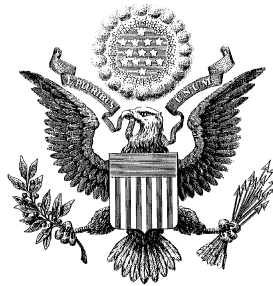


TAX REDUCTION AND ECONOMIC WELFARE

by

**Richard K. Vedder and
Lowell E. Gallaway**

**Distinguished Professors of Economics,
Ohio University**



**Prepared for the
Joint Economic Committee
Vice Chairman Jim Saxton (R-NJ)**

April 1999

Joint Economic Committee
1537 Longworth House Office Building
Washington, DC 20515
Phone: 202-226-3234
Fax: 202-226-3950

Internet Address:
<http://www.house.gov/jec/>

TAX REDUCTION AND ECONOMIC WELFARE

INTRODUCTION

As discussion continues over the federal government's budget for fiscal year 2000, a large number of political leaders are calling for some form of tax relief. Three factors are contributing to this push for tax reduction: first, the federal budget is in surplus for the first time in decades. It is financially possible to have tax reduction without incurring the political problems associated with budget deficits and/or forced reductions in federal expenditure. Second, federal tax revenues are at a historic high in relation to the nation's output, and many taxpayers feel the federal government is imposing an increasingly unreasonable burden on them, thereby increasing the political appeal of a tax cut. Some areas of taxation - e.g., the taxation of savings and capital - are particularly high and burdensome. Third, some advocates of tax reduction feel that if federal revenues are not soon reduced, that political forces will operate to increase spending, crowding out private sector activity. History suggests that this possibility is indeed very real.¹

This study argues that tax reduction would have very significant positive welfare effects on the American economy. Based on previous research by a large number of scholars, it is reasonable to foresee the equivalent of tens of billions of dollars of new output being created with a significant reduction in taxes. While it is true that from a Keynesian, demand-side perspective, the case for a tax reduction is rather weak, there are compelling arguments that suggest that lowering taxes would promote economic welfare. A tax reduction that approximates the magnitude of the 1998 or projected 1999 budget surplus would provide benefits to Americans measured in tens of billions of dollars annually.

THE ECONOMIC IMPACT OF A TAX CUT: THE DEMAND SIDE

What would be the economic impact of a tax reduction on the aggregate demand for goods and services? Standard Keynesian analysis would predict that a tax reduction would increase disposable income, leading to an increase in consumption spending, the precise amount depending on the marginal propensity to consume. The initial increase in autonomous consumption would be subject to an expenditure multiplier, leading to a significant increase (conceivably measured in the hundreds of billions of dollars) in the equilibrium level of money or nominal total output. Traditional Keynesian analysis suggests that such fiscal stimulus potentially could translate into significantly higher real output of goods and services as well.

¹ See our "Budget Surpluses, Deficits and Government Spending," Study, Joint Economic Committee of Congress, December 1998.

There are a number of problems with this analysis, however. First, the size of initial expenditure increase depends at least in part of the nature of the tax reduction. More important, there is the real possibility of some “crowding out” of private expenditure associated with some increase in interest rates associated with a reduction or elimination of the budget surplus - the previous positive amounts of government savings would disappear, leading the supply of loanable funds in the economy to fall. Thus, the “multiplier” might be partly illusionary.

Most critically, the economy is already at what most persons would describe as effective full employment, with the reported unemployment reflecting normal frictional and structural forces that inevitably lead some persons to be out of work at any given point in time. With the economy operating essentially at full capacity, any stimulus to aggregate demand would likely largely be reflected in inflationary pressures. In any case, the modern historical experience suggests that lowering unemployment below its “natural rate” works, at best, only temporarily. Current unemployment is believed to be at or even below that natural rate. Thus the case for a tax cut is *not* good at the present if the goal is merely to provide stimulus to aggregate demand.

THE CASE FOR TAX REDUCTION: ELIMINATION OF DEAD WEIGHT LOSSES

Yet there are other compelling arguments that support tax reduction. It is a standard proposition in public finance that the imposition of taxes imposes welfare costs on the population. Taxes impose an “excess burden” or a “deadweight loss” on the economy. Economic activity is based on mutually agreeable exchange, and taxes tend to reduce the amount of that exchange, potentially lowering output and the satisfaction of consumers and producers.

Consumers derive what economists call “consumer surplus” to the extent they are able to buy things for a price less than what they are willing to pay. Suppose the price of computer discs is \$1.00. Some purchasers of those disks would have been willing to pay \$1.50 to buy a disk; those individuals derive 50 cents in satisfaction from getting the disk for less than they were willing to pay. Similarly, there is likely some “producer surplus” from trade as well: producers obtain \$1 from selling disks, when in fact they would have supplied at least some discs for less, for example, 90 cents (the difference, 10 cents, is the amount of producer surplus). Taxation reduces consumer and producer surplus, and thus economic welfare.

