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LETTER OF TRANSMITTAL

November 6, 2000

To the Members of the Joint Economic Committee:

Transmitted hereby is a *Compendium of Staff Studies on Tax Policy.* It is comprised of eight Joint Economic Committee studies.

The views expressed in this compendium are those of the authors and do not necessarily represent the views of the individual Members of the Joint Economic Committee.

Sincerely,

Jim Saxton,
Vice Chairman.

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TAXATION AND CURRENT ECONOMIC POLICY

INTRODUCTION

The recent projection of Federal budget surpluses by both the Congressional Budget Office (CBO) and the Office of Management and Budget (OMB) has stimulated discussion about the role of tax policy in the current macroeconomic policy mix. After highlighting some key premises underlying pro-growth tax policy, the paper reviews current circumstances, explains why tax distortions have increased in recent years, and makes the case for tax rate reduction. Reduction in tax rates can take several forms including uniform across-the-board rate reduction, liberalized IRA deductions, and other measures to reduce the current multiple layers of taxation on saving or investment.

PREMISES

Pro-growth macroeconomic tax policy should be premised on a number of key considerations:

- ***The current tax structure imposes an excessive burden or "welfare cost" on the economy***: Our current tax code is economically counterproductive in that the cost of taxation involves not only the direct, obvious revenue costs, but additional costs of lost income and output. Estimates suggest that every additional dollar of tax revenue costs the economy significantly more than one dollar; substantial deadweight losses are evident. For example, Martin Feldstein estimates that an additional increase in tax revenue "achieved by a proportional rise in all personal income tax rates involves a deadweight loss of two dollars per incremental dollar of revenue."[1] In short, deadweight losses of our current tax code are considerable. This suggests that additional public spending should occur only if the benefits it produces exceeds the full costs of those benefits, including the deadweight loss of collecting the revenue. This also suggests that tax reduction would reduce some of these excessive costs. Feldstein provides estimates of a substantial reduction of deadweight losses of the existing tax system brought about by a reduction in tax rates.[2] In short, current levels of taxation impose heavy costs or excessive burdens on the economy together with related costs of compliance and complexity. These costs have important negative consequences for long-term economic growth. This is one of the reasons that reductions in the levels of tax burdens would improve long-term macroeconomic performance.

- ***Tax rate changes can impact economic incentives***: Changing marginal tax rates can impact a number of relative prices and consequently affect behavioral choice, resource allocation, and real economic activity. In particular, tax-induced relative

[1] See, for example, Martin Feldstein, "Tax Avoidance and the Deadweight Loss of the Income Tax," NBER Working Paper No. W5055, March 1995, p.37.

[2] Feldstein, pp.32-3.

price changes can affect choices between work and leisure, consumption and future consumption, and taxable and non-taxable activity. Similarly, qualities that are difficult to measure such as ambition, motivation, the intensity of work effort, as well as other activities such as innovation, managerial skills, and entrepreneurial activity can also be affected by tax rate changes. In short, a full range of behavioral responses of taxpayers to changes in tax rates is possible. Changes in marginal tax rates, therefore, can simultaneously impact the supply of various factors of production such as labor, capital, and entrepreneurship, and consequently can affect productive capacity, aggregate supply, and long-term economic growth. Pro-growth tax policy should be designed to maximize these potentially favorable growth effects. The implication is that marginal tax rate cuts are preferred to various tax credits that have little impact on these important growth incentives.

- ***Tax policy should focus on long-term economic growth rather than on short-term aggregate spending or stabilization***: By focusing on expanding various factors of production and thereby fostering aggregate supply rather than on managing aggregate demand or spending, tax policy can promote long-term economic growth. Aggregate spending, after all, is and will continue to be largely determined by monetary policy. In short, in order to raise living standards in the long run, tax policy should emphasize the primacy of production and aggregate supply.

  Similarly, tax policy's long-run growth orientation should preclude attempts to actively use tax changes to "fine tune" or stabilize the economy over the business cycle. Pro-growth tax policy improves efficiency and incentives, and removes distortions and deadweight losses, thereby impacting aggregate supply rather than manipulating aggregate demand.

- ***Tax rates should be distinguished from tax revenues***: Tax rates and tax revenues are distinctly different variables. Changes in marginal tax rates should be thought of as changes in relative prices affecting choice, resource allocation and real economic activity rather than as revenue or income changes. In short, these rate changes impact incentives and behavior and therefore are of utmost importance to growth advocates.

  Tax revenue, on the other hand, is the product of the tax rate multiplied by the tax base. As such, changes in tax revenues are correctly interpreted as changes in spending or purchasing power. Understandably, changes in tax revenues are of utmost interest not so much to growth-incentivist advocates, but to those interested in the budget process and the financing of government purchasing or spending powers.

  When the incentive effects of particular tax rate changes are correctly measured and properly taken into account (as in dynamic scoring models), changes

in tax revenues and tax rates may not be highly correlated and may possibly move in opposite directions. Accordingly, accounting for potent incentive effects of well-designed pro-growth tax rate cuts can result in substantially less revenue loss than static revenue scoring methods would suggest.

- ***Tax cuts can work to constrain government spending growth***: Tax cuts can help to constrain the growth of government spending, thereby both limiting the size of government and encouraging economic growth. Government spending together with the financing it necessarily entails, after all, is the fundamental public sector burden on the overall economy. Actions limiting the size of government not only minimize financing burdens, but enable a larger share of economic resources to be more usefully employed in the more efficient private sector, thereby enabling the economy to grow more rapidly than would otherwise be the case.[3] Tax cuts can help to accomplish this limitation of government spending in a number of ways:

  - ***By constraining the key financing source for government spending***: Government normally has incentives to spend all available tax revenue (and then some). By constraining funding, tax cuts limit government's primary input or its key source for spending.

  - ***By lessening the budget surplus and thereby removing the temptation for more government spending.*** Limiting spending can work directly by constraining tax revenue as described above, or indirectly by reducing the existing pool of unclaimed revenue. Because government has incentives to spend existing unclaimed revenues, reduced surpluses lessen the incentive to spend. Thus, by lessening budget surpluses, tax cuts can reduce the temptation for additional government spending.

  - ***By garnering the support of citizens necessary for the backing of spending restriction.*** Given the presence of special interests with a strong appetite for additional public spending, tax cuts can serve as a counterweight to the influence of these special interests in the political process. Without such counterweight, political pressures would weigh in the direction of more public spending. Thus, tax cuts can be used to muster the support of citizens necessary to support spending restraint.

[3] For a discussion of the relationship between government spending and economic growth, see James Gwartney, Robert Lawson, and Randall Holcombe, "The Size and Functions of Government and Economic Growth," Joint Economic Committee, April 1998.

➤ ***By bolstering economic growth and thereby lessening the need for certain categories of government spending*** (such as unemployment insurance or income support programs).

CURRENT REASONS TO REDUCE TAX RATES

Given these key premises of pro-growth tax policy, there are several reasons, including the following, that support tax relief at this time :

- ***Marginal tax rates have increased for many taxpayers in recent years***: While major elements of the income tax code are indexed for inflation, as real incomes rise, each year more and more taxpayers continue to be pushed into higher tax brackets. The result of this "real bracket creep" is to place larger and larger proportions of taxpayers in higher tax brackets, thereby broadening the disincentive effects of higher marginal tax rates.[4] Additionally, marginal rate increases for some tax brackets were legislated in the budget bills of both 1990 and 1993. Furthermore, marginal rates on other forms of federal taxation (such as the payroll tax) have gradually increased over time, buttressing a higher overall marginal rate structure of federal taxation. While these considerations have not resulted in uniform marginal tax increases for each taxpayer, all taxpayers would still benefit from across-the- board tax rate reduction. Moreover, marginal income rate reduction is essential now to reverse the backsliding that has occurred both because of real bracket creep and legislated marginal tax increases. Because of the structure of the tax code, it is essential for Congress to periodically cut taxes to restore those rates that promote incentives and foster growth.

- ***Federal tax revenue as a percent of GDP (or the federal tax burden) has increased to historic highs in recent years***: During the current expansion, federal tax revenues have grown significantly faster than the macroeconomy, placing ever-higher burdens on many of those paying taxes. Higher and higher shares of national income are being devoted to paying federal taxes. Not only is the proportion of federal tax revenue to GDP at the highest levels since World War II, but the President's budget projects this tax revenue-to-GDP ratio to remain at or near record levels throughout the entire budget forecast horizon.[5] In short, tax policy is growing more restrictive and burdensome on the overall economy from both the average and marginal rate

[4] Currently referred to as "real bracket creep," the phenomenon of economic expansion generating rapid revenue growth resulting in sizable budget surpluses at full employment was earlier called "fiscal drag" and was part of the rationale used to justify the Kennedy tax cut in the 1960s.

[5] Similarly, federal income taxes as a percentage of GDP are also at record post-war levels and are projected to remain at or near these record levels throughout the President's budget forecast horizon. Similar statements apply to federal payroll taxes.

perspectives as well as from the perspective of welfare costs. Accordingly, a tax rate reduction to relieve some of this increased excess burden and thereby promote efficiency and growth is most appropriate at this time.

- ***Tax rate reduction would help to sustain essential economic growth***: Marginal income tax rate cuts would enhance incentives to work, save, invest, and innovate, thereby encouraging continued economic expansion. Efforts to sustain economic growth are critically important at this juncture for several reasons. In addition to a number of well-known domestic benefits, continued U.S. economic growth is particularly important to the vitality of the global economy. As the world's largest economy and a major export market for many countries, protracted U.S. growth is essential for the global expansion to continue, particularly given the persistent weakness in Japan and in many of the world's emerging markets. An uninterrupted U.S. expansion could provide the stable backdrop needed to allow many of these countries to make necessary long-term structural adjustments.

  Furthermore, continued U.S. economic growth provides the best foundation for policies to save and/or reform social security and medicare. Such growth will lend the time essential to carefully prepare appropriate responses to these important problems. An interruption in the expansion could create obstacles to needed bipartisan solutions to these problems. For these reasons, tax policy involving tax cuts to nurture and sustain our economic expansion is most appropriate.

- ***Tax cuts could help constrain the current pressure for more federal government spending, thereby both limiting the size of government and helping to sustain the U.S. economic expansion***: Tax cuts can work to limit government spending growth in coming years by constraining such spendings' key source of finance. Tax cuts can also work to limit spending growth by lessening budget surpluses, thereby reducing the temptation of government to spend such monies. Additionally, tax cuts can act as an incentive to taxpayers to restrain their demands for more government spending. Such tax-induced spending restraint helps to promote continued economic expansion in part by reducing the excess burden of taxes and government spending.

- ***Tax cuts can help to restore rationality to tax policy***: By the mid-1980s, a consensus had emerged among most economists and tax experts that proper reform of the U.S. tax code should entail lowering marginal tax rates and broadening the tax base. They recognized that tax loopholes and tax code complications spawned by years of special interest tax lobbying should be minimized or removed in favor of a cleaner, simpler code with fewer brackets and lower rates. Conservative economists as well as liberal economists from the Brookings Institute largely agreed on these principles which were partially incorporated into the tax code by the *Tax Reform Act of 1986*. After exhaustively reviewing recent literature surrounding the *Tax Reform Act of 1986*, Auerbach and Slemrod concluded that "the theoretical case remains valid for a tax

system with a broad and clean base which minimizes the reward to tax-driven economic activity."[6]

Recently, however, tax policy has lost its moorings. Specifically, tax policy during the 1990s has moved in a direction opposite to the concept of a broader base and lower rates; it has increasingly been characterized by targeted tax relief or tax credits that necessarily and inevitably imply a narrower tax base. As former Federal Reserve Governor Lindsey has ably pointed out in recent testimony before the Senate Budget Committee:

> Targeted tax relief means, by definition, a narrower tax base. Some economic activity becomes tax favored while, to compensate, other forms of economic activity must carry higher marginal rates to make up the difference.[7]

In short, as the tax base is chipped away, over time marginal rates will be raised to compensate for revenue losses.

A reversal of this unfortunate trend is essential to restore a rational tax policy. An across-the-board marginal income tax rate cut would be a move in this direction and could help to revitalize support for the earlier view.

- ***Returning tax monies to their rightful owners (the taxpayer) is appropriate***: A budget surplus signifies a tax overpayment (for goods or services not rendered). Such monies do not belong to the government, but to the taxpayer; tax money is the people's money rather than the government's. In short, there is a moral dimension to tax policy deliberations that merits consideration when weighing tax options in an era of budget surpluses. Returning tax monies to their rightful owners is an appropriate option.

- ***A proportional income tax rate reduction to those paying income taxes is fair and equitable***: The current income tax code is progressive with a very high proportion of tax revenues being paid by taxpayers in the upper-income brackets. Such progressiveness means that upper-income taxpayers not only pay significantly more taxes in absolute terms, but they also pay higher percentages or shares of their incomes in taxes as well. Lowering tax rates proportionately across the board reduces the tax burden by equal percentages on all those paying taxes. Since all taxpayers are

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[6] Alan J. Auerbach and Joel Slemrod, "Economic Effects of the Tax Reform Act of 1986," Journal of Economic Literature, Volume XXXV, Number 2, June 1997.

[7] Lawrence B. Lindsey, "Federal Tax Policy in the New Millennium," statement before the Senate Budget Committee, January 20, 1999, p.18.

treated alike, such change is fair and equitable. But such action does retain the progressive structure of the tax code.

SUMMARY AND CONCLUSION

Pro-growth tax policy should be premised on a number of key considerations. A host of reasons highlight the appropriateness of tax rate reduction at this time. The current tax structure imposes an excessive burden or welfare cost on the economy which would be reduced by lowering tax rates. Marginal and average tax rates have increased in recent years with the average tax burden reaching and persisting at historically record levels. Reducing tax rates is currently one of the few viable public policy options available to sustain economic growth. Uninterrupted economic growth is particularly important given global economic weakness and during periods when solutions to the social security crises are being formulated. Broad-based tax cuts can help restrain the spending of government and are fair, equitable, and appropriate in a period of budget surplus.

Dr. Robert E. Keleher
Chief Macroeconomist to the Vice Chairman

Tax Reduction and Economic Welfare

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.

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[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

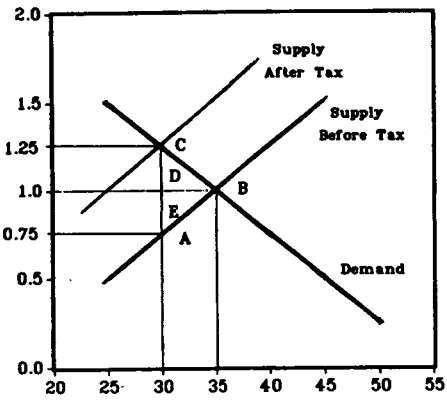
Yet there are other compelling arguments that support tax reduction. It is a standard proposition in public finance that the imposition of taxes imposes welfare costs on the population. Taxes impose an "excess burden" or a "deadweight loss" on the economy. Economic activity is based on mutually agreeable 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.

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



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.

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[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

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[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.

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[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.

Tax Reduction and the Economy

Economic Effects of Tax Reduction

Proposals for tax reduction are being presented by policymakers from various points of view. While there is some bipartisan agreement on the desirability of tax relief, the composition and scale of tax legislation are both matters of contention. This paper will examine some of the features of the recently proposed tax bill reported from the House Ways and Means Committee. Although this legislation is quite large and complex, the focus here is on several key components and their potential effects upon the economy.

On the basis of current and ongoing Joint Economic Committee (JEC) research on major tax issues,[1] this paper concludes that the pending Ways and Means Committee proposal would have positive long-term effects on the economy. Although current economic conditions are strong, this economic strength is unlikely to continue indefinitely. Therefore, phased-in tax reduction can be viewed as a type of insurance policy over the long-run.

Equally important is the fact that the current levels of taxation can impose relatively high output and welfare costs on the economy, per dollar of revenue raised, regardless of the current phase of the business cycle. While the range of economic losses imposed by the current level of taxation is rather broad, a conservative estimate is that these excess marginal burdens range from 25 to 40 cents of the last dollars raised in federal revenue; other estimates range much higher.[2]

In other words, the U.S. tax system imposes significant costs on the economy and these costs are present whether the economy is expanding or contracting. Policymakers have no reason to accept these counterproductive losses imposed by the tax system just because the economy is otherwise performing well. A healthy economy would normally be expected to generate a positive fiscal situation that presents the opportunity to remove or modify the most counterproductive features of the tax system. This opportunity should be seized in the current economic environment.

This paper is divided into several sections: the economic impact of taxation, the recent historical record, certain major provisions of the Ways and Means Committee tax bill, and issues related to the tax burden. Among the findings are the following:

- The current tax code penalizes work, saving and investment, and entrepreneurship.
- Tax changes that reduce these penalties will improve long-term economic growth.
- According to an important and growing body of economic research, the current level of taxation imposes large economic "deadweight" losses at the margin; 40 cents in lost economic welfare per dollar of tax would be a reasonable estimate. There is no reason for policymakers to accept such counterproductive results.
- If the tax bill increases the GDP growth rate by about two-tenths of one percentage point annually, it would produce about $240 billion in additional revenue over ten years, enough to offset well over one quarter of the revenue losses of official projections that assume no macroeconomic effects.

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[1] For more information, please visit our webpage at http://www.house.gov/jec.

[2] Richard Vedder, and Lowell Gallaway, *Tax Reduction and Economic Welfare,* Joint Economic Committee, April 1999.

- According to JEC research, the evidence shows that for every dollar of budget surplus accumulated, 60 cents will be spent within one year. Budget accounting suggests that these surpluses might be available to reduce the federal debt, but history shows that in reality it is the political system, not accounting statements, that determine federal policies when it comes to taxing and spending. Only by returning it to the taxpayers can a probable squandering of the surplus be avoided; already advocates are preparing various spending proposals.
- Despite misleading tax figures that can suggest otherwise, the shares of the tax burden borne by each income group under the tax system would not be changed under the proposed tax legislation. In other words, the broad-based reduction in tax payments does not shift the tax burden but leaves it essentially unchanged; thus there is no basis for viewing the legislation as skewed in any particular way.

I. Why Certain Tax Changes Can Affect the Economy

In a market economy resources are allocated by the forces of supply and demand. Producers of goods and services expand production to the point where the cost of producing the last unit is covered by the price that can be obtained in the market.

The quantity of inputs to the production process – labor services and capital – is also influenced by changes in market prices. All other things equal, a rise in wage rates, for example, will tend to attract new potential workers and expand the labor force. An increase in the rate of return on saving and investment will tend to elicit more saving and investment. Thus changes in prices can affect the quantity of inputs used in production. This is how the price system allocates resources in a market economy.

Current and especially future prices and costs are not objectively presented, but must be discovered through the market process. Various market participants have differing views of future market conditions and their current implications, and these views are tested by the market process over time. Entrepreneurs whose expectations are especially prescient and accurate will be rewarded, while those who are not will lose their command of productive resources. The entrepreneurial function is the nerve center of the market economy because foresight and the ability to productively use knowledge underlie all the valid assumptions made about costs and prices.

Our economy is not a pure free market economy as in an abstract model, but a market-based system in which market forces allocate resources, but government is also present. Market costs and relative prices are influenced by government taxation and regulation. The general effect of taxes and regulations is to increase production costs. This effect may or may not be offset by other gains, but an increase in cost or a reduction in the return to a factor of production tends to reduce the supply available. This imposes costs on the economy, withdraws resources from production, and lowers economic growth. The result is economic losses for consumers and producers.

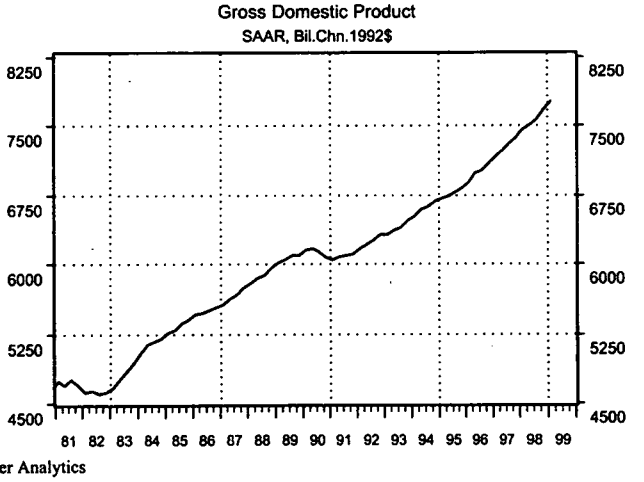
An ideal tax is one that interferes as little as possible with the market allocation of resources. The current tax system is not consistent with this criterion because it is biased against

saving and investment, which are taxed more heavily than consumption. Furthermore, given the current level of taxation, the costs imposed are excessive in relation to the revenue raised. The excess burden of taxation is estimated at about 40% of revenues raised at the margin.

Tax legislation which removes some of the bias against work, saving, and investment, would tend to lower barriers to resources flowing into production. Tax legislation that blunts tax provisions that undermine entrepreneurship and innovation would also tend to facilitate the dynamism and flexibility conducive to economic growth. These positive economic effects can be seen during periods when broad-based tax incentives are in place.

II. Recent Economic Trends and the Role of Tax Policy

The current expansion is now more than eight years old (99 months) and the longest peacetime expansion on record. It followed the 1980s expansion which is the second longest peacetime expansion on record (92 months). In short, we are experiencing back-to-back the first and second longest peacetime expansions in American history. Further, the recession that occurred between these record-breaking expansions was exceptionally short (9 months). We have not experienced a serious recession for more than 16 years.



Source: Haver Analytics

This extraordinarily sustained period of expansion has been associated with lower inflation, lower interest rates, falling unemployment rates, higher labor-force participation, higher investment, and an exceptional degree of innovation and entrepreneurial activity.

There are a number of reasons for this superb macroeconomic performance. Excellent monetary policy, technological innovation, global competition and freer trade together with constrained government spending have all played a role. But tax policy is also central to any explanation of this record-setting, sustained growth. In particular, the substantial marginal income tax rate reductions in the 1980s laid in place an incentive structure that has encouraged and fostered steady and long-run improvements in work effort, investment, innovation and entrepreneurial activity. It is no coincidence that the 1960s expansion -- the longest expansion on record (which included the Vietnam War) --also followed significant cuts in marginal rates of taxation.

Because such tax rate cuts encourage the supply of labor and capital as well as innovation and entrepreneurial activity, they impact aggregate supply and increases in the capacity of the economy to grow; such tax cuts foster economic growth. While some backsliding has occurred with the rate increases in some tax brackets in 1990 and 1993, most marginal tax rates still remain lower than rates which existed in the 1950s, 1960s, and 1970s.

Despite this successful record over the long-term, there are a number of reasons why additional tax relief is still most appropriate at this time. While marginal income tax rates for the most part remain below earlier levels, income tax rates and other forms of taxation have gradually increased in recent years. Increases have occurred in payroll taxes, excise taxes on gasoline, alcohol, tobacco and various luxuries, and federal user fees. Additionally, because significant portions of the tax code are not indexed for (persistent, albeit lower) inflation, taxation has increased for unindexed items such as estate taxation and various elements of corporate and capital taxation. Further, our progressive income tax system -- while indexed for inflation -- is not adjusted for real growth. Hence, as the economy grows, individuals gradually are pushed into higher tax brackets over time and the alternative minimum tax applies to more and more people. Much of this increased taxation not only creates distortions (and adds to deadweight loss) but adds to the multiple layers of taxation on saving and investment, thereby reducing incentives to save, invest, innovate, consequently thwarting longer term growth.

All of these factors help to explain why federal taxation as a percentage of GDP -- or the federal tax burden -- has increased to record levels in recent years. During the current expansion, for example, federal tax revenues have grown significantly faster than the macroeconomy, placing ever-higher burdens on many of those paying taxes. Higher and higher shares of national income are being devoted to paying federal taxes. Not only is the proportion of federal tax revenue to GDP at the highest levels since World War II, but the Presidents' budget projects this tax revenue-to-GDP ratio to remain at or near record levels throughout the entire budget forecast horizon. In short, tax policy is growing more restrictive and burdensome on the overall economy from both the average and marginal rate perspectives. Accordingly, tax rate reduction to relieve some of this increased burden and thereby promote, restore, and sustain efficiency and growth is most appropriate at this time. Legislation to accomplish these objectives is under consideration in Congress.

III. The Ways and Means Tax Legislation

The House tax legislation, by reducing personal tax rates, lowering the capital gains tax rate, phasing out the estate tax, and enhancing incentives for personal saving along with other measures, would lessen the cost of the tax system upon the economy and free resources for more productive uses.

In evaluating the economic effects of growth-oriented tax reduction there are two opposing potential errors. On the one hand, it would be easy to exaggerate the economic effects of tax legislation and produce unduly optimistic and inaccurate revenue projections. On the other hand, it could be equally unrealistic and inaccurate to assume that no positive macroeconomic effects would result from major tax legislation. This latter approach is the standard one used in revenue scoring of tax legislation.

The tax bill is estimated to save taxpayers $792 billion in static revenue terms over 10 years. However, this estimate, following the conventions of static revenue analysis, does not include any possible effects on economic growth. However, an assumed increase in the rate of economic growth of about two-tenths of a percentage point would be quite modest, but even this small increase would produce an additional $240 billion over the 10-year period. This would offset over one-quarter of the projected revenue cost and provide some insurance against the vagaries of long-term budget estimates.

This example illustrates the point that just as long-term forecasts often generate large static revenue losses, they also have the potential to generate considerable revenue offsets if ever modest macroeconomic effects are considered.

Major Provisions That Improve Economic Incentives

Marginal Rate Cuts

The Ways and Means tax plan lowers personal income tax rates. It includes a 10% across-the-board reduction in tax rates, phased in over 10 years. The 15%, 28%, 31%, 36%, and 39.6% rates would be reduced to 13.5%, 25.2%, 27.9%, 32.4%, and 35.7%, respectively. These rate reductions would work to bolster incentives to work, save, invest, and innovate. While the incentive effects would be positive, they would likely not be large since the percentage changes are limited and the program is phased in over an extended time period (so that the annual changes are small). Nonetheless, these rate reductions would work to offset some of the backsliding that has occurred over the years and would undoubtedly be a positive factor reinforcing the incentive structure of the economy and sustaining its growth.

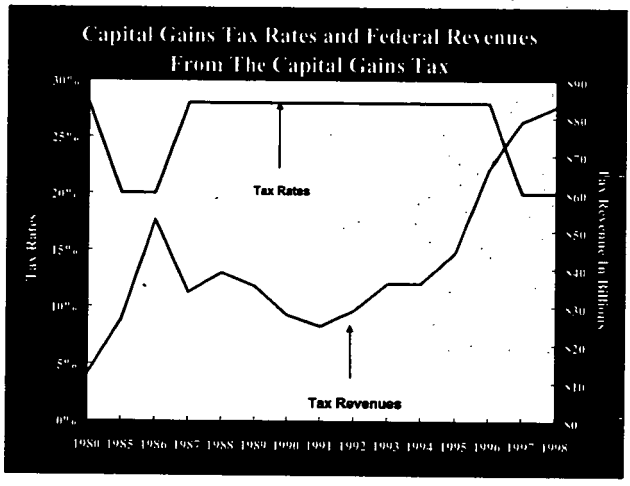
Addressing the Saving Problem

But reducing marginal income tax rates, while quite helpful, does not directly address the problem of multiple layers of taxation that our tax system heaps on saving and investment. Whereas wage income is normally taxed once, income from saving and investment is often taxed twice and sometimes more as assets are sold or passed on into the hands of beneficiaries of

estates. It is at least partly because of these multiple layers of taxation that our savings rate is currently so low (recent data actually show record low and negative savings rates).

Capital Gains Tax Reduction

The Ways and Means tax plan addresses this important issue in a number of ways, including reducing individual capital gains tax rates by 25%. Reducing taxation of capital gains is one way to reduce such excessive taxation of saving and investment. There are several key advantages of reducing capital gains taxation. Such taxation reduces the cost of capital thereby encouraging more investment in various forms. Accordingly, such reduction promotes more economic growth.[3] And because other countries generally have lower rates of capital gains taxation, a U.S. rate cut would also enhance U.S. international competitiveness.



Further, reduction in capital gains taxation has been shown often to be a revenue-raiser. Research suggests an inverse relationship between capital gain tax rate and tax revenue changes.

Since increasing proportions of Americans own investments directly or indirectly in the stock market and own their own homes or businesses, reduction in capital gains taxation can no longer legitimately be labeled a tax cut for the "rich." Increasing numbers of women and younger people would also clearly benefit from such action.

