

IRET Congressional Advisory

INSTITUTE FOR RESEARCH ON THE ECONOMICS OF TAXATION

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November 10, 2006

Advisory No. 213

HOW MUCH GROWTH FROM TAX REFORM? PRESIDENT'S ADVISORY PANEL ON FEDERAL TAX REFORM: PART THREE

The Report of the President's Advisory Panel on Federal Tax Reform provided estimates by the Treasury Department of the additional growth of national income that would result from three alternative tax systems: the Simplified Income Tax Plan (SIT), the Growth and Investment Tax Plan (GIT), and the Progressive Consumption Tax Plan (PCT). The growth estimates were offered as an indication of the amount of economic benefit that the plans would achieve for the population. The Report also estimated ranges for the potential additional

growth of the capital stock under each plan. However, the Panel ignored the additional growth when it calculated the tax rates needed to achieve revenue neutrality.

The reform plans would add to the National Income (or GDP) largely by encouraging additional capital investment. They would do so by eliminating some of the tax biases against saving and investment in the current tax system, reducing marginal tax rates on capital income, while leaving marginal tax rates

Maximum Added National Income (Total GDP) Predicted by Treasury for President's Tax Panel Proposals

Plan	10th year	20th year	Long run
Simplified Income Tax Plan	0.5%	1.0%	1.2%
Growth and Income Tax Plan	1.8%	3.6%	4.7%
Progressive Consumption Tax Plan	2.3%	4.5%	6.0%

Report of the President's Advisory Panel on Federal Tax Reform, pages 149 and 190.

Ranges of Increases in Capital Stock Predicted by Treasury for President's Tax Panel Proposals

Plan	10th year	20th year	Long run
Simplified Income Tax Plan	0.1% - 0.4%	0.3% - 1.4%	1.4% - 2.3%
Growth and Income Tax Plan	0.5% - 3.64%	1.7% - 11.7%	5.3% - 19.8%
Progressive Consumption Tax Plan	0.7% - 5.1%	2.5% - 16.7%	7.6% - 27.9%

Report of the President's Advisory Panel on Federal Tax Reform, pages 149 and 190.

on income from labor and non-corporate businesses roughly unchanged (SIT and GIT) or higher (PCT). The added economic growth and the rise in the capital stock would be expected to raise labor productivity and thereby boost pre-tax and after-tax wages.

Treasury used three models of the economy to make these estimates, a neo-classical growth model, an overlapping generations life cycle model (OGL), and a Ramsey growth model. Each incorporates some of the growth mechanisms related to saving and capital formation mentioned above, but in a restrictive manner. The neoclassical and Ramsey models assumed a closed economy, isolated from the rest of the world. These models could not allow for any redirection of global saving — either more U.S. saving remaining at home, or more foreign saving moving in — to support additional investment in the United States. The OGL model allowed for some international capital flows. All three models built in an unrealistically restrained view of the degree to which national saving and investment would respond to tax changes, and the speed with which additional capital would be put in place. The neo-classical model assumed no response by the labor force to changes in taxes, while the other two models allowed for some response, but less than is indicated by history. The neoclassical and Ramsey models assumed an initial flat rate tax on labor, ignoring the progressive marginal rate structure and its important influence on behavior, and omitted state and local

taxes. For these reasons and others, the Treasury’s estimates understate the benefits from tax reform, and overstate the time required to realize the gains.

In our view, the Treasury projections are correct in their ranking of the three tax plans’ effects on growth, but understate the amount of growth one should expect by between 26 percent and 46 percent. We estimate that the gain in private sector GDP (excluding government) and total GDP would be achieved within 5 to 10 years, not the 20-plus year framework in the Treasury calculations.

In estimating the effects of tax changes, historical experience should guide the analysis of how large the changes in the desired capital stock would be, how fast the changes would be implemented, and how much and how soon the national income would change as a result. Gary Robbins of Fiscal Associates has estimated that, in previous cases of major changes in the tax treatment of capital, the adjustments were about 75 percent completed within 5 years, and largely finished in 10. (For equipment, about 50 percent of the adjustment was finished within 2 years, with the remainder done within 4. For structures, about 50 percent of the adjustment was finished within 5 years, with the remainder done within 10. Structures and equipment generate roughly equal shares of national income.)

One source of difference between our estimates and those of the Treasury is how service prices are

Increase in Economic Performance in an Unconstrained Open Economy Model for President’s Tax Panel Proposals			
Plan	Increase in private sector (& total) GDP	Increase in private sector capital stock	Increase in wage rate
Simplified Income Tax Plan	2.6% (2.1%)	6.4%	1.8%
Growth and Income Tax Plan	7.9% (6.4%)	20.7%	5.8%
Progressive Consumption Tax Plan	13.6% (11.0%)	40.0%	11.0%
<i>Half of these adjustments would occur within 5 years, and nearly all within 10 years. Estimates by the author. Thanks to Gary Robbins of Fiscal Associates and the Heritage Foundation Center of Data Analysis for tax model and service price software.</i>			

calculated. The service price of capital is the rate of return that the machine or structure must earn to cover its depreciation and taxes and to leave its owner with a competitive income, relative to other possible uses of the money. Many models calculate service prices by assuming that each investment is partially financed by equity and partially by debt, in roughly the economy-wide ratio. The tax on debt financed-capital is less than on equity-financed capital, and the service price is lower as a result. This method runs counter to good economic theory. It may understate the degree to which a tax reform that reduces the double taxation of the income of corporate equity, and that lowers the tax on the income of non-corporate equity, would increase investment and GDP.

Equity should be viewed as the source of financing for an addition to the stock of capital, and the service price should be calculated on that basis. Why? A rational business pushes the use of each type of available financing until the associated costs, including risk, are equal at the margin. Debt finance has a lower tax burden, but is inherently riskier for a business, than equity. In a bad year, a dividend payment to the shareholders can be suspended, but interest payments are still due to the lenders. Furthermore, as a company increases its leverage, its lenders will demand a higher interest rate on the firm's debt, because there is a greater risk of default. The higher interest rate will apply not only to the new project, but to all the company's debt as it is rolled over. Thus, the cost of debt finance of a new investment may be much higher than the average debt service on existing assets. Therefore, the service price calculated using the latter is wrong. In theory, the marginal cost of debt finance should be as high as additional equity finance, funded through new share issues (or through retained earnings in the case of either a corporation or a non-corporate business). For these reasons, we determine the cost of marginal investment by assuming equity finance (which correctly reflects the cost of either debt or equity).

There are other reasons why the Treasury growth estimates may be low. Many models of the future effects of changes in tax policy make the fundamental mistake of trying to figure out where all the

saving needed to create the new capital investment will come from. That is, they attempt to write financial market and saving behavior constraints into the model that slow the adjustment process relative to the pace implied in the historical data. Even if the models forecast correctly how much additional capital would become profitable to employ, such limits built into the models may curb the expansion.

One typical mistake is to assume a closed economy (ignoring trade and capital flows to and from the rest of the world). In the past, swings in U.S. investment or changes in the federal deficit have been accommodated by international capital flows. We are not limited to domestic saving to pay for additions to the U.S. capital stock. The presence of a large international market for financial instruments is also the reason why there should be little change in interest rates to dampen the impact of the tax changes on investment. The changes are simply too small to have a major impact on global interest rates via the demand for and supply of credit. A more fundamental flaw in the reasoning is that interest rates generally move as a result of changes in the after-tax rates of return on physical capital (because investment in physical capital and equity are competing uses of saving). The market interest rates are not an exogenous force that moves for other reasons to impose an additional constraint on investment, so the modeler should not worry about them.

Many models drag unnecessary considerations into their analysis of the outcome of a tax change on investment behavior, considerations that tend to reduce the predicted effects of tax changes on investment. Among these concerns are: How will the tax change be financed, in the case of a tax reduction? Will the government cut spending to accommodate the tax cut, or keep spending, forcing a future tax increase? How will the fear of a future tax increase affect investors' decisions? Will additional borrowing raise interest rates? What will the Federal Reserve think about the expansion, and will it raise interest rates? Most of these and other similar considerations are either irrelevant to the analysis or fully accounted for in the historical data on which the model should be based.

The Panel Report does not reveal how much these issues affected the Treasury work. However, they have influenced the efforts of the Joint Tax Committee of the Congress (JCT) to build a model of the economic effects of tax changes. Concerns over other changes in government policy confronted savers and investors in the past, and any effect that they have on the adjustment process must already be reflected in the historical data. To build a further financial market limitation or behavior quirk into a forecast of a response to future tax changes, beyond what the data would predict, is an error. At least, it is an assertion by the modeler that behavior in the future is going to be different from that in the past, and that the modeler knows what that difference is and how to inject it into the prediction.

Indeed, the chief reason for constructing an overlapping generations model is to enable the modeler to indulge in such errors more easily. In such models, the modeler may readily assign different saving behaviors and different responses to changes in the incentive to save and invest to working age and retired generations. In a model driven by the historical record, which already reflects such differences, no such added imposition of assumptions by the modeler is needed, unless the composition of the population is shifting very rapidly, and if the generations actually behave very differently. This does not appear to be the case. Unfortunately, it is often asserted in such models that the young do all the saving, and the old dissave steadily over their remaining years, with varying amounts left for bequests. In reality, there is much saving done by the elderly, and the speculations of the modeling community as to bequests do not appear to be grounded in any testable theory.

In short, a simple calculation of the change in the service price of capital, based on equity finance, should give a good guide to the increase or decrease in the desired real capital stock. It should be assumed that the saving to fund the additional investment will be found, and that the investment and other adjustments to the real economy will proceed as quickly as in the past. There is no need for a

complicated financial market sector to the model to determine the speed of adjustment. Any such sector should be for the purpose of estimating how nominal prices and interest rates might be affected by the changes in the real economy, not how the financial sector would affect the real variables. On no account should a closed economy model with be taken seriously.

In the Appendix (p. 225), the Panel Report acknowledges, "Because the tax system is modeled in a stylized way in each of these models, and the models make simplifying assumptions about a variety of factors, they provide only rough guidance about how tax reforms might affect economic growth. Nevertheless, these models are representative of the types of models that are commonly applied in academic and government research." That is unfortunately all too true. In our view, real tax reform is being thwarted by models that are built to be convenient for the researchers, using inappropriate data and functional forms that are easy to obtain and work with, but that do not do a proper job of measuring what economic buttons were pushed by previous tax changes, and what impact future tax changes would have on the economy.

We need to develop better models of the impact of tax changes. The change in control of Congress in January is likely to spell the end of the House-mandated effort at dynamic analysis by the JCT, an effort that has been seriously flawed in any event. The Treasury recently began a dynamic analysis project under former Secretary John Snow. Treasury should abandon inadequate models from the past, and take an approach that is better informed by economic theory and the historical record. The Treasury has better access to current and historical tax data than any other research team. If it is willing to acknowledge the short-comings of much of the older academic work, and to strike out on its own to develop the correct tax and economic data bases, it will do the country a real service.

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