inflation-indexing, (2) the replacement of half of expensing of expenditures on advertising with phased-in amortization over 10 years, (3) the replacement of expensing of research and development with phased-in amortization over five years, (4) a three-year (2015-2017) phase-out of the deduction for domestic production activities, (5) the repeal of LIFO inventory accounting, coupled with recapture of the existing LIFO reserve over 2019-2022, and (6) the introduction of a limitation on the deduction of net operating losses by C-corporations. In addition, all business tax credits would be eliminated with the exception of a reformed low-income housing tax credit and a permanent simplified 15 percent tax credit for research and development expenses.

On the international side, the discussion draft would move the United States to a participation exemption tax system, under which 95 percent of foreign-source dividends repatriated from controlled foreign corporations would be tax exempt; with a 25 percent corporate tax rate, such dividends would effectively be taxed at a rate of 1.25 percent. However, foreign-source income attributable to intangibles – defined as income in excess of a return of 10 percent on invested capital – would be taxed currently at a rate of 15 percent if derived from sales to foreign markets and at a rate of 25 percent if derived from sales to the US market, subject to credits for foreign taxes paid. To provide for tax neutrality with respect to decisions regarding the location of intangibles, income derived from intangibles on sales to foreign markets from the United States would also be taxed at a 15 percent rate. The discussion draft includes several other international tax reforms including a new thin capitalization rule, changes in foreign sales sourcing rules, temporary extension of the active finance exception, and a permanent CFC look-through rule. In addition, the discussion draft includes a one-time tax on the existing stock of unrepatriated profits, imposed at an 8.75 percent rate on cash and cash equivalents and a 3.5 percent rate on illiquid assets, subject to credits for foreign taxes paid.

Individual Tax Reforms

The reform of the individual income tax system also follows the base-broadening, rate-reducing approach. Individual tax rates would generally decline, to a new two-rate basic structure of 10 percent and 25 percent, supplemented by a 35 percent bracket on certain forms of income, including most labor income, in excess of $400,000 for singles and $450,000 for married couples; however, all income from qualified domestic manufacturing activities would be taxed at the 25 percent rate. Standard deductions and the child credit would be increased, but would be phased out for high income taxpayers, as would the benefit of the 10 percent tax bracket. The individual alternative minimum tax would also be repealed, as would the phase-out of personal exemptions, current "Pease" limitations on itemized deductions, and the 2 percent floor on miscellaneous itemized deductions. Capital gains and dividends would subject to a 40 percent exclusion.

The individual rate reduction would be financed with the elimination or reduction of many individual tax preferences. The primary individual base broadeners would be (1) capping the rate at which most itemized deductions, other than charitable contributions, are deductible to 25 percent, (2) a phased-in reduction of the cap on new home mortgages for which interest is deductible to $500,000, (3) the elimination of personal exemptions and dependent care credits, (4) the elimination of deductibility of the interest on home equity loans unless the loan is used for home improvements or to finance a business, (5) the elimination of deductibility for charitable contributions less than 2 percent of adjusted gross income, (6) the elimination of deductibility of all state and local taxes, (7) the elimination of deductibility of any medical expenses, personal casualty losses, and business expenses of employees, (8) a phase-out of the capital gains exemption for principal residences, (9) the repeal of the earned income tax credit,

coupled with exemption of both employee and employer payroll taxes for low income workers, and (10) a requirement that all new IRA contributions be only to Roth IRAs and inflation adjustments for qualified plan elective deferral limitations.

Excise Tax Reforms

The discussion draft includes changes in several excise tax provisions, including elimination of the excise tax on medical devices and the introduction of an excise tax on "systemically important" financial institutions.

III. OVERVIEW OF THE TPA MODEL

This section provides a short description of the TPA Model used in this analysis. It first considers the domestic component of the model and then turns to a discussion of its international aspects, including its modeling of US and foreign MNCs. The model combines various features from other broadly similar CGE models, including those constructed by Auerbach and Kotlikoff (1987), Goulder and Summers (1989), Goulder (1989), Keuschnigg (1990), Fullerton and Rogers (1993), Bettendorf, Devereux, van der Horst, Loretz, and de Mooij (2009), and de Mooij and Devereux (2011). For more details on the model, see Zodrow and Diamond (2013). Key parameter values used in the simulation are listed in the appendix; for discussion of some of these choices, see Gunning, Diamond, and Zodrow (2008). Versions of the model have been used in analyses of tax reforms by the U.S. Department of the Treasury (President's Advisory Panel on Federal Tax Reform, 2005) and in a number of other recent tax policy studies (Diamond and Zodrow, 2007, 2008, 2013; Diamond, Zodrow, Neubig, and Carroll, forthcoming; Diamond and Viard, 2008).