Estate Tax Relief

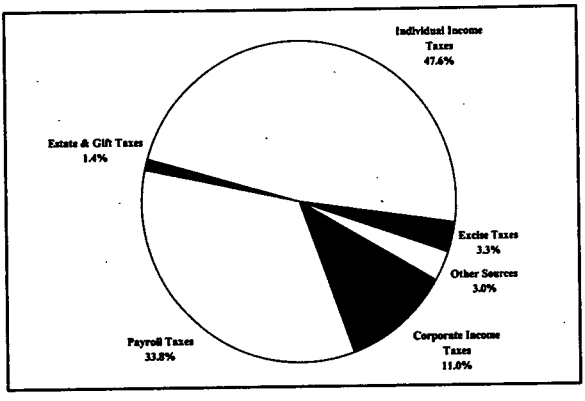
Providing estate tax relief is another way to reduce excessive taxation on saving and investment by reducing the multiple layers of taxation on such activity. The Ways and Means

[3] See Shahira Knight, *The Economic Effects of Capital Gains Taxation*, Joint Economic Committee, June 1997.

phase-in of death tax repeal is a promising way to do this. Extensive research has shown that estate taxes are remarkably costly; their detrimental effects are grossly disproportionate to the modest (if any) amount of federal tax revenue raised. The estate tax's punitive tax rates are the highest of all federal taxes. Additionally, estate tax compliance costs are quite high and the tax is unfair and inefficient.[4]

Because of these extensive costs, estate tax relief would encourage more saving, investment, capital accumulation, entrepreneurial activity, and consequently, economic growth. Many family-run businesses would be preserved instead of prematurely dissolved. And since the estate tax raises little, if any, net revenue for the Federal government, estate tax relief would not be costly from a tax revenue perspective.

Distribution of 1998 Federal Revenues



Saving Incentives

The U.S. national savings rate ranks among the lowest of the G-7 countries. Many economists have found that the low rate of saving is partially caused by tax laws that discourage saving in favor of consumption. Policies aimed at reducing this bias can promote long-term economic growth by increasing the amount of domestic resources available for investment.

One proposal that would help reduce the bias against saving would allow taxpayers to exempt from taxation the first $200 ($400 for joint tax filers) of interest or dividend income earned. Because of the low exclusion caps, such a proposal would primarily benefit low- and middle-income taxpayers and would boost saving incentives for small savers and non-savers. The proposal would interact with other initiatives, such as lower capital gains tax rates and expanded benefits for Individual Retirement Accounts, to create new saving incentives for

[4] See Daniel Miller, *The Economics of the Estate Tax*, Joint Economic Committee, December 1998.

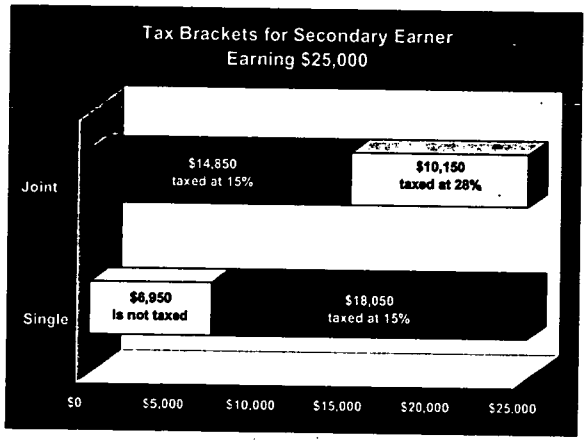
taxpayers across the income spectrum, thus improving the efficiency and neutrality of the tax code.

Estimates by the Joint Committee on Taxation indicate that half of all taxpayers who reported taxable interest income and 35 percent of all taxpayers who reported dividend income would not have paid any taxes on that income if a $200/$400 exclusion were allowed. Overall, 30 million taxpayers would not have paid any taxes on their interest and dividend income. Low- and middle-income taxpayers would receive more valuable tax relief relative to high-income taxpayers when benefits are measured as a percentage of income.

Marriage Penalty

The Ways and Means Committee proposal would reduce the marriage penalty. Marriage penalties and bonuses occur because several provisions in the tax code treat joint tax filers differently than two single filers with the same total income. [5] Marriage taxes most commonly arise because of variations in the size of the standard deduction and the widths of the tax brackets across different filing statuses. At low levels of income, the earned income tax credit (EITC) is the main source of marriage taxes.

Whether a particular couple receives a marriage penalty or bonus (or neither) depends primarily on their division of income. Marriage penalties are more likely to occur if a couple's income is evenly divided between husband and wife. In contrast, marriage bonuses are more likely to occur if a couple's income is largely attributable to one spouse. For a given level of income, the largest penalties are generally paid by two-earner couples with a 50-50 income split, and the largest bonuses are received by one-earner couples (100-0 income split).



[5] See Shahira Knight, *Reducing Marriage Taxes: Issues and Proposals*, Joint Economic Committee, May 1998.

Business Investment and Job Creation

The growth of the U.S. economy continues to be led by business investment that spurs new technologies and job creation. The Ways and Means tax plan improves economic incentives for business investment by reducing the corporate capital gains tax, phasing out the corporate alternative minimum tax ("AMT"), and extending the research tax credit.

Under present law, the net capital gain of a corporation is taxed at the same rate as ordinary income, and subject to graduated tax rates up to 35 percent. The Ways and Means tax plan would allow for the application of an alternative tax on capital gains, beginning with a 34 percent tax rate in 2000. The alternative tax rate would be reduced by one percentage point per year until a 25 percent rate is reached beginning in 2009.

Present law also imposes a minimum tax on a corporation to the extent a corporation's minimum tax liability exceeds its regular tax liability, although preferences, exclusions and phase-outs exist. Furthermore, if a corporation is subject to AMT in any given year, the amount of tax exceeding the regular tax liability may be allowed as a credit ("AMT credit") in subsequent taxable years. The Ways and Means tax plan increases the limitation on the amount of AMT credits allowable to a corporation, including treatment of the AMT foreign tax credit, and eliminates the corporate AMT altogether beginning in 2008.

The research tax credit has provided a major economic incentive for business investment in new technology and helps spur economic growth and job creation by lowering the tax burden on research and development. The Ways and Means tax bill provides for the 10th extension of the research tax credit since its introduction on a temporary basis in 1981. The research tax credit would be extended for five years, covering the period July 1, 1999 through June 30, 2004.

The economic effect of these measures is to reduce the tax bias against investment and innovation. Reducing the corporate capital gains tax rate, providing relief from the corporate alternative minimum tax, and extending the research tax credit would provide incentives and resources for more business investment in new capital and technology, expanding output and employment. Additionally, reducing the corporate capital gains tax rate would reduce the double taxation that occurs in our current tax system when corporate profits are taxed and then distributions to individual shareholders are taxed, as well. Reducing this double taxation increases the return to individual investors and strengthens the economic incentives to save and invest. Furthermore, the extension of the research tax credit will continue to provide businesses an incentive to invest in technology and innovation. By reducing the tax burden through these and other measures, increased incentives are provided for investment in new capital and technology, thus increasing productivity and economic growth.

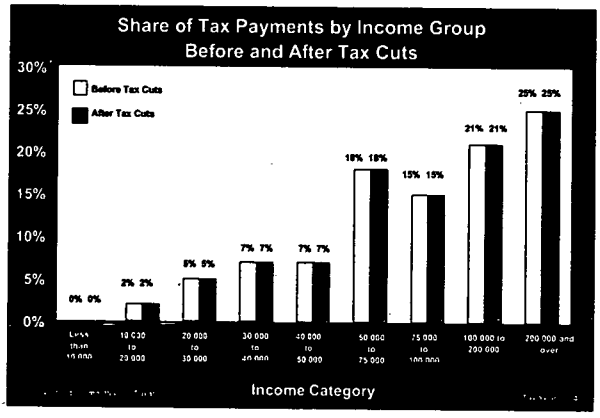
IV. Taxes and Taxpayers

In the debate of tax relief proposals, sometimes it is contended that tax reduction unduly favors the affluent. This point of view is often based on statistical sketches of tax changes in which the benefits appear skewed toward higher-income taxpayers, but in reality only reflect the current pattern of tax payments taken out of context. Very often this kind of information

allocating the benefits of tax changes is circulated without any comparison of the share of tax payments of each income group before and after the effects of the tax reduction legislation are taken into account.

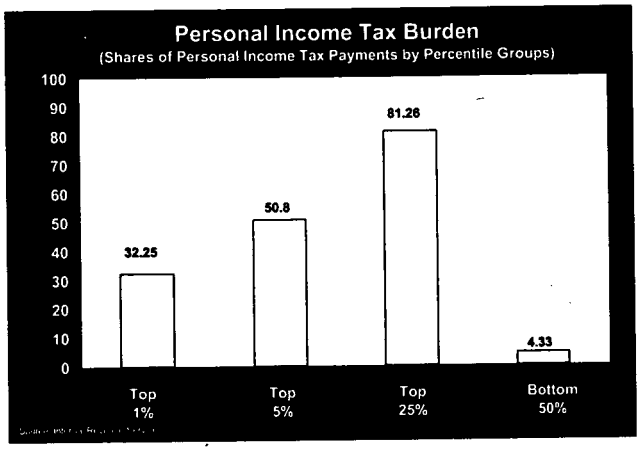
On the other hand, if the relative shares of the tax burden of each income grouping are unchanged before and after a tax change is taken into account, it is hard to establish reasonable grounds to assert that the tax change is skewed unfairly. For example, if the shares of total taxes paid among the bottom, middle, and top fifth are unchanged before and after a tax change is made, there is little factual basis for arguing that the new tax law is any worse than the previous one.[6]

The graph below shows the relative shares of the tax burden before and after the effects of the currently proposed tax relief legislation are taken into account. As one can see, under the House legislation, the *shares* of taxes paid by all income groups are unchanged. The graph also makes the point that "taxpayers" at low income levels pay little or no taxes, while those at middle-and high-income levels pay most of the tax burden.



According to a different set of data prepared by the Internal Revenue Service (IRS), the top one percent of filers pay 32.3 percent of the personal income taxes. The IRS data show that the income tax share of the top 5 percent is 50.8 percent, and that of the top 25 percent is 81.3 percent. Filers in the bottom 50 percent paid 4.3 percent of personal income taxes. Incidentally, the taxpayers in the top quarter of taxpayers qualified by earning more than only $45,833 in 1996. The shares of personal income tax payments are displayed in the graph below.

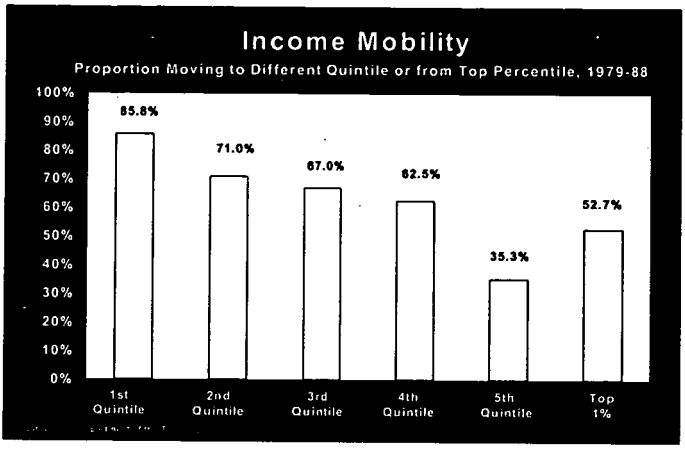
[6] Christopher Frenze, *Treasury Department Estimates of Tax Changes: A Review and Analysis*, Joint Economic Committee, July 1997.



Another serious problem regarding the analysis of the tax changes on taxpayers at various income levels is that those households are not necessarily cemented into specific income classes for extended periods of time. The United States has a dynamic economy in which there are remarkable degrees of income mobility. Over extended periods, many if not most of those in a particular income strata move up or down. Thus, statements based on the assumption that taxpayers are confined to particular income classes over time do not accurately reflect a much more complicated and interesting reality.

For example, according to tax return data, 85.8 percent of filers in the bottom 5th in 1979 had exited this quintile by 1988. The corresponding mobility rates were 71.0 percent for the second lowest quintile, 67.0 percent for the middle quintile, 62.5 percent for the fourth quintile, and 35.3 percent for the top quintile.[7] The long-run impact of tax policy on most taxpayers depends on their tax situations and incomes in the future, not the present. The graph below displays the high degree of income mobility in the U.S. over one ten-year period.

[7] See Christopher Frenze, *Income Mobility and Economic Opportunity*, Joint Economic Committee, June 1992.



As can be seen, America is a fluid and dynamic society, not a caste system. The portrayal of the American economy as a rigid class system is contradicted by the statistical evidence.

Conclusion

The current tax system is counterproductive and biased against saving and investment. The tax system imposes large losses on the economy that reduce the economic welfare of households and businesses. The current level of taxation imposes additional costs of about 40 cents at the margin for each dollar collected in revenue. A reduction in the burden imposed by the tax system would make a significant improvement in the economic well-being of American households. Furthermore, if this surplus revenue is not returned to the taxpayers, it appears likely that most of it will be absorbed in federal spending increases. The Ways and Means Committee tax bill would improve economic incentives, reduce deadweight losses, and provide broad-based relief to households subjected to excessive income taxation.

TAX EXPENDITURES: A REVIEW AND ANALYSIS

I. INTRODUCTION

One measure of the federal government's impact on the economy is its annual budget, which expresses the totals of revenues, outlays, and surpluses or deficits. Congressional consideration of the budget is influenced by the procedures and elements of the budget process, some of which are quite controversial. For example, the idea of "tax expenditures" - tax provisions that are presented as equivalent to governmental outlays - has evolved as part of the budget process in recent decades. However, the notion of "tax expenditures" is controversial because tax payments are viewed from the viewpoint of the government as opposed to the viewpoint of taxpayers. The "tax expenditure" concept rests on the assumption that tax rates should be applied to an expansive definition of taxpayer income so as to maximize tax revenue at any given tax rate.

Thus, tax provisions that shield components of this broad definition of income are viewed as depriving the government of its rightful revenues; these lost revenues are regarded as properly belonging to the federal government. Tax provisions that shield taxpayer income, expansively defined, from exposure to prevailing income tax rates are regarded as analogous to government expenditures, hence the term, "tax expenditure."

This violates the deeply ingrained principle that income, at least initially, belongs to those who generate it and that only through the democratic process becomes subject to taxation. It also contradicts with common sense perceptions of many taxpayers. For example, if a taxpayer were asked if the amount of his or her IRA deduction or 401(k) deferral should be properly viewed as the taxpayer's property or as the property of the government, the practical problems of the tax expenditure budget would become even more evident.

The theory underlying the concept of tax expenditures represents only one side of a very lively debate over what constitutes an appropriate tax base. In truth, our tax system is a compromise between income and consumption tax bases. Since the democratic process has not resolved many of these issues, it is inappropriate to institutionalize one point of view and mandate its use in official measures of tax policy. As a guide to tax policy the tax expenditure budget is one-sided and thus introduces a bias into the decision-making process.

The abstract principle underlying the tax expenditure concept presumes that the multiple taxation of saving is the norm, ignoring the compromise between income and consumption bases present in our tax code. Tax code provisions that eliminate or mitigate the multiple taxation of saving are listed as tax expenditures, and hence, as

revenue losers. A tax policy guided by the tax expenditure budget will be biased against increasing tax neutrality between saving and consumption.

The remainder of this paper gives an in-depth review of the problems associated with the use of an expansive view of income and with the tax expenditure concept in general. Section II gives a brief overview of the mechanics of the tax expenditure budget. Section III covers conceptual problems dealing with the definition of the tax baseline. Section IV deals with the question of whether many tax expenditures represent subsidies or tax relief. Section V concludes with a summary of the arguments given in the paper.

II. THE TAX EXPENDITURE BUDGET: AN OVERVIEW

The tax expenditure budget enumerates the tax incentives or tax subsidies that are a part of our income tax system. Stanley S. Surrey helped institute the "tax expenditure budget" in 1967 while he was Assistant Secretary for Tax Policy in the Treasury Department. In 1972, the Joint Committee on Taxation (JCT) began preparing an annual tax expenditure budget for the Committee on Ways and Means. In 1974, the Congressional Budget and Impoundment Control Act (PL 93-344) required that a list of tax expenditures be included in the annual budget in order to control spending and make tax provisions more transparent. Table 1 lists the top 25 expenditures (in terms of revenue loss) for fiscal year 2000.

Tax expenditures are defined in the Congressional Budget Act of 1974 as "revenue losses attributable to provisions of the Federal tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of tax liability."[1] Surrey himself stated that the tax expenditure budget is "essentially an enumeration of the present tax incentives or tax subsidies, contained in our present income tax system."[2] He has also defined tax expenditures as spending programs embedded in the Internal Revenue Code.[3]

The Budget Act of 1974 does not specify guidelines for determining which provisions constitute tax expenditures.[4] Consequently, the Office of Management and Budget (OMB) states that judgment is needed in determining which provisions are receiving preferential treatment and which are not.[5] The JCT has stated that the legislative history

[1] Congressional Budget and Impoundment Control Act of 1974 (PL 93-344), sec. 3(3).

[2] Stanley S. Surrey, *Pathways to Tax Reform: The Concept of Tax Expenditures* (Cambridge, MA: Harvard University Press, 1973): 7.

[3] Stanley S. Surrey and Paul R. McDaniel, *Tax Expenditures* (Cambridge, MA: Harvard University Press, 1985): 1.

[4] Norman B. Ture, *Tax Expenditures: A Critical Appraisal* (Washington, DC: Institute for Research on the Economics of Taxation, 1990), i.

[5] Office of Management and Budget, *Analytical Perspectives* of *Budget of the United States Government, Fiscal Year 2000* (February 1999): 119.

of the Budget Act indicates that tax expenditures are to be defined with reference to normal income tax law, although this definition has not been codified.[6] The Treasury Department, when preparing the tax expenditure estimates for the annual budget, uses both the normal tax law employed by the JCT and another baseline called reference tax law. Both baselines are modeled after the Comprehensive Income Tax (CIT).[7]

Table 1. Major Tax Expenditures in the Income Tax, Ranked by 1999 Revenue Loss
(In millions of dollars)

Rank	Provision	FY 2000
1	Net exclusion of pension contributions and earnings: Employer plans	$84,350
2	Exclusion of employer contributions for medical insurance premiums and medical care	77,670
3	Deductibility of mortgage interest on owner-occupied homes	55,100
4	Capital gains (except agriculture, timber, iron ore, and coal) (normal tax method)	40,585
5	Deductibility of nonbusiness state & local taxes other than on owner-occupied homes	37,000
6	Accelerated depreciation of machinery and equipment (normal tax method)	35,465
7	Step-up basis of capital gains at death	27,090
8	Deductibility of charitable contributions, total	25,850
9	Exclusion of interest on public purpose bonds	20,450
10	Deductibility of state and local property tax on owner-occupied homes	19,495
11	Child Credit[1]	18.725
12	Capital gains exclusion on home sales	18,540
13	Exclusion of Social Security benefits for retired workers	18,125
14	Exclusion of interest on life insurance savings	14,990
15	Net exclusion of pension contributions and earnings: Individual Retirement Accounts	11,170
16	Deferral of income from controlled foreign corporations (normal tax method)	6,200
17	Exclusion of workmen's compensation benefits	5,475
18	Graduated corporation income tax rate (normal tax method)	5,360
19	Earned income tax credit[2]	4.971
20	HOPE tax credit	4,855
21	Exclusion of interest on non-public purpose state and local debt	4,635
22	Workers' compensation insurance premiums	4,585
23	Net exclusion of pension contributions and earnings: Keogh plans	4,255
24	Exception from passive loss rules for $25,000 of rental loss	4,215
25	Tax credit for corporations receiving income from doing business in U.S. possessions	4,120

Source: Budget of the United States Government: Analytical Perspectives, Fiscal Year 2000, p.114.

[1] The figures in the table indicate the effect of the child tax credit on receipts, not outlays. Child tax credits for individuals with three or more children may be refundable, and as such are paid by the Federal Government. This portion of the credit is included in outlays while the amount that offsets tax liabilities is shown as a tax expenditure.

[2] The figures in the table indicate the effect of the earned income credit on receipts, not outlays. Earned income credits in excess of tax liabilities may be refundable to individuals, and as such are paid by the Federal Government. This portion of the credit is included in outlays while the amount that offsets tax liabilities is shown as a tax expenditure.

[6] Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 1999-2003* (JCS-7-98, December 14, 1998): 2. Ture, *Tax Expenditures*, 3.

[7] *Analytical Perspectives*, 119.

The classic book *Blueprints for Tax Reform* best sets forth the CIT as well as an alternative tax system.[8] Prepared by U.S. Treasury Tax Policy Staff, *Blueprints for Tax Reform* presents the results of a year-long study on tax reform. It presents two model tax systems, one of which is the Comprehensive Income Tax. By using two model systems, the Treasury Tax Policy staff acknowledged the fundamental split between economists that favor an expansive view of income and economists who are concerned with the neutrality between consumption and saving.

III. CONCEPTUAL PROBLEMS

The CIT uses the accretion concept of income as its guide. This method defines income as the sum of consumption and change in net worth over a given period, usually a year. Income that is consumed is taxed and income that is saved is taxed (and the earnings on that saving is taxed as well), with subtractions from income of expenditures that are neither consumption nor additions to net worth (i.e., business expenses). The remaining income forms the tax base, and generally speaking, exclusions or deductions from this definition of taxable income constitute a tax expenditure. The normal income tax baseline and the reference tax baseline both use the accretion income base as a guide.

A drawback of an accretion income base is that it leads to the multiple taxation of saving. Saving occurs after the payment of income taxes, and the earnings on those savings are then taxed again, resulting in the same income stream being taxed twice. By taxing the returns to saving, the price of saving increases relative to consumption. As the relative cost of saving rises, people reduce the amount they save.

Economic research indicates that this bias is a partial explanation of the low saving levels in the United States. The bias towards consumption can be viewed as the intellectual source for the designation of tax provisions that treat income saved and income consumed in a neutral manner as "tax expenditures." The exclusion of contributions to employer-sponsored pension plans, different treatment of capital gains, and exclusion of contributions and earnings on IRA's can all be viewed as tax-neutral or tax-mitigating devices that help to alleviate the multiple taxation of saving.

In addition to the use of an accretion income base in calculating the tax expenditure budget, the pay-as-you-go (PAYGO) rules in the federal budget process work against these tax-neutral or tax-mitigating provisions. The PAYGO rules require that new direct spending and revenue legislation be deficit neutral. Therefore, any new entitlement

[8] David F. Bradford and the U.S. Treasury Tax Policy Staff, *Blueprints for Basic Tax Reform* (2nd edition, Arlington, VA: Tax Analysts, 1984). The Comprehensive Income Tax was itself developed from the "Haig-Simons" (or accretion) definition of income, perhaps the most commonly used definition of income. The Haig-Simons (H-S) definition of income, while useful for analytical purposes, has many shortcomings as a tax base. For example, the H-S definition is subject to measurement problems with many items that are required for the calculation of net income being guessed at or determined by arbitrary rules. For more on the shortcomings of an accretion income tax base, see chapter two of *Blueprints*.

spending requires a spending decrease elsewhere or revenue increase to offset the new spending. The elimination of "loopholes" is one policy option by which policymakers find money for new spending. The Administration's fiscal year 2000 budget calls for the elimination or curtailment of at least 72 "unwarranted benefits" or "loopholes."[9] This becomes problematic when provisions trimmed or eliminated are *tax-neutral provisions*, resulting in additional tax biases against personal saving.

Examination of the provision for the net exclusion of employer pension-plan contributions and earnings provides evidence to support this concern. Exclusion of employer pension-plan contributions has been the fastest growing tax expenditure in the budget, rising from $5.6 billion in fiscal year 1975 to $84.3 billion in fiscal year 2000. For over two decades, employer-provided pension plans have been one of the largest tax expenditures in terms of revenue losses. Over that time, Congress has enacted tax law changes that have reduced revenue losses attributable to employer-provided pension plans.[10]

However, a tax expenditure budget prepared with a definition of taxable income based on tax neutrality between saving and consumption would look drastically different from the list of tax expenditures shown in Table 1. Nine of the twenty-five largest tax expenditures (in terms of revenue loss) are provisions aimed at mitigating or eliminating the multiple taxation of income. These nine items are enumerated in Table 2. The inclusion of these items overestimates the revenue losses attributable to tax subsidies *because they are not subsidies.*

Table 2. Improperly Identified Tax Expenditures

Rank	Provision	FY 2000
1	Net exclusion of pension contributions and earnings: Employer plans	84,350
4	Capital gains (except agriculture, timber, iron ore, and coal) (normal tax method)	40,585
7	Step-up basis of capital gains at death	27,090
9	Exclusion of interest on public purpose bonds	20,450
12	Capital gains exclusion on home sales	18,540
14	Exclusion of interest on life insurance savings	14,990
15	Net exclusion of pension contributions and earnings: Individual Retirement Accounts	11,170
18	Graduated corporation income tax rate (normal tax method)	5,360
23	Net exclusion of pension contributions and earnings: Keogh plans	4,255

Source: Budget of the United States Government: Analytical Perspectives, Fiscal Year 2000, p.114 and JEC calculations.

[9] Office of Management and Budget, *Budget of the United States Government, Fiscal Year 2000* (February 1999): 371-373.

[10] The Tax Reform Act of 1986 (TRA 86) restricted the availability of IRA's and imposed a cap on elective contributions to 401(k) plans. The Omnibus Budget Reconciliation Act of 1987 (OMBRA) reformed pension funding and imposed 150% of current liability cap on pension funding. The Omnibus Budget Reconciliation Act of 1989 (OMBRA 89) restricted ESOPs and imposed a mandatory penalty for violations of ERISA. TRA 86, OMBRA, OMBRA 89 are but three examples of the restrictions placed on private employer provided pension plans.

By using a tax baseline patterned after the CIT, the current tax expenditure budget places unwarranted scrutiny on provisions of the tax code that treat saving and consumption equitably. The current tax expenditure budget has the effect of encouraging the elimination of these provisions - provisions that address our low savings levels in the United States - because they are a source of revenue for new spending programs. A tax expenditure budget based on tax neutrality would lessen the tendency to target saving provisions in an effort to comply with PAYGO rules.

A proper tax expenditure concept must have a clearly defined set of laws to determine whether a specific provision is or is not a tax expenditure.[11] The lack of an operationally precise definition of taxable income requires tax officials to exercise subjective judgment, a reality that potentially limits the tax expenditure approach of objectivity and leaves it open to attacks on the grounds of arbitrariness.[12] The classification of a specific provision as a tax expenditure under normal and reference tax law requires such judgment on the part of tax officials.

The OMB statement that judgment is needed to establish a tax baseline provides further evidence that the current system is not a "clearly defined set of laws."[13] Noted tax scholar and Yale Law Professor Boris I. Bittker has objected to the tax expenditure concept on the grounds that it is entirely subjective. He argues that it is nothing more than each individual analyst's list of departures from what he or she thinks is the tax baseline.[14] Critics often point to the Treasury Department's use of two different baselines as evidence of this charge.

Surrey responded in 1973 to these charges by stating that tax expenditures were not subjective, rather their designation entailed consensus. He stated that a tax expenditure existed if a provision departed from a tax structure that is "generally accepted" by professional tax analysts and economists.[15] It is not clear, however, that using a baseline based on the CIT reflected what the consensus was then or is now. In a joint paper written two decades ago, two future Chairmen of the President's Council of Economic Advisers, Joseph Stiglitz and Michael Boskin, stated that there was "widespread sentiment among economists" that a consumption tax base was better than an income tax base at the time of the inception of the tax expenditure budget.[16]

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[11] Ture, *Tax Expenditures*, i.

[12] See *supra* note 8.

[13] See *supra* note 5.

[14] Cited in Victor Thuronyi, "Tax Expenditures: A Reassessment," *Duke Law Journal* 1988, (December, 1988): 1181.

[15] Surrey, *Pathways*, 186.

[16] Joseph E. Stiglitz and Michael J. Boskin, "Some Lessons from the New Public Finance," *American Economic Review* 61, no.1 (February 1977): 297.

Norman Ture, former Undersecretary of the Treasury, has persuasively argued that the concept of neutrality should be the essential criterion when choosing a tax base for the tax expenditure budget:

> The neutrality criterion is essential if tax expenditures are to be identified as tax subsidies equivalent to those provided by government outlays (and other government actions and policies). The distinguishing attribute of a subsidy is that it reduces the cost or the price of the subsidized product below the level that would prevail in a market unaffected by governmental policies or activities. A subsidy, therefore, alters the relationship among costs and prices that would otherwise prevail. A neutral tax system, accordingly, would include no provisions that provided subsidies: by the same token, it would contain no provisions that raised the price or cost of any product, service, or activity relative to the prices or costs of others.[17]

Thus, if tax expenditures are to be defined as "revenue losses due to preferential provisions of the Federal tax laws" as the Budget Act of 1974 declares,[18] then Ture's approach to tax neutrality as stated above leads to the conclusion that neutral tax provisions should not be classified as "preferences."

The tax expenditure budget includes several tax-mitigating provisions with those provisions that abate the multiple taxation of saving often are listed among the 25 largest revenue losers. The IRA exclusion, the Keogh plan exclusion, and the exclusion of employer pension-plan contributions can all be viewed as provisions that mitigate the multiple taxation of saving. The tax expenditure for the "graduated corporation income tax," which is estimated to cost the government over five billion dollars in fiscal year 2000, is another example of this error. A tax-neutral baseline would not identify the corporate income tax as a tax expenditure.

