MACROECONOMIC ANALYSIS OF A PROPOSAL TO BROADEN THE INDIVIDUAL INCOME TAX BASE AND LOWER INDIVIDUAL INCOME TAX RATES

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of the
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INTRODUCTION AND SUMMARY

This document,[1] prepared by the staff of the Joint Committee on Taxation ("Joint Committee staff"), provides an analysis of the macroeconomic effects of a proposal to modify the individual income tax by broadening the tax base and reducing statutory tax rates. In particular, the proposal would eliminate exemptions and reduce deductions and credits. It would reduce tax rates and repeal the alternative minimum tax ("AMT"). The proposal is approximately revenue neutral as measured by the conventional revenue estimate over the current 10-year budget window.

The Joint Committee staff analyzed this proposal utilizing three different macroeconomic models: the Joint Committee staff macroeconomic equilibrium growth model ("MEG"), an overlapping generations lifecycle model ("OLG"), and a dynamic stochastic general equilibrium model with infinitely lived agents ("DSGE"). In general, the lower marginal rates made possible by the base broadening provide additional incentives for work and investment, which are expected to result in an increase in real gross domestic product, business investment, and employment. Investment in housing is likely to be reduced by the proposal. The extent of the changes depends on the sensitivity of individual labor choices to changing marginal rates, as well as on how the proposal affects the overall Federal government debt and interest rates. Two of the models suggest that consumption would increase as a result of the proposal; however, the third suggests that consumption would decrease because of a redistribution of individual income tax liability from high wage earners to low wage earners.

This study is part of the Joint Committee staff's work to model the macroeconomic effects of proposed tax legislation and to provide information about macroeconomic models and their assumptions. The Joint Committee staff welcomes comment on this analysis.

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[1] This document may be cited as follows: Joint Committee on Taxation, *Macroeconomic Analysis of a Proposal to Broaden the Individual Income Tax Base and Lower Individual Income Tax Rates,* (JCX-53-06), December 14, 2006.

I. DESCRIPTION OF THE PROPOSAL CONSIDERED AND THE MACROECONOMIC MODELS USED FOR THE ANALYSIS

A. Description of Proposal

A broad-base, low tax rate individual income tax

Under the proposal, all personal exemptions, itemized deductions, personal credits except for the earned income credit, and all above-the-line adjustments to income except for retirement savings deductions and the deduction for self employment taxes would be repealed. The largest categories of deductions repealed are present-law deductions for home mortgage interest expenses, State and local taxes, and charitable contributions. In addition, the exclusions for certain employee fringe benefits, such as employer contributions for health and life insurance, would be repealed. The standard deduction would remain.

The proposal would reduce tax rates relative to present law. The statutory rates that apply to ordinary income in 2007 are reduced by approximately 23.5 percent. Under present law, statutory tax rates on individual ordinary income form the following progressive structure through six tax brackets: 10 percent, 15 percent, 25 percent, 28 percent, 33 percent, and 35 percent. The bracket amounts would correspond to those specified under present law through 2010. For taxable years beginning after December 31, 2010, this structure reverts to a five bracket structure with the following statutory tax rates on ordinary income: 15 percent, 28 percent, 31 percent, 36 percent, and 39.6 percent. Under the proposal, broadening the tax base would allow for the repeal of the alternative minimum tax and a reduction in the present law statutory rates applicable to ordinary income. Specifically the new rates would be 7.55 percent, 11.5 percent, 19.1 percent, 21.4 percent, 25.2 percent and 26.8 percent. The taxation of capital gains and dividends remains unchanged. The new rate structure is assumed to be permanent and effective for taxable years beginning after December 31, 2006. Table 1 provides a summary of individual ordinary income tax rates by 2007 income bracket for 2007 and 2016 under present law, and for the entire period under the proposal.