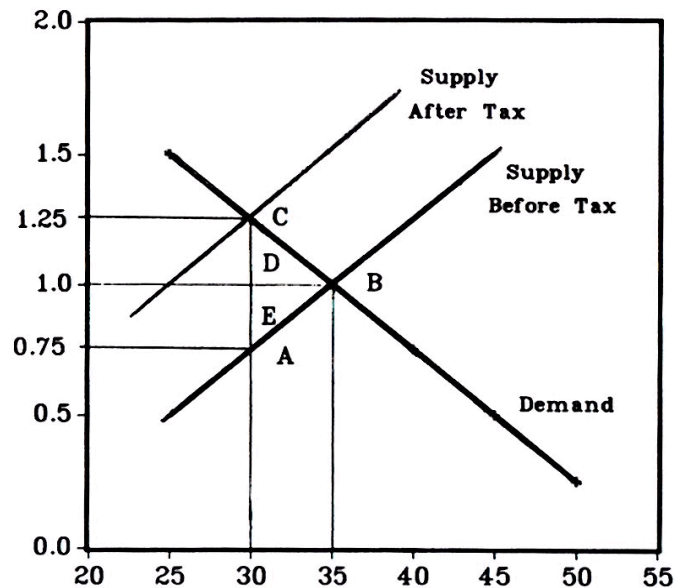
Figure 1 shows the principle of the deadweight loss from taxation, where the tax is an excise tax imposed on some good. Originally, producer willingness to supply the good is denoted by the curve “supply before tax.” The demand curve indicates the quantity of the good, say computer disks, that consumers will purchase at various prices. Initially, the price will be \$1.00 and the quantity sold equal to 35 million units. Suppose a 50 cent excise tax is levied on the manufacturers of the disks. That leads to a leftward shift in the supply curve. The demand and supply curves now intersect at point C, with a market price of \$1.25 and a quantity of 30 million units. In this example, half of the burden of the tax falls initially on the producers (who net only 75 cents per disk after paying the 50 cent excise tax).

In this case, the government will derive \$15 million in revenue (50 cents per disk times 30 million disks), half coming from the increased price paid by buyers, and half from the reduced per unit revenues received from sellers as a consequence of the tax. Yet the small triangles D and E in the diagram represent a deadweight welfare loss from the reduction in trade. The area D is reduced consumer satisfaction associated with a fall in consumer surplus arising from reduced sales of the product at the higher \$1.25 price. The area E represents reduced producer surplus arising from lower product sales and reduced net prices received by the manufacturer.

The example above applied to an excise tax on a consumer good. The same principle, however, applies to other taxes. For example, if the new tax were an income tax levied on productive services (e.g., as manifested in worker wages), there likely would be some reduction in labor supply, and a loss of consumer and producer surplus as users of productive services have to pay higher wages and workers receive lower wages in an after tax sense. The principle involved is the same. The lost of welfare is felt directly by workers (who receive lower net wages) and employers (who pay higher wages), but the impact is precisely the same as with the computer disc example above.

How large are the deadweight losses associated with taxation? In the example above, the area of triangles D and E are collectively somewhat less than 10 percent the size of the area representing the amount of money raised. Early estimates of deadweight losses by economists were of about that magnitude. For example, in the classic pioneering study, Arnold Harberger estimated the losses to be under five percent of tax revenues.² Other scholars, replicating and improving upon Harberger's methodology, concluded that deadweight losses tended to be larger.³ For example, Edgar K.

Figure 1. Impact of Tax on Economic Activity: Deadweight Loss



² Arnold Harberger, "Taxation, Resource Allocation, and Welfare," in John Due, ed., *The Role of Direct and Indirect Taxes in the Federal Revenue System* (Princeton, NJ: Princeton University Press, 1964).

³ For an excellent study discussing the evolution of the "Harberger triangles" and the measurement of deadweight loss, see James R. Hines, Jr., "Three Sides of Harberger Triangles." This study analyzes the historical origins of our knowledge about deadweight loss, and details a more comprehensive literature than contained in this study. Cambridge, MA: National Bureau of Economic Research (NBER), Working Paper W6852, November 1998. This and other NBER papers mentioned are obtainable at <http://www.nber.org>.