The lack of a clearly defined set of tax laws is illustrated by the difference in the treatment received by corporate income relative to the treatment received by individual income. The corporate income tax rate schedule is graduated, as is the individual income tax rate schedule. Under normal income tax law this qualifies the graduated corporate income tax as a tax expenditure, yet the graduated individual income tax is not. Logic would dictate that if the graduated corporate income tax qualifies as a tax expenditure, then the graduated individual income tax schedule should as well.[19] Yet it does not, presumably for political reasons.

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[17] Ture, *Tax Expenditures*, 5.

[18] *Analytical Perspectives*, 105.

[19] The JCT makes the argument that concern about the ability of individuals to pay warrants the exclusion of graduated individual income taxes. This can be found in Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 1999-2003* (JCS-7-98), December 14, 1998. However, concern over ability to pay was the reason behind the graduated corporate income tax. See page 232 of *Tax Expenditures: Compendium of Background Material on Individual Provisions* for the rationale behind the graduated corporate income tax.

Therein lies the main issue concerning the lack of a clearly defined set of tax laws. The moment that judgment enters the analysis the potential for internal inconsistency and the appearance of arbitrariness increases. The more judgment that is exercised, the less useful the tax expenditure budget becomes for analytical purposes. A rigorous definition of tax expenditures would define a comprehensive tax base (i.e., all labor income, all capital income, all wealth transfers, all capital and labor income, etc.,) and the applicable tax rate. By that definition, there is no room for subjective concerns. Yet, the current tax expenditure budget includes several such examples that seem at odds with a baseline derived from a *comprehensive* income tax, most notably the exclusion of the personal exemption and standard deduction.

According to the JCT, personal exemptions and the standard deduction are not treated as exclusions from the income tax base for the following reason: "one may consider these amounts as approximating the level of income below which it would be difficult for an individual or family to obtain minimal amounts of food, clothing, and shelter."[20] From this viewpoint they can be seen as being analogous to business expenses in that they approximate the "costs of doing business" for individuals. This may be a reasonable consideration, but the determination of the appropriate amounts is based on normative judgment, not an objective or empirical fact. Such considerations are the concern of those that write the tax code, not those that are providing an analytical guide to an aspect of taxation.

Furthermore, the calculation of tax expenditure estimates has measurement limitations that raise concern over the appropriateness of their use in tax policy. Calculations of tax expenditure estimates by the JCT and Treasury department do not incorporate any changes in taxpayer behavior.[21] Consequently, a revenue loss estimate for a given tax expenditure is not identical to an estimate of the revenue gain if the tax provision was repealed. A 1994 General Accounting Office study came to the conclusion that, as a result of the exclusion of behavioral and economic effects from their calculation, tax expenditure estimates are at best useful as broad guidelines.[22] Combined with the conceptual difficulties described above, these estimates are not a reliable guide to policymakers.

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[20] Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 1999-2003* (JCS-7-98), 3.

[21] Behavioral and economic effects of any modification or elimination of tax expenditures are taken into account when making revenue estimates for proposals that are included in the Administration's annual budget.

[22] See U.S. General Accounting Office, *Tax Policy: Tax Expenditures Deserve More Scrutiny* (Washington, DC: U.S. General Accounting Office, 1994): 53.

IV. TAX SUBSIDY OR TAX RELIEF?

Regardless of whether an income or a consumption tax base is used, the tax expenditure concept suffers from another problem, namely that of closing so-called tax "loopholes" or tax preferences. The concept of a "loophole" is problematic as it has a pejorative connotation that unnecessarily complicates budgetary review and tax relief.[23] Implicit in the notion of closing loopholes is the idea that virtually the total income of the country constitutes the tax base. A deduction or exemption can only be defined as a "loophole" with this presupposition.

The untenable nature of this premise is illustrated by the following *reductio ad absurdum*. Imagine if capital gains tax rates were raised to 100 percent while tax credits were given that kept individuals' effective capital gains rate constant. Though nothing of substance has changed, an enormous tax expenditure would now exist. From this viewpoint, the untenable nature of viewing tax payments from the position of the government becomes obvious.

This view fails to take into account the ways in which the tax base can affect tax rates. The raison d'être for many exemptions, deductions, and credits is to provide tax relief for eligible taxpayers. As one law professor remarked, "It could just be that tax preferences are surrogates for low tax rates."[24]

V. CONCLUSION

This paper has documented the problems associated with the tax expenditure budget. In light of the compromise between income and consumption tax bases inherent in our current tax code, there appears to be little evidence to support the institutionalization of an expansive view of income. If the current tax expenditure budget, using an expansive view of income to define tax expenditures, provided an accurate enumeration of tax subsidies, then a plausible argument could be made for its continued use. However, the evidence presented in this paper shows that the current tax expenditure budget does not accurately quantify tax subsidies, a necessary condition if tax expenditures are to be equated with governmental outlays.

[23] In tax terminology, a loophole is defined as the following: a technicality making it possible to circumvent the law's intent without violating the letter of the law. Clearly, there exists a difference between a tax expenditure and a tax loophole, yet the two terms are often used interchangeably in common usage, unnecessarily complicating budgetary review.

[24] Thuronyi, 1179.

The tax expenditure budget is an unfortunate component of the current federal budget process. It overstates the number of tax expenditures and the revenue losses attributed to those tax provisions. This misleading identification places a weighty obstacle in the path of those policymakers who desire tax neutrality between consumption and saving. The balance of evidence presented here strongly suggests that the statutory provision requiring the listing of the tax expenditure in the budget, the costs of which outweigh any potential benefits, be repealed.

Joshua Hall
Policy Analyst

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A Guide to Tax Policy Analysis: Problems With Distributional Tax Tables

A GUIDE TO TAX POLICY ANALYSIS: PROBLEMS WITH DISTRIBUTIONAL TAX TABLES

EXECUTIVE SUMMARY

This study examines the use of distributional tax tables for purposes of analyzing tax policy and tax legislation. It concludes that the process, development and release of distributional tax tables is misleading, "highly conjectural" and in need of reform.

Specifically, this report finds:

- The analysis of tax policy and tax legislation is more art than science.
- The Treasury Department's practice of imputing income items is based on "highly conjectural" analysis, which lacks any measure of statistically accuracy.
- The release of distribution tables by the Administration without detailed information regarding the possibility of data errors, degree of reliability, and validity violate the federal government's own policies on the dissemination of information to the public.
- The reliance on statistically compromised data sources to impute income measures inconsistent with the public understanding of income pushes average American taxpayers into higher income brackets.
- The Treasury Department's mere use of an income measure inconsistent with the public understanding of income serves only to confuse the average taxpayer and bias the tax policy debate.
- The presentation of tax data within distribution tables hides or omits most of the important information that people require in order to effectively evaluate the merits of any tax legislation.
- A more transparent dissemination of data and an insightful understanding of the "tricks of the trade" will enable taxpayers to better dissect the information contained in the estimates presented in distributional tax tables and to make educated decisions about the economic merits of tax legislation – promoting better understanding of tax policy, informed public debate and better tax policy outcomes.
- The following ten questions will assist taxpayers in reviewing tax distribution tables:

1. What measure of income is being used (Ask that data be recomputed based on adjusted gross income (AGI), if not presented so already)?

2. What taxes are being included in the analysis in both the before and after columns, and are they identical (i.e., comparing apples to apples)?
3. How many taxpayers reside within the displayed income categories?
4. What is the income range associated with each category?
5. What is the current and proposed (after full enactment of the proposed tax legislation) level of taxation (percent of total taxes paid to the government) paid by each income category?
6. What is the current and proposed (after full enactment of the proposed tax legislation) effective tax rate for each income category?
7. What are the ranges of tax cuts each income group is estimated to receive after full enactment of the tax legislation (ranges should be provided in addition to the often-presented average tax cut)?
8. Are the estimates presented free of imputations? If not, what imputations have been made to arrive at the estimates presented in the distributional tax tables?
9. What are the accuracy and reliability of the estimates presented in the distributional tax tables?
10. What are some additional or hidden burdens that are not captured in the distributional tax tables (e.g., the hidden burden of hiring lawyers and accountants to avoid the estate tax)?

A GUIDE TO TAX POLICY ANALYSIS: PROBLEMS WITH DISTRIBUTIONAL TAX TABLES

[E]very calculation of income depends upon 'constructive valuation' i.e., upon *highly conjectural* estimates made, at best, by persons of wide information and sound judgement.

Henry C. Simons[1]

There are three kind of lies: lies, damned lies and statistics.

Mark Twain[2]

Agencies should inform the public as to the limitations inherent in the information dissemination product (e.g., possibility of errors, degree of reliability, and validity) so that users are fully aware of the quality and integrity of the information.

U.S. Office of Management and Budget[3]

I. INTRODUCTION

The analysis of tax policy and tax legislation can be "highly conjectural[4]" and consequently more art than science. Tables and figures detailing revenue effects and distribution of burdens associated with projected outcomes of proposed tax legislation are often presented in ways that distort or fail to disclose information regarding the economic outcomes. Additionally, some of these tables are based on data sources that are statistically compromised and for which statistical measures of accuracy are impossible to calculate. Furthermore, the public is often not informed as to the limitations inherent in the information. Members of Congress, students of tax analysis, the media and ordinary citizens seeking to understand the economic effects of proposed tax legislation are inundated with revenue estimates and distribution tables that often obscure the economic issues and hinder the policy process.

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[1] Henry C. Simons, *Personal Income Taxation: The Definition of Income as a Problem of Fiscal Policy.* Chicago: University of Chicago Press, 1938, page 56. (Emphasis added).

[2] Mark Twain attributed this quotation in his autobiography to Benjamin Disraeli.

[3] United States Office of Management and Budget. Executive Office of the President. Circular NO. A-130. Appendix IV, Section 8a(7). February 1996. Available on-line at: http://www.whitehouse.gov/OMB/circulars/a130/a130.html

[4] Merriam Webster's Collegiate Dictionary, 10th Edition, defines conjecture as "inference from defective or presumptive evidence."

The taxation of individual income is a central aspect of fiscal policy. Legislators evaluating the fundamental components of tax legislation face decisions that often redistribute after-tax income and wealth among different members of society and, on a larger scale, can affect the performance of the greater economy. It is the aim of most legislators that tax law changes be designed to ease understanding and compliance and be less of a hindrance on individual economic decision-making.

Much data are available to legislators to help them make informed decisions relating to the costs and benefits of proposed tax legislation, as well as distributional income and wealth effects. However, the quantity and mixed quality of these data can lead to confusion about the economic effects of proposed tax legislation. This is especially the case when competing or contradictory information is presented. Distribution tables that purport to show the estimated income and tax distribution among groups of individuals and how these groups will bear the economic burden resulting from changes due to proposed tax legislation are a source of confusion for policymakers and the public.

The official sources of tax distribution data are the Office of Tax Analysis (OTA) of the Department of Treasury, the Congressional Joint Committee on Taxation (JCT) and, to a lesser extent, the Congressional Budget Office (CBO).[5] All of these organizations apply different assumptions and methodologies to the analysis of tax legislation. In addition, there are unofficial distribution tables that are publicly released by various interest groups to influence the policy process and the debate on particular aspects of tax legislation. Not surprisingly, the analyses put forth by these special interest groups are intended to tilt the results toward their political objectives and tend to muddle the tax policy debate. Perhaps Mark Twain's famous quotation that serves as an epigraph to this paper should now read: "There are three kinds of lies: lies, damned lies and distributional tax tables."

The first section of this paper briefly provides the reader with a basic knowledge and understanding of what distribution tables do and do not show, and how various methods of presentation can bias or influence the reader toward certain conclusions. The rest of this paper is devoted to explaining in further detail the essential issues surrounding distributional tax tables. Example tables are provided to assist the reader in understanding important concepts. Subsequent sections deal with issues such as statistical sampling and accuracy, confidence levels, accuracy and reliability using data from multiple samples, the illusion of precision, income mobility, what is income and who are the rich, and classification of taxpayers.

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[5] For a more detailed discussion of their respective rolls, see: Michael J. Graetz. "Distributional Tables, Tax Legislation, and the Illusion of Precision," in David F. Bradford, ed. *Distributional Analysis of Tax Policy*. AEI Press. Washington, DC. 1995, page 20.

Additionally, a list of ten essential questions is provided to aid people evaluating distributional tax tables in understanding the tax policy nuances imbedded in distribution tables. By knowing the answers to these essential questions people can effectively evaluate the estimated outcomes of proposed tax legislation.

Lastly, the Appendix to this paper provides several examples of actual tax distribution tables constructed by selected organizations. The ten essential questions that are provided in Section VIII of this paper are then applied to these tables to evaluate whether the tables conform to the standards of transparency, statistical accuracy and reliability that are discussed throughout this paper.

II. DISTRIBUTIONAL ANALYSIS: THE BURDEN TABLE

A burden table can be deceptively simple. Generally, in the left-hand column are income categories classified in either dollars or divided into percentile groupings or quintiles such as, $0 - $10,000, $10,000 - $20,000, $20,000 - $30,000, etc., or lowest quintile, second quintile, third quintile, fourth quintile, and highest quintile. Additional columns provide information about the number of observations, income levels, taxes paid, etc., for each income category. Usually, the table provides information pertaining to the amount of tax currently paid and the amount of tax that is to be paid after the proposed tax legislation is enacted. The primary focus of tax analysis is the increases and decreases in taxes paid under current law in comparison to after the proposed tax legislation becomes fully effective. Table 1 provides an illustration of a simple burden table relating to a hypothetical proposal to reduce individual taxes:

Table 1.

Income Category	Change in Federal Taxes		Effective Tax Rate		Average Tax Change
			Present Law	Proposed Law	
	$ (millions)	Percent	Percent	Percent	$
Less than $10,000	-20	-0.2	7.1	7.0	-300
10,000 to 20,000	-365	-1.0	8.1	8.0	-400
20,000 to 30,000	-1,300	-1.5	15.2	15.0	-500
30,000 to 40,000	-2,150	-1.9	17.6	17.3	-750
40,000 to 50,000	-2,750	-2.1	19.3	18.9	-1,100
50,000 to 75,000	-7,200	-2.3	21.2	20.7	-1,500
75,000 to 100,000	-6,600	-2.4	23.9	23.2	-2,000
100,000 to 200,000	-8,100	-2.2	26.2	25.5	-3,500
200,000 and over	-13,500	-3.1	29.2	27.6	-5,000
Total, all taxpayers	-$41,985	-2.4%	22.2%	21.5%	-$650

Source: Hypothetical Data. JEC Calculations

In viewing the results displayed in the second column, it is quite clear that all taxpayer groups receive a nominal reduction in tax. The lowest group receives a total reduction in their tax of $20 million and the highest group receives a total reduction of $13.5 billion. The third column shows the reduction in terms of percentages. The lowest group receives a 0.2 percentage reduction in tax, while the highest group receives a 3.1

percentage reduction. The fourth and fifth columns display each group's effective tax rate under present law and after the legislation becomes effective, respectively. All income groups benefit from a lower effective tax rate under the proposed legislation. The last column displays the dollar amount of the average tax cut that each member in an income category might expect to receive.

Since every income group benefits, a cursory review of the above table might lead readers to conclude that the tax proposal is good for all. However, some might come to completely different conclusions. These readers may conclude that the tax legislation is not fair to the lowest income group, since the highest income group receives 32 percent of the total benefit ($13,500 / $41,985) while the lowest income group receives less than ½ percent of the total benefit ($20 / $41,985).

Furthermore, if taxpayers want to see how much their family would save in taxes under the proposed legislation, theoretically all they need to do is find which income category they belong to and their tax cut will be presented in the last column of the table. However, as will be illustrated later in this paper, members of a family earning $50,000 would probably misclassify themselves in a distribution table. This is due to the fact that many analyses are based upon definitions of income that are unfamiliar to typical members of an average American family.

Table 1 actually provides insufficient information from which to draw an informed conclusion as to the merits of the proposed tax legislation. For example, this table does not show the current amount of taxes that each income group pays. For purposes of illustration, assume that the lowest income group currently pays no tax at all, while the highest income group pays 50% of the total tax collected. Then, based on fairness, it could be argued that the highest income group should receive 50% of the benefits of the total tax reduction and, therefore, the proposed 32% ($13,500 / $41,985) is *unfair* to the upper income group.

Additionally, Table 1 does not indicate how many taxpayers make up each income group, although this can be mathematically derived. Additional information is also necessary to effectively evaluate the proposed tax legislation, such as what items are included in income, what types of taxes are being included/excluded, and over what time horizon the effects are being measured, among others.

III. STATISTICAL STANDARDS, SAMPLING AND ACCURACY

All distributional tax tables constructed and released by the Treasury's Office of Tax Analysis, the Joint Committee on Taxation, the Congressional Budget Office and the various interest groups are all based on one or more statistical samples. None of the distribution tables are based on a pure census of the population. These tables are based on sample surveys that inevitably have limitations. These limitations are routinely

disclosed by statisticians. Furthermore, government policy requires that government agencies disclose such data limitations when information based on sample surveys are released to the public.[6]

A sample is a portion of a population that is examined or tested in order to obtain information or draw conclusions about the entire population.[7] Every statistical sample inherently contains some amount of error. Each statistic or estimate generated from a sample has a measurable precision, or sampling error, that may be expressed as a plus or minus figure. Sampling error indicates mathematically how closely the estimated number is to the actual number that would result if a database were constructed consisting of the entire population.

For example, the confidence interval for the monthly change in total employment from the household survey released by the Bureau of Labor Statistics (BLS) is on the order of plus or minus 376,000, at a 90-percent level of confidence.[8] Suppose the estimate of total employment provided by the sample increases by 100,000 from one month to the next. The 90-percent confidence interval on the monthly change would range from –276,000 to 476,000 (100,000 +/- 376,000). These figures do not mean that the sample results are off by these magnitude, but rather that there is about a 90 percent chance that the "true" population over-the-month change lies within this interval.

In other words, a confidence interval at the 90-percent confidence level means that 90 out of 100 instances, the sampling procedure used would produce a confidence interval containing the population value that is being estimated, in this case change in employment. For this example, since the confidence interval includes values of less than zero and includes zero itself, it cannot be said with certainty that employment had, in fact, increased. Hence, in order to effectively analyze results derived from sample data, it is necessary to take into account the confidence level and confidence interval. The same applies to tax statistics that result from sample studies.

All of the distributional tax tables constructed by the Treasury's Office of Tax Analysis, Joint Committee on Taxation, Congressional Budget Office, and lobbying organizations base their estimates on a sample database constructed by the Internal Revenue Service – Statistics of Income Division (SOI).[9] Since the numbers presented in

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[6] United States Office of Management and Budget. Executive Office of the President. Circular NO. A-130. Appendix IV, Section 8a(7). February 1996. Available on-line at: http://www.whitehouse.gov/OMB/circulars/a130/a130.html

[7] United States General Accounting Office. *Using Statistical Sampling.* (GAO/PEMD-10.1.6), May 1992.

[8] United States Department of Labor – Bureau of Labor Statistics. "The Employment Situation: April 1997." News Release.

[9] Only government agencies that are given authority under law have access to individual taxpayer records, or micro-data. All other parties, including lobbying organizations, must use SOI's public-use file, which is sanitized so that no information can be directly or indirectly identified to individual taxpayers.

distributional tax tables are estimates based on a sample of tax returns, they are subject to sampling error.

To properly use the estimates presented in any distribution table, as noted above, the magnitude of the potential sampling error must be known in order to make any informed views relating to the significance of the estimates presented. The SOI Division, as any reputable statistical agency does, stresses in every article it publishes that its estimates are based on a sample and that the statistics presented are only estimates and are subject to error. Hence, all numbers must be analyzed within the context of the sampling error. The SOI Division is so strongly committed to the transparency of its work and the importance of viewing estimates within the context of sampling error that it either publishes, or makes available to the public, tables that openly provide the coefficients of variation (a measure of sampling error).[10]

In fact, an omission of such information would be in violation of government policy. According to the of U.S. Office of Management and Budget (OMB), an agency within the Executive Office of the President with responsibility for overseeing Federal regulations and developing policies to improve government statistics: "Agencies should inform the public as to the limitations inherent in the information dissemination product (e.g., *possibility of errors, degree of reliability, and validity*) so that users are fully aware of the quality and integrity of the information."[11]

Unfortunately, such important information is missing from the tax distribution tables released by the Treasury Department. The omission of these data, which would help determine the accuracy of the estimates, only hinders the policy debate and furthers the illusion of precision surrounding the estimates. If the public understood that the numbers released by the Treasury were subject to sampling error, the reliability of these data would then be subject to question. Table 2 below details by how much estimates for