Table 1.−Statutory Tax Rates Under Present Law and Proposal

2007 Income Brackets for Single Filers (estimated)	2007 Income Brackets for Joint Filers (estimated)	2007-2010 Statutory Tax Rates (present law)	Statutory Tax Rates After 2010 (present law)	Proposed Statutory Tax Rates
<$7,775	<$15,551-$63,200	10	15	7.55
$7,776-$31,600	$15,551-$63,200	15	15	11.55
$31,601-$76,550	$63,201-$127,600	25	28	19.1
$76,551 - $159,700	$127,601-$194,450	28	31	21.4
$159,701-$347,250	$194,451-$347,250	33	36	25.2
>$347,250	>$347,250	35	39.6	26.8

Conventional estimate of the effects of the proposal - long run and short-run

Using our conventional revenue estimating methodology, the individual income tax as modified by the proposal is expected to result in approximately the same amount of Federal individual income tax receipts during the 2007-2016 budget period as the present law individual income tax. Because of the changing rate structure within the ten-year budget period under present law, the effect of this new permanent rate structure under the proposal is to raise revenues relative to present law for the period 2007-2010 and to lose revenues relative to present law during the period from 2011-2016 and thereafter. The reason for the continuing revenue losses relative to present law is that the present-law tax rate structure results in receipts growing more rapidly than the economy after 2016--primarily because increasing numbers of taxpayers become subject to the alternative minimum tax.[2] But the new tax base and rate structure under the proposal, which does not include the alternative minimum tax, does not produce a corresponding rate of increase in revenues after 2016. Because receipts are lower in the long run, the proposal results in growing government debt relative to present law tax receipts in the long run. This result affects the analysis of the macroeconomic effects of the proposal, as will be discussed further in Part II.

[2] Under present law, there is a temporary increase in AMT liability between 2007 and 2010, while ordinary income tax rates remain low and the ability to apply certain personal credits against the individual AMT has expired. When ordinary income tax rates increase in 2011, the number of people subject to AMT falls, but gradually increases with nominal income growth.

B. Description of Macroeconomic Simulation Models Used in the Analysis

In order to account for the sensitivity of the analysis to different modeling assumptions, we have used three different models to simulate the macroeconomic effects of this proposal. The three models are the Joint Committee macroeconomic equilibrium growth model ("MEG"), an overlapping generations lifecycle model ("OLG"),[3] and a dynamic stochastic general equilibrium growth model with infinitely lived agents ("DSGE").[4] Following is a brief description of each model.

Macroeconomic equilibrium growth ("MEG") model

The MEG model is based on the standard, neoclassical assumption that the amount of output is determined by the availability of labor and capital, and in the long run, prices adjust so that demand equals supply. Individuals are assumed to make decisions based on observed characteristics of the economy, including current period wages, prices, interest rates, tax rates, and government spending levels. Consumption in MEG is determined according to the life-cycle theory, which implies that individuals attempt to even out their consumption patterns during their lifetimes. Business production and housing production are modeled separately, and may substitute for each other. The model is an open economy model, allowing international capital flows to affect investment and net exports to affect U.S. consumption.

The supply of labor to the economy over time is determined by the size of the working age population and that population's willingness to work in response to changes in after-tax wages. Population and age profile projections are calibrated to the Census Bureau middle-series projections.[5] The path of Federal government expenditures on the two largest transfer payment programs, Social Security and Medicare, is calibrated to be between the low and intermediate projections in the Congressional Budget Office forecast in *The Long-Term Budget Outlook,* December 2005.

Individuals in the MEG model do not anticipate changes in the economy or government finances; thus, this type of model is often referred to as a "myopic" behavior model. This feature

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[3] The OLG model is leased from Tax Policy Advisers, LLC.

[4] More detailed descriptions of the MEG and OLG models and their assumed behavioral parameters may be found in: Joint Committee on Taxation, *Macroeconomic Analysis of Various Proposals to Provide $500 Billion in Tax Relief,* (JCX-4-05), March 1, 2005, and Joint Committee on Taxation, *Overview of the Work of the Staff of the Joint Committee on Taxation to Model the Macroeconomic Effects of Proposed Tax Legislation to Comply with House Rule XIII.3(h)(2)*, (JCX-105-03), December 22, 2003. A more detailed description of the DSGE model may be found in Joint Committee on Taxation, *Background Information about the Dynamic Stochastic General Equilibrium Model Used by the Staff of the Joint Committee on Taxation in the Macroeconomic Analysis of Tax Policy,* (JCX-52-06), December 14, 2006.