A. Modeling the Domestic Economy

The domestic component of the TPA model includes both corporate and non-corporate composite consumption goods and owner-occupied and rental housing, with the corporate sector subject to the corporate income tax and subdivided into domestic and multinational firms as described below, and the non-corporate sector taxed on a pass-through basis at the individual level and subdivided into a "tax preferred good" that benefits from various subsidies provided through the income tax code and an unsubsidized "tax neutral" good. Firms combine labor and several different types of capital to produce their outputs at minimum after-tax costs. The time paths of investment are determined by profit-maximizing firm managers who take into account all business taxes (including all tax preferences) as well as the costs of adjusting their capital stocks, correctly anticipating the macroeconomic changes that will occur after a tax reform is enacted. Firms finance their investments with a mix of equity and debt, and choose an optimal debt-asset ratio to balance the costs and benefits of additional debt, including its tax advantages.

On the consumption side, household supplies of labor and saving for capital investment and demands for all housing and nonhousing goods are modeled using an overlapping

generations structure in which a representative individual in each generation spends a fixed amount of time working and in retirement, makes consumption choices to maximize lifetime welfare subject to a lifetime budget constraint that includes personal income and other taxes, and makes a fixed "target" bequest.

The government purchases fixed amounts of the composite goods and makes transfer payments, which it finances with the corporate income tax, a progressive tax on wage income after deductions and exemptions, and constant average marginal tax rates applied to interest income, dividends, and capital gains. The modeling of corporate income tax revenues includes explicit consideration of depreciation allowances for new and old assets, other production and investment incentives, and state and local income and property taxes. The government must balance its budget in each period, after taking into account enough borrowing to maintain a constant debt-to-GDP ratio. During the five-year phase-in of the reduction in the corporate tax rate under the Camp discussion draft, we assume that government transfers are adjusted to meet the government budget constraint; after the phase-in period, the corporate tax rate adjusts endogenously to balance the federal government budget, so that dynamic revenue increases are offset by further reductions in the corporate tax rate. State and local governments finance fixed levels of purchases of the composite goods with sales, property, and income taxes. Tax policy in the rest of the world is assumed to remain constant; that is, other countries do not respond to the corporate income tax rate reduction in the United States by reducing their own tax rates further.

All markets are assumed to be in equilibrium in all periods, and the economy must always begin and end in a steady-state equilibrium, with all of the key macroeconomic variables growing at the exogenous growth rate, which equals the sum of the population and productivity growth rates. The model does not include unemployment, so that any labor supply response that is observed reflects changes in labor supply in the context of a full employment economy.

B. Modeling the International Economy

The TPA model includes a simplified foreign or "rest-of-the-world" (RW) sector, with international trade and capital movements between the US and RW. The model includes (1) US and foreign multinationals (parents and subsidiaries), which play the key role in determining the allocation of highly mobile firm-specific capital (e.g., intangibles, including intellectual property) that earns above-normal returns as well as the allocation of much less mobile ordinary capital that earns normal returns, and in the use of intermediate goods that are traded between the affiliates of the MNCs,[2] (2) income shifting between high and low tax countries,[3] (3) an

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[2] The assumption of differential international mobility of capital follows Becker and Fuest (2011). The inclusion of intermediate goods in the production functions of MNC parent firms and subsidiaries follows Desai, Foley, and Hines (2009).

endogenous decision by the US subsidiary regarding how much of its profits to repatriate to the parent firm in the presence of costs to adding to the stock of unrepatriated profits,[4] and (4) a balance of payments condition that links the domestic and international economies. To simplify the analysis, the RW is modeled as consisting entirely of the MNC sector (both US-MNC subsidiaries and RW-MNC parents); we thus effectively assume that the remainder of RW is unaffected by the income tax reforms analyzed.