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[10] In SOI reports, the standard error is not directly presented. Instead, the ratio of standard error to the estimate itself is presented in percentage form. This ratio is called the coefficient of variation (CV). The user of SOI data has to multiply an estimate by its CV to recreate the standard error and to construct confidence intervals. For example, if a sample estimate of 150,000 returns is known to have a coefficient of variation of 4-percent at a 95-percent confidence level, then the following arithmetic procedure would be followed to construct a 95-percent confidence interval estimate:

```
      150,000        (sample estimate)
        x0.04        (coefficient of variation)
       =6,000 (standard error of estimate)
then:
      150,000        (sample estimate)
  + or – 6,000       (standard error)
=[144,000 - 156,000] (95 percent confidence interval)
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[11] United States Office of Management and Budget. Executive Office of the President. Circular NO. A-130. Appendix IV, Section 8a(7). February 1996. Available on-line at: http://www.whitehouse.gov/OMB/circulars/a130/a130.html (Emphasis added)

the number of returns and the amount of tax generated from the SOI sample can vary due to sampling error based on a 95-percent level of confidence.

Table 2.

Coefficients of Variations and Confidence Intervals for Selected Items, Tax Year 1996 - Modified Taxable Income -
(Amounts in Thousands, except percentages)

Size of AGI	Number of Returns	Tax Generated Amount	Number of Returns (CV)	Tax Generated Amount (CV)	Number of Returns (interval)	Tax Generated Amount (interval)
Total	96,514	$666,574,904	0.42%	0.46%	96,109 - 96,919	$663,508,659 - $669,641,149
Under $2,000	1,298	81,957	12.14	12.56	1,140 - 1,456	71,663 - 92,251
$2,000 under $4,000	1,381	191,096	13.40	14.44	1,196 - 1,566	163,502 - 218,690
$4,000 under $6,000	1,842	342,525	10.68	11.36	1,645 - 2,039	303,614 - 381,436
$6,000 under $8,000	2,708	650,262	9.58	9.58	2,449 - 2,967	587,967 - 712,557
$8,000 under $10,000	3,280	1,308,655	7.58	7.70	3,031 - 3,529	1,207,889 - 1,409,421
$10,000 under $12,000	3,439	2,066,940	7.02	7.02	3,198 - 3,680	1,921,841 - 2,212,039
$12,000 under $14,000	3,887	2,776,060	6.84	6.84	3,621 - 4,153	2,586,177 - 2,965,943
$14,000 under $16,000	4,515	3,863,139	6.32	6.34	4,230 - 4,800	3,618,216 - 4,108,062
$16,000 under $18,000	4,428	4,824,118	6.14	6.16	4,156 - 4,700	4,526,952 - 5,121,284
$18,000 under $20,000	4,129	5,557,164	6.18	6.18	3,874 - 4,384	5,213,731 - 5,900,597
$20,000 under $25,000	9,437	16,652,891	3.90	3.90	9,069 - 9,805	16,003,428 - 17,302,354
$25,000 under $30,000	7,954	19,253,299	4.08	4.08	7,629 - 8,279	18,467,764 - 20,038,834
$30,000 under $40,000	12,481	42,845,950	2.74	2.78	12,139 - 12,823	41,654,833 - 44,037,067
$40,000 under $50,000	9,507	46,663,357	2.84	2.96	9,237 - 9,777	45,282,122 - 48,044,592
$50,000 under $75,000	14,300	105,754,831	2.24	2.32	13,980 - 14,620	103,301,319 - 108,208,343
$75,000 under $100,000	5,798	73,816,834	3.20	3.28	5,612 - 5,984	71,395,642 - 76,238,026
$100,000 under $200,000	4,609	110,330,516	2.78	2.72	4,481 - 4,737	107,329,526 - 113,331,506
$200,000 under $500,000	1,197	87,893,139	2.44	2.38	1,168 - 1,226	85,801,282 - 89,984,996
$500,000 under $1,000,000	214	43,745,287	2.58	2.44	208 - 220	42,677,902 - 44,812,672
$1,000,000 or more	111	97,956,884	0.56	0.56	110 - 112	97,408,325 - 98,505,443

Source: Statistics of Income Division. SOI Bulletin - Spring 1999. Pages 26 - 28.

Although publishing coefficients of variation (CV) for estimates provides the user with a measure of accuracy, it does not provide effortless transparency. A person would have to go through the mathematical calculations described in the footnote above in order to derive the information similar to that which is presented in Table 2. Additionally, CVs do not provide an easy way to perceive the measure of variation. Table 2 shows that based on both a nominal and percentage basis the variation between income ranges varies greatly. Focusing on the column for "Tax Generated Amount," the CV for those taxpayers with an AGI under $2,000 is 12.56 percent (+ / -).

However, the amount of tax generated can vary by $20,588, or 28.7 percent [(92,251 – 71,663) / 71,663)]. The CV associated with tax generated amount (tax liability) for those taxpayers with an AGI of $1,000,000 or more is 0.56 percent and the amount of tax liability varies by $1,097,118, but only 1.1 percent [(98,505,443 – 97,408,325) / 97,408,325]. Although the nominal variation for tax liability is higher for the highest income group, the highest income group has the lowest percent of variation. However, the lowest income group has the highest percent variation. This fact calls into question the precision of any report based on SOI data that claims that the lowest income groups are losers under a particular tax reduction proposal since, based on the SOI data alone, the variation of some estimates of tax liability can vary by almost 29 percent.

It has just been demonstrated that in order for readers to make informed decisions regarding the accuracy of a given set of statistics, it is necessary for the agencies or groups responsible for the release of statistical tables to publish some type of companion table providing measurement of error. In order to meet the reasonable standards of statistical integrity, every government publication based on statistical sampling should also provide companion information to the public on possible measurement errors.

However, the current Administration's practice of releasing distributional tax tables prepared by the Treasury Department without providing information relating to the statistical errors of its estimates fails to meet the standards of transparency that are typically adhered to by reputable statistical agencies.[12] However, even if the Administration *desired* to have complete transparency and be open to the public, it can't! This is because the Treasury Department *has no way to calculate measures of error based on a statistically compromised data set.*

IV. STATISTICAL ACCURACY AND RELIABILITY COMBINING DATA SETS OF DIFFERENT SAMPLE DESIGNS

Mixtures from different sources can produce results that are less than the sum of its parts. For example, if grammatical Chinese is mixed with grammatical German, the results are likely to be a hybrid that would be neither grammatical nor intelligible. A similar problem emerges from efforts to combine different statistical samples. Individual statistical samples by themselves can be accurate and reliable. However, if different samples are *combined* in order to impute additional variables, the result is not necessarily a reliable and accurate sample, but more likely a statistically compromised sample from which it is impossible to provide accurate measures of error and reliability. This is exactly what the Treasury Department does in order to develop the data set it uses to construct its tax model and produce distributional tax tables. Consequently, when the Administration releases official tax tables based on Treasury's statistically compromised data set, it has no way of knowing how accurate these statistics are.

Consider the following simple example: Suppose a team of economists was interested in income and level of education by zip code. Assume that the variable for income was only available from the SOI sample data of tax returns used by the Treasury Department. Furthermore, assume that the variable for education was only available from the Census Bureau's Current Population Survey (CPS). For a particular zip code, the economists estimate that the percentage of persons with an income over $50,000 is

[12] Please note that the civil servants employed by the Department of Treasury are not those responsible for releasing distributional tax tables into the public domain. The responsibility for releasing and disseminating data resides solely with the Administration and its political appointees within the Treasury Department.

50 percent (from the SOI data set), while the percentage of persons with a college degree is 30 percent (from the CPS data set). The economists may be tempted to conclude that the percentage (or joint distribution) of persons in the zip code that have a college degree with incomes over $50,000 is 15 percent (50% x 30% = 15%).

However, the only way for this inference, or imputed value, to be accurate is if income and education are statistically independent. If they are not, which is the case in this example, then the conditional probability needs to be computed, e.g., what is the probability of having an income over $50,000 given that a person has a college degree. To accurately arrive at this statistic, both variables would have to be included in a single and complete sample, not derived from a merged sample consisting of two different samples of different sample designs. Only then could the economists determine the number of persons that have income over $50,000 with a college degree.

The fallacies of combining statistics from different samples can best be illustrated using the old discipline, *reductio ad absurdum*; i.e., if one sample study indicates that 50 percent of Americans own stocks either directly or through stock mutual funds and another sample study indicates that 10 percent of Americans have income over $100,000, it would be silly to combine the two results and argue that only 5 percent of Americans with income over $100,000 own stocks (50% x 10% = 5%)![13]

As illustrated above, statistical samples generally should not be merged together if the samples have different sample designs and the data were collected under different conditions. If there are differences in the sample designs and sampling conditions, the samples normally cannot be combined, as the results would not be statistically accurate or reliable. Furthermore, measurements of error cannot mathematically be calculated for sample data resulting from the combination of two totally different samples. However, the Treasury violates this principle in the construction of its tax model and the production of distributional tax tables.

Treasury's Office of Tax Analysis (OTA) bases its data set on SOI's sample of individual tax returns, as mentioned previously. SOI's data is based on taxpayers, not families – the unit of analysis for OTA's tax model. In order to construct families out of taxpayers, OTA combines data from the Current Population Survey (CPS) released by the Census Bureau. CPS data contain information on nonfilers, nontaxable sources of income and family structure. OTA further adds to its data set by drawing information from the Consumer Expenditure Survey (CES) released by the Bureau of Labor Statistics, the IRS' Taxpayer Compliance Measurement Program (TCMP) and the Federal Reserve Board's Survey of Consumer Finances.

[13] A recent study by the Investment Company Institute and the Securities Industry Association found that 49.2 million, or 48.2 percent, of all U.S. households owned equities in early 1999 or 78.7 million individuals. Additionally, of U.S. households with income of $100,000 or more, 67 percent owned individual stock and 88 percent owned stock mutual funds. *Equity Ownership in America.* Fall 1999, pages 5 and 71.

All of these data sources have different sample designs, sample different populations and are conducted at different points in time. Extensive imputations are added to the Treasury's data set based on all of these mutually exclusive samples of different sample designs. Because these mutually exclusive samples are merged, there is no way to measure the accuracy and reliability of the estimates that the current Administration publicly releases based on these combined data.

As OTA Director of Tax Analysis James R. Nunns has observed, "The accuracy of the matching and imputation procedures cannot be independently verified, because no single data source contains all of the income, consumption, and wealth data necessary for such a verification. For distributional purposes, however, the methods need only provide a *reasonable* accurate distribution of *certain variables* by broad family economic income classes." [14]

However, one cannot objectively define "reasonable" when it is impossible to measure accuracy. The estimates released by the Administration based on the Treasury's statistically compromised tax model do not meet the statistical standards by which every other government statistical agency adheres. Although imputations are made for all income categories, the imputations made by the Treasury add "income" with disproportionately large amounts allocated to the middle and upper income categories (those Americans that pay the vast majority of tax). This has the effect of making the middle and upper income groups appear to be "richer" than they actually are while simultaneously making the lower income groups (those that may not incur tax liability) appear to be less well off, thus portraying the tax code as overly regressive.

V. THE ILLUSION OF PRECISION

Distribution tables are constructed based on data sources that sample parts of the population to make inferences about the population at large, not data sources that count the entire population like a census. Furthermore, many economic and mathematical assumptions are relied upon in order to fashion distribution tables. The end result produces tables which often purport to consist of absolute numbers but instead present a false sense of precision. Despite the appearance of precision conveyed by changes expressed down to one or even two decimal places, the reality is that significant problems usually are just below the surface.

[14] James R. Nunns. "Distributional Analysis at the Office of Tax Analysis." In David F. Bradford (Editor). *Distributional Analysis of Tax Policy.* AEI Press. Washington, DC. 1995, page 113. (Emphasis added.)

Table 3.

Income Category	Change in Federal Taxes		Effective Tax Rate		Average Tax Change
			Present Law	Proposed Law	
	$ (millions)	Percent	Percent	Percent	$
Less than $10,000	-20	-0.2	7.1	7.0	-300
10,000 to 20,000	-365	-1.0	8.1	8.0	-400
20,000 to 30,000	-1,300	-1.5	15.2	15.0	-500
30,000 to 40,000	-2,150	-1.9	17.6	17.3	-750
40,000 to 50,000	-2,750	-2.1	19.3	18.9	-1,100
50,000 to 75,000	-7,200	-2.3	21.2	20.7	-1,500
75,000 to 100,000	-6,600	-2.4	23.9	23.2	-2,000
100,000 to 200,000	-8,100	-2.2	26.2	25.5	-3,500
200,000 and over	-13,500	-3.1	29.2	27.6	-5,000
Total, all taxpayers	-$41,985	-2.4%	22.2%	21.5%	-$650

Source: Hypothetical Data. JEC Calculations

In Table 3, a taxpayer that falls into the $30,000 to $40,000 income range could reasonably expect that their tax cut for the year would be $750. Not $400 or $300, or even an unspecified amount somewhere between $700 and $800. As Yale University law professor and former Treasury Deputy Assistant Secretary for tax policy Michael J. Graetz writes, "[t]he current practice of fashioning tax legislation to achieve a particular result in a distribution table creates the illusion of precision when such precision is impossible."[15] It is statistically possible, based on averages, that some taxpayers would receive no tax cut or even face a tax increase.

Furthermore, the distribution tables provide averages of certain tax data of all the taxpayers identified within a given income category. It is well known to most taxpayers that tax liabilities often differ among families with the same income. This can be because of family size, filing status, whether a family itemizes their deductions or elects to take the standard deduction, whether a family pays a mortgage on their home and deducts the interest expense or rents, the nature of a family's income and other factors. Additionally, some families are more aggressive at reducing their tax liabilities than others. For example, this can be done legally by contributing to a 401(k) plan, an individual retirement account or a medical savings account.

Additionally, the dispersion of taxpayers within an income group is impossible to determine from the information presented in tax distribution tables. Do most of the taxpayers within the $20,000 to $30,000 income range lie closer to $20,000 or to $30,000? All other things being equal, and from the information presented in Table 3, it would be expected that a taxpayer with income closer to $30,000 would have a higher tax liability, and subsequently should receive a greater tax cut, than a taxpayer with income closer to $20,000.

[15] Michael J. Graetz. "Distributional Tables, Tax Legislation, and the Illusion of Precision." In David F. Bradford (Editor). *Distributional Analysis of Tax Policy.* AEI Press. Washington, DC. 1995.

Furthermore, the use of averages can be an inappropriate measure of central tendency because extreme outlying data points can skew the average toward a higher number. Central tendency is a summary number used to represent several numbers. Instead of the average, the median, or middle value, can be presented. For example, consider the five salaries of a company:

Annual Income	
CEO	$1,000,000
Attorney	$70,000
Systems Administrator	$60,000
Economist	$50,000
Secretary	$40,000
Average	$244,000
Median	$60,000

The average of these five salaries is $244,000. The median value is $60,000. In this instance, and in any situation where extreme outliers can skew the average, the median is a better indicator of the central tendency because the CEO's salary is an extreme outlier causing the average to lie far from the other four salaries. For example, Bill Gates, who has an estimated net worth near $85 billion dollars, resides in the upper most income category of any distributional tax analysis. His income alone would be enough to skew any average income measure in the upper percentiles. Due to this statistical fact, most official income data provide the median as a measure of central tendency or provide the median along with the average.

The use of averages in distribution tables hides information relating to the dispersion and the true central tendency of the data from the public, further clouding the ability to make sound decisions about tax policy.

Lastly, tax changes alter the after-tax prices and costs of goods and services, thereby adjusting the relative mix of inputs used in production, the types of goods and services businesses offer, as well as the amount of labor and capital. Tax changes can alter the economy and can produce broad economic effects that are not reflected in distributional analyses. Therefore, attempts to ascertain the distributional impact of proposed tax legislation should consider the possible macroeconomic effects.

VI. INCOME MOBILITY

The results of any distributional tax table are based over some stated time horizon -- one year, five years, 10 years, or over a lifetime. Presenting estimates in this fashion implicitly assumes a static, non-mobile population of Americans. Tax distribution tables are usually used in a way that ignores the important factor of income mobility.

Studies by the Joint Economic Committee (JEC) support the conclusion that due to the great degree of income mobility in the U.S. economy, comparisons of similar income categories over time are virtually meaningless.[16] According to these studies, 85.8 percent of filers in the bottom quintile in 1979 had exited this quintile by 1988. The corresponding rates were 71 percent for the second lowest quintile, 67 percent for the middle quintile, 62.5 percent for the fourth quintile, and 35.3 percent for the top quintile. Taxpayers residing in the often-discussed top one percent had a mobility rate of 52.7 percent.

As Mark Maier points out in his influential book *The Data Game: Controversies In Social Science Statistics*, longitudinal data from the University of Michigan's Panel Study of Income Dynamics (PSID) and the Census Bureau's Survey of Income and Program Participation (SIPP) also show considerable movement between income classes.[17] Using the official U.S. government poverty level as a benchmark, the PSID data found that only 2.6 percent of the population was poor in eight out of 10 years between 1969 and 1978, while over 24 percent were poor for at least one year.[18] Similarly, the SIPP data found that only 6 percent of the population was poor in every month of 1984, but 26 percent were poor for at least one month.[19]

Income categories may be a convenient way of presenting snapshots of income data for a group of people at a certain point in time. Nonetheless, the notion of a quintile as a fixed economic class or social reality is a statistical mirage.

Distributional tax tables do not purport to show how various tax legislation will affect the mobility of taxpayers (i.e., due to the components of the proposed tax legislation, how many taxpayers will move up the income ladder). As a result, the reality of income mobility should be at least considered by analysts of tax distribution tables and by the public.

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[16] See, for example: Christopher Frenze. "Income Mobility and Economic Opportunity." Joint Economic Committee. June 1992, and JEC staff study "Income Mobility and the U.S. Economy: Open Society or Caste System?" Joint Economic Committee. January 1992.

[17] Mark H. Maier. *The Data Game – Controversies in Social Science Statistics*. M.E. Sharpe, Inc. Armonk, NY, 1991.

[18] *Ibid.* Page 127.

[19] *Ibid.*

VII. WHAT IS INCOME AND WHO ARE THE RICH?

According to the Internal Revenue Service (IRS), to rank in the top 10 percent of individual tax returns for 1996, a taxpayer[20] need report an adjusted gross income amount of $74,986 – up from $72,094 in 1995.[21] However, distributional tax tables released by the Department of Treasury's Office of Tax Analysis defines the top quintile (the top 20 percent, not 10 percent) of families as having an income of at least $100,767![22] This raises the question of how it is mathematically possible that the income level needed to be included in the Treasury top 20 percent is over 34 percent higher than the income amount needed to be included in the IRS top 10 percent.[23] The answer lies in the details of what the Treasury considers "income."

To the average citizen, "income" is anything on which they have to pay tax. Every year, taxpayers fill out their Form 1040 and list their sources of income on which they owe tax. Such sources of income are:

1. wages, salaries, tips;
2. interest;
3. dividends;
4. taxable refunds;
5. personal business;
6. capital gains;
7. rental income, royalties, trust, partnerships;
8. farm income;
9. unemployment compensation; and
10. certain taxable portions of social security.[24]

The addition of all income sources defines a taxpayer's total income. Certain adjustments to total income, such as contributions to an IRA (Individual Retirement Account), MSA (Medical Savings Account) and student loan interest deductions, are

[20] For IRS statistical purposes, the term "taxpayer" refers to the filing unit on a tax return. Individual taxpayers filing under the "single" status with an AGI of $50,000 are ranked the same as a married couple with two children filing under the "married filing jointly" status with the same $50,000 AGI.

[21] Internal Revenue Service. *Statistics of Income Bulletin. Spring 1999.* Washington, D.C. 1999.

[22] Department of the Treasury. Office of Tax Analysis. "Distribution of Income and Federal Taxes Under Current Law." July 21, 1999.

[23] The $100,767 figure presented by the Treasury is for year 2000 income levels. A comparable figure computed by the JEC for 1996 levels would be $89,530, based on an income growth rate of 3%. In other words, for 1996, the Treasury income level necessary to be included in the top 20 percent is 19% higher than the amount necessary to be included in the IRS top 10 percent of tax returns.

[24] For more information, see: Internal Revenue Service. Publication 17. *Your Federal Income Tax and Form 1040. U.S. Individual Income Tax Return. 1998 Tax Guide.*

subtracted from total income to arrive at a taxpayer's AGI. AGI can be located by any taxpayer by taking it right off Line 33 of their Form 1040. The concepts of total income or AGI are used by most citizens when they think of "income." AGI is reflected in the amount of money available in taxpayers' wallets and bank accounts for spending. It is from this base that taxpayers make their decisions regarding whether or not they can afford a new car, spend money on new clothes, or go on a vacation.

Since current tax policy can be confusing enough (the complete Internal Revenue Code is more than 21 megabytes in size, and contains more than 2.8 million words; printed 60 lines to the page, it would fill almost 6000 letter-size pages[25]), the government should help to simplify the tax policy debate by using a measure of income that is readily understandable to typical Americans -- AGI. However, AGI is not what the Treasury Department's Office of Tax Analysis uses. The Treasury Department uses an income concept called "Family Economic Income."

The Treasury Department's "Family Economic Income" (FEI) concept is an attempt to measure income based on a concept that economists refer to as the Haig-Simons income concept. The Haig-Simons income concept defines income as the "total value of rights exercised in the market, together with the accumulation of wealth in that period."[26] Unlike the tangible dollar amounts that make up AGI, the *theoretical* Haig-Simons income concept is measured by adding to AGI such items as in-kind income (e.g., cash transfers and food stamps), *imputed* income from durable goods consumption (e.g., imputed rental income from an owner-occupied home), and accrued (i.e., unrealized) capital gains.

Henry Simons recognized the great difficulties with the valuation of imputed sources of income. He readily acknowledged this problem when he stated: "Thus, every calculation of income depends upon 'constructive valuation' i.e., upon *highly conjectural* estimates made, at best, by persons of wide information and sound judgement."[27] The term "highly conjectural" concedes that these estimates would be based, in part, on imperfect and even questionable inferences. Upon close inspection, the Treasury's methodology demonstrates that this is indeed the case.

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[25] U.S. Tax Code On-Line. Available on-line at: http://www.fourmilab.ch/ustax/ustax.html

[26] Robert Murray Haig, "The Concept of Income: Economic and Legal Aspects," in R.M. Haig (editor), *The Federal Income Tax*. New York: Columbia University Press, 1921, and Henry C. Simons, *Personal Income Taxation: The Definition of Income as a Problem of Fiscal Policy*. Chicago: University of Chicago Press, 1938.

[27] Henry C. Simons, *Personal Income Taxation: The Definition of Income as a Problem of Fiscal Policy*. Chicago: University of Chicago Press, 1938, page 56. (Emphasis added).

Items added to AGI to arrive at the FEI concept include:

1. tax-exempt interest;
2. employer contributions for health plans, pension plans, and life insurance, as well as deductible purchases of health insurance by the self-employed;
3. employer's share of FICA tax;
4. workers' compensation;
5. nontaxable social security benefits;
6. deductible contributions to IRAs and 401(k)s;
7. welfare payments, food stamps, child support, and certain veterans' benefits;
8. net operating losses carried over from previous years;
9. accrued earnings on pension and individual retirement arrangements;
10. employer contributions for other fringe benefits, including military benefits;
11. inside buildup of life insurance;
12. imputed rental income from owner-occupied housing net of costs such as mortgage interest, property tax, and depreciation;
13. pre-tax corporate profits allocated to individuals based on ownership of shares (both directly and through pension holdings);
14. nontaxable pension benefits;
15. excluded income of U.S. citizens living abroad;
16. alternative minimum tax (AMT) preferences;
17. unreported income; and
18. income from people who don't file tax returns. [28]

Furthermore, the Treasury Department aggregates the income of all tax filers in a household into a single-family unit. This means that the income of dependents that file tax returns is added to the income of the primary taxpayers. Lastly, the Treasury *excludes* from its FEI concept in-kind transfers such as Medicare and Medicaid, which often benefit middle and lower income groups. The Treasury's justification for excluding Medicare and Medicaid is based both on "the difficulty of assigning a value of benefits to the recipient, and the difficulty of properly identifying recipients."[29] However, the Treasury Department would face similar problems with the difficulty in imputing values for unreported income, income from people who do not file tax returns and rental income from owner-occupied housing. Additionally, any imputed data variable will contain some measurement error. Measurement error results when a variable can't be measured accurately or when it is inherently unmeasurable. Errors in measuring variables create serious statistical problems.[30]

[28] James R. Nunns, "Distributional Analysis at the Office of Tax Analysis," in David F. Bradford (editor), *Distributional Analysis of Tax Policy*. The AEI Press. Washington, DC, 1995 and Letter from the Joint Committee on Taxation Chief of Staff, Lindy Paull to Representative Jim Saxton, June 1999.

[29] Julie-Anne Cronin. "U.S. Treasury Distributional Analysis Methodology." Office of Tax Analysis. Department of Treasury. OTA Paper 85. September 1999.

[30] Peter Kennedy. *A Guide to Econometrics (3rd Edition)*. The MIT Press. Cambridge, MA, 1992, pages 3 and 137.

Many economists and statisticians will argue that one of the greatest problems encountered working with sample data is the fact that much data are poor. As Josiah Stamp, a former President of the Bank of England, recounts:

> The Government are (sic) very keen on amassing statistics – they collect them, add them, raise them to the *n*th power, take the cube root and prepare wonderful diagrams. But what you must never forget is that every one of those figures comes in the first instance from the village watchman, who just puts down what he damn pleases.[31]

Furthermore, noted econometrician Peter Kennedy addressing the problem of imputed values states:

> The errors-in-variables problem is concerned with the implication of using incorrectly measured variables, whether these measurement errors arise from the whims of the village watchman or from the use by econometricians of a proxy variable in place of an unobservable variable suggested by economic theory.[32]

Treasury's additions to income listed above push the average American family up to a higher income level relative to an AGI measure. The inclusion of additional income items, including the unreliable imputations relating to non-filer income, rental income from owner-occupied housing, inside buildup of life insurance, and unreported income, differs radically from the concept of AGI used by taxpayers on their tax returns and only serves to muddle the tax policy debate whenever significant tax legislation is discussed. When the Treasury Department selectively releases distributional tax tables for publication, the American people naturally view the results in the context most familiar to them -- AGI. When taxpayers see popular media reports that rely on these Treasury data, few are aware that the income definition used is based on a concept other than AGI, and one that few outside a handful of Washington tax experts can understand.

Besides confusing the average citizen, the Treasury's FEI concept biases the policy debate by moving families up the income ladder and making it appear that reductions in tax liabilities that would actually be received by the middle income families are primarily benefiting the wealthy. It's easier for a family of four making $30,000 a year to discount the value of a tax reduction when the Treasury Department's tables show that families with incomes above $50,000 get most of the benefit. However, that family making $30,000 a year doesn't understand that under the Treasury's FEI concept, *they* are the family that the Treasury Department considers to be making $50,000 a year.

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[31] Josiah Stamp. *Some Economic Factors in Modern Life.* King and Son. London, 1929, pages 258-259.

[32] Peter Kennedy. *A Guide to Econometrics (3rd Edition).* The MIT Press. Cambridge, MA, 1992, page 137.