Browning, who in a 1976 study found that deadweight losses were typically from nine to 16 percent of tax revenues, by 1987 had concluded that they ranged widely between 10 and 300 percent.⁴ Most of the early studies (e.g., Harberger, Browning) used partial equilibrium analysis, ignoring the secondary and tertiary effects that a given tax change has on various economic variables. A number of other studies using a more comprehensive general equilibrium approach found more substantial deadweight losses than the earliest studies.⁵ For example, Ballard, Shoven and Whalley concluded deadweight losses typically ranged between 15 and 50 percent of tax revenues, while Charles Stuart concluded they probably exceeded 50 percent.⁶

A criticism of these studies is that they may understate some of the behavioral responses of taxpayers to changes in levies. To cite one example: there is some compelling evidence that lowering tax rates might put political pressure on governments to constrain relatively less productive public sector spending.⁷ In that connection, we have recently estimated that higher taxes lead to a significant reduction in economic growth, which can have the impact of lowering incomes by about 38 cents for each dollar of tax collected.⁸ This conclusion fits in with that of many other studies of the tax-growth relationship, for example the recent work of Engen and Skinner.⁹

The most comprehensive analysis of the impact of taxation on deadweight losses, however, has been done recently by Martin Feldstein of Harvard, who is also President of the National Bureau of

⁴ See Edgar K. Browning, "The Marginal Cost of Public Funds," *Journal of Political Economy*, April 1976 and his "On the Marginal Welfare Cost of Taxation," *American Economic Review*, March 1987.

⁵ See, for example, Alan Auerbach, "The Theory of Excess Burden and Optimal Taxation," in Auerbach and Martin Feldstein, eds., *Handbook of Public Economics*, Vol. 1, North-Holland Publishers, 1985; Charles Stuart, "Welfare Costs per Dollar of Additional Revenue," Charles Stuart, "Welfare Costs per Dollar of Additional Tax Revenue in the United States," *American Economic Review*, June 1984; Charles J. Ballard, John Shoven, and J. Whalley, "General Equilibrium Computations of the Marginal Welfare Costs of Taxation in the United States," *American Economic Review*, March 1985.

⁶ The magnitude of deadweight loss no doubt varies considerably with the type of tax. While some find very high deadweight losses with the personal income tax, the loss with corporate taxes may be lower. Austan Goolsbee estimates those losses to be only about 5-10 percent. See his "Taxes, Organizational Form, and the Deadweight Loss of the Corporate Income Tax," NBER Working Paper W6173, November 1997.

⁷ The most recent study making this point is Gary S. Becker and Casey B. Mulligan, "Deadweight Costs and the Size of Government," NBER Working Paper No. W6789, November 1998. On the theory and some empirical evidence regarding whether governmental restraint is best achieved by tax reduction or deficit reduction, see Dwight Lee and Richard Vedder, "Friedman Tax Cuts vs. Buchanan Deficit Reduction as the Best Way of Constraining Government," *Economic Inquiry*, October 1992.

⁸ See our "Government Size and Economic Growth," Study, Joint Economic Committee of Congress, December 1998.

⁹ Eric M. Engen and Jonathan Skinner, "Taxation and Economic Growth," *National Tax Journal*, December 1996. For a less technical discussion relating specifically to the U.S., see Richard Vedder, "State and Local Taxation and Economic Growth," Joint Economic Committee Study, December 1995.

Economic Research, in part with other collaborators.¹⁰ Looking at the 1993 federal income tax increase, Feldstein found that the tax imposed enormous losses per dollar of revenue raised. While the tax on upper income Americans raised about \$8 billion annually, Feldstein predicted that tax repeal would reduce deadweight losses by about \$24 billion annually. Moreover, Feldstein found that an across-the-board income tax cut, as some are advocating, would in general reduce deadweight losses by nearly two dollars for each dollar of tax revenue lost.

The National Bureau of Economic Research study directed by Prof. Feldstein uses that organization's powerful TAXSIM econometric model to evaluate the impact of tax changes. Feldstein argues that previous authors have failed to take account the impact that taxes have on schemes for tax avoidance, such as converting taxable wage and salary income into such non-taxable fringes as employer-paid health insurance. Also, certain characteristics of the federal tax laws lead to shifts in consumption patterns, such as a switch from rental to owner-occupied housing. These non-neutral aspects of the tax code impose additional welfare burdens that are mitigated by reductions in tax rates. Feldstein also argues that the earlier partial-equilibrium studies in the Harberger tradition understated the true elasticity of labor supply. In other words, higher taxes have a more debilitating impact on the willingness of workers to provide their labor services than has been commonly assumed.

THE IMPACT OF TAX REDUCTION ON THE AMERICAN ECONOMY

Given the substantial body of research on the adverse effects that taxation has on economic welfare and on output, what would be the expected effects of a tax reduction implemented in the coming year? Again, we emphasize that such an increase should not be implemented to stimulate aggregate demand and, indeed, it is even conceivable that the Federal Reserve might have to temporarily offset any demand stimulus that such a tax reduction would have with appropriate monetary measures. Yet the deadweight loss and tax/growth literature suggests that any undesirable inflationary impact that a tax cut would have from increasing aggregate demand should be offset soon, if not simultaneously, by increases in aggregate supply arising from the reduction in deadweight losses and the stimulus to the formation and use of human and physical capital. The inflationary effects of higher aggregate demand would be offset (and perhaps more than offset) by the deflationary effects of higher aggregate supply.