A key feature of the model – and an important determinant of the simulation results – is the extent and nature of income or profit shifting between multinational parents and subsidiaries. Although profit shifting can occur in many ways, including the relocation of intangibles, the use of transfer pricing, and loan reallocations that facilitate interest stripping, we simplify the analysis by modeling total profit shifting, and restrict profit shifting to the above-normal earnings of highly mobile firm specific capital rather than extending profit shifting to all capital earnings. A key parameter is the amount of revenue lost due to profit shifting in the initial equilibrium. As described in detail by Dharmapala (2013), there is considerable disagreement on the size of the revenue loss due to income shifting and the sensitivity of profit shifting to tax rate differentials. We draw on the recent work of Clausing (2011), whose preferred estimate indicates that in 2008 the average revenue loss due to profit shifting was roughly 30 percent of corporate revenues, while an alternative estimate suggests this figure is 19 percent; we use an intermediate value of 24 percent. It should be noted, however, that some other studies, as described in a recent review by Heckemeyer and Overesch (2013), suggest that income shifting is less pervasive than suggested by the Clausing analysis.

In addition, we must specify the effect on income shifting of reductions in the US corporate income tax rate. The extent to which such reductions would reverse existing income shifting is unclear. We assume that the reversal of income shifting is a constant semi-elasticity function of the difference between the combined federal and state US corporate income tax rate and the average effective tax rate in a typical tax haven; thus, we assume that some reversal of income shifting would begin immediately, but that all income shifting would be reversed only if the US rate fell to the average effective tax rate of the typical tax haven.

Finally, a much discussed issue is what would happen with the existing stock of unrepatriated profits if a territorial system were adopted. Research on this issue has focused on analyzing the behavior of US multinationals after enactment of the temporary repatriation provision in the American Jobs Creation Act of 2004. Although the effect of an increase in repatriations is quite controversial, we generally follow Dharmapala, Foley, and Forbes (2011) in

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[3] For a recent discussion of the issues raised by income shifting, see Organisation for Economic Co-operation and Development (2013).

[4] The costs of deferring profits abroad are analyzed by Grubert and Altshuler (2013).

assuming that US multinationals are already optimizing their international allocation of capital so that most repatriations are distributed to shareholders (where they are taxed as dividends) and then reinvested – although we also assume that some repatriated funds are used to reduce domestic debt-asset ratios.[5]

IV. SIMULATION RESULTS

The simulation results for the Camp tax reform are shown in Table 1. These results show the percentage changes in the variables listed as a result of the reform, relative to a steady state in which the current tax system is left unchanged. The table also provides values of the federal statutory corporate income tax rate, which is reduced from 35 percent to 25 percent in increments of 2 percentage points over the first five years of reform, and then adjusts endogenously to balance the federal government budget. In particular, the corporate income tax rate declines to roughly 20 percent in the long run as the additional economic growth associated with the reform generates additional tax revenues that allow further corporate income tax rate reduction. (Recall that in the first five years after the enactment of reform, transfer payments adjust each year to balance the budget.)

The simulation indicates that GDP increases by 0.9 percent two years after the enactment of reform, by 1.2 percent after 5 years, by 2.2 percent after 10 years, by 2.6 percent after 20 years, and by 3.1 percent fifty years after reform and in the long run, relative to the initial steady state. Consumption follows a similar pattern, increasing by 1.6 percent two years after reform, by 2.9 percent after 10 years, by 3.3 percent after 20 years, and by 4.0 percent in the long run.

These gains are partly attributable to a reallocation of firm-specific capital (FSK) to the United States in response to a relatively more favorable investment environment due to the reduction in the corporate income tax rate to 15 percent for foreign sales and the elimination of deferral on foreign income related to FSK (holding foreign taxes constant). For example, FSK is 16.7 percent higher 5 years after the enactment of reform, 23.5 percent higher after 10 years and in the long run, relative to the initial steady state.