[5] United States Census Bureau, *U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin*. U.S. Census Bureau, Population Division, Population Projections Branch, March 2004.

of the MEG model allows the simulation of tax and government expenditure policy that may result in an unsustainable growth path. Specifically, policies that result in the Federal debt increasing or decreasing at a faster rate than the growth of gross national product ("GNP") can be modeled. This feature allows the MEG model to incorporate in its simulations a baseline fiscal policy that is consistent with present law for a period far beyond the 10-year budget planning period.

The analysis below presents three different simulations using the MEG model. All three simulations assume that the Federal Reserve Board acts aggressively to offset any short-run demand effects that may result from changes in Federal government debt. Because all three simulations also allow government debt to grow with no fiscal policy offset beyond the ten-year budget period, the Federal Reserve Board adjusts interest rates upward. The first simulation uses the standard MEG default labor supply response parameters, as described in our earlier work. The second MEG simulation uses lower labor supply response parameters.[6] The final MEG simulation uses the default labor supply response, but changes the policy experiment to permit the mortgage interest deduction, while using the same new statutory tax rates that are used in the other policy simulations. This simulation is included to provide an indication of the importance of the housing sector response to overall macroeconomic results; however, because this version of the proposal raises less revenue than the other versions, the simulation results also reflect the differential effects on the path of government debt.

Overlapping generations life cycle ("OLG") model

In the OLG model, individuals are assumed to make consumption and labor supply decisions in order to maximize their lifetime well-being given the resources they anticipate will be available to them. They are assumed to have complete information, or "perfect foresight," about economic conditions, such as wages, prices, interest rates, tax rates, and government spending, over their lifetimes. The economic decisions are modeled separately for each of 55 adult-age cohorts.

The OLG model has separate production sectors for business and housing. This feature allows for an analysis of the effects of the different policies on the allocation of investment between housing and business. Unlike the MEG model, the OLG model also treats the purchase of housing as a consumption decision, thus making investment in housing less responsive to changes in the after-tax price of housing. Also unlike the MEG model, the OLG model assumes that prices adjust to any changes in economic conditions (such as a change in fiscal policy) so that supply equals demand in every period and resources are always fully utilized, after accounting for the cost of adjusting the capital stock. Therefore, the model does not allow for unemployment, but does account for adjustment costs that would be related to changes in the rate of investment and the movement of assets between sectors during the transition. There is no explicit modeling of international trade in goods and services, but international capital flows are modeled through interest rate adjustments.

[6] These parameters appear in Joint Committee on Taxation, 2005, *op.cit*., p.57.

Under present law, although normal income growth is expected to increase AMT receipts significantly, the changing age profile of the population is expected to increase transfer payments even more significantly, and Federal government debt is expected to grow at a faster rate than the economy in the coming decades.[7] In macroeconomic modeling, government debt growing at a faster pace is often referred to as fiscal instability. The overlapping generations and perfect foresight features of the OLG model make it difficult to model changing age profiles of the population and the fluctuating path of Federal government debt created by the combined changing profile of AMT receipts and transfer payments. The dynamic general equilibrium feature makes it impossible to model the long-run fiscal instability created by the rapid growth in Federal government debt. Therefore, the OLG model simulations do not incorporate a long-run increase in government debt due to the policy, as the other model simulations do. The proposal is revenue neutral across the whole budget horizon. The two simulations presented in this analysis assume either that individual ordinary income tax rates are set each period to preserve revenue neutrality or that Federal government transfer payments are changed to offset changes in revenues. In general, these assumptions result in either a smaller decrease in marginal tax rates than is simulated in the MEG simulations, or a reduction in government transfer payments.

Dynamic Stochastic General Equilibrium Model ("DSGE")

The DSGE model has microeconomic foundations, based on the neoclassical growth framework. Similar to the OLG model, the DSGE model assumes that the economy operates at full employment each period, and therefore it does not model involuntary unemployment or the effects of policy on unemployment. In contrast to the MEG and OLG models, in the DSGE model the amount of foresight people have about future fiscal policy can vary; foresight may be myopic or perfect, or somewhere in between. In this analysis, the simulations assume that every year agents know the exact tax policy next year, and that people forecast that tax policy after the next year is likely to be persistent with some random disturbances. The model is a closed, real economy.