A comparison of AGI to FEI using 1983 data showed that the value of total AGI in the economy was 67 percent of the value of total FEI. In other words, **FEI was 50 percent greater than AGI.**[33] The Treasury Department verifies these figures in its own comparative analysis of AGI to FEI in a recently released paper.[34] Although analyzing the FEI's impact on a specific income level is difficult because FEI departs so radically from the more commonly understood income definition of AGI, a study by the Congressional Joint Economic Committee compared AGI and FEI income levels by quintiles and discovered that Treasury's FEI income concept overstated income between 68 and 95 percent.[35] Income levels at the 20th, 40th, 60th, and 80th percentiles can be estimated using Internal Revenue Service tax return data and compared with the corresponding points in the FEI data using the quintile boundaries disclosed by the Treasury Department. As can be seen below in Table 4, the overstatement of income under FEI ranges from 68 to 95 percent.[36]

Table 4.

Treasury Overstatement of Income			
Quintile	Tax Return Data (AGI)	FEI	% Overstatement
20th Percentile	$8,701	$16,950	94.80
40th Percentile	$18,363	$32,563	77.33
60th Percentile	$31,866	$54,758	71.84
80th Percentile	$55,540	$93,222	67.85

Source: U.S. Department of Treasury and JEC Calculations

The Treasury's FEI income concept is a broader measure of income than AGI. Generally (and especially the case with FEI) the broader the income measure, the greater the income imputed to an individual or family. If families or individuals are classified by a dollar value of income, a broader income measure (FEI) will show a larger number of families in the upper income categories than will a narrower definition (AGI).

Thus, by inflating the income amounts for those families primarily included in the middle and upper income brackets, the FEI income concept biases tax policy deliberations. Using this methodology, virtually any broad-based income tax reduction proposal would appear to overly favor the so-called "wealthy" and understate the progressivity of any tax proposal. Thus, when distributional tax tables that use the FEI concept purport to show that tax cuts are only going to the "rich," it only appears that

[33] Susan C. Nelson, "Family Economic Income and Other Income Concepts Used in Analyzing Tax Reform," *Compendium of Tax Research*, 1986, (Washington: Office of Tax Analysis, Department of Treasury), 1987. (Emphasis added).

[34] Julie-Anne Cronin. "U.S. Treasury Distributional Analysis Methodology." Office of Tax Analysis. Department of Tax Analysis. OTA Paper 85. September 1999.

[35] Christopher Frenze. "Treasury Department's Estimate of Tax Changes: A Review and Analysis." Joint Economic Committee. July 1997.

[36] *Ibid.*

way primarily because the middle and upper income class categories have been inflated. To reiterate, a family with an AGI of $30,000 that is evaluating the merits of a tax proposal based on the FEI concept would not necessarily recognize that benefits accruing to a family making $50,000 (based on the FEI concept) would actually apply to them. The use of the FEI income concept fails to give the American taxpayer a transparent, useful, meaningful, and understandable measure of income from which they can evaluate the merits of proposed tax legislation.

Under the FEI concept, "income is the money value of the net accretion to one's economic power between two points of time."[37] In other words, the FEI concept measures income as the amount a family can *spend* during a given time period and still have the same *net assets* at the end of the period as it did in the beginning. Since accrued, though unrealized, capital gains do, in theory, increase an individual's economic power to *spend*, it is included in the Treasury's FEI measure of income. Like many other income sources included in the Treasury FEI measure (e.g., inside buildup on life insurance and income earned in pension funds), many American taxpayers would argue that their pension funds are used for saving and do not provide current cash flow that can be *spent* in the time period under analysis. Therefore, most of the items in the Treasury FEI concept should not be considered a source of income until the gains from such sources are realized and available for *spending*.

Although some economists in the Treasury Department and advocacy organizations may consider the Treasury's FEI measure to be a more *theoretically* correct measure of income, it cannot be as accurate, reliable or understandable to the public as an income measure based on AGI due to the many imputations that the Treasury staff has to infer.

The fallacy of including the imputed rental value of owner-occupied housing can be illustrated in the following example: The Treasury's FEI concept attempts to impute the rental value of owned consumer durable goods, such as the imputed rental value from owner-occupied housing. In theory, economists will recognize that the imputed rental value of owner-occupied housing fits the Treasury's FEI concept of income (i.e., the Haig-Simons theory of income discussed earlier). Furthermore, the average person understands that people who own their own homes are generally more wealthy than those that rent. However, if owner-occupied housing is included as a durable good, why isn't an owner-occupied car? Obviously, a person who owns a car is wealthier than a person who cannot afford to own a car.

Therefore, under the Treasury's income concept, there should also be an imputation for the rental value of owner-occupied automobiles. In fact, any consumer durable good that could be rented, as opposed to purchased, should have some rental

[37] Robert Murray Haig. "The Concept of Income – Economic and Legal Aspects." In Robert Murray Haig (Ed.). *The Federal Income Tax*. Columbia University Press, 1921, page 7.

value and, hence, should be included as imputed income. As noted economist Jane G. Gravelle states, "Imputed income, in economic theory, would include income from the flow from all durable goods..."[38] This would include cars, washing machines, dryers, refrigerators, televisions, etc.

Although the cost of depreciation and maintenance on most consumer durable goods would most likely net against any imputed rental value, the very notion that any imputed rental value for owner-occupied consumer durable goods (such as housing) should be included as "income" in distributional tax analysis is misleading and confusing to the average taxpayer. In fact, the largest item of imputed income in the National Income and Product Accounts compiled by the U.S. Department of Commerce (one of the data sources used by the Treasury Department) was $159.8 billion in 1995 under the category personal interest income, which includes the benefits of banking services provided free to customers in lieu of interest.[39]

The true effect of including all aspects of theoretical income under the Treasury's FEI income measure is dubious and vastly overstates a more realistic measure of family income -- AGI. Furthermore, most taxpayers will no doubt agree that the imputed rental value of any durable good should be excluded from income and "ability to pay" measures, and should purposefully be excluded from any income measure when evaluating changes in tax burdens resulting from changes in tax policies. One typical reaction to the Treasury approach is reflected in the following quotation from former ABC commentator and talk show host David Brinkley:

> Finally, a few words about federal taxes and what some of the great minds in the U.S. Treasury are thinking about.
>
> The Treasury likes to calculate the American people's ability to pay taxes based not on how much money we have, but on how much we might have or could have had. For example, a family that owns a house and lives in it, the Treasury figures that if the family didn't own the house and rented it from somebody else, the rent would be $500 a month. So it would add that amount, $6,000 a year, to the family's so-called imputed income. Imputed income is income you might have had, but don't. They don't tax you on that amount.
>
> The IRS does not play this silly game. Instead the Treasury calculates how much they could take away from us if they decided to. If that were the system, consider the possibilities. How about being taxed on Ed McMahon's $10 million magazine lottery? You didn't win it, you say?

[38] Jane G. Gravelle. "Imputed Income." In Joseph J. Cordes, Robert D. Ebel, and Jane G. Gravelle (Editors). *The Encyclopedia of Taxation and Tax Policy.* The Urban Institute Press, 1999, page 168.

[39] *Ibid.*

> But you could have. The Treasury must have something better to do. If not, there is a good place for Clinton to cut some spending.[40]

Furthermore, even Henry Simons (of the famed Haig-Simons income concept) recognizes the major problem with imputing the rental value of owner-occupied housing. As he states:

> Another difficulty with the income concept has to do with the whole problem of valuation. The precise objective measurement of income implies the existence of perfect markets from which one, after ascertaining quantities, may obtain the prices necessary for routine valuation of all possible inventories of commodities, services, and property rights. In actuality there are few approximately perfect markets and few collections of goods or properties which can be valued accurately by recourse to market prices. Thus, every calculation of income depends upon 'constructive valuation' i.e., upon *highly conjectural* estimates made, at best, by persons of wide information and sound judgement.[41]

Hence, Treasury's FEI concept contains *"highly conjectural"*[42] estimates that may be statistically unreliable and inaccurate. Data for which statistical measures of reliability and accuracy cannot be measured should not be used in analyses that are released into the public domain to influence tax policy.

Another major problem with the Treasury's FEI measure results from the fact that the Treasury data include non-filers with no income or payroll tax liability. In addition, there are millions of households that do not pay taxes and also rely on federal and state public assistance. Common sense might question whether it is appropriate to include those without tax liability in an analysis of income tax burdens.

Since most of these non-filers without tax liability will reside in the bottom quintiles, the predictable outcome is that any income tax reduction will not appear to provide significant benefits to low income households and the progressive nature of the tax system will be understated. Thus, the Treasury's method does not really analyze the effects of tax changes on taxpayers, but on taxpayers and non-taxpayers alike.

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[40] "This Week with David Brinkley," Washington, D.C.: ABC News, February 28, 1993. In: Michael J. Graetz. "Distributional Tables, Tax Legislation, and the Illusion of Precision," page 43. In: David F. Bradford (Ed.). *Distributional Analysis of Tax Policy*. AEI Press. Washington, DC. 1995.

[41] Henry C. Simons, *Personal Income Taxation: The Definition of Income as a Problem of Fiscal Policy*. Chicago: University of Chicago Press, 1938, page 56. (Emphasis added).

[42] Merriam Webster's Collegiate Dictionary, 10th Edition, defines conjecture as "inference from defective or presumptive evidence." 1993.

In addition, despite the term "Family" in the Family Economic Income concept, many of these non-filers actually are non-family households, i.e., single persons. Thus, for example, it would not be surprising that an income tax cut which includes a child tax credit provision would provide much larger average benefits to taxpaying families than to those who are non-filers without children and who disproportionately reside in the bottom quintile. The larger relative presence of non-filers and single persons in the bottom quintiles means that the average benefits of income tax reductions in a distribution table will appear to be lower than they otherwise would be to those residing in the lower income categories.

In response to some of the criticisms of the Treasury's FEI concept that have been illustrated in this paper, raised by previous JEC studies and elsewhere,[43] the Treasury has begun to release companion distribution tables using another measure of income, "Cash Income." However, Treasury's notion of "cash income" still differs from the commonly understood concept of AGI. According to the Treasury Department, "Cash Income consists of wages and salaries, net income from a business or farm, taxable and tax-exempt interest, dividends, rental income, realized capital gains, cash transfers from the government, and retirement benefits. Employer contributions for payroll taxes and the federal corporate income tax is added to place cash income on a pre-tax basis."[44]

This measure still departs from common notions of income. Not many taxpayers would add the share of Social Security tax that is paid for by their employers when calculating their family cash income. Additionally, many taxpayers may even be unaware that their employer pays half of their Social Security tax liability.

Furthermore, the addition of many millions of non-taxpayers at the bottom of the income range ratchets up the relative position of taxpayers in the income distribution. For example, millions of taxpayers that were in the fourth quintile are pushed up into the top fifth of households. In other words, the Treasury approach increases taxpayer income in both relative and dollar terms. This is further evidence of how the Treasury's FEI and "cash income" concepts bias the consideration of tax policy changes and underestimate the progressivity of the tax system.[45]

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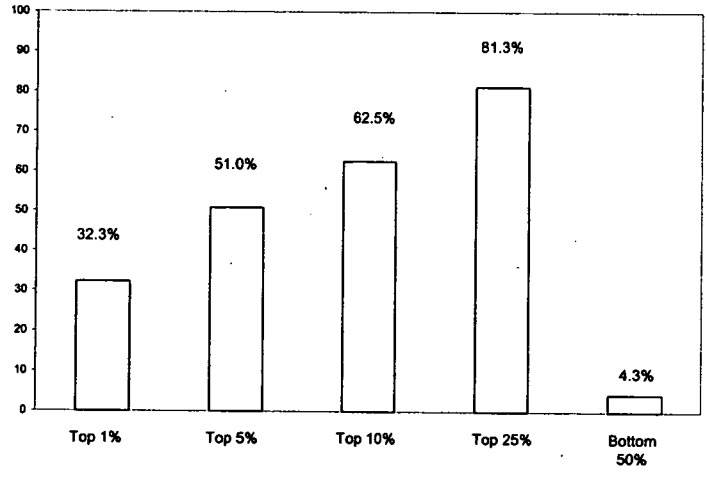
[43] See, for example, Christopher Frenze. "Treasury Department's Estimates of Tax Changes: A Review and Analysis." Joint Economic Committee. July 1997. See also, Bruce Bartlett. Brief Analysis #303: "Income Distribution." National Center for Policy Analysis. Washington, DC. August 10, 1999.

[44] Julie-Anne Cronin. "U.S. Treasury Distributional Analysis Methodology." Office of Tax Analysis. Department of Tax Analysis. OTA Paper 85. September 1999, page 18.

[45] See, for example, Christopher Frenze. "Treasury Department's Estimates of Tax Changes: A Review and Analysis." Joint Economic Committee. July 1997. See also, Bruce Bartlett. Brief Analysis #303: "Income Distribution." National Center for Policy Analysis. Washington, DC. August 10, 1999.

The chart below shows that the entire bottom half (bottom 50 percent) of taxpayers that reported positive AGI paid 4.3 percent of all individual taxes in 1996. This compares with 32.3 percent paid by the top 1 percent, 51 percent paid by the top 5 percent and 62.5 percent (well over half of all individual taxes) paid by the top 10 percent of taxpayers reporting positive AGI. Obviously, if the bottom half of all taxpayers, approximately 51 million taxpayers, are only paying 4.3 percent of all federal income taxes, then many of these taxpayers are paying little or no income tax.

Personal Income Tax Burden
(Shares of Personal Income Tax Payments by Percentile Groups)



Source: Internal Revenue Service - Statistics of Income Division

Public trust and a transparent tax policy debate is hindered by limiting the availability of publicly released tax data, or by showing data only for high income groups while excluding the same data for lower income groups. Not only do these practices reduce the transparency of government and hinder an open policy debate, but these current practices further serve to bias tax policy debates against middle-income and upper-income earners.

VIII. TOP TEN ESSENTIAL QUESTIONS TO ASSIST IN EVALUATING TAX DISTRIBUTION TABLES

The points made in this paper and the following 10 questions will assist taxpayers in reviewing distribution tables of proposed tax legislation. If citizens evaluating the merits of tax distribution tables are unable to determine the answers to the following 10 questions, more information should be requested from the authoring agency or organization. Only with the answers to all of the following questions can taxpayers make informed decisions about the merits of tax proposals.

1. What measure of income is being used (Ask that data be recomputed based on AGI, if not presented so already)?
2. What taxes are being included in the analysis in both the before and after columns, and are they identical (i.e., comparing apples to apples)?
3. How many taxpayers reside within the displayed income categories?
4. What is the income range associated with each category?
5. What is the current and proposed (after full enactment of the proposed tax legislation) level of taxation (percent of total taxes paid to the government) paid by each income category?
6. What is the current and proposed (after full enactment of the proposed tax legislation) effective tax rate for each income category?
7. What are the ranges of tax cuts each income group is estimated to receive after full enactment of the tax legislation (ranges should be provided in addition to the often-presented average tax cut)?
8. Are the estimates presented free of imputations? If not, what imputations have been made to arrive at the estimates presented in the distributional tax tables?
9. What are the accuracy and reliability of the estimates presented in the distributional tax tables?
10. What are some additional or hidden burdens that are not captured in the distributional tax tables (e.g., the hidden burden of hiring lawyers and accountants to avoid the estate tax)?

Using the answers to these 10 questions, taxpayers will be able to unveil the information that is not always contained in tax distribution tables and evaluate the economic merits of proposed tax legislation. Distributional tax tables that are presented in such manners that withhold or omit the answers to these questions, or are based on statistically compromised data sources, should seriously be questioned on the issues of transparency, accuracy and reliability.

IX. CONCLUSION

This paper has demonstrated how tax distribution tables can be designed and presented in order to further policy objectives rather than advance a balanced and accurate perspective on tax policy. Unless there is greater public recognition of both the art and the science of distributional analysis, tax policy will be unduly influenced by sub-standard data and research.

The use of statistically compromised data sources and the imputation of income variables inconsistent with the public understanding of income overstate income and push average American taxpayers into higher income brackets. This, in turn, gives the appearance that the average American family is wealthier than it actually is. This biases the debate of proposed tax relief legislation that attempts to return taxpayer money by perpetuating a myth that tax cuts only benefit the rich.

The presentation of tax data within distribution burden tables hides or omits much of the important information that citizens require in order to effectively evaluate the merits of any tax legislation. Furthermore, the omission of statistical measures of accuracy and reliability relating to estimates contained in distributional tax tables released into the public domain creates an illusion of precision that is misleading.

A former Treasury Deputy Assistant Secretary for Tax Policy, Michael J. Graetz, argues that due to the current opaque nature of communicating even the simplest facts about tax policy to the American pubic, distributional tax tables should be abandoned as a basis for legislative decision-making.[46] Although this paper makes no recommendations for continuing or discontinuing the use of tax distribution tables in the legislative decision making process, it is obvious that the process, development and release of tax distribution tables need reform.

A more transparent dissemination of data and an insightful understanding of the "tricks of the trade" will enable citizens to better dissect distributional tax tables. This will enable the average American taxpayer to make educated decisions about the economic merits of tax legislation – promoting better understanding of tax policy, informed public debate and better tax policy outcomes.

Jason J. Fichtner
Senior Economist

[46] Michael J. Graetz. "Distributional Tables, Tax Legislation, and the Illusion of Precision." In David F. Bradford (Editor). *Distributional Analysis of Tax Policy*, pages 75 and 76.

APPENDIX – TABLE A1.

Distribution of Income and Federal Taxes Under Current Law

(2000 Income Levels)

Family Economic Income Quintile	Number of Families (millions)	Family Economic Income (1) ($B)	Federal Taxes Under Current Law (2) ($B)	Taxes as a Percent of Income (%)	After-tax FEI ($B)	Percent Distribution of:		
						Family Economic Income (%)	Federal Taxes Under Current Law (%)	After-tax FEI (%)
Lowest (3)	22.4	226.0	13.3	5.9	212.6	2.7	0.7	3.2
Second	23.0	602.4	70.3	11.7	532.0	7.2	3.9	8.0
Third	23.0	1,062.2	184.9	17.4	877.4	12.6	10.2	13.3
Fourth	23.0	1,790.1	359.1	20.1	1,431.0	21.3	19.9	21.6
Highest	23.0	4,771.4	1,175.3	24.6	3,596.1	56.7	65.1	54.4
Total (3)	**115.2**	**8,419.3**	**1,806.5**	**21.5**	**6,612.8**	**100.0**	**100.0**	**100.0**
Top 10%	11.5	3,406.7	876.6	25.7	2,530.2	40.5	48.5	38.3
Top 5%	5.8	2,479.5	659.9	26.6	1,819.6	29.4	36.5	27.5
Top 1%	1.2	1,247.0	363.2	29.1	883.9	14.8	20.1	13.4

Source: Department of the Treasury. Office of Tax Analysis. Fax from Jim Nunns, July 30, 1999.

(1) Family Economic Income (FEI) is a broad-based income concept. FEI is constructed by adding to AGI unreported and under-reported income; IRA and Keogh deductions; nontaxable transfer payments such as Social Security and AFDC; employer-provided fringe benefits; inside build-up on pensions, IRAs, Keoghs, and life insurance; tax-exempt interest; and imputed rent on owner-occupied housing. Capital gains are computed on an accrual basis, adjusted for inflation to the extent that reliable data allow. Inflationary losses of lenders are subtracted and gains of borrowers are added. There is also an adjustment for accelerated depreciation of noncorporate businesses. FEI is shown on a family rather than a tax-return basis. The economic incomes of all members of a family unit are added to arrive at the family's economic income used in the distributions.

(2) The taxes included are individual and corporate income, payroll (Social Security and unemployment), excises, customs duties, and estate and gift taxes. The individual income tax is assumed to be borne by payors, the corporate income tax by capital generally, payroll taxes (employer and employee shares) by labor (wages and self-employment income), excises on purchases by individuals in proportion to relative consumption of the taxed good and proportionately by labor and capital, and the estate tax by decedents. Federal taxes are estimated at 2000 income levels but assuming 2009 law and, therefore, exclude provisions that expire prior to the end of the Budget period and are adjusted for the effects of unindexed parameters.

(3) Families with negative incomes are excluded from the lowest quintile but included in the total line.

Note: Quintiles begin at FEI of: Second $17,988; Third $34,844; Fourth $59,019; Highest $100,767; Top 10% $140,581; Top 5% $189,835; Top 1% $462,053.

Does the table show the answers to the following 10 essential questions?	Yes	No
1. What measure of income is used?	X	
2. What taxes are included?	X	
3. How many taxpayers are in each income category?	X	
4. What income range is associated with each income category?	X	
5. What are the current and proposed levels of taxation for each category?		X
6. What are the current and proposed effective tax rates for each category?		X
7. What are the estimated ranges of tax cuts for each category?		X
8. Are the estimates presented free of imputations?		X
9. Are measures of error provided relating to the precision, accuracy and reliability?		X
10. Do the estimates provided account for hidden burdens?		X

The FEI concept is used in this analysis, and families with negative incomes are excluded from the lowest quintile, biasing the analysis. Furthermore, this Treasury table excludes information relating to the percentage *change* in after after-tax income, which is

considered by the Treasury Department to be the most important piece of information to include in a distributional tax table. As one of the Office of Tax Analysis' own economists writes:

> The only tax burden measure with some theoretical basis is the percentage change in after-tax income. It alone provides some indication of a family's change in welfare, because after-tax income represents the family's consumption possibilities in either the current or future years. In contrast, the share of the total change in tax burdens, which is often quoted in the popular press, does not convey information on a family's initial welfare position.[47]

The Treasury table reproduced above provides the percent *distribution* of after-tax FEI, which is not the same as the percentage *change* in after-tax FEI. The opaque nature of the exclusion of this information prevents citizens from making an informed debate regarding the "fairness" of the tax proposal under analysis.

[47] Julie-Anne Cronin. "U.S. Treasury Distributional Analysis Methodology." Office of Tax Analysis. Department of Tax Analysis. OTA Paper 85. September 1999. Page 34.

APPENDIX – TABLE A2.

$10 Billion Tax on Alcoholic Beverages[1]

(2000 Income Levels)

Family Economic Quintile[2]	Number of Families (millions)	Average Tax Change ($)	Total Tax Change		Percent Change in:	
			Amount[3] ($M)	Percent Distribution (%)	Current Federal Taxes[4] (%)	After-Tax Income[5] (%)
Lowest	22.4	14	303	4.0	2.27	-0.14
Second	23.0	35	805	10.7	1.15	-0.15
Third	23.0	55	1,258	16.8	0.68	-0.14
Fourth	23.0	77	1,772	23.6	0.49	-0.12
Highest	23.0	145	3,350	44.7	0.29	-0.09
Total	**115.2**	**65**	**7,500**	**100.0**	**0.42**	**-0.11**
Top 10%	11.5	190	2,190	29.2	0.25	-0.09
Top 5%	5.8	254	1,465	19.5	0.22	-0.08
Top 1%	1.2	515	599	8.0	0.16	-0.07

Source: Department of the Treasury, Office of Tax Analysis. OTA Paper 85, Table 16.

(1) This table distributes the estimated change in tax burden due to a proposed $10 billion tax on alcoholic beverages.
(2) Family Economic Income (FEI) is a broad-based income concept. FEI is constructed by adding to AGI unreported and under-reported income; IRA and Keogh deductions; nontaxable transfer payments such as Social Security and AFDC; employer-provided fringe benefits; inside build-up on pensions, IRAs, Keoghs, and life insurance; tax-exempt interest; and imputed rent on owner-occupied housing. Capital gains are computed on an accrual basis, adjusted for inflation to the extent that reliable data allow. Inflationary losses of lenders are subtracted and gains of borrowers are added. There is also an adjustment for accelerated depreciation of noncorporate businesses. FEI is shown on a family rather than a tax-return basis. The economic incomes of all members of a family unit are added to arrive at the family's economic income used in the distributions.
(3) The change in Federal taxes is estimated at 2000 income levels but assuming long run (2009) law.
(4) The taxes included are individual and corporate income, payroll (Social Security and unemployment), excises, customs duties, and estate and gift taxes. The individual income tax is assumed to be borne by payors, the corporate income tax by capital generally, payroll taxes (employer and employee shares) by labor (wages and self-employment income), excises on purchases by individuals in proportion to relative consumption of the taxed good and proportionately by labor and capital and excises on purchases by businesses and customs duties proportionately to labor and capital, and the estate tax by decedents. Federal taxes are estimated at 2000 income levels but assuming 2009 law and, therefore, exclude provisions that expire prior to the end of the Budget period and are adjusted for the effects of unindexed parameters.
(5) After-tax income is Family Economic Income less current Federal taxes.
(6) Families with negative incomes are excluded from the lowest quintile but included in the total line.
NOTE: Quintiles begin at FEI of: Second $17,988; Third $34,844; Fourth $59,019; Highest $100,767; Top 10% $140,581; Top 5% $189,835; Top 1% $462,053.

Does the table show the answers to the following 10 essential questions?	Yes	No
1. What measure of income is used?	X	
2. What taxes are included?	X	
3. How many taxpayers are in each income category?	X	
4. What income range is associated with each income category?	X	
5. What are the current and proposed levels of taxation for each category?	X	
6. What are the current and proposed effective tax rates for each category?		X
7. What are the estimated ranges of tax cuts for each category?		X
8. Are the estimates presented free of imputations?		X
9. Are measures of error provided relating to the precision, accuracy and reliability?		X
10. Do the estimates provided account for hidden burdens?		X

The FEI concept is used in this analysis, and families with negative incomes are excluded from the lowest quintile, biasing the analysis.

APPENDIX – TABLE A3.

Distributional Effects of the Conference Agreement for H.R. 2488

Calendar Year 2004

Income Category (2)	Change in Federal Taxes (3)		Federal Taxes (3) Under Present Law		Federal Taxes (3) Under Proposal		Effective Tax Rate (4)	
							Present Law	Proposal
	Millions	Percent	Billions	Percent	Billions	Percent	Percent	Percent
Less than $10,000	-$36	-0.5%	$7	0.4%	$7	0.4%	7.1%	7.0%
10,000 to 20,000	-807	-2.3%	35	2.0%	34	2.0%	8.1%	7.9%
20,000 to 30,000	-2,734	-3.0%	90	5.0%	87	5.0%	15.2%	14.8%
30,000 to 40,000	-4,022	-3.5%	116	6.5%	112	6.4%	17.6%	17.0%
40,000 to 50,000	-4,454	-3.4%	130	7.3%	126	7.2%	19.3%	18.6%
50,000 to 75,000	-10,452	-3.3%	314	17.6%	304	17.5%	21.2%	20.4%
75,000 to 100,000	-8,475	-3.2%	269	15.1%	260	15.0%	23.9%	23.0%
100,000 to 200,000	-6,655	-1.8%	377	21.1%	370	21.3%	26.2%	25.3%
200,000 and over	-6,092	-1.4%	445	25.0%	439	25.2%	29.2%	27.1%
Total, All Taxpayers	**-$43,726**	**-2.5%**	**$1,784**	**100.0%**	**$1,740**	**100.0%**	**22.2%**	**21.3%**

Source: Joint Committee on Taxation. JCX-62-99. August 5, 1999

(1) Includes: individual (15% rate) rate reduction, dependent care credit expansion, AMT credit limitation repeal, deductible IRA provisions, student loan interest deduction, elderly caretaker exemption, capital gains, and self-employed health insurance deduction.

(2) The income concept used to place tax returns into income categories is adjusted gross income (AGI) plus: [1] tax-exempt interest, [2] employer contributions for health plans and life insurance, [3] employer share of FICA tax, [4] worker's compensation, [5] nontaxable social security benefits, [6] insurance value of Medicare benefits, [7] alternative minimum tax preference items, and [8] excluded income of U.S. citizens living abroad. Categories are measured at 1999 levels.

(3) Federal taxes are equal to individual income tax (including the outlay portion of the EIC), employment tax (attributed to employees), and excise taxes (attributed to consumers). Corporate income tax is not included due to uncertainty concerning the incidence of the tax. Individuals who are dependents of other taxpayers and taxpayers with negative income are excluded from the analysis.

(4) The effective tax rate is equal to Federal taxes described in footnote (3) divided by: income described in footnote (2) plus additional income attributable to the proposal.

Does the table show the answers to the following 10 essential questions?	**Yes**	**No**
1. What measure of income is used?	X	
2. What taxes are included?	X	
3. How many taxpayers are in each income category?		X
4. What income range is associated with each income category?	X	
5. What are the current and proposed levels of taxation for each category?	X	
6. What are the current and proposed effective tax rates for each category?	X	
7. What are the estimated ranges of tax cuts for each category?		X
8. Are the estimates presented free of imputations?		X
9. Are measures of error provided relating to the precision, accuracy and reliability?		X
10. Do the estimates provided account for hidden burdens?		X

Although the table by the JCT does not provide all of the information necessary to make completely informed decisions, the JCT table gives solid information to determine fairness: percent of federal taxes paid under present law and after implementation.

APPENDIX – TABLE A4.

Selected Federal Taxes in 1999 / Effects of the House GOP 1999 Tax Plan

Income Group	No. of Taxpayers (000)	Income Range	Average Income	Total Income (billions)	Federal Income & Payroll Taxes	% of Total Pretax Income	% of Total Fed PIT & Payroll Tax	Fed PIT & Payroll Tax/ Income	House 99 Tax Cut/PIT & Payroll Tax
Lowest 20%	25,350	Less than $13,300	$8,400	$213.2	$5.5	3.4%	0.5%	2.6%	-12.73%
Second 20%	25,329	13,300 – 23,800	18,300	464.5	43.7	7.5%	3.6%	9.4%	-8.3%