Domestic investment in ordinary capital follows a path similar to FSK (the return of FSK to the US makes domestic factors more productive), as it increases by 6.5 percent 10 years after reform, and by 6.8 percent 20 years after reform and in the long run. These results are, however, offset to some extent by a reduction in imports of ordinary capital into the US, as the shift of the highly mobile FSK to the US implies a shortfall of capital and thus production to meet demand

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[5] For example, Brennan (2013) concludes that most repatriated funds were used for acquisitions and debt reduction rather than share repurchases.

in RW. Over time, this is offset by a movement of ordinary capital back to RW (recall that labor supply cannot increase as the aggregate supply of labor in RW is assumed to be fixed). However, this reallocation is fairly slow (and indeed does not begin until approximately 10 years after the enactment of reform), both because ordinary capital K is relatively immobile and because it takes time for domestic investment to increase in the US, which drives down the return to investment in the US and makes foreign investment more attractive. The net effect is that the stock of ordinary capital in the US increases by 1.3 percent 10 years after the enactment of reform, and by 5.0 percent in the long run.

Of considerable importance in determining the effects of the reform is the extent to which corporate rate reduction results in a reversal in income shifting. This effect is an especially beneficial aspect of the reform as it allows further rate reduction without incurring any costs such as those associated with base broadening – which in turn results in a larger reduction in income shifting. The reform is found to result in a reversal of income shifting that increases over time, with income shifting falling by 35.3 percent five years after the enactment of reform, and by 57.1 percent in the long run.

The effects of reform on labor supply reflect several competing factors. The reform-induced increase in the stocks of both FSK and ordinary capital K imply that labor productivity and wages increase. The resulting increase in the return to work tends to result in an increase in labor supply. However, standard consumer theory also predicts that increases in income, from either higher wages or any other sources, lead consumers to increase their demand for both goods and leisure; that is, the income effects associated with higher wages and other increases in income imply greater leisure demand and thus less labor supply. In the simulation, these income effects offset a portion of the positive substitution effect on labor supply from an increase in the wage rate, and total hours worked increase by 0.5 percent after 2 years, and by 0.3 percent after 10 years and in the long run. Note, however, that the reform causes labor compensation to increase by 0.1 percent after 2 years, by 1.3 percent after 10 years, and by 3.6 percent in the long run. After declining initially, the real wage increases by 0.5 percent five years after the enactment of reform, by 1.0 percent after 10 years, and by 3.4 percent in the long run; the real after-tax wage increases by 3.2 percent five years after the enactment of reform, by 3.8 percent after 10 years, and by 6.1 percent in the long run. Thus the increase in labor demand due to the reform appears primarily as an increase in wages rather than as an increase in hours worked, largely because the model assumes full employment. If instead the model allowed for unemployment in the labor market, then some of the reform-induced increase in the demand for labor would result in less unemployment and thus more hours worked, coupled with a smaller increase in the real wage (note that by definition the sum of the percentage changes in wages and hours worked must equal the percentage change in compensation).

Table 1

Macroeconomic Effects of the Camp Discussion Draft

(Percentage changes in variables, relative to steady state with no reform)

Variable % Change in Year:	2	5	10	20	50	LR
GDP	0.9	1.2	2.2	2.6	3.1	3.1
Consumption	1.6	1.7	2.9	3.3	3.9	4.0
Stock of *FSK* in US	6.9	16.7	23.5	22.2	23.5	23.5
Domestic investment in ordinary *K*	1.8	4.6	6.5	6.8	6.9	6.8
Imports of ordinary *K* into US	1.0	0.5	−1.3	−4.6	−10.4	−14.2
Net change in stock of ordinary *K*	0.2	0.5	1.3	3.3	5.2	5.0
Reduction in income shifting	17.1	35.3	57.1	52.5	57.1	57.1
Labor compensation	0.1	1.0	1.3	2.4	3.4	3.6
Employment (hours worked)	0.5	0.5	0.3	0.3	0.3	0.3
Real wage	−0.4	0.5	1.0	2.0	3.1	3.4
Real after-tax wage	2.3	3.2	3.8	4.8	5.8	6.1
US Tax Rate (%) Value in Year:	**2**	**5**	**10**	**20**	**50**	**LR**
Statutory corporate income tax rate	31.0	25.0	19.9	21.2	19.9	19.9

V. CONCLUSION

In response to widespread concerns that the income tax system in the United States is highly inefficient, unfair, unnecessarily complicated, and discourages economic growth while putting US multinational companies at a disadvantage relative to their foreign competitors, numerous proposals for sweeping reforms have been advanced in recent years. The most recent is the comprehensive discussion draft for reform of the business and individual income tax systems released by Representative Dave Camp, Chairman of the House Ways and Means Committee.