The model distinguishes between two types of people: those who save ("savers") and those who do not ("spenders"). Savers decide how much to save by optimizing their consumption utility over time subject to a budget constraint. They own the entire capital stock of the economy and also hold government debt. Spenders consume all disposable income each period; they do not own capital and therefore cannot lend capital. In equilibrium, neither savers nor spenders borrow to finance consumption or investment. Generally consistent with empirical evidence, spenders are assumed to be those in the lower portion of the income distribution. We assume in the model that spenders are those in the bottom 40th percentile of filers with positive labor income. This partitioning between spenders and savers allows for an analysis of the differential effects of proposals on relatively low and high income households.

Government in the model can operate at permanently increasing debt levels due to a tax cut as long as the economy grows at a faster rate than the debt, thus maintaining fiscal solvency. For this analysis, the Federal government responds to increases in debt by reducing either its spending on goods and services ("consumption") or its transfer payments with a ten-year delay.

[7] Congressional Budget Office, *The Long-Term Budget Outlook*, December 2005.

The model has one production sector; no distinction is made between residential capital and production capital. There is one effective capital income tax rate, which is computed as the income-weighted average of effective tax rates on income from corporate and non-corporate capital as derived from the Joint Committee staff individual income tax and corporate income tax microsimulation models.

Modeling limitations

The Joint Committee staff presents multiple macroeconomic simulation models when analyzing tax proposals because no one model framework can provide complete information about the broad array of anticipated effects of tax policy on the economy. Even with this multiple model approach, however, we cannot account for all the possible effects that this proposal might have on the economy.

Effects on the housing sector

The elimination of deductions for mortgage interest and property tax expenses for homeowners in this proposal is likely to impact housing markets significantly.

Because there is no separately modeled housing sector in the DSGE model, simulations of this model do not capture any effects of the proposal that would be unique to housing markets. Both the MEG and OLG models include separate housing sectors for business investment, allowing them to provide some information on the impact of the proposal on housing versus substitute investments. Still, there are a number of issues that are not completely addressed by these models, either because there is little consensus as to the correct approach or because the models are not currently well suited to the question. In the MEG model, housing is treated as strictly an investment, and the consumption value of housing is not modeled. This feature implies that the full economic cost of reducing the housing stock is understated and the representative agents do not suffer a loss in well-being due to consuming less housing. Thus, in the MEG model, shifting between the housing stock and business capital is easier than we might expect. By contrast, in the OLG model, the consumption value of housing and adjustment costs associated with switching investment out of the housing sector are modeled. As can be seen in the results below (Tables 3 and 4), there is a smaller shift from the housing stock to business capital in the OLG model than in the MEG model.

Further, neither the MEG nor OLG model includes a portfolio allocation algorithm that would allow for analysis of the likely effects of denial of the mortgage interest deduction on refinancing or other portfolio decisions. As housing prices adjust, there are potentially significant financial market effects that would likely be felt by both home owners and owners of capital, particularly if there are significant defaults. Neither model explicitly accounts for the effect of possible declines in housing prices on the household wealth. Such an analysis would be necessary to fully model the effects of the proposal on mortgage interest rates and housing prices. Since for many consumers the value of their house is the single largest item in household wealth, any reduction in the value of the house would diminish wealth, which would potentially lower consumption.

Effects on the healthcare and health insurance sectors

Another major feature of this proposal is the denial of the income tax exclusion for employer-provided health insurance, along with the denial of the deduction of health-related expenditures by individuals as consumers of health services. These features of the proposal could have a significant impact on the 15 percent of the economy that the healthcare sector represents. While firms would continue to be able to deduct health-care expenses, the after-tax cost of health care would be increased because these expenses would be taxable to individuals, making health care relatively more expensive to consume. The likely reduced demand for health care could result in pressure for health service providers to lower costs, thus increasing efficient provision of health care services. The increase in the after-tax cost of health care is also likely to decrease consumption of health care, thus shifting investment away from health care and into other sectors of the economy, which could improve economic efficiency. However, it could also reduce the rate of progress in medical advances, thus affecting long-run human capital development. There are also potentially significant effects on the insurance sector. None of the changes in the health care or insurance sectors is modeled in these simulations, largely because there is little economic consensus regarding the effects, but also because significant and time-consuming modeling changes would be required.

Other effects

In general, the base-broadening nature of this proposal means that special tax incentives will be lost for many specific activities, e.g., childcare, education, adopting children, spending on home improvements to increase energy efficiency, and making charitable contributions. This analysis does not attempt to account for the effects of the proposal on these activities, some of which may have some feedback into the economy.