Middle 20%	25,339	23,800 – 38,200	30,300	766.8	111.9	12.3%	9.2%	14.6%	-7.9%
Fourth 20%	25,341	38,200 – 62,800	49,100	1,245.3	233.2	20.0%	19.1%	18.7%	-7.7%
Next 15%	19,009	62,800 – 124,000	83,600	1,590.0	348.7	25.6%	28.6%	21.9%	-8.2%
Next 4%	5,068	124,000 – 301,000	173,000	877.8	203.1	14.1%	16.7%	23.1%	-12.1%
Top 1%	1,264	301,000 or more	837,000	1,058.0	273.0	17.0%	22.4%	25.8%	-25.0%
ALL	127,648		$48,700	$6,211.8	$1,219.2	100.0%	100.0%	100.0%	-12.6%

Source: Citizens for Tax Justice. E-mail from Bob McIntyre, July 14, 1999.

Note: For most taxpayers (all but the top quintile), income tax figures alone would exclude most current federal taxes.
Current tax figures do not include federal excise taxes, corporate income taxes or estate taxes, nor state and local taxes.
Tax cut figures include proposed cuts in corporate income taxes and estate taxes.
Totals ("ALL") include taxpayers with negative incomes; lowest group does not include those taxpayers.
Taxpayers include taxpayers who file federal income tax returns and those who do not. Dependent filers are excluded.

Does the table show the answers to the following 10 essential questions?	Yes	No
1. What measure of income is used?		X
2. What taxes are included?	X	
3. How many taxpayers are in each income category?	X	
4. What income range is associated with each income category?	X	
5. What are the current and proposed levels of taxation for each category?		X
6. What are the current and proposed effective tax rates for each category?		X
7. What are the estimated ranges of tax cuts for each category?		X
8. Are the estimates presented free of imputations?		X
9. Are measures of error provided relating to the precision, accuracy and reliability?		X
10. Do the estimates provided account for hidden burdens?		X

Although this table presents a lot of data for the reader, it only answers three out of the 10 essential questions that are necessary in order for a reader to make an informed decision. Furthermore, this table is very dishonest due to the data used. The notes to the table reveal that the author excluded certain taxes in the current tax base, but included them in the tax cut base. This has an effect of skewing the benefits received towards the upper income categories and, furthermore, is a comparison of apples and oranges. This type of statistical analysis is only used to distort data and hide the truth. Lastly, note that the author excludes those taxpayers with negative income from the lowest income group

(those taxpayers who pay no taxes and may in fact receive federal tax subsidies). This has an effect of making the lowest income group appear worse off than would otherwise be the case. This effect is compounded by the exclusion of certain taxes paid by the upper income groups and the table reproduced above is misleading.

APPENDIX – TABLE A5.

Effects of the House GOP Tax Plan

Income Group	Income Range	Average Income	Tax Cut (billions)	Average Tax Cut	% of Total Tax Cut
Lowest 20%	Less than $13,300	$8,400	$-0.7	$-29	0.5%
Second 20%	$13,300 – 23,800	18,300	-3.6	-144	2.4%
Middle 20%	23,800 – 38,200	30,300	-8.9	-350	5.8%
Fourth 20%	38,200 – 62,800	49,100	-18.1	-712	11.8%
Next 15%	62,800 – 124,000	83,600	-28.8	-1,513	18.8%
Next 4%	124,000 – 301,000	173,000	-24.7	-4,866	16.1%
Top 1%	301,000 or more	837,000	-68.3	-54,027	44.6%
ALL		**$48,700**	**$-153.1**	**$-1,199**	**100.0%**
Addendum					
Bottom 60%	Less than $38,200	$19,000	$-13.3	$-174	8.7%
Top 10%	$89,000 or more	204,000	-105.8	-8,355	69.1%

Source: Citizens for Tax Justice. "House GOP Tax Plan: The Rich Get Richer." July 27, 1999

Notes: Figures show the annual effects of (1) a 10% cut in personal income tax rates; (2) a reduction in the income tax rates on realized capital gains, from 20% to 15% (for those in all but the bottom regular tax bracket) and from 10% to 7.5% (for those in the bottom regular tax bracket); (3) elimination of the estate tax; (4) repeal of the individual Alternative Minimum Tax; (5) a $200 interest and dividend exclusion ($400 for couples); (6) an increase in the standard deduction for couples to double the single amount; (7) increased contribution and benefit limits for pensions and 401(k)s; (8) deductions for health insurance for people without employer plans; and (9) various corporate tax breaks. Not included are about $3 billion a year in miscellaneous tax breaks, mostly for certain health and education expenses. All figures are at 1999 levels, showing full-year effects after phase-ins are completed.

Does the table show the answers to the following 10 essential questions?	Yes	No
1. What measure of income is used?		X
2. What taxes are included?	X	
3. How many taxpayers are in each income category?		X
4. What income range is associated with each income category?	X	
5. What are the current and proposed levels of taxation for each category?		X
6. What are the current and proposed effective tax rates for each category?		X
7. What are the estimated ranges of tax cuts for each category?		X
8. Are the estimates presented free of imputations?		X
9. Are measures of error provided relating to the precision, accuracy and reliability?		X
10. Do the estimates provided account for hidden burdens?		X

Although the variable amounts for income range and average income are identical to those presented in the table for Appendix - Table A4, the footnotes are different for this table that was released into the public domain. They do not detail whether taxpayers with negative incomes are excluded from the lowest income category, nor does it identify whether "taxpayers" who don't file tax returns are included in the analysis. This lack of transparency and the exclusion of essential information from their distributional tax tables, as is the case with many of the distributional tax tables released by the CTJ, only serves to bias the reader towards the preconceived notions of the CTJ.

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A Guide to Tax Policy Analysis: The Central Tendency of Federal Income Tax Liabilities in Distributional Analysis

A GUIDE TO TAX POLICY ANALYSIS: THE CENTRAL TENDENCY OF FEDERAL INCOME TAX LIABILITIES IN DISTRIBUTIONAL ANALYSIS

EXECUTIVE SUMMARY

This study examines the misuse of averages as a sole measure of central tendency in presenting results of analyses based on income and tax data in distributional analysis. It finds that the use of averages in tax distribution tables is misleading to the public and the press and that the median is a more appropriate and representative measure to describe income and tax amounts for the taxpaying population.

Specifically, this report finds:

- Income and tax information based on tax returns filed with the IRS do not follow the pattern of a normal distribution. Hence, the use of averages is an inappropriate measure of central tendency.
- Over 22 percent of all 1995 tax returns claimed zero tax liability.
- The Joint Committee on Taxation estimates that for calendar year 2000, 48.7 million taxpayers out of 140.2 million taxpayers overall, or 34.7 percent, will have zero or negative federal income tax liability.
- For all taxpayers, the use of the average as the measure of central tendency overstates the tax liability for the "representative" taxpayer by almost 3 times the median value.
- The dispersion of taxpayers within any income group is impossible to determine from the information presented in tax distribution tables, but is shown to vary considerably.
- The grouping of taxpayers into income categories provide a false sense of precision and misleadingly suggest that taxpayers within the same groups necessarily have similar federal income tax liability.
- In four out of the five income groups examined, a majority of taxpayers had tax liabilities that were either 25 percent greater than the average or 25 percent less than the average tax liability for each income group.

- In comparing federal income tax liabilities, distribution tables often misclassify millions of taxpayers into quintiles in which they have little tax liability in common.
    - Approximately 2.2 million taxpayers in the third quintile pay more in federal income taxes than 5.4 million taxpayers classified in the fourth quintile.
    - Over 3 million taxpayers in the fourth quintile pay more in federal income taxes than 4.1 million taxpayers classified in the fifth quintile.
- The use of averages in tax distribution tables obscures the simplest facts about proposed tax policy initiatives to the public.

ESSENTIAL QUESTIONS TO ASSIST IN EVALUATING TAX DISTRIBUTION TABLES

The issues raised in this paper and the following eleven questions will assist taxpayers in reviewing tax distribution tables:

1. Is the median presented as the correct measure of central tendency (or at least provided in addition to the average)?
2. What measure of income is being used (If adjusted gross income (AGI) is not presented, or some other measure that taxpayers understand, ask that it be provided)?
3. What taxes are being included in the analysis in both the before and after columns, and are they identical (i.e., comparing apples to apples)?
4. How many taxpayers reside within the displayed income categories?
5. What is the range of income and tax liability associated with each category?
6. What is the current and proposed (after full enactment of the proposed tax legislation) level of taxation (percent of total taxes paid to the government) paid by each income category?
7. What is the current and proposed (after full enactment of the proposed tax legislation) effective tax rate for each income category?
8. What are the ranges of tax cuts each income group is estimated to receive after full enactment of the tax legislation (ranges and medians should be provided instead of the often-presented average tax cut)?
9. Are the estimates presented free of imputations? If not, what imputations have been made to arrive at the estimates presented in the distributional tax tables?
10. What are the accuracy and reliability of the estimates presented in the distributional tax tables, and are data limitations disclosed or are they hidden?
11. What are some additional or hidden burdens that are not captured in the distributional tax tables (the hidden economic gains or losses resulting from a tax change, e.g., the economic increase in the stock of capital that would result from a repeal of the estate tax or the hidden burden of hiring lawyers and accountants to avoid the estate tax)?

A GUIDE TO TAX POLICY ANALYSIS: THE CENTRAL TENDENCY OF FEDERAL INCOME TAX LIABILITIES IN DISTRIBUTIONAL ANALYSIS

He uses statistics as a drunken man uses lamp posts – for support rather than illumination.

Andrew Lang[1]

[B]efore representing the central tendency by any single number, evaluators need to look at the distribution and decide whether the indicator would be misleading.

United States General Accounting Office[2]

I. INTRODUCTION

The analysis of tax data is a time intensive and complicated process. Much time and effort are spent collecting income and tax data, compiling data sets and running statistical analyses. However, it appears that relatively little time and effort are spent actually *understanding* the data and how best to present results to the public of analyses of tax data. This is evident in the overuse of averages and the simplistic classification of taxpayers into income ranges and quintiles by highly publicized tax distribution tables. This study shows that the link between income and tax liability is much more tenuous that that often presumed, and that a variety of other factors can greatly affect tax liability.

The taxation of individual income is a major focus of tax policy. Legislators evaluating the fundamental components of tax legislation face decisions that often affect after-tax income and wealth of taxpayers and can affect the performance of the greater economy. The presentation of tax data is necessary for the effective understanding and evaluation of tax policy by both legislators and the public. The incorrect use of descriptive statistics can have profound effects on the way tax policies are evaluated.

The official sources of tax distribution data are the Office of Tax Analysis (OTA) of the Department of Treasury, the Congressional Joint Committee on Taxation (JCT)

[1] Furman University Mathematical Quotation Server. Available online at: http://math.furman.edu/~mwoodard/mqs/mquot.shtml

[2] United States General Accounting Office. *Quantitative Data Analysis: An Introduction.* (GAO/PEMD-10.1.11), June 1992.

and, to a lesser extent, the Congressional Budget Office (CBO).[3] All of these organizations apply different assumptions and methodologies to the analysis of tax legislation. In addition, there are unofficial distribution tables that are publicly released by assorted advocacy groups to influence the policy process and the debate on particular aspects of tax legislation.

Many tax distribution tables released into the public domain, such as those of the Treasury Department and assorted advocacy groups, misrepresent the average as the correct measure of central tendency. Examples of these tables are provided in Appendix I. Not surprisingly, those distribution tables released to advance one point of view are the analyses most likely to misuse averages and to mislead the public. Additionally, all of the disseminators of tax distribution tables use rigid income categories to classify taxpayers that *appear* to be alike. As is commonly said, the devil is in the details.

The rest of this paper is organized as follows. Section II will briefly outline what exactly is a distribution table. Section III will then discuss the appropriate measures used to describe the central tendency of income and tax data. Sections IV and V will describe in detail why the use of averages is an inappropriate measure of central tendency for describing income and tax data, and further describe how the use of averages provides an incomplete picture in tax distribution tables. Federal income tax data from the Internal Revenue Service graphically demonstrate how the use of averages provides an illusion of precision that is false and misleading. Furthermore, these sections will explain why in order to remain impartial, distributional tax tables should *never* display averages as the sole measure of central tendency. Section VI concludes this paper. Appendix I provides examples of tax distribution tables released by the OTA and Citizens For Tax Justice and Appendix II provides a description of the data used in this paper and the limitations associated with the data.

Readers that are not familiar with distributional tax analysis, the presentation and use of distribution tables, the measures of income and methodologies used in distributional analysis are encourage to reference **"A Guide to Tax Policy Analysis: Problems with Distributional Tax Tables,"** a previous Joint Economic Committee Study. This study also details how taxpayers can effectively evaluate the merits of different presentations used in distributional analysis and is available online at: http://www.house.gov/jec

[3] For a more detailed discussion of their respective rolls, see: Michael J. Graetz. "Distributional Tables, Tax Legislation, and the Illusion of Precision," in David F. Bradford, ed. *Distributional Analysis of Tax Policy*. AEI Press. Washington, DC. 1995, page 20.

II. The Distribution Table

A distribution table can be deceptively simple. Generally, in the left-hand column are income categories classified by either dollar cut-offs, such as, $0 - $10,000, $10,000 - $20,000, $20,000 - $30,000, etc., or divided into percentile groupings such as, lowest quintile, second quintile, third quintile, fourth quintile, and highest quintile. Additional columns provide information about the number of observations, income levels, taxes paid, etc., for each income category. Usually, the table provides information pertaining to the changes in taxes that are to be paid after the proposed tax legislation is enacted. The primary focus of tax analysis is the increases and decreases in taxes paid under current law in comparison to after the proposed tax legislation becomes fully effective. Table 1 provides an illustration of a simple burden table relating to a hypothetical proposal to reduce individual taxes:

Table 1.

Income Category	Change in Federal Taxes		Effective Tax Rate		Average Tax Change
			Present Law	Proposed Law	
	$ (millions)	Percent	Percent	Percent	$
Less than $10,000	-20	-0.2	7.1	7.0	-300
10,000 to 20,000	-365	-1.0	8.1	8.0	-400
20,000 to 30,000	-1,300	-1.5	15.2	15.0	-500
30,000 to 40,000	-2,150	-1.9	17.6	17.3	-750
40,000 to 50,000	-2,750	-2.1	19.3	18.9	-1,100
50,000 to 75,000	-7,200	-2.3	21.2	20.7	-1,500
75,000 to 100,000	-6,600	-2.4	23.9	23.2	-2,000
100,000 to 200,000	-8,100	-2.2	26.2	25.5	-3,500
200,000 and over	-13,500	-3.1	29.2	27.6	-5,000
Total, all taxpayers	**-$41,985**	**-2.4%**	**22.2%**	**21.5%**	**-$650**

Source: Hypothetical Data. JEC Calculations

In viewing the results displayed in the second column, it is quite clear in this example that all taxpayer groups would receive a nominal reduction in tax. The lowest group receives a total reduction in their tax of $20 million and the highest group receives a total reduction of $13.5 billion. The third column shows the reduction in terms of percentages. The lowest group receives a 0.2 percentage reduction in tax, while the highest group receives a 3.1 percentage reduction. The fourth and fifth columns display each group's effective tax rate under present law and after the legislation becomes effective, respectively. All income groups benefit from a lower effective tax rate under the proposed legislation. The last column displays the dollar amount of the average tax cut that each member in an income category might expect to receive.

Since every income group benefits, a cursory review of the above table might lead readers to conclude that the tax proposal is beneficial for all. However, some might come to completely different conclusions. These readers may conclude that the tax legislation is not fair to the lowest income group, since the highest income group receives 32 percent of the total benefit ($13.5 billion / $42.0 billion) while the lowest income group receives less than ½ percent of the total benefit ($20 million / $42.0 billion). However, the problem with this perspective is that these numbers reflect more about the impact of the

current tax system than the tax change under consideration. In other words, in most cases such statistics primarily reflect the distribution of tax payments under the tax code before the tax change takes place. The more progressive the current tax code is, the more regressive any subsequent tax change can be made to appear. What is presented as a measure of the tax change is in reality a statistical mirage that mainly reflects the progressivity of the current tax system.

Table 1 actually provides insufficient information from which to draw an informed conclusion as to the merits of the proposed tax legislation. For example, this table does not show the current amount of taxes that each income group pays. For purposes of illustration, assume that the lowest income group currently pays no tax at all, while the highest income group pays 50% of the total tax collected. Then, based on a different measure of fairness, it could be argued that the highest income group should receive a commensurate amount of the benefits of the total tax reduction and, therefore, the proposed 32% ($13.5 billion / $42.0 billion) is *unfair* to the upper income group.

Additionally, Table 1 does not indicate how many taxpayers make up each income group, although this can be mathematically derived. Additional information is also necessary to effectively evaluate the proposed tax legislation, such as what items are included in income, what types of taxes are being included/excluded, and over what time horizon the effects are being measured.

III. MEASURES OF CENTRAL TENDENCY

As Yale University law professor and former Treasury Deputy Assistant Secretary for tax policy Michael J. Graetz writes, "[t]he current practice of fashioning tax legislation to achieve a particular result in a distribution table creates the illusion of precision when such precision is impossible."[4] It is statistically possible, based on averages, that some taxpayers would receive no tax cut or even face a tax increase. Furthermore, not only is precision impossible but the use of averages misrepresents the central tendency of the data.

The central tendency of the distribution of data is a point estimate or single number that corresponds to a typical, representative or middle score for a given set of data. Examples of such measures are the average, the median and the mode.

The average, or mean, is the most easily recognized and understood measure of central tendency. To calculate the average, each observation in the data is added together and then the sum is divided by the total number of observations. Some common uses of averages to describe central tendency are batting averages in baseball and student grade

[4] Michael J. Graetz. "Distributional Tables, Tax Legislation, and the Illusion of Precision." In David F. Bradford (Editor). *Distributional Analysis of Tax Policy.* AEI Press. Washington, DC. 1995.

point averages. The use of averages is simple and easy for people to understand. However, the use of averages may not be appropriate if there are many outliers in the data or the data do not fit the pattern of a normal distribution. This is because the average as a measure of central tendency can be highly influenced by the presence of extreme values.

The median is the middle score in a set of ranked data. It represents the point in the distribution where 50 percent of the observations lie above the value and 50 percent lie below it. The median makes no assumptions about the shape of the distribution of data. Furthermore, the median is a considered to be a statistically resistant measure of central tendency because the value associated with a median it is not highly affected by outliers that can affect the value associated with an average.

The mode is determined by finding the value that most frequently corresponds to the data set. Simply stated, the mode is the most frequently occurring attribute or observation in a data set and is most commonly used with nominal variables.

When describing the central tendency of data, the measure that should be used is the one the best describes the data. For most income and tax data this the median value, not the average. To see why this is the case, consider the following example displaying the seven salaries of a company in Table 2.

Table 2. - Annual Income	
CEO	$1,000,000
Attorney	$70,000
Systems Administrator	$60,000
Economist	$50,000
Office Administrator	$40,000
Secretary	$40,000
Paid Intern	$10,500
Total	$1,270,500
Average	$181,500
Median	$50,000
Mode	$40,000

The average of these seven salaries is $181,500. The median value is $50,000 and the mode is $40,000. In this instance, and in any situation where extreme outliers can skew the average, the median is a better indicator of the central tendency because the CEO's salary is an extreme outlier causing the average to lie far from the other six salaries. The median is the best single number that represents the central tendency of this data.

To further illustrate, Bill Gates, who has an estimated net worth in the billions of dollars and an unusually high income, resides in the upper most income category of any distributional tax analysis. His income alone would be enough to skew any average

income measure in the upper percentiles. Due to the nature of income data, most official income data released by government and other statistical agencies provide the median as a measure of central tendency or at the very least provide the median along with the average.

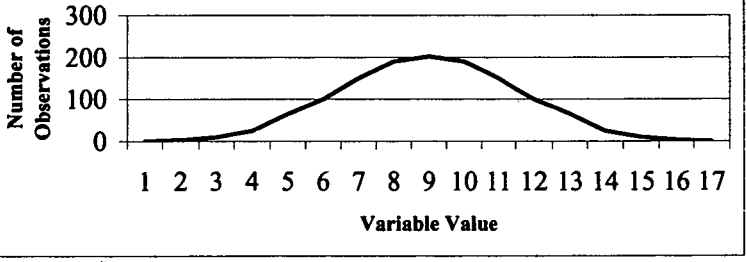
The misuse of averages in distribution tables can hide information relating to the dispersion and the true central tendency of the data from the public, further clouding the ability to make sound decisions about tax policy. The severity of the misuse of the average as a measure of central tendency depends on how far the distribution of the data varies from a normal distribution.

IV. THE CENTRAL TENDENCY OF TAX DATA

The Internal Revenue Service (IRS) Public Use Tax File, prepared by the Statistics of Income Division (SOI), contains a stratified random sample of tax returns and is used to tabulate and present statistical information representative of the entire population of individual income tax returns filed with the IRS.[5] Using this data and a statistical software package, graphical representations of the distribution of taxpayers' tax liability by income categories becomes possible.

A common graphical way to present the distribution of data is by means of a simple line chart. In this fashion, a normal distribution would take on a shape similar to the following in Chart 1 below.

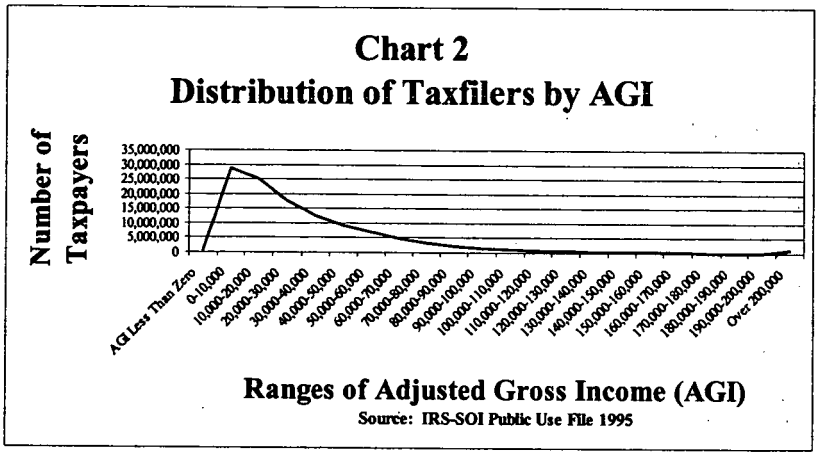
Chart 1
Example of a Normal Distribution



[5] For a full description of the IRS Public Use File, including sampling error and disclosure avoidance procedures, please see the Appendix II.

With normally distributed data the shape is symmetrical. Furthermore, the three measures of central tendency (average, median and mode) tend to be identical or very close to being identical. In the above example, the average, median and mode are all nine. However, data provided by the IRS show that income and tax data do not follow the pattern of a normal distribution.

For tax year 1995, the most recent public use file available, the distribution of tax returns by adjusted gross income (AGI) looks as follows in Chart 2.[6]

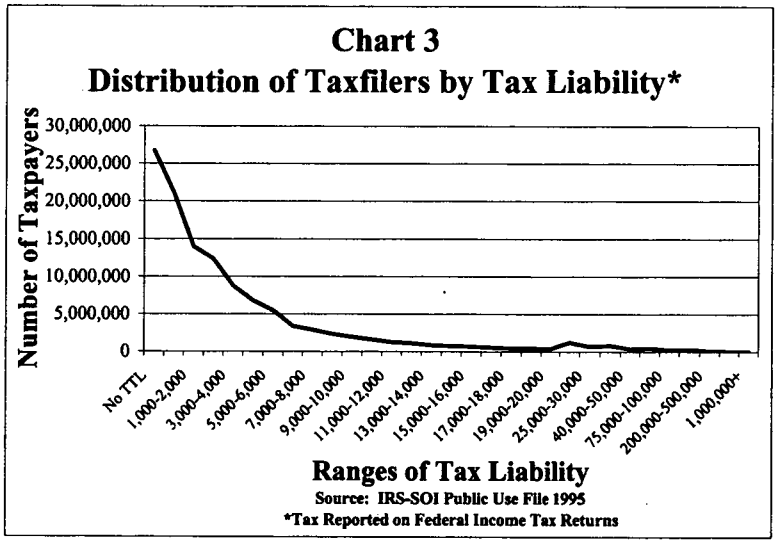


As can be seen, the distribution of tax returns based on AGI is highly asymmetrical. Furthermore, the distribution is highly skewed to the left. Due to the extreme asymmetry of the data, it would be inappropriate to use the average as an appropriate measure of central tendency when describing taxpayers based on AGI.

Chart 3 below displays how the distribution appears if the variable of analysis is federal income tax liability, or the total dollar amount that is paid to the IRS and reported straight off of a federal tax return.[7]

[6] The IRS releases aggregate statistics to the public and publishes these statistics in its "Statistics of Income Bulletin" on a lagged basis. In past years, the public use file has been published yearly on a one-year lag after the end of the filing period. The current increase in the lag has been caused by SOI's efforts to reexamine the disclosure issues involved with the microdata. The public use files for tax years 1996 – 1998 will hopefully be released starting late this summer or early fall. Furthermore, SOI hopes to have the reexamination of its disclosure policies completed shortly so that the Tax Year 2000 Public Use File will be available in December 2002.

[7] Does not include payroll or excise taxes or any taxes not reported on a federal tax return.



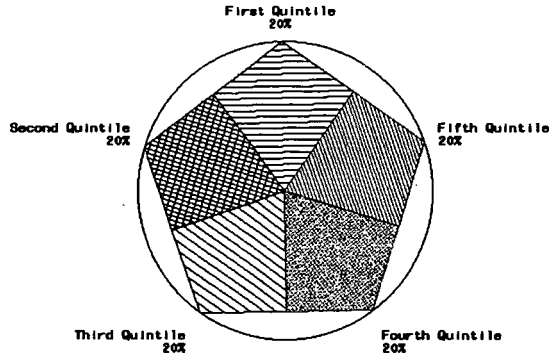
In this case, the distribution is also asymmetrical with the data highly skewed to the left. From the chart, it is observed that over 25 million tax returns have zero tax liability. Hence, any use of an average to describe taxpayers based on tax liability does not accurately represent the central tendency of the population. Furthermore, due to the skewed nature of the data, even the use of the median may not provide an accurate representation of the data.

The use of line charts is a simple way to graphically represent the distribution of data and can be created in spreadsheet software packages. A more complex chart can be used to shed light on the nuances that are often hidden in more simplistic tables. Star charts provide an interesting and novel approach to looking at the distribution of data.

Star charts are graphs created with complex statistical software packages that show statistics based on values of a variable. The center of a star chart represents the value zero. The circle enclosing the star chart represents the maximum statistic value for any one of the predefined groups. Each group value is represented by a slice. The slice with the greatest value extends out to the edge of the circle. The remaining slices are represented as proportions of the slice with the greatest value. The groups can be midpoints, quartiles, quintiles, or any programmed group that an analyst chooses to study.

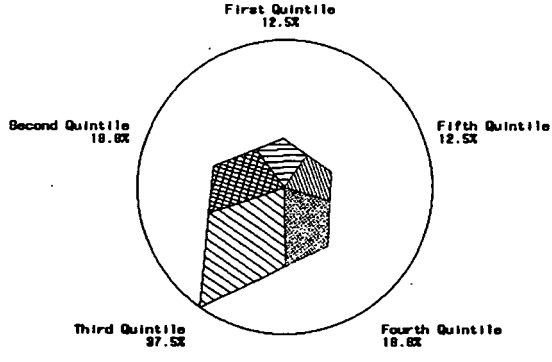
Chart 4 below provides an example of a star chart with an equal distribution. The variable of study has been grouped into quintiles. By definition, a quintile contains one-fifth of the total number of observations in a data set. If the variable under study was federal tax liability and the distribution of federal tax liability was equal for each quintile, this would imply that each quintile has the same number of total dollars as each of the other quintiles. Since each quintile group contains the same amount of total federal tax liability, each slice extends equally out to the edge of the circle.

Chart 4 — Example of An Equal Distribution



However, federal income tax liability doesn't follow an equal distribution. Chart 2 above shows that income is asymmetric and highly skewed to the right. If tax liability were normally distributed and were to follow a pattern such as that displayed in Chart 1, a star chart displaying the distribution of a variable that follows the shape of a normal distribution grouped into quintiles would look like the following example in Chart 5.

Chart 5 — Example of A Normal Distribution



This is how a variable that follows the pattern of a normal distribution displays as a star chart. The third quintile is equivalent to the middle observations that would lie underneath the height of the curve of a normal distribution displayed as a line chart, as in Chart 1 above. Since the third quintile represents the greatest value (37.5%), its slice is the longest and extends to the edge of the circle. Since both the second and fourth quintiles contain half the value as the third quintile (18.75% rounded to 18.8%), their respective slices extend halfway to the edge of the circle. Similarly, the first and fifth quintiles, or the tails of a normal distribution as displayed in Chart 1, contain only one-third the value as the third quintile (12.5%). Hence the slices representing the first and fifth quintiles extend one-third of the way to the edge of the circle. Only if a variable follows the pattern of a normal distribution similar to the pattern displayed above in Chart 5 is it appropriate to use the average as the measure of central tendency.

Tax distribution tables ultimately focus on how much more or less in taxes income groups will pay under a change in tax law. Furthermore, the majority of distribution tables that are released use the average as a measure of central tendency and group taxpayers into quintiles. Therefore, the rest of this paper will focus on federal AGI and tax liability grouped by quintiles. Using the SOI Public Use File, it is possible to calculate the average and median AGI and federal tax liability amounts for each quintile. Table 3 below displays this information for tax year 1995.

Table 3. Estimated Average and Median Amounts Federal AGI and Tax Liability
(Rounded to Nearest $100)

	Average	Median
All Tax Returns		
AGI	$35,300	$22,100
Tax Liability	$5,200	$1,800
First Quintile		
AGI	$1,600	$3,700
Tax Liability	$100	$0
Second Quintile		
AGI	$12,200	$12,100
Tax Liability	$500	$400
Third Quintile		
AGI	$22,400	$22,100
Tax Liability	$1,800	$1,800
Fourth Quintile		
AGI	$38,700	$38,000
Tax Liability	$4,200	$3,900
Fifth Quintile		
AGI	$101,300	$71,600
Tax Liability	$19,100	$10,100

Detail May Not Add Due To Rounding.

The average and median values show some interesting contrasts in Table 3. For all tax returns, the average AGI amount is almost 60 percent more than the median. The contrast is even greater focusing on tax liability, the average of which is 189 percent greater than the median! Since the average and median are so far apart, it is obvious that the distribution of AGI and tax liability among all tax returns does not follow the pattern of a normal distribution. Hence, the average should not be used as the sole measure of central tendency.

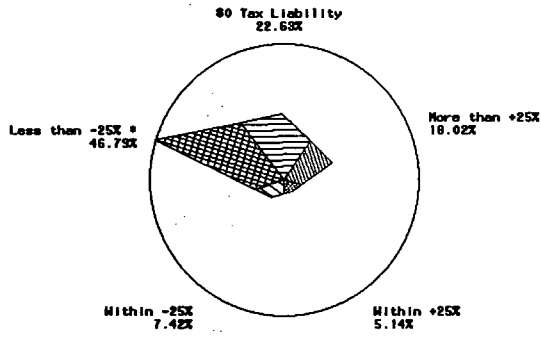
Contradictory observations are further made focusing on the quintile levels. Focusing on tax liability, the averages and medians for the second and third quintiles are relatively close. However, the opposite is the case for the first and fifth quintiles. In the first quintile, the average tax liability is $100 (rounded up) and the median is $0 (this value wasn't rounded). This means that at least 50 percent of the tax returns in the bottom quintile have zero or negative tax liability. In this instance, the median is the best representative measure of central tendency.