The Camp discussion draft follows in the long tradition of base-broadening, rate-reducing (BBRR) reforms that finance reductions in corporate and individual income tax rates with the elimination of a wide variety of tax expenditures. Such proposals have many advantages but also face some important problems.

For example, corporate BBRR reforms tend to improve the efficiency of resource allocation and thus increase the productivity of the nation's assets and enhance opportunities for economic growth by equalizing the tax treatment of different assets and industries. Lower statutory rates also reduce many other inefficiencies associated with the corporate income tax, including distortions of the choice of organizational form, methods of finance, and methods of distributing profits to shareholders, while reducing incentives for tax evasion and avoidance. In addition, in the modern globally integrated economy, lower corporate tax rates encourage the investment of mobile capital, especially highly mobile firm-specific capital that earns above normal returns, in the United States rather than abroad, and reduce incentives for income shifting to lower rate foreign countries, including tax havens.

On the other hand, the rate reduction component of a BBRR corporate tax reform applies not only to new investment but also to the income earned by existing capital, including capital earning above-normal returns. Critics of such reforms argue that this creates a windfall gain for the owners of existing capital, and an offsetting revenue loss to the government. As a result, for a given amount of base broadening, the corporate tax rate cannot decline as much as it would in the absence of the windfall gain to old capital, which implies that – in the absence of other effects – investment declines, resulting over time in reductions in the capital stock, wages, output, and consumption. A central question in evaluating any corporate BBRR reform is thus whether the various gains from reform outweigh the loss due to reducing the tax rate applied to the income from existing capital. Models such as the detailed computable general equilibrium model used in this report are designed to analyze these tradeoffs. As expanded upon below, our analysis suggests that the reforms described in the Camp discussion draft would have positive impacts on the capital stock, wages, output, and consumption.

The Camp discussion draft also includes a move to a participation exemption tax system coupled with the elimination of deferral for foreign-source income earned by intangible capital

on sales in foreign markets, which would be taxed at a special 15 percent rate. The move to a participation exemption tax system would bring the US tax system in line with the tax systems of most of our major competitors and would also remove the current tax disincentive for repatriation of profits earned by foreign subsidiaries to their US parents. On the other hand, by lowering the tax burden on foreign investment, a move to a participation exemption system would tend to encourage investment abroad by US multinationals and facilitate income shifting. Base protection measures, such as the special tax treatment under the Camp discussion draft of the income earned by intangibles, including applying a 25 percent tax rate on foreign-source income earned by intangible income on sales to the US market, are designed to address these two critical issues.

On the individual side, many of the advantages of a BBRR reform are similar to those outlined above for corporate income tax reform. Rate reduction coupled with the elimination of tax preferences eliminates inefficient distortions of a wide range of household decisions, including decisions regarding consumption choices, the form of compensation, and the choice of saving vehicles. In addition, to the extent that a BBRR reform finances reductions in the tax rates applied to labor income with the elimination of items that have little or no effect on real after-tax wages at the margin (e.g., the elimination of personal deductions and the setting of a floor for the deductibility of charitable contributions), it will encourage labor supply. This effect will be blunted, however, if the tax preference eliminated lowers the marginal real after-tax wage rate, for example by increasing the marginal cost of formerly tax-preferred items, or by adding a surtax or phasing out deductions or exemptions at higher income levels. A BBRR reform should also make the tax system fairer, simpler in terms of both administration and compliance, and reduce incentives for tax avoidance and evasion. However, BBRR reforms are typically difficult to enact, as existing tax preferences may serve an important social purpose or simply have the support of important special interests.

Comprehensive tax reform thus has an extremely wide range of advantages and disadvantages. The simulation model used for the analysis presented in this report attempts to capture the net macroeconomic effects of the economic advantages and disadvantages of the comprehensive corporate and individual BBRR reform discussion draft released by Chairman Camp. As described above, the simulation results suggest that the net macroeconomic effects would be positive, with an increase in GDP of 2.2 percent ten years after the enactment of reform and 3.1 percent in the long run. These increases are attributable to many factors, including a significant reallocation of firm-specific capital that earns above normal economic rents to the United States and a sizable reversal of income shifting, as well as modest increases in labor supply and larger increases in labor compensation. The gains from reform are sufficiently large that if all the resulting revenues were devoted to further reductions in the corporate income tax rate, that rate could decline to roughly 20 percent in the long run. These results suggest that enactment of the Camp discussion draft would have positive net effects on the macroeconomic performance of the US economy.

We conclude with some caveats. In our view, dynamic, overlapping generations computable general equilibrium models of the type used in this analysis are one of the best tools available to analyze the real economic effects of tax policy changes such as the Camp discussion draft analyzed in this study, as they provide a rich structure based on fundamental economic theory that captures many of the complex and interacting effects of potential tax reforms. Nevertheless, it is clear that the estimated effects of the discussion draft presented in this report reflect the results of a particular simulation within the context of a specific computable general equilibrium dynamic economic model. The results of any study that attempts to model the effects of corporate and individual income tax reform in today's highly complex and internationally integrated economy are at best suggestive, and this report is no exception. Such results depend on the details of the reform proposed as well as a wide variety of structural assumptions in the model – especially the way that firm specific capital is allocated and the extent to which income shifting might be reversed with reductions in the US corporate rate – and the specific model parameters that are utilized. An analysis of the sensitivity of our results to variations in model structure and parameter values is the subject of ongoing research.

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PARAMETER VALUES USED IN THE TPA MODEL

Symbol	Description	Value
	Utility Function Parameters	
ρ	Rate of time preference	0.015
σ_U	Intertemporal elasticity of substitution (EOS)	0.40
σ_C	Intratemporal EOS	0.80
σ_H	EOS between composite good, housing	0.33
σ_N	EOS between corporate composite good and noncorporate good	2.00
σ_{NS}	EOS between subsidized and nonsubsidized noncorporate good	2.00
σ_M	EOS between M-sector and C-sector corporate goods	2.00
σ_I	EOS between domestic and foreign produced goods	5.00
σ_R	EOS between rental and owner-occupied housing	1.50
α_C	Utility weight on the composite consumption good	0.65
α_H	Utility weight on non-housing consumption good	0.46
α_{NS}	Utility weight on subsided non-corporate consumption good	0.50
α_N	Utility weight on composite corporate good	0.70
α_M	Utility weight on M-sector corporate good	0.75
α_R	Utility weight on owner-occupied housing	0.77
α_{LE}	Leisure share of time endowment	0.35
	Production Function Parameters	
ε_C, ε_M	EOS for C-sector and M-sector corporate goods	1.00
ε_N	EOS for noncorporate good	1.00
ε_H, ε_R	EOS for owner and rental housing	1.00
γ_C	Capital shares for C-sector corporate goods	0.20
γ_N	Capital share for noncorporate good	0.30

γ_H, γ_R	Capital share for owner and rental housing	0.98
$\beta_X, \beta_N, \beta_H$	Capital stock adjustment cost parameters	5–10
ζ	Dividend payout ratio in corporate sector	0.60
b_C, b_N, b_H, b_R	Debt-asset ratios	0.35
β_d	Cost of excessive debt parameter	0.30
γ_{KM}	Capital share parameter in M-sector composite *KEL* factor	0.15
γ_{MK}	*KEL* share parameter in M-sector production function	0.70
γ_{MI}	Intermediate good share in M-sector production function	0.04
	Other Parameters	
ε_K	Portfolio elasticity for ordinary capital	0.50
ε_{FSK}	Portfolio elasticity for firm-specific capital	8.60
f_{IS}	Share of profits shifted abroad as a fraction of corporate profits	0.24
n	Exogenous growth rate (population plus productivity)	0.034

BIOGRAPHICAL SKETCHES

John W. Diamond is Chief Executive Officer of Tax Policy Advisers, LLC, the Edward A. and Hermena Hancock Kelly Fellow in Public Finance at Rice University's Baker Institute for Public Policy, and an adjunct professor of economics at Rice University. His research interests are federal tax and expenditure policy, state and local public finance, and the construction and simulation of computable general equilibrium models. His current research focuses on the economic effects of corporate tax reform, the economic and distributional effects of fundamental tax reform, individual portfolio allocation in the 2000s, and various other tax policy issues. Diamond is the forum editor for the National Tax Journal and has served on the Joint Committee on Taxation, United States Congress (2000-2004). He has also served as a consultant on the efficacy of structural adjustment programs to the World Bank. He received his Ph.D. in economics from Rice University in 2000.

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