In particular, there are potential effects of the proposal on labor supply, particularly of secondary earners, that are not entirely captured in the models. Lower tax rates increase the incentive to work by increasing the marginal benefit of labor, thus causing people to substitute labor for leisure; but the elimination of dependent care credits and inclusion in income of the value of employer-provided child care increase the after-tax cost of working. While the effects of the tax rate changes are captured in the models, and while secondary labor supply is explicitly modeled in the MEG model, none of the models explicitly accounts for the increased after-tax cost of work-related expenses.

In addition, there are potential effects of the proposal on the incentive to invest in human capital, which has been associated empirically with productivity, growth, and investment. Lower marginal tax rates increase this incentive, while elimination of some of the education subsidies may have the opposite effect. The macroeconomic models used in this analysis do not include human capital, and so may understate or overstate overall growth effects of the proposal.

II. RESULTS

Following is a series of tables that show the effects of this proposal on real (inflation adjusted) gross domestic product ("GDP"), real business and residential capital stock, employment, labor supply, and consumption.

Results from each policy simulation for each variable are presented as percentage changes from the present-law baseline forecast values for the variable. Specifically, the percentage change in each variable for the first five years is calculated by summing the change in the reported variable due to the proposal over the period from 2007 to 2011, and dividing that change by the sum of the baseline values of each variable over the same period. The same calculation is applied to the period from 2012 to 2016. The Joint Committee staff configures the present-law baseline forecasts for Federal government receipts and spending in each of the macroeconomic models to approximate the January 2006 forecast of the Congressional Budget Office[8] as closely as possible. The baseline beyond 2016 is extrapolated to approximate long-run expected Federal government receipts and expenditures under present-law as closely as possible within each model, subject to the constraints resulting from requirements for maintaining a steady-state equilibrium in the OLG model, and to a lesser extent the DSGE model. While it is impossible to incorporate unknowable intervening circumstances, such as major resource or technological discoveries or shortages, these models are designed to predict the long-run effects of policy changes, assuming other unpredictable influences are held constant. To provide information about the longer run effects of the policy, the tables also report the percent change in each economic variable in 2034, which is referred to in the tables as "long run."[9]

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[8] Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2007-2016*, January 2006.

[9] The year 2034 was selected as the "long-run" for the purpose of these simulations, primarily for consistency with prior reported results. In general, we are constrained in our choice of a year to represent the long run by how far into the future our myopic models will continue to converge. For baseline, present-law simulations, our models continue to converge until at least 2050. But for some policy simulations we have considered, the models begin to have difficulty converging in the early 2040's. By choosing a year that is about half a decade earlier, we avoid reporting results that are influenced by nonconvergent model behavior. At the same time, by the mid-2030's, essentially all of the "baby boomers" will have retired and are making full use of Social Security and Medicare, and thus the models will be significantly influenced by this important long-run demographic dynamic.

A. Effects on Real Gross Domestic Product

Table 2.–Percent Change in Real GDP Relative to Present Law

Percent Change in Real GDP	2006-11	2012-16	Long Run
MEG, Base Elasticity	1.1	1.9	0.9
MEG, Low Labor Elasticity	0.9	1.6	0.2
OLG, Transfer Offset	1.2	1.9	2.6
OLG, Tax Rate Offset	1.2	1.1	1.2
DSGE, Lagged Transfer Offset	0.1	1.2	3.5
DSGE, Lagged Government Consumption Offset	0.1	1.2	2.5
MEG, Keep Housing Deductions	0.8	1.6	0.5

Real gross domestic product is increased by the proposal in all of the simulations. In the short-run, the increase ranges from 0.1 percent of GDP to 1.2 percent of GDP, while in the long-run, the increase ranges from 0.2 percent to 3.5 percent. Growth in the MEG and OLG models responds to changes in average and marginal tax rates on labor, changes in the after-tax return to capital, and changes in the after-tax cost of housing capital versus the after-tax cost of producers' capital. In the DSGE simulations, the amount of growth is determined by labor supply response to changes in disposable income and in marginal tax rates on labor, differentiated between spenders and savers, and by investment response to changes in the after-tax cost of capital; there is no substitution from housing to producers' capital. Within the 10-year budget period, growth is higher in the MEG and OLG simulations both because of a bigger labor response to changes in marginal tax rates and because of substitution from investment in housing to investment in producers' capital. In the long run, growth in the MEG simulations is lower than in simulations of the other two models because the increasing government debt crowds out private sector investment. Growth is higher in the OLG and DSGE simulations that use transfer payments as fiscal offsets because the reduction in transfer payments lowers disposable income, thus creating additional incentives to work. The tax rate offset in the longer-run OLG simulations reduces the marginal rate stimulus for both labor and capital relative to the proposal, which is revenue neutral only within the budget window.