In fact, as will be demonstrated later in the paper, there are tax returns in each quintile that have zero tax liability. A study by the Congressional Joint Committee on Taxation (JCT) calculates that roughly 48.7 million taxpayers (including those taxpayers that don't file a federal income tax return) have zero or negative tax liability in calendar year 2000.[8] This is equivalent to 34.7 percent of the JCT's estimated number of tax units, including filing and non-filing units and *excluding* individuals who are dependents of other taxpayers and taxpayers with negative income. If these taxpayers were included in the JCT analysis, the number and percentage of taxpayers who have zero or negative tax liability would be substantially higher. This further supports using the median as the most representative measure of central tendency when describing income and tax liability amounts.

But how do the distributions of tax returns by quintile compare to that of a normal distribution? Again, Chart 5 above presented a star chart for a normally distributed variable. In order to use star charts to show the distribution of tax returns by quintile, it is necessary to define some groupings. For purposes of this analysis each quintile has been grouped further into five categories: (1) tax returns having zero tax liability; (2) returns having tax liabilities greater than zero and that are between the average amount for that quintile and the amount which is less than 25% greater than the average; (3) returns having tax liabilities that are between the average amount for that quintile and the amount which is less than 25% less than the average; (4) returns having tax liabilities greater than that amount which is 25% more than the average; and (5) returns having tax liabilities less than the amount which is 25% less than the average.

[8] United States Congress. Joint Committee on Taxation. "Distribution of Certain Federal Tax Liabilities by Income Class for Calendar Year 2000." JCX-45-00. April 11, 2000.

Chart 6 — Federal Income Tax Liability **



* For Federal Income Tax Liability Greater Than Zero
** Compared To Average Income Tax Liability

Before turning to an analysis of quintiles, the national distribution of tax returns based on tax liability for all tax returns using the groupings defined above is displayed in Chart 6.

For tax year 1995, over 22 percent of all tax returns have no tax liability. This amounts to 26.8 million tax returns. This figure is less than the 48.7 million taxpayers identified in calendar year 2000 by the JCT.[9] This discrepancy is in part based on the different years under analysis and that the unit of analysis in the 1995 data is tax returns while the JCT's unit of analysis is taxpayers.

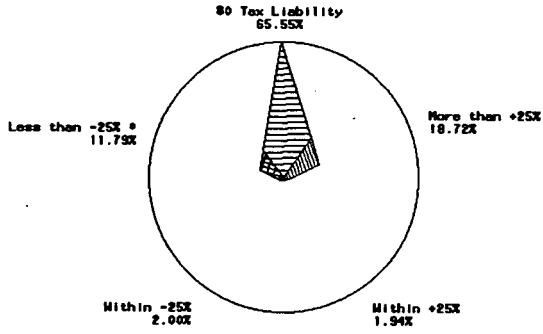
Furthermore, almost 47 percent of all returns have tax liability amounts falling between zero and 25 percent less than the average of $5,200. If these tax returns are combined with those with zero tax liability, then over 69 percent (22.63% + 46.79%) of all returns pay less than the average tax liability. Lastly, about 12 percent of all returns have tax liabilities that are within +/- 25 percent of the average tax liability amount. In other words, and perhaps most notably, almost 88 percent of all returns have tax liabilities that are either 25 percent greater than the average or 25 percent less than the average.

Based on this information, the use of the average as the sole measure of central tendency to describe the tax liability for the entire country would be misleading. The use of the average suggests that the "representative" taxpayer has a tax liability of $5,200, almost three times greater than the median amount.

[9] *Ibid.*

Chart 7 below represents the distribution of tax returns based on tax liability for the first quintile using the groupings defined above.

Chart 7 — Federal Income Tax Liability for First Quintile **



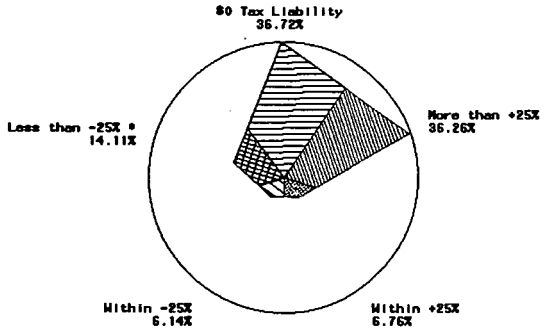
* For Federal Income Tax Liability Greater Than Zero
** Compared To Average Income Tax Liability

Notice that over 65 percent of the returns in the first quintile have no income tax liability. This means that over 65 percent of the returns in this quintile have more in common with the median ($0) than with the average ($100). Furthermore, only about 4 percent of the returns in the first quintile have tax liabilities that are within +/- 25 percent of the average tax liability amount for the first quintile of $100. This means that over 96 percent of all returns in the first quintile have tax liabilities that are either 25 percent greater than the average or 25 percent less than the average.

It would appear that the median is definitely a more representative measure of central tendency in the first quintile than the average. The use of the average in this case misleads the reader into believing that more people in this quintile have positive tax liability than those that have zero tax liability.

A similar picture emerges for the second quintile, as Chart 8 shows. Just over 36 percent of tax returns in this quintile have zero tax liability. Also, under 13 percent of the tax returns have tax liability within +/- 25 percent of the average ($500). In other words, over 87 percent of all returns in the second quintile have tax liabilities that are either 25 percent greater than the average or 25 percent less than the average.

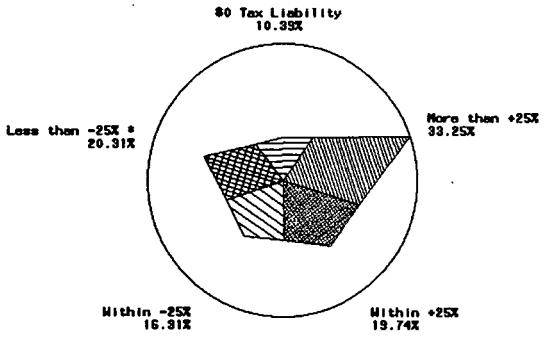
Chart 8 — Federal Income Tax Liability for Second Quintile **



* For Federal Income Tax Liability Greater Than Zero
** Compared To Average Income Tax Liability

The third quintile, in which the average and median are similar, displays a more normal pattern as Chart 9 displays.

Chart 9 — Federal Income Tax Liability for Third Quintile **

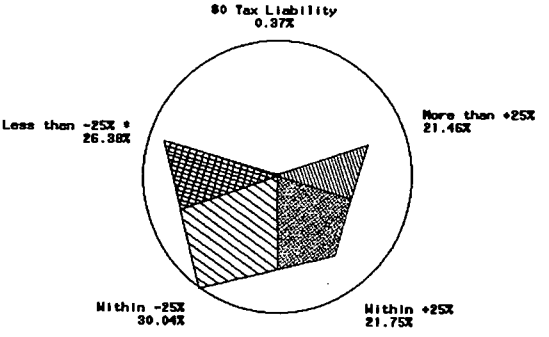


* For Federal Income Tax Liability Greater Than Zero
** Compared To Average Income Tax Liability

Ten percent of returns in this quintile have zero tax liability (10% of returns with AGI between $16,700 and $29,000). Thirty-six percent of tax returns have tax liability amounts between +/- 25 percent of the average ($1,800). However, the overwhelming majority of tax filers in the third quintile (almost 64%) have tax liabilities that are either 25 percent greater than the average or 25 percent less than the average.

The fourth quintile is similar in distribution to the third, with less than 1 percent of returns showing zero tax liability and just over 50 percent of returns having tax liability amounts within +/- 25 percent of the average ($4,200). The fourth quintile is the most "normal" of the quintiles, as can be seen from Chart 10 below. However, nearly half of the tax filers in the fourth quintile have tax liabilities that are either 25 percent greater than the average or 25 percent less than the average.[10]

Chart 10 — Federal Income Tax Liability for Fourth Quintile **

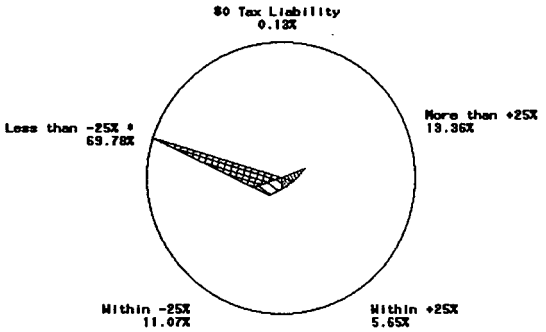


* For Federal Income Tax Liability Greater Than Zero
** Compared To Average Income Tax Liability

[10] However, almost 60 percent (57.37%) of the tax filers in the fourth quintile have tax liabilities that are either 20 percent greater than the average or 20 percent less than the average.

The fifth quintile is as non-normal as the first quintile, as Chart 11 demonstrates below. A most interesting statistic is that almost 70 percent of the returns in the fifth quintile report a tax liability amount that is *less* than 25 percent of the average. As discussed earlier, this demonstrates how a few high-income earners can have a tremendous effect on the average. Because of this, again the median is the more appropriate measure of central tendency. To report only the average would mislead the reader into believing that one-fifth of all tax returns have tax liabilities that are similar to the average amount for the fifth quintile of $19,100 instead of the median value of $10,100. The average tax liability amount for the fifth quintile is almost double the median value!

Chart 11 — Federal Income Tax Liability for Fifth Quintile **



* For Federal Income Tax Liability Greater Than Zero
** Compared To Average Income Tax Liability

Therefore, using the average as the measure of central tendency when analyzing or discussing tax policy initiatives is quite misleading. The over-reliance on averages has the effect of making it appear that tax plans that aim to reduce income tax burdens overstate the benefits to the taxpayers in the upper income categories, whereas what is primarily reflected is their higher tax burden before the tax change takes effect. Additionally, even the use of the median can be misleading due to the significant dispersion of tax liability among taxpayers. However, the use of the median is less misleading than the use of the average.

The use of averages when displaying distribution data for income and tax liability misleads the public. This clouds the transparency necessary for the public to effectively evaluate the merits of any proposed tax plan. But this is only part of the story. Not only is the use of averages as a measure of central tendency misleading, but so is the use of quintiles or income categories based on AGI or any other measure of income. These

arbitrary categories imply that the taxpayers grouped into these categories are necessarily similar in economic status and pay similar taxes. This is far from the case.

V. Misclassification of Taxpayers

It is well known to most taxpayers that tax liabilities often differ among families with the same income. This can be because of family size, filing status, whether a family itemizes their deductions or elects to take the standard deduction, whether a family pays a mortgage on their home and deducts the interest expense or rents, the nature of a family's income and many other factors. Additionally, some families are more aggressive at reducing their tax liabilities than others. For example, this can be done legally by contributing to a 401(k) plan, an individual retirement account or a medical savings account, and in many other ways as well.

The dispersion of taxpayers within any income group is impossible to determine from the information typically presented in tax distribution tables. Do most of the taxpayers within the $20,000 to $30,000 income range lie closer to $20,000 or to $30,000? All other things being equal, and from the information presented in most distribution tables, it would be expected that a taxpayer with income closer to $30,000 would necessarily have a higher tax liability, and consequently pay a greater amount in taxes than a taxpayer with income closer to $20,000. But this is not necessarily the case as Table 4 below begins to illuminate.

Table 4. Estimated Descriptive Statistics for Tax Year 1995 Tax Returns
(Rounded to Nearest $100)

All Tax Returns	Average	Median	Minimum Amount	Maximum Amount
AGI	$35,300	$22,100	($241,700,000)	$209,400,000
Tax Liability	$5,200	$1,800	$0	$62,560,000
First Quintile				
AGI	$1,600	$3,700	($241,700,000)	$7,900
Tax Liability	$100	$0	$0	$3,764,000
Second Quintile				
AGI	$12,200	$12,100	$7,900	$16,700
Tax Liability	$500	$400	$0	$58,700
Third Quintile				
AGI	$22,400	$22,100	$16,700	$29,000
Tax Liability	$1,800	$1,800	$0	$168,300
Fourth Quintile				
AGI	$38,700	$38,000	$29,000	$50,700
Tax Liability	$4,200	$3,900	$0	$529,900
Fifth Quintile				
AGI	$101,300	$71,600	$50,700	$209,400,000
Tax Liability	$19,100	$10,100	$0	$62,560,000

Detail May Not Add Due To Rounding.

Although over 65 percent of returns in the first quintile and over 36 percent of returns in the second quintile reported zero tax liability (as shown in Charts 7 and 8 above), Table 4 shows that there are actually taxpayers in each quintile that reported zero tax liability on their federal tax returns in 1995. However, the grouping of taxpayers by income measures into quintiles suggests that there are close similarities among these taxpayers with respect to the amount of federal tax liability. The suggested correlation that higher income taxpayers always have higher tax liabilities is not necessarily the case. As Table 4 also illuminates, the maximum tax liability reported on a return classified in the second quintile was $58,700. However, the maximum tax liability reported on a return classified in the first quintile was over 3 million dollars, $3,764,000. It seems counterintuitive that a taxpayer ranked and classified in a lower income category can pay more in taxes than a taxpayer ranked and classified in a higher category. This is possible because millions of taxpayers have more in common with each other based on tax liability than based on income. This important fact is ignored in typical tax distribution tables.

It could be suggested that the case highlighted above is only that of an outlier and should be discarded from the sample. Not only would discarding this observation fail to highlight extreme cases in our tax system, but it would also fail to enlighten the public that taxpayer misclassification is actually a problem involving millions of taxpayers, not just a few extreme cases. Chart 12 below begins to illuminate the problem and false sense of precision of classifying taxpayers by income categories.

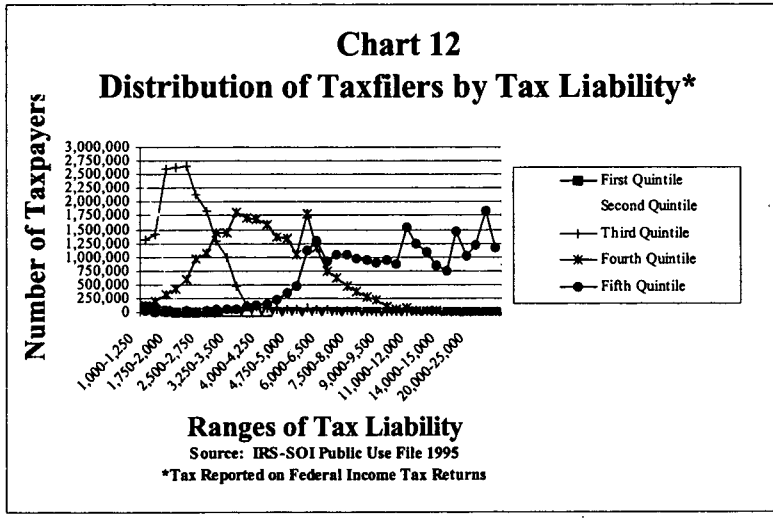


Chart 12 focuses on all tax returns that paid over $1,000 in federal income tax in 1995, ranked by AGI and grouped into quintiles. As the chart shows, there are millions of taxpayers in the third quintile who pay more in taxes than millions of taxpayers in the fourth quintile. Similarly, there are millions of taxpayers in the fourth quintile who pay more in taxes than millions of taxpayers in the fifth quintile.

Based on Chart 12, Chart 13 below shows that there are 2.2 million tax returns in the third quintile that paid $3,000 or more in federal income taxes, compared with 5.4 million tax returns in the fourth quintile that paid less than $3,000, even though these taxpayers are in a higher income quintile.

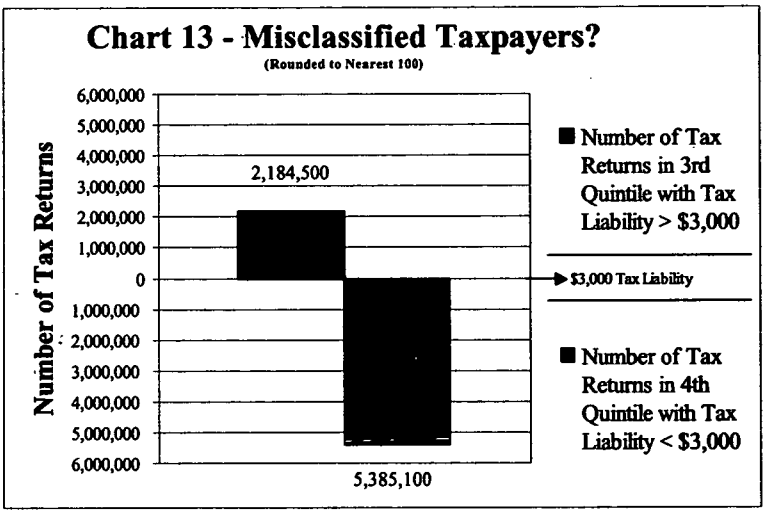
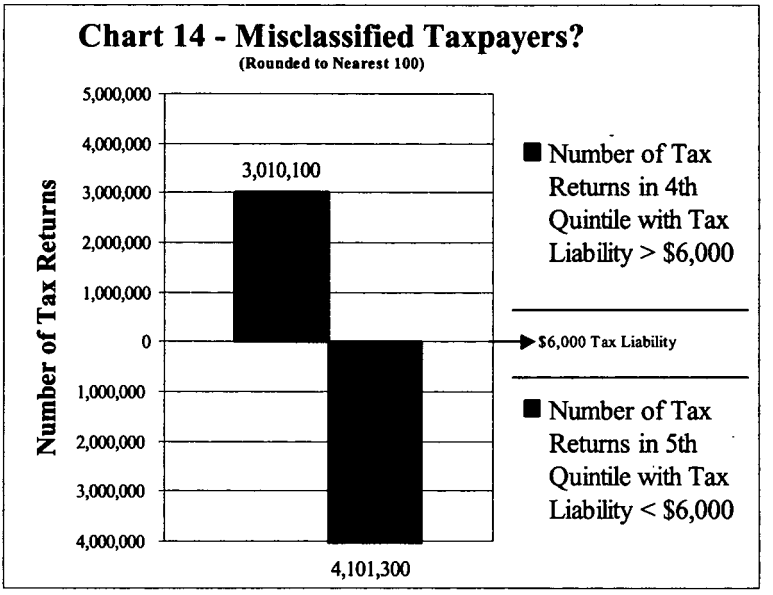


Chart 14 below sheds light on a similar story between the fourth and fifth quintiles. Even though they are in a lower income quintile, 3 million tax returns in the fourth quintile paid over $6,000 in federal income tax in 1995, compared with 4.1 million tax returns in the fifth and "richest" quintile that paid less than $6,000.



For tax year 1995, there were roughly 118 million federal tax returns. This amounts to about 23.6 million tax returns per quintile. Chart 13 above suggests that based on tax liability, 5.4 million taxpayers in the fourth quintile have more in common with 21.4 million taxpayers in the third quintile than they do with the other members of the fourth quintile. Similarly, Chart 14 suggests that 4.1 million taxpayers in the fifth quintile have more in common with 20.3 million taxpayers in the fourth quintile than they do with the rest of the 19 million taxpayers in their own quintile.

Ultimately, since tax distribution tables are concerned with the amount of tax currently paid and the amount of tax that is to be paid after a proposed tax legislation is enacted, it is questionable whether policy makers and the public are best served by classifying taxpayers into rigid income categories. This is especially the case when, based on income measures alone, millions of taxpayers have less in common with taxpayers of their own income categories because the amount of tax they pay is more

similar to taxpayers in other income categories. Along with the use of averages, the use of income categories without detailed descriptive language detailing their limitations misleads the public by suggesting that the numbers detailed in tax distribution tables are accurate, precise and reflect an accurate picture of the American taxpaying population.

VI. CONCLUSION

A former Treasury Deputy Assistant Secretary for Tax Policy, Michael J. Graetz, argues that due to the current opaque nature of communicating even the simplest facts about tax policy to the American public, distributional tax tables should be abandoned as a basis for legislative decision-making.[11] The statistical evidence demonstrates that the process, development, presentation and release of tax distribution tables need fundamental reform.

Lastly, tax changes can alter the after-tax prices and costs of goods and services, thereby adjusting the relative mix of inputs used in production, the types of goods and services businesses offer, as well as the amount of labor and capital. Tax changes can also alter the growth path of the economy and can produce broad economic effects that are not reflected in distributional analyses. Therefore, attempts to ascertain the distributional impact of proposed tax legislation should consider the possible macroeconomic effects. Furthermore, if distributional analysis is used, it should be in a much broader context in which the effects on efficiency and the economy are fully considered.

This paper has demonstrated how the use of averages and income classifications in tax distribution tables can mislead the public. This has the effect of supporting arguments based on class conflict paradigms and fails to illuminate the public as to the nuances of the actual distribution of tax liability across the income spectrum. Unless there is greater public recognition of the improper use of averages with income and tax data and the problems associated with using broad sweeping income categories to group "like" taxpayers, the current practice of using tax distribution tables will continue to mislead the public. At the very minimum, the use of the median as a more appropriate measure of central tendency will help to illuminate the public and contribute to a more open and honest tax policy debate

Specifically, this report finds:

- Income and tax information based on tax returns filed with the IRS do not follow the pattern of a normal distribution. Hence, the use of averages is an inappropriate measure of central tendency.

[11] Michael J. Graetz. "Distributional Tables, Tax Legislation, and the Illusion of Precision." In David F. Bradford (Editor). *Distributional Analysis of Tax Policy*, pages 75 and 76.

- Over 22 percent of all 1995 tax returns claimed zero tax liability.
- The Joint Committee on Taxation estimates that for calendar year 2000, 48.7 million taxpayers out of 140.2 million taxpayers overall, or 34.7 percent, will have zero or negative federal income tax liability.
- For all taxpayers, the use of the average as the measure of central tendency overstates the tax liability for the "representative" taxpayer by almost 3 times the median value.
- The dispersion of taxpayers within any income group is impossible to determine from the information presented in tax distribution tables, but is shown to vary considerably.
- The grouping of taxpayers into income categories provide a false sense of precision and misleadingly suggest that taxpayers within the same groups necessarily have similar federal income tax liability.
- In four out of five income groups examined, a majority of taxpayers had tax liabilities that were either 25 percent greater than the average or 25 percent less than the average tax liability for each income group.
- In comparing federal income tax liabilities, distribution tables often misclassify millions of taxpayers into quintiles in which they have little tax liability in common.
    - Approximately 2.2 million taxpayers in the third quintile pay more in federal income taxes than 5.4 million taxpayers classified in the fourth quintile.
    - Over 3 million taxpayers in the fourth quintile pay more in federal income taxes than 4.1 million taxpayers classified in the fifth quintile.
- The use of averages in tax distribution tables obscures the simplest facts about proposed tax policy initiatives to the public.

In addition to the use of averages (or the omission of the median as a measure of central tendency), tax distribution tables can mislead the public in other areas as well. The points made in this paper and the following 11 questions will assist taxpayers in reviewing distribution tables of proposed tax legislation. If citizens evaluating the merits of tax distribution tables are unable to determine the answers to the following 11 questions, more information should be requested from the authoring agency or organization. Only with the answers to all of the following questions can taxpayers make informed decisions about the merits of tax proposals.

1. Is the median presented as the correct measure of central tendency (or at least provided in addition to the average)?
2. What measure of income is being used (If adjusted gross income (AGI) is not presented, or some other measure that taxpayers understand, ask that it be provided)?

3. What taxes are being included in the analysis in both the before and after columns, and are they identical (i.e., comparing apples to apples)?
4. How many taxpayers reside within the displayed income categories?
5. What is the range of income and tax liability associated with each category?
6. What is the current and proposed (after full enactment of the proposed tax legislation) level of taxation (percent of total taxes paid to the government) paid by each income category?
7. What is the current and proposed (after full enactment of the proposed tax legislation) effective tax rate for each income category?
8. What are the ranges of tax cuts each income group is estimated to receive after full enactment of the tax legislation (ranges and medians should be provided instead of the often-presented average tax cut)?
9. Are the estimates presented free of imputations? If not, what imputations have been made to arrive at the estimates presented in the distributional tax tables?
10. What are the accuracy and reliability of the estimates presented in the distributional tax tables, and are data limitations disclosed or are they hidden?
11. What are some additional or hidden burdens that are not captured in the distributional tax tables (the hidden economic gains or losses resulting from a tax change, e.g., the economic increase in the stock of capital that would result from a repeal of the estate tax or the hidden burden of hiring lawyers and accountants to avoid the estate tax)?

Using the answers to these 11 questions, taxpayers will be able to unveil the information that is not always contained in tax distribution tables and evaluate the economic merits of proposed tax legislation. Distributional tax tables that are presented in such a manner that withhold or omit the answers to these questions, misuse the average as the sole measure of central tendency, or are based on statistically compromised data sources, should seriously be questioned on the issues of transparency, accuracy and reliability.

This is another paper in a Joint Economic Committee series on distributional tax analysis. For more information and details on how taxpayers can effectively evaluate the merits of different presentations used in distributional analysis, see the previous paper in the series, **"A Guide to Tax Policy Analysis: Problems with Distributional Tax Tables,"** is available online at: http://www.house.gov/jec

Jason J. Fichtner
Senior Economist

APPENDIX I - TABLE I

Major Tax Cut Provisions in the Senate Finance Committee Chairman's Mark [1]

(1998 Income Levels)

Family Economic Income Quintile (2)	Number of Families (millions)	Average Tax Change ($)	Total Tax Change		Tax Change as a Percent of:	
			Amount (3) ($M)	Percent Distribution (%)	Current Federal Taxes (4) (%)	Family Economic Income (%)
Lowest (5)	21.5	-12	-264	0.4	-2.10	-0.13
Second	22.2	-64	-1428	2.3	-2.32	-0.26
Third	22.3	-274	-5095	10.0	-3.86	-0.64
Fourth	22.3	-583	-12964	21.3	-4.20	-0.81
Highest	22.3	-1789	-39837	65.5	-4.38	-0.97
Total (5)	111.3	-547	-60836	100.0	-4.19	-0.82
Top 10%	11.1	-2338	-26036	42.8	-3.93	-0.89
Top 5%	5.6	-3137	-17489	28.7	-3.58	-0.83
Top 1%	1.1	-7081	-7945	13.1	-3.06	-0.75

Source: Department of the Treasury – Office of Tax Analysis. June 16, 1997.

(1) This table distributes the estimated change in tax burdens due to the major tax cut proposals in the Senate Finance Committee Chairman Mark which include the following: I) a child credit; ii) a modified HOPE scholarship tax credit; iii) a deduction for student loan interest; iv) deduction for education expenses paid through State-sponsored prepaid tuition programs; v) permanent extension of Section 127; vi) education investment accounts and private prepaid tuition programs; vii) expanded front-loaded and new back-loaded IRAs; viii) Capital gains provision (lower individual rates, extension of S. 1202, and $500,000 exclusion for gains on a principal residence; and ix) changes in the individual AMT.

(2) Family Economic Income (FEI) is a broad-based income concept. FEI is constructed by adding to AGI unreported and under-reported income; IRA and Keogh deductions; nontaxable transfer payments such as Social Security and AFDC; employer-provided fringe benefits; inside build-up on pensions, IRAs, Keoghs, and life insurance; tax-exempt interest; and imputed rent on owner-occupied housing. Capital gains are computed on an accrual basis, adjusted for inflation to the extent that reliable data allow. Inflationary losses of lenders are subtracted and gains of borrowers are added. There is also an adjustment for accelerated depreciation of noncorporate businesses. FEI is shown on a family rather than a tax-return basis. The economic incomes of all members of a family unit are added to arrive at the family's economic income used in the distributions.

(3) The change in Federal taxes is estimated at 1998 income levels but assuming fully phased in (2007) law and behavior. For the IRA provisions and education accounts, the change is measured as the present value of the tax savings from one year's contributions. The effect of the capital gains provision is based on the level of capital gains realizations under current law.

(4) The taxes included are individual and corporate income, payroll (Social Security and unemployment), and excises. Estate and gift taxes and customs duties are excluded. The individual income tax is assumed to be borne by payors, the corporate income tax by capital income generally, payroll taxes (employer and employee shares) by labor (wages and self-employment income), excises on purchases by individuals by the purchaser, and excises on purchases by business in proportion to total consumption expenditures. Federal taxes are estimated at 1998 income levels but assuming 2007 law and, therefore, exclude provision that expire prior to the end of the Budget period and are adjusted for the effects of unindexed parameters.

(5) Families with negative incomes are excluded from the lowest quintile but included in the total line.

NOTE: Quintiles begin at FEI of: Second $16,950: Third $32,583; Fourth $54,758; Highest $93,222; top 10% $127,373; Top 5% $170,103; top 1% $408,551.

Does the table show the answers to the following 11 essential questions?	Yes	No
1. Is the median presented as the correct measure of central tendency?		X
2. What measure of income is used?	X	
3. What taxes are included?	X	
4. How many taxpayers are in each income category?	X	
5. What income range is associated with each income category?		X
6. What are the current and proposed levels of taxation for each category?		X
7. What are the current and proposed effective tax rates for each category?		X
8. What are the estimated ranges of tax cuts for each category?		X
9. Are the estimates presented free of imputations?		X
10. Are measures of error provided relating to the precision, accuracy and reliability?		X
11. Do the estimates provided account for hidden burdens?		X

The FEI concept is used in this analysis, and families with negative incomes are excluded from the lowest quintile, biasing the analysis. Furthermore, this Treasury table excludes information relating to the percentage *change* in after after-tax income, which is considered by the Treasury Department to be the most important piece of information to include in a distributional tax table. As one of the Office of Tax Analysis' own economists writes:

> The only tax burden measure with some theoretical basis is the percentage change in after-tax income. It alone provides some indication of a family's change in welfare, because after-tax income represents the family's consumption possibilities in either the current or future years. In contrast, the share of the total change in tax burdens, which is often quoted in the popular press, does not convey information on a family's initial welfare position.[12]

The opaque nature of the exclusion of this information prevents citizens from having an informed debate regarding the "fairness" of the tax proposal under analysis.

[12] Julie-Anne Cronin. "U.S. Treasury Distributional Analysis Methodology." Office of Tax Analysis. Department of Tax Analysis. OTA Paper 85. September 1999. Page 34.

APPENDIX I – TABLE II

Effects of the House GOP Tax Plan

Income Group	Income Range	Average Income	Tax Cut (billions)	Average Tax Cut	% of Total Tax Cut
Lowest 20%	Less than $13,300	$8,400	$-0.7	$-29	0.5%
Second 20%	$13,300 – 23,800	18,300	-3.6	-144	2.4%
Middle 20%	23,800 – 38,200	30,300	-8.9	-350	5.8%
Fourth 20%	38,200 – 62,800	49,100	-18.1	-712	11.8%
Next 15%	62,800 – 124,000	83,600	-28.8	-1,513	18.8%
Next 4%	124,000 – 301,000	173,000	-24.7	-4,866	16.1%
Top 1%	301,000 or more	837,000	-68.3	-54,027	44.6%
ALL		**$48,700**	**$-153.1**	**$-1,199**	**100.0%**
Addendum					
Bottom 60%	Less than $38,200	$19,000	$-13.3	$-174	8.7%
Top 10%	$89,000 or more	204,000	-105.8	-8,355	69.1%

Source: Citizens for Tax Justice. "House GOP Tax Plan: The Rich Get Richer." July 27, 1999

Notes: Figures show the annual effects of (1) a 10% cut in personal income tax rates; (2) a reduction in the income tax rates on realized capital gains, from 20% to 15% (for those in all but the bottom regular tax bracket) and from 10% to 7.5% (for those in the bottom regular tax bracket); (3) elimination of the estate tax; (4) repeal of the individual Alternative Minimum Tax; (5) a $200 interest and dividend exclusion ($400 for couples); (6) an increase in the standard deduction for couples to double the single amount; (7) increased contribution and benefit limits for pensions and 401(k)s; (8) deductions for health insurance for people without employer plans; and (9) various corporate tax breaks. Not included are about $3 billion a year in miscellaneous tax breaks, mostly for certain health and education expenses. All figures are at 1999 levels, showing full-year effects after phase-ins are completed.

Does the table show the answers to the following 11 essential questions?	**Yes**	**No**
1. Is the median presented as the correct measure of central tendency?		X
2. What measure of income is used?		X
3. What taxes are included?	X	
4. How many taxpayers are in each income category?		X
5. What income range is associated with each income category?	X	
6. What are the current and proposed levels of taxation for each category?		X
7. What are the current and proposed effective tax rates for each category?		X
8. What are the estimated ranges of tax cuts for each category?		X
9. Are the estimates presented free of imputations?		X
10. Are measures of error provided relating to the precision, accuracy and reliability?		X
11. Do the estimates provided account for hidden burdens?		X

The CTJ table misuses the average as the appropriate measure of central tendency, provides no detail as to the income measure used and whether taxpayers with negative incomes are excluded from the lowest income category, nor does it identify whether "taxpayers" who don't file tax returns are included in the analysis. As the checklist above details, the lack of transparency and the exclusion of essential information from the CTJ distributional tax table, as is the case with many of the distributional tax tables released by the CTJ, only serves to bias the reader towards the preconceived notions of the CTJ.

APPENDIX II
1995 STATISTICS OF INCOME PUBLIC USE TAX FILE

"The Internal Revenue Service 1995 Public Use Tax File, which contains 103,117 records, was selected as part of the Statistics of Income program that was designed to tabulate and present statistical information for the 118.2 million Form 1040, Form 1040A, and Form 1040EZ Federal Individual Income Tax Returns filed for Tax Year 1995.

The Tax Files which have been produced since 1960, consist of detailed information taken from SOI sample records. The public use versions of these sample files are sold in an unidentifiable form, with names, Social Security Numbers (SSN), and other similar information omitted. The primary uses made of these files have been to simulate the administrative and revenue impact of tax law changes, as well as to provide general statistical tabulations relating to sources of income and taxes paid by individuals."[13]