While estimates of the welfare effects of reduced taxation vary considerably, there are quite a number of estimates that would suggest that economic gains would be equal to about 40 cents for each dollar of reduced tax revenue. Our reading of the Engen and Skinner estimates based on international cross-sectional analysis suggests that the U.S. might obtain perhaps 30 cents output gain

¹⁰ See, for example, Martin Feldstein and Daniel Feenberg, "The Effect of Increased Tax Rates on Taxable Income and Economic Efficiency: A Preliminary Analysis of the 1993 Tax Rate Increases, in James Poterba, ed., *Tax Policy and the Economy* (Cambridge, MA: MIT Press, 1996); Feldstein, "Tax Avoidance and the Deadweight Loss of the Income Tax," Cambridge, MA: NBER Working Paper W5055, March 1995; Feldstein, "How Big Should Government Be," NBER Working Paper W5868, December 1996.

per dollar if the tax were in the form of marginal income tax rate reductions; our own estimate suggests a 38 cents gain. The midpoint of the Ballard, Shoven and Whalley estimates is 33 cents. Stuart puts the loss at somewhat over 50 cents. The midpoint of this range of estimates (30 to 50 cents per dollar) is 40 cents. To be sure there are still higher estimates (some of Browning's, Feldstein's), as well as lower ones (e.g., the original Harberger, Goolsbee), but the 40 cent estimate is probably approximately a midpoint estimate of the many serious studies performed. It is important to note that *all* the studies show some deadweight loss from taxation - that is one of the most well established theoretical and empirical propositions in economics. The 40 cent welfare loss per tax dollar estimate is a reasonable midrange evaluation of a number of studies of the issues using different methodologies, data sets, and time periods.

The 1999 budget surplus probably will approximate \$80 billion.¹¹ A tax reduction of that magnitude would have a positive impact on economic welfare and growth of about \$32 billion annually, based on the 40 percent midpoint estimate discussed above. The present value of the 10 year effects of such a tax reduction using an appropriate discount rate would be about \$287 billion.¹² There are few other individual policy decisions that Congress could make that would have that much of a positive impact on the American economy.

The impact of a tax reduction, of course, would vary with the type of change that occurs in the tax law. Tax reductions that impact positively on economic behavior are likely to have more effect, for example, than reductions that have little impact on incentives.¹³ In general, tax reduction should strive to increase tax neutrality, that is reduce tax-induced biases that distort the allocation of resources. In general, savings and investment are taxed more in the American economy than are labor earnings, so positive tax reform optimally would address this imbalance (e.g., expanding IRA or other savings vehicles, reducing estate taxes, etc.). Also, in general, marginal income tax rate reductions are superior in their positive economic effects to tax credits designed to encourage specific forms of behavior but which leave marginal rates unchanged. In the context of the discussion above, marginal tax rate reductions increase labor supply, reducing the deadweight losses associated with income taxation. Tax credits, which do not impact on marginal behavior, do not have the same supply effect. Indeed, tax credits can have adverse effects to the extent that they reduce the neutrality of the tax code with respect to resource allocation.

¹¹ The official OMB estimate is \$79.3 billion. Examination of Monthly Treasury Statements for the first four months of this fiscal year suggests that this estimate may well significantly understate the surplus. For the past several years, final budget figures have shown smaller deficits or larger surpluses than predicted at the beginning of the fiscal year or at the time of the President's submission of his budget.

¹² This would be the case if the deadweight losses grow 3.5 percent a year with economic growth and the rate of interest is 5.5 percent, approximately equal to the recent interest rate of federal long term obligations as of this writing.

¹³ For a far more detailed discussion of what "good" tax reduction might contain, see our "Underlying Principles of Tax Policy," Study, Joint Economic Committee of Congress, September 1998.

CONCLUSIONS

There is considerable evidence that taxes impose a deadweight loss or burden on members of society. Reductions in taxes, then, reduce this burden and thus improve the economic welfare. While the precise magnitude of this excess burden varies with time, place and the form of taxation, it is probably a reasonable generalization to conclude that about 40 cents of each dollar of taxes at the margin represents a deadweight loss to society. If a tax reduction equal to the budget surplus contemplated for fiscal year 1999 were implemented, society would derive benefits worth about \$32 billion annually, or nearly \$120 per person (\$480 for a family of four). A tax reduction of \$80 billion (less than five percent of total federal tax revenues) would provide economic benefits over the next decade conservatively valued at \$287 billion, discounting future benefits to the present using an appropriate interest rate. If Martin Feldstein's analytically strong evaluation is correct, that present value rises dramatically, to perhaps over one trillion dollars. Thus a strong case can be made for significant federal tax reduction as part of a fiscal plan for the next several years.