B. Effects on the Capital Stock

Table 3.–Percent Change in Total Real Capital Stock Relative to Present Law

Percent Change in Total Capital	2006-11	2012-16	Long Run
MEG, Base Elasticity	-0.2	-0.9	-7.3
MEG, Low Labor Elasticity	-0.2	-1.0	-8.0
OLG, Transfer Offset	0.5	2.0	4.5
OLG, Tax Rate Offset	0.2	1.1	1.8
DSGE, Lagged Transfer Offset	0.5	2.4	7.2
DSGE, Lagged Government Consumption Offset	0.5	2.3	5.5
MEG, Keep Housing Deductions	0.2	-0.3	-6.8

Table 4.–Percent Change in Real Producers' Capital Relative to Present Law

Percent Change in Producers' Capital	2006-11	2012-16	Long Run
MEG, Base Elasticity	2.7	5.3	2.5
MEG, Low Labor Elasticity	2.6	5.0	1.7
OLG, Transfer Offset	1.9	5.5	9.8
OLG, Tax Rate Offset	0.5	1.9	3.1
DSGE, Lagged Transfer Offset	0.5	2.4	7.2
DSGE, Lagged Government Consumption Offset	0.5	2.3	5.5
MEG, Keep Housing Deductions	1.2	2.9	-0.8

Table 5.–Percent Change in Real Residential Capital Relative to Present Law

Percent Change in Residential Capital	2006-11	2012-16	Long Run
MEG, Base Elasticity	-3.0	-7.2	-19.3
MEG, Low Labor Elasticity	-3.0	-7.3	-20.0
OLG, Transfer Offset	-1.2	-2.2	-1.9
OLG, Tax Rate Offset	-0.2	0.0	0.3
DSGE, Lagged Transfer Offset	n.a.	n.a.	n.a.
DSGE, Lagged Government Consumption Offset	n.a.	n.a.	n.a.
MEG, Keep Housing Deductions	-0.9	-3.5	-14.1

Table 6.–Change in Interest Rates Relative to Present Law

Change in Real Interest Rates (Basis Points)	2006-11	2012-16	Long Run
MEG	-52	-30	104
MEG, Low Labor Elasticity	-52	-30	114
OLG, Transfer Offset	1.5	122	0
OLG, Tax Rate Offset	67	64	0
DSGE, Lagged Transfer Offset	4	17	19
DSGE, Lagged Government Consumption Offset	5	17	24
MEG, Keep Housing Deductions	-19	2	191

The proposal results in an increase in producers' capital stock in virtually all of the simulations. The MEG and OLG models distinguish between producers' capital and residential capital; thus, changes in the total capital stock can be small or even negative while GDP growth is still boosted by increases in producers' capital stock, as shown in Tables 3 and 4. In the DSGE model, producers' capital and total capital are synonymous. In the short run, the increase in producers' capital is largest in the MEG simulations, which show a correspondingly larger decrease in residential capital stock. The interest rate changes shown in Table 6 reflect the impact of differing long-run fiscal policy assumptions; these differences correspond with the differences in long-run capital stock growth among the three models. In the long run in the MEG simulations growth in producers' capital stock is depressed because of the crowding out effects of the rapidly growing Federal government debt, leading to long-run increases in the interest rate. In the DSGE simulations, Federal government debt is also allowed to grow, but only so long as it

does not outpace the growth of GDP. Consequently, there is a smaller increase in interest rates, less crowding out, and a net growth in investment. Because the OLG simulations do not allow for an increase in debt relative to GDP, there is no long-run change in interest rates, and hence a greater growth in the stock of business capital.

The OLG model shows a smaller response of residential capital than the MEG model, in part because OLG models the consumption value of housing and the adjustment costs of transitioning investment out of housing. As Table 5 shows, when this substitution is explicitly modeled, the stock of residential capital can be expected to fall. Investment in producers' capital is higher in both the OLG and DSGE simulations that use transfer payments to offset the long-run growth in government debt because the labor supply response is the highest in these simulations.

C. Effects on Private Sector Employment

Table 7.–Percent Change in Private Sector Employment Relative to Present Law

Percent Change in Private Sector Employment	2006-11	2012-16	Long Run
MEG, Base Elasticity	1.0	1.7	2.5
MEG, Low Labor Elasticity	0.7	1.3	2.0
OLG, Transfer Offset	1.1	0.8	0.4
OLG, Tax Rate Offset	1.4	0.9	0.6
DSGE, Lagged Transfer Offset	0.0	0.8	1.8
DSGE, Lagged Government Consumption Offset	0.0	0.8	1.1
MEG, Keep Housing Deductions	0.9	1.6	2.6

Although long-run employment increases in all the simulations, there is a significant range in the magnitude of the increase among the simulations, and the primary reasons for the increase differs between models. Both the MEG model and the DSGE model include separate labor supply functions for lower income versus higher income individuals, and the effects of the proposal's change in statutory tax rates on effective marginal tax rates on labor income is computed separately for these different groups. Effective marginal rates on labor used in these models are computed using the Joint Committee staff's individual income tax microsimulation model. These rates decrease less for the lower income groups than the others in the MEG model. In the DSGE model, because there is no distinction between average and marginal tax rates; the effective tax rates on labor increase for the lower wage group. Hence, in the early years after implementation of the proposal, there is very little direct incentive to increase labor effort for these groups, particularly in the DSGE model. In the second half of the budget period, there is an induced labor supply incentive from wage growth due to the increased capital stock. In the long run in the DSGE model, the simulation with lagged reduction in transfer payments induces more employment because the lower income group works more to make up for the loss of transfer payment income. The contrast in employment effects between the base case and the low labor elasticity simulation in the MEG model illustrates directly the influence of different assumptions about the degree of responsiveness built into models.

D. Effects on Consumption

Table 8.–Percent Change in Consumption Relative to Present Law

Percent Change in Real Consumption	2006-11	2012-16	Long Run
MEG, Base Elasticity	1.5	3.3	4.0
MEG, Low Labor Elasticity	1.3	3.0	3.3
OLG, Transfer Offset	0.4	0.8	1.6
OLG, Tax Rate Offset	1.0	0.9	1.0
DSGE, Lagged Transfer Offset	-0.6	-0.1	2.4
DSGE, Lagged Government Consumption Offset	-0.6	0.0	0.0
MEG, Keep Housing Deductions	0.9	2.6	3.2

Consumption is presented as another indicator of the effects of the policy on peoples' economic well-being. Although it is an over-simplification, most economic models equate increases in consumption with increases in individuals' well-being. In the long-run, consumption increases in virtually all of the simulations. It increases most in the MEG simulations and least in the DSGE simulations. Because the decrease in housing investment in the OLG simulation is also modeled as a decrease in housing consumption, total consumption is not increased commensurately with the increase in GDP in the OLG model.

In the DSGE simulation, consumption decreases within the window. Savers anticipate lower tax rates on capital income and hence reduce consumption to invest more, while spenders reduce consumption because of reductions in their disposable income due to higher tax liabilities. In the longer run, as savers become wealthier (in part due to returns from their increased investment), their consumption increases. In the simulation in which Federal government consumption is reduced to maintain fiscal solvency, consumption increases more because people tend to consume more when government absorbs a smaller share of resources.

E. Conclusion

Broadening of the individual income tax base through elimination of many preferences in the form of exclusions, deductions, and tax credits allows for a reduction in effective marginal tax rates for most individual income taxpayers. This policy also reduces preferential tax treatment of investment in housing relative to producers' capital. Both of these effects provide incentives for more work and investment in the economy, thus increasing total output potential. The extent of this growth predicted in different macroeconomic model simulations can vary significantly depending on assumed behavioral parameters, the amount of disaggregation in the models between types of investment and types of workers and consumers, and assumptions about long-run fiscal policy in both the baseline model and the proposed policy change.

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