Furthermore, the public use file is adjusted to comply with IRS disclosure procedures. First, taxpayers in the sample with total income or loss of $5,000,000 or more; those with business plus farm receipts of $50,000,000 or more; and nontaxable returns with adjusted gross incomes or expanded incomes of $200,000 or more were subsampled at a 33 percent rate to project the identity of individual taxpayers. Second, those returns that remain in the public use file after the subsampling procedure are combined with other high income returns in a blending process to further protect the identity of individual taxpayers. Third, all lower income returns have been blurred for alimony paid and alimony received and home mortgage interest paid to financial institutions. Finally, all fields in the returns have been rounded to the four most significant digits (e.g., $14,371 = $14,370 and $228,867 = $228,900). These are the main differences between the public use file and the microdata files used by the Treasury Department's Office of Tax Analysis and the Congress' Joint Committee on Taxation.

However, all sample data are subject to further sampling and measurement error. To properly use the statistical data presented in distributional tax tables, the magnitude of the potential sampling error must be known; coefficients of variation (CVs) are used to measure that magnitude. Based on the microdata, the table below highlights selected coefficients of variation (CVs) for selected items, tax year 1995 at a 95-percent confidence level. The CVs and subsequent standard errors associated with the public use file will be equal to or greater than the CVs listed in the table below due to the disclosure procedures applied to the public use file by SOI as detailed above. For more information

[13] Mike Weber. United States Internal Revenue Service, Statistics of Income Division. "General Description Booklet for the 1995 Public Use Tax File."

on SOI sampling methodology and data limitation with reference to the tax year 1995 data, please see *SOI Bulletin – Fall 1997*, page 245.

Coefficients of Variation for Selected Items, Tax Year 1995
(Number of returns is in thousands – money amounts are in millions of dollars – CVs are percentages)

Item	Number of Returns	Coefficient of Variation	Amount	Coefficient of Variation
Adjusted Gross Income (less deficit	118,218	0.12	4,189,354	0.34
Salaries and Wages	101,139	0.36	3,201,457	0.56
Net capital gain	10,151	2.36	176,473	1.74
Net capital loss	5,134	3.56	9,715	3.84
Taxable social security benefits	6,598	3.12	45,715	3.78
Total statutory adjustments	18,209	1.56	41,140	2.48
Total standard deduction	83,223	0.48	413,585	0.62
Total itemized deductions after limitations	34,008	1.12	527,374	1.10
Taxable income	94,612	0.44	2,813,826	0.44
Total income tax	89,253	0.54	588,419	0.48

Source: SOI Bulletin. Fall 1997. "Individual Income Tax Returns, 1995." Page 20.
Note: SOI publishes CVs at the 68-percent confidence level. The CVs above have been changed to reflect a 95-percent confidence level.

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The Roots of Broadened Stock Ownership

THE ROOTS OF BROADENED STOCK OWNERSHIP

I. INTRODUCTION

Recent data released by the Federal Reserve shows that nearly half of all U.S. households are stockholders. In the last decade alone, the number of stockholders has jumped by over fifty percent. According to one observer, this explosion in stock ownership has been "one of the great social movements of the 1990s."[1] The shift of many individuals from wage earners to worker capitalists has stimulated discussion on the implications of this economic shift. On the surface, it might seem that broadened stock ownership is of little importance. There are many positive benefits, however, to the expansion of stock ownership. Not the least of these benefits is the ability, over the long-term, for families to accumulate wealth to provide for their needs including retirement, education, medical care, and potential unemployment.

In addition to this effect on household wealth, saving and investment contribute to the capital needed for sustainable economic growth. According to one market strategist, financial market liquidity has been one of the main drivers of the bull market:

> You can have no inflation and earnings up 25 percent, but if you don't have money [from investors] forget it...The liquidity has come from you and me and our neighbors, who have been putting money into mutual funds to the tune of $20 billion to $25 billion a month.[2]

In addition to providing a basis for investment needed for economic growth, the increase in stock ownership appears to be cultivating a deeper appreciation and understanding of private enterprise. The involvement of new stockholders in the capitalization of the companies that create wealth allows these new investors to have a better understanding of financial matters. Furthermore, it is suggested that broadened stock ownership can erode class conflict, for "as capitalism expands, a lot of 'them' can become 'us.' It [stock ownership] brings us all together as stakeholders-in-common."[3]

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[1] Robert J. Samuelson, "Stocks Without Risks?" *Newsweek*, November 11, 1999.

[2] Alfred Goldman, chief market strategist at A.G. Edwards, a St. Louis based brokerage firm, cited in: Albert B. Crenshaw, "401(k) Plans Provide Benefits for the Wall Street as Well as the Workers," *Washington Post*, March 20, 1999.

[3] Ben J. Wattenberg, "Capitalism for the Masses," *Baltimore Sun*, January 9, 1997.

Richard Nadler, executive director of the American Shareholders Association and author of "The Rise of Worker Capitalism," has written:

> The active involvement of tens of millions of Americans in capital markets has affected their retirement planning, productivity, and attitudes toward capital and free markets. The growth of investment has rewarded, and appears to have thus encouraged, an orientation towards the future – the investor's own and his family's.[4]

The purpose of this analysis is not to restate the benefits of worker capitalism. Rather this report analyzes the reasons behind the increase in stock ownership. Given the private and public benefits of stock ownership, it is appropriate to analyze the dynamics of stock market democratization and its policy implications.

The rise in stock ownership over the past twenty years can be mainly attributed to three factors, all of which made stock ownership more attractive relative to consumption or other methods of saving. First, the increasing use of mutual funds as an investment vehicle allowed small investors to diversify and receive professional management at a fraction of its previous cost. Second, the creation and proliferation of the Individual Retirement Arrangement (IRA) and the 401(k) plan led to a general reduction in the multiple taxation on saving and investment, increasing its after-tax return. Finally, the emphasis of the Federal Reserve on price stability has lowered inflation, brought interest rates down and stabilized financial markets, creating a stable macroeconomic climate.

This remainder of this paper is organized into four sections. Section II provides an overview of the mechanics of stock ownership, while Section III outlines prominent features of the current expansion in stock ownership. Section IV addresses the reasons behind the broadening of stock ownership, and Section V concludes the study with an articulation of some lessons to be learned from the broadening of stock ownership.

II. THE MECHANICS OF STOCK OWNERSHIP & SUPPLEMENTAL RETIREMENT ACCOUNTS

Shares of stock represent ownership shares in a corporation. Investors purchase these shares because they expect to share in the corporation's profits. It is these expectations of profit and loss that drive the demand for stocks. Owners of common stock hope to make money in two ways – through dividends and/or price appreciation. Dividends are a division of income among the firm's owners (i.e., shareholders) and stock appreciation arises from an increase in the market value of the stock relative to its purchase price. The profit on a sale of an appreciated stock is called a capital gain.

[4] Richard Nadler, "The Rise of Worker Capitalism," Cato Policy Analysis No. 359, November 1, 1999.

Direct purchase of common stock is one way to invest, although not the only method. Many investors choose to combine the advantages of many different types of stock (diversification) by purchasing shares in a mutual fund. A mutual fund is a financial institution that pools investor money to buy and sell stocks on their behalf. The advantage of mutual funds over individual investment is that they offer small investors diversification and professional management for a small fee. Mutual funds are usually organized around a specific objective such as long-term growth or income security. Ownership of mutual funds can result in the realization of dividends and capital gains.

The tax treatment of capital gains and dividends present an unfortunate aspect of the tax code, namely, the multiple taxation of saving and investment. Imagine a family wishing to save out of current income to invest for a large purchase in the future. The family pays all applicable federal, state, and local taxes on their earnings. They then decide to invest a portion of what remains. However, on the return of the investment's dividends and capital gains, the taxpayer is taxed again. The result is that the portion of income that is saved is being taxed twice. In contrast, the consumption component of the income stream is only being taxed once. Multiple taxation of the returns to saving and investment increases the cost of saving and investment relative to consumption, thus encouraging consumption.

Mutual fund shares and stock holdings can be held in a retirement saving account such as an Individual Retirement Arrangement (IRA), 401(k) plan, 403(b) plan, or Keogh plan. These plans were created to promote retirement saving and are subject to limitations and restrictions. All of these plans defer taxation of contributions, either by allowing contributions to come from pre-tax dollars or by allowing the deduction of contributions from taxable income.

IRAs were established by the Employee Retirement Income Security Act of 1974 (P.L. 94-406), and were strictly limited to those workers who lacked employer pension coverage. Expansion of eligibility to all workers occurred with the Economic Recovery Act of 1981 (P.L. 97-34), but restrictive income limits were then applied in the Tax Reform Act of 1986 (P.L. 99-514). As of 1998, a worker and a worker's nonworking spouse may both make annual tax-deductible contributions to IRAs of $2,000, subject to certain restrictions such as income tests. Assets of IRAs are required to be held at a financial institution and can only be invested in interest-bearing accounts, certain precious metals, and financial securities including common stock. Income from IRAs is taxed as ordinary income as long as funds are not withdrawn before age 59½ ; otherwise, a 10% tax penalty applies.

Named after the section of the Internal Revenue Code that created them, 401(k) plans allow workers to contribute pre-tax dollars to retirement saving accounts. The Revenue Act of 1978 (P.L. 95-600) formally authorized the 401(k) plan for use, although some 401(k) plans had already existed under earlier Internal Revenue Service rulings. 401(k) plans permit employees to contribute a portion of their wages into a retirement plan on a tax-deferred basis, up to a certain threshold. In 1998, the contribution limit was $10,000.

401(k) plans are similar to IRAs in that the worker decides how contributions should be allocated among various investment options. These options vary from plan to plan, with the worker having discretion over allocation of funds. 401(k) plans have a higher contribution threshold and generally allow employers to "match" employee contributions. Withdrawals of accrued 401(k) plan funds are taxed as ordinary income, with withdrawals before age 59½ incurring an additional 10% tax penalty.

The 401(k) plan and the IRA are supplemented by two other retirement saving plans that are available to specific groups. One plan is the Keogh plan for self-employed persons. The second type of group specific retirement saving plan is the 403(b) tax-sheltered annuity plan for employees of education and various non-profit institutions. Due to the specific nature of the individuals eligible for these plans, they are not as prevalent as 401(k) plans and IRAs.

III. CHARACTERISTICS OF STOCK OWNERSHIP

The most widely used data source in research on financial behavior is the *Survey of Consumer Finances (SCF)*, a survey conducted on behalf of the Federal Reserve Board by the Survey Research Center at the University of Michigan. The *SCF* occurs every three years and data from the survey is usually released two years after the survey date. Data from the *SCF* are used whenever possible due to its generally accepted status as the most accurate source on stock ownership. Table 1 presents data compiled in the Federal Reserve Bulletin from the *1989, 1992, 1995,* and *1998 SCF.*

Table 1. Percentage of Families Directly and Indirectly Holding Stocks,* by Selected Characteristics - 1989, 1992, 1995, and 1998

Characteristic	1989	1992	1995	1998
All Families	**31.6**	**36.7**	**40.4**	**48.8**
Cash Income (1998 dollars)				
Less than 10,000	**	6.8	5.4	7.7
10,000 - 24,999	12.7	17.8	22.2	24.7
25,000 - 49,999	31.5	40.2	45.4	52.7
50,000 - 99,999	51.5	62.5	65.4	74.3
100,000 or more	81.8	78.3	81.6	91.0
Age of Household Head				
Less than 35	22.4	28.3	36.6	40.7
35 - 44	38.9	42.4	46.4	56.5
45 - 54	41.8	46.4	48.9	58.6
55 - 64	36.2	45.3	40.0	55.9
65 - 74	26.7	30.2	34.4	42.6
75 or more	25.9	25.7	27.9	29.4

Source: Kenickell, et al.

* Indirect Holdings are those in mutual funds, retirement accounts, and other managed assets.

** Ten or fewer observations.

The data presented in Table 1 show that 48.8 percent of households were stockholders in 1998, an increase of over 17 percentage points since 1989. In addition, the ownership rates for all income groups and all age groups increased over the last nine years. A significant portion of the increase in the incidence of stock ownership has come through indirect ownership, as a majority of stockholders no longer directly own stock.[5] The majority of the new growth in stock ownership is not in the form of "direct" ownership, but has come from retirement saving accounts such as IRAs and 401(k) plans. In addition, the percentage of young Americans (households where the head is below age 35) investing has nearly doubled since 1989.

IV. REASONS BEHIND BROADENED STOCK OWNERSHIP

This section of the paper analyzes the reasons behind the broadening of stock ownership in recent years. This section argues that stock ownership expanded mainly due to three factors that made stock ownership an increasingly attractive option compared to alternatives. The rise of mutual funds, creation and proliferation of IRAs and 401(k) plans, and a declining risk premium due to lower and less variable inflation have all contributed to broadened stock ownership.

A. THE MUTUAL FUND REVOLUTION

A mutual fund is an investment company that pools money from individual shareholders and invests those funds into a diverse pool of securities. Mutual fund investors purchase shares of the fund, with each share representing proportionate ownership in all of the securities held by the investment company. Although data from previous years is not directly comparable due to different methodologies, it is clear that mutual fund ownership has increased exponentially. By one measure 44 million American households owned mutual fund shares in 1998, an increase of 39 million from the 4.6 million mutual fund-owning households in 1980.[6] In addition, the percentage of U.S. households owning mutual funds has increased sevenfold since 1980 (Chart 1).

Although mutual funds have been in existence since the Great Depression, they first gained real popularity in the late 1970s due to the conjunction of two unrelated factors – inflation and outdated banking regulations. A Depression-era banking regulation known as Regulation Q limited banks to offering a maximum of 5¼ percent return on passbook savings accounts. As long as inflation remained low, Regulation Q was of little concern. Starting in 1973, however, inflation began averaging over 5 percent annually. This meant that the assets held in passbook accounts were declining in value at the same time that inflation was pushing interest rates on money market funds higher.

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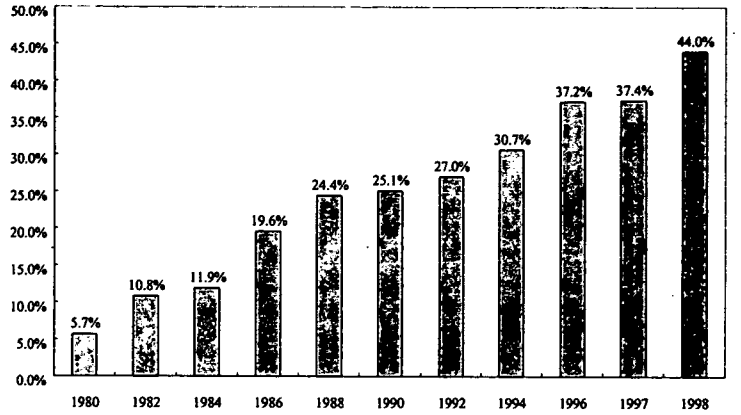
[5] Poterba, James, *Shareownership 1998: Based on the 1995 Survey of Consumer Finances*, (New York, NY: New York Stock Exchange, 1998), 9.

[6] Investment Company Institute, *1999 Mutual Fund Factbook*, (Washington, DC: Investment Company Institute, 1999), 11, and Investment Company Institute, *Mutual Fund Shareholders: The People Behind the Growth*, (Washington, DC: Investment Company Institute, Spring 1996), 1.

Chart 1. Percent of U.S. Households Owning Mutual Funds, 1980-1998*



Source: Investment Company Institute, *1999 Mutual Fund Factbook*, Washington, DC: Investment Company Institute, 1999, p. 40.
* 1998 data includes ownership through variable annuities and uses an improved method to calculate ownership through employer-sponsored retirement plans. Consequently, the 1998 number is not directly comparable with previous years.

In 1974 the spread between the regulated interest rates of passbook accounts and the unregulated interest rates of money market funds was about 4 percent. By 1981, the difference between the rates reached as high as 12 percent.[7] The locus of risk had shifted. It was now riskier to wait in a passbook account for inflation to decline than it was to place one's money in an investment vehicle. Money market funds and mutual funds soon began to compete for ex-passbook account money. Mimicking passbook accounts by allowing accountholders to write checks gave money market funds the initial edge. The advantage held by money market funds dissipated over time as interest rates came down and accountholders shifted assets into the stock market through mutual funds.

Consider the example of a hypothetical family, the Joneses, placing $1,000 into a passbook savings account at the beginning of 1975 and earning the maximum interest rate allowable (5¼ percent). According to the *1999 Economic Report of the President*, the Consumer Price Index rose by 6.9 percent in 1975. Although the Jones family would have ended 1975 with $1,052.50 [1000+(1000*0.0525)] in their account, after adjusting for inflation they would have lost money, the real value of their assets declining to $983.50 [1000+(1000(0.0525-0.0690))].

A few years of meager earnings or asset devaluation forced individuals to look for a way to protect their assets from inflation in a way that passbook accounts could not. Hard, or illiquid, assets such as housing were purchased as a hedge against inflation.

[7] Joseph Nocera, *A Piece of the Action: How the Middle Class Joined the Money Class* (New York, NY: Simon & Schuster, 1994), 197.

However, many individuals shifted assets into money market funds and the stock market. Stocks were not exactly a hedge against inflation; however, return was not restricted as in Regulation Q deposits. Joseph Nocera, editor-at-large of *Fortune* and author of *A Piece of the Action: How the Middle Class Joined the Money Class*, states that the inflation of the seventies destroyed some of the trust that households had in government bonds and savings accounts as safe places for their savings.[8]

The two main problems facing these reluctant investors were inadequate information regarding stock selection and insufficient funds to minimize risk through portfolio diversification. Mutual funds solved both of these problems. The assets in mutual funds are selected by a professional investment adviser to meet a specific objective. Rather than having to choose among various stocks to suit their financial goals (i.e., retirement income, current income stream), all families had to do was choose from among the variety of mutual funds, all with varying objectives. In addition, fund managers invest in a variety of securities, seeking portfolio diversification. The benefit of portfolio diversification is that it helps to reduce risk. In the eyes of these former savers, mutual funds were a good way to increase the return on their savings without increasing their effort or risk much over what it had been previously.

Mutual funds gave small investors the ability to adequately diversify with minimal outlay, and to receive professional management at a fraction of the cost of a stockbroker. Joseph Nocera noted in *A Piece of the Action*:

> Part of the original appeal of mutual funds was that they seemed to offer a path into the stock market that was both simpler and safer than the old call-a-broker-and-buy-a-stock route.[9]

Katherine Wilson, a certified financial planner for Financial Network Investment Corporation in Houston, agreed that before the advent of mutual funds it was difficult for the small investor to get started:

> This [investing in the stock market] was kind of a rich person's discipline because, in order to be cost-effective, you had to buy round lots (100-share increments of stock) or an individual bond. It was a very restricted market for this in many ways.[10]

Mutual funds companies played a large role in expanding stock ownership to the middle class. There exists a fund for just about any objective an investor could desire: growth funds, income funds, environmental funds, children funds, etc. By enabling investors to overcome their information and diversification problems the mutual fund helped to make the stock market a financial tool of the middle class.

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[8] *Ibid.*, 178.

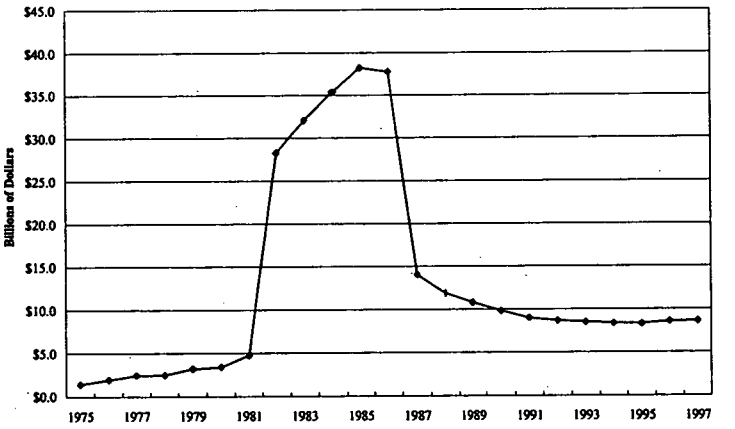
[9] *Ibid.*, 333.

[10] Pamela Yip, "Spreading the Wealth: Changes Paved Way to 10K; Retirement Funds, High Tech, Strong Economy Fuel Climb," *The Houston Chronicle*, March 30, 1999.

B. INDIVIDUAL RETIREMENT ARRANGEMENTS AND 401(K) PLANS

In 1974, Individual Retirement Arrangements (IRAs) were created to encourage individuals to save for retirement if they were not covered by employer sponsored retirement plans. Assets in IRAs have grown steadily, rising from $200 billion in 1985 to $1,347 billion in 1996.[11] While assets in IRAs have been rising, however, annual contributions to IRAs precipitously declined and then have leveled off since the Tax Reform Act of 1986. Annual IRA contributions, which had risen from $5 billion in 1981 to nearly $38 billion in 1986, have declined to just over 8.6 billion by 1997 (Chart 2).[12] Not only have contributions fallen, but also IRA participation has declined in proportion with the decline in contributions (Chart 3). In 1986, there were over 15.5 million IRA participants. By 1997, there were only 4 million. The income and contribution limits established by the Tax Reform Act of 1986 appear to have had a "chilling" effect on IRA participation.

Chart 2. Contributions to Individual Retirement Arrangements (IRAs): 1975-1997

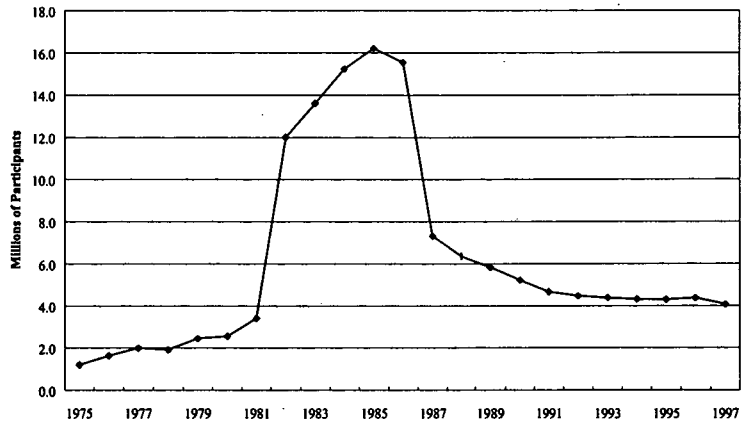


Source: Internal Revenue Service, *Statistics of Income Bulletin*, various years.

[11] U.S. Bureau of the Census, *Statistical Abstract of the United States 1998* (118th edition), (Washington, DC: Government Printing Office, 1998), Table 845.

[12] M. Poterba, Steven F. Venti and David A. Wise, "How Retirement Savings Programs Increase Savings," *Journal of Economic Perspectives* 10, no. 4 (Fall 1996), 91-92. Also, Internal Revenue Service, *Statistics of Income Bulletin*, Fall 1999, Washington, D.C., 1999

Chart 3. Participation in Individual Retirement Arrangements (IRAs): 1975-1997



Source: Internal Revenue Service, *Statistics of Income Bulletin,* various years.

401(k) plans, which allow employees to contribute a tax-deferred portion of their wages to a retirement plan, have grown steadily since the Internal Revenue Service issued rules regarding them in 1982 (Table 2).

Table 2. 401(k) Plan Trends, 1984-1993

Year	Number of Plans (thousands)	Participants (millions)	Contributions ($billions)	Plan Assets ($billions)	Distributions ($billions)
1984	17.3	7.5	16.3	91.8	10.6
1985	29.9	10.3	24.3	143.9	16.4
1986	37.4	11.6	29.2	182.8	22.1
1987	45.1	13.1	33.2	215.5	22.2
1988	68.1	15.2	39.4	277.0	25.2
1989	83.3	17.3	46.1	357.0	30.9
1990	97.6	19.5	49.0	384.9	32.0
1991	111.4	19.1	51.5	440.3	32.7
1992	139.7	22.4	64.3	553.0	43.2
1993	154.5	23.1	69.3	616.3	44.2

Source: James R. Storey, "Section 401(k) Retirement Plans: A Fact Sheet."

By eliminating some of the multiple taxation that exists on saving and investment, IRAs and 401(k) plans became attractive relative to other retirement saving options. Americans looking for a way to protect their savings from the ravages of inflation began to look towards investing in stocks and mutual funds. The creation of the IRA and the 401(k) account allowed their participants to maximize the return on their retirement savings by allowing contributions and earnings to accumulate on a tax-deferred basis. The new saving vehicles proved to be popular with onetime passbook account holders.

More importantly, the people brought into the stock market by IRAs and 401(k) plans were a new type of investor. A survey of money fund customers by the Investment Company Institute found that the investment purpose of 53 percent of money fund customers was "general savings."[13] Alternatively, "These new customers were still not *investors* – or rather they didn't think of themselves as investors. They still thought of themselves as savers."[14]

For many individuals, the IRA and 401(k) rules on early withdrawal made it quite clear that these were *retirement* accounts. Penalties for early withdrawal, combined with the ability to move assets from one investment to another, created the perfect haven for reluctant investors to get their feet wet. Being unable to touch the funds placed into their 401(k) plans or IRAs until age 59½ encouraged many to look long-term.

By having punitive penalties for early withdrawal, IRAs and 401(k) plans made investors focus on the long-term. The existence of these penalties helped IRA and 401(k) investors to consider the benefits that stock investment had over long periods. Being unable to remove the money in their 401(k) plan without penalty encouraged savers to take a long-term view of investment. In a manner of speaking, IRAs and 401(k) plans gave people a way to try the stock market on for size. A consultant to the financial services industry at the time was convinced that the IRA was the beginning of Americans taking responsibility for their financial future:

> It [the IRA] was the first real incentive for a great number of Americans to put money away for the long term. And these were generally people who up until then hadn't seen themselves as having any control over the long-term.[15]

Thus, the IRA and the 401(k) plan helped to transform savers into investors. Relief from the multiple taxation of saving and investment increased the attractiveness of saving and investment relative to consumption. Withdrawal rules and penalties assisted new investors in feeling comfortable assuming risk and planning for a longer term. Although few visualized the interaction between supplemental retirement accounts and the stock market, they have proved to be an immensely popular and efficacious retirement saving vehicle. Now that so many Americans have taken advantage of these

[13] Joseph Nocera, *A Piece of the Action*, 286.

[14] *Ibid.*

[15] *Ibid.*, 288.

accounts, support has increased for some liberalization of withdrawals without stiff penalties.

C. INFLATION

The past eighteen years have seen the stock market experience one of the greatest bull markets in U.S. history. An often overlooked contributor to this current economic expansion is the role of monetary policy. The distortionary effect of inflation on saving and investment decisions is well known among economists, with recent research documenting a strongly negative relationship between inflation and economic growth.[16]

Changing inflation rates have effected change in stock ownership by initially pushing - and later pulling - individuals into the stock market as inflation declined. As stated earlier, high inflation in the 1970's, combined with outdated banking regulations, pushed savers into the stock market. For many savers, there was little choice between getting into the stock market or remaining in a passbook savings account and allowing inflation to eat away at their retirement.

However, an important ingredient of post-1970's monetary policy has been price stabilization as Federal Reserve officials have repeatedly endorsed the goal of price stability. This emphasis on price stability has resulted in the steady decline in the inflation rate (Chart 4), leading to lower interest rates, stable financial markets, and an enhanced working of the price system. Lower interest rates, stable financial markets, and increased economic efficiency have increased the returns to investment, attracting more individuals toward the stock market.

Alan Greenspan, Chairman of the Board of Governors of the Federal Reserve System, while expressing some reservations about rising stock prices, has acknowledged the importance of price stability in economic growth:

> Importantly, the evidence has become increasingly persuasive that relatively stable prices – neither persistently rising nor falling – are more predictable hence result in a lower risk premium for investment. Because the nation's level of investment, to a large extent, determines our prosperity over time, stability in the general level of prices for goods and services is clearly a necessary condition for maximum sustainable growth.[17]

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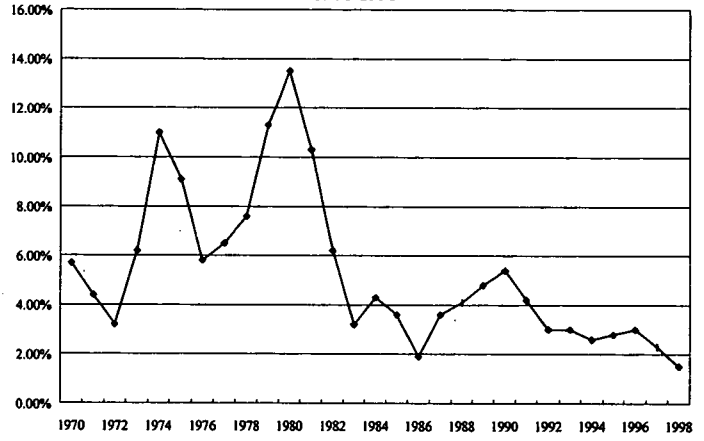
[16] See, for example, Robert Barro, "Inflation and Economic Growth," National Bureau of Economic Research, Working Paper 5326 (October 1995); and Stanley Fischer, "The Role of Macroeconomic Factors in Growth," National Bureau of Economic Research, Working Paper 4565 (December 1993). For more information on the economic and financial market effects of a credible anti-inflationary monetary policy and the effect it has on economic growth, see Robert Keleher, "The Roots of the Current Expansion," Joint Economic Committee Study, April 1997.

[17] Alan Greenspan, Testimony before the Joint Economic Committee, *The Economic Outlook and U.S. Monetary Policy*, U.S. Congress, June 17,1999, 9.

Low levels of inflation have played a large role in creating an environment where new investors feel comfortable. Many new investors viewed themselves as savers and stable financial markets allowed these savers to feel comfortable investing. Low levels of inflation helped to make individuals feel comfortable using mutual funds instead of banks to increase the return on their investment.

Chart 4. Annual Percent Change in Consumer Price Indexes (CPI-U): 1970-1998



Sources: *Statistical Abstract of the United States 1998*, Table 772 and *Montly Labor Review* 122, no. 6.

The harmful impact of high inflation is highlighted by the degree to which inflation has a negative marginal effect on equity valuations. Nobel Prize winner Franco Modigliani, along with Richard Cohn, documented a negative relationship between inflation and equity valuation in a 1981 paper. Using both time series and cross-sectional analyses, they found that stocks were presently undervalued due to the effect of inflation on nominal interest rates.[18] The effect of this undervaluation is not small. One study estimated that a one-percentage point increase in expected inflation would cause a 20 percent decline in stock prices.[19]

The magnitude of the inverse relationship between the price level and stock prices is also influenced by the tax code. Taxation of nominal capital gains, estate taxation, some forms of corporate taxation, and historic cost depreciation are all portions of the tax

[18] Franco Modigliani and Richard A. Cohn, "Inflation and the Stock Market," *Review of Economic Conditions in Italy*, (October 1981): 415-431.

[19] Steven A. Sharpe, "Stock Prices, Expected Returns, and Inflation," Board of Governors of the Federal Reserve System, Finance and Economