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**Article**

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# Taxpayer Behavior and Government Policy

Alan J. Auerbach\*

Taxpayers respond to government policies. These responses, in turn, can inform government policy design. The increasing fluidity of capital markets calls new attention to the impact and formulation of capital income taxation, in particular to the possible economic benefits of fundamental income tax reforms that would reduce the burdens and distortions imposed on capital income. Much of my recent research has focused on the interrelated topics of measuring agents' responses to capital income taxation, evaluating alternative tax systems, and considering how governments can and do respond to taxpayer behavior.

## Households, Firms and Capital Income Taxes

Capital gains taxes are often cited in relation to potentially large taxpayer responses. Because capital gains taxes are normally due only upon the voluntary sale of assets and can be avoided entirely when appreciated assets are held until a taxpayer's death, there is scope for considerable tax planning, including general avoidance of capital gains taxes and the timing of realized gains to coincide with temporary dips in tax rates. Indeed, the billions of dollars of capital gains realized annually present something of a puzzle, in light of theories suggesting that optimizing taxpayers should be able to avoid realizing net gains and take advantage of their ability to use a limited annual

amount of capital losses to shelter other taxable income.

In a joint paper with Leonard E. Burman and Jonathan M. Siegel<sup>1</sup>, I considered the capital gains realization behavior of taxpayers over the ten-year period 1985-94, focusing on the extent to which individuals engaged in tax avoidance techniques, notably the realization of capital losses to shield realized capital gains and other income. Our investigation was facilitated by the richness of our data set, which was highly stratified by income and provided information on all capital asset transactions. The results indicated that only about one-tenth of taxpayers exhibited net capital losses in a typical year, a finding consistent with an earlier one by James M. Poterba.<sup>2</sup> We also found, however, that the likelihood of having net capital losses in a given year, and the likelihood of *persisting* in this state from one year to the next, were both strongly related to wealth and to a constructed measure of taxpayer "sophistication," defined by evidence that the taxpayer engaged in short sales or traded in derivatives at least once during the sample period. These findings are consistent with tax avoidance activity being costly and more accessible to those with greater wealth and information.

If investors differ in their access to avoidance technology, then we would also expect them to differ in their responses to changes in tax rates. Using the same data set, Siegel and I estimated models of capital gains realization behavior, distinguishing responses to permanent and transitory tax rates changes.<sup>3</sup> Our basic results were consistent with those in earlier studies<sup>4</sup>, estimating substantially larger behavioral elasticities to transitory changes than to permanent ones. But

we also found strong differences from these basic results when looking exclusively at the taxpayers that our earlier paper had found to be more likely to engage in tax avoidance activity — the rich and "sophisticated." For these two groups, responses to permanent tax rates changes were even smaller, and responses to transitory tax rate fluctuations even larger — findings consistent with this group using timing as yet another tax avoidance mechanism and, as a result, facing a lower overall burden of taxation and hence being less sensitive to permanent tax rates changes.

Just as challenging to understand as the determinants of capital gains realization and avoidance behavior is the impact of dividend taxation on corporate financial and investment decisions. Through the years, the payment of dividends in the face of a sizable tax penalty has generated considerable theorizing, with implications regarding the extent to which dividend taxes distort behavior rather than simply being capitalized into the values of corporate shares. One important prediction of the "new view" that emphasizes capitalization is that firms rely heavily on retained earnings as the marginal source of equity finance.<sup>5</sup> Testing this theory directly using a panel of U.S. nonfinancial corporations, Kevin A. Hassett and I<sup>6</sup> found significant heterogeneity, with two distinctly different types of firms likely to rely much more heavily than others on retained earnings. Firms in one group have relatively weak capital market access and so must rely on internal funds, while a second group of much larger firms have stronger access to capital markets but appear to rely more heavily on fluctuations in borrowing to complement the use of internal funds. By

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implication, dividend taxes are likely to have a much weaker impact on marginal investment decisions by these two groups of firms than is implied by theories that ignore the use of retained earnings as a marginal source of funds. This is because reductions in dividend taxes also raise the cost of retaining earnings for these firms.

## Tax System Design

For many years, economists have discussed and debated the potential benefits of a shift from income taxation to consumption taxation. While much of the discussion has related to the effects on capital accumulation (see the discussion below), another possible benefit of consumption taxation lies in its obviating the need to measure capital income. This attribute has assumed greater prominence as financial innovation has given us tax instruments that make it ever harder to identify not only the magnitude of capital income, but also when it occurs, where it is earned, and to whom it should be attributed. But, drawing on our own earlier related papers on capital gains taxation<sup>7</sup>, David F. Bradford and I<sup>8</sup> showed that the key element of consumption taxation that effectuates this simple treatment of capital income is the taxation of cash flows, not the elimination of a tax burden on capital income. By relying on cash-flow taxation, we showed, it is possible to implement a tax that imposes the same burden on capital income as a traditional income tax without the need to *measure* capital income. That is, leaving aside the question of whether it would wish to do so, the government can impose a capital income tax without measuring capital income.

Another consequence of financial innovation has been the growth of the financial services sector, prompting one to consider the appropriate treatment of financial services under a consumption tax, notably the value added tax (VAT). Some approaches exempt financial activities entirely, while others would apply special rules to financial companies. Yet, in considering the basic principles underlying consumption taxation, Roger H. Gordon and I found that these principles gen-

erally imply that financial services should be subject to the same rules under the VAT as other activities.<sup>9</sup>

## Estimating the Impact of Tax Reform

Realistic evaluation of a shift to consumption taxation requires one to consider how broad the new tax base will be, how progressive the tax system will be, and what type of transition relief will be provided to those adversely affected by the reform. Using an intertemporal overlapping-generations general equilibrium model with twelve lifetime income classes in each age cohort, David Altig, Laurence J. Kotlikoff, Kent A. Smetters, Jan Walliser, and I estimated the transition and long-run gains in welfare and output from a variety of tax reforms, starting from the current income tax.<sup>10</sup> We found that significant increases in output could accompany the shift to a consumption tax, but that most of the gains would be forgone if the new tax system maintained the original degree of progressivity and provided full transition relief to holders of existing assets.

Dynamic general equilibrium models are also useful for analyzing the effects of less sweeping changes in tax policy. Recently, I considered the impact of the 2001 reduction in U.S. federal income taxes put forward by President Bush, the Economic Growth and Tax Relief Reconciliation Act.<sup>11</sup> The task of determining the legislation's economic impact was complicated by several factors. First, the legislation included a variety of "phase-in" provisions that caused incentives to vary over time. Second, the tax cut was scheduled to "sunset" after ten years, but taxpayers might reasonably have discounted the likelihood that the sunset would occur. Finally, the tax cut was substantial, leaving taxpayers to infer what further fiscal actions would occur to compensate for the reduction in revenues. My results suggested that the Bush tax cut should have increased labor supply, output, and saving in the short run. These effects would likely be reversed in the long run, though, because of accumulating deficits. But the magnitudes of both short-run and long-run responses depend on unob-

served taxpayer expectations about government policy responses, such as how long the tax cut will last and the extent to which the larger deficits will lead to higher taxes or lower government spending. In other recent work, I have estimated these responses<sup>12</sup>, finding that legislated changes in both revenues and spending react significantly to near-term estimates of the federal budget surplus, with these relationships present in both Democratic and Republican administrations over the past two decades.

An interesting by-product of this general equilibrium analysis of the 2001 Bush tax cut is that it provides a measure of the tax cut's "dynamic scoring"—the estimated feedback effects of taxpayer behavior on revenue. By comparing the revenue losses generated by the model with those that would occur without any behavioral response, one can estimate how much of the static revenue loss would be recouped by expanded economic activity.<sup>13</sup> The simulations suggest that dynamic scoring has a sizable impact on estimated short-run revenue losses, even though the tax cut's impact on output and national saving is still negative in the long run. As with the macroeconomic effects of the policy, estimates of dynamic revenue responses depend on assumptions about future government policy reactions highlighting one of the challenges to the further implementation of dynamic scoring.

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<sup>1</sup> A. J. Auerbach, L. E. Burman, and J. M. Siegel, "Capital Gains Taxation and Tax Avoidance: New Evidence from Panel Data," NBER Working Paper No. 6399, February 1998, and in *Does Atlas Shrug? The Economic Consequences of Taxing the Rich*, J. B. Slemrod, ed., Cambridge, MA: Harvard University Press, 2000.

<sup>2</sup> J. M. Poterba, "How Burdensome are Capital Gains Taxes?" *Journal of Public Economics*, 33 (July 1987) pp.157-72.

<sup>3</sup> A. J. Auerbach and J. M. Siegel, "Capital-Gains Realizations of the Rich and Sophisticated," NBER Working Paper No. 7532, February 2000, and in *American Economic Review*, 90 (May 2000), pp. 276-82.

<sup>4</sup> See L. E. Burman and W. C. Randolph, "Measuring Permanent Responses to

*Capital-Gains Tax Changes in Panel Data,* American Economic Review, 84 (September 1994), pp. 794-809.

<sup>5</sup> A. J. Auerbach, "Taxation and Corporate Financial Policy," NBER Working Paper No. 8203, April 2001, and in Handbook of Public Economics, 3, A. J. Auerbach and M. Feldstein, eds., Amsterdam: Elsevier/North-Holland, 2003.

<sup>6</sup> A. J. Auerbach and K. A. Hassett, "On the Marginal Source of Investment Funds," NBER Working Paper No. 7821, August 2000, and in Journal of Public Economics, 87 (January 2003), pp. 205-32.

<sup>7</sup> A. J. Auerbach, "Retrospective Capital Gains Taxation," NBER Working Paper No. 2792, December 1988, and in American Economic Review, 81 (March 1991), pp. 167-78; D. F. Bradford, "Fixing Capital Gains: Symmetry, Consistency and Correctness in the Taxation

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<sup>8</sup> A. J. Auerbach and D. F. Bradford, "Generalized Cash-Flow Taxation," NBER Working Paper No. 8122, February 2001; forthcoming in the Journal of Public Economics.

<sup>9</sup> A. J. Auerbach and R. H. Gordon, "Taxation and Financial Services under a VAT," American Economic Review, 92 (May 2002), pp. 411-16.

<sup>10</sup> D. Altig, Alan J. Auerbach, L. J. Kotlikoff, K. A. Smetters, and J. Walliser, "Simulating U.S. Tax Reform," NBER Working Paper No. 6248, October 1997, and in American Economic Review, 91 (June 2001), pp. 574-95.

<sup>11</sup> A. J. Auerbach, "The Bush Tax Cut and National Saving," NBER Working Paper

No. 9012, June 2002, and in the National Tax Journal, 55 (September 2002), pp. 387-407.

<sup>12</sup> A. J. Auerbach, "Is There a Role for Discretionary Fiscal Policy?" NBER Working Paper No. 9306, November 2002, and in Rethinking Stabilization Policy: Proceedings of a Symposium Sponsored by the Federal Reserve Bank of Kansas City, Federal Reserve Bank of Kansas City, Kansas City, MO, 2003; A. J. Auerbach, "Fiscal Policy, Past and Present," NBER Working Paper No. 10023, October 2003, and in Brookings Papers on Economic Activity, 1 (2003), pp. 75-138.

<sup>13</sup> See A. J. Auerbach, "Dynamic Revenue Estimation," Journal of Economic Perspectives, 10 (Winter 1996), pp. 141-57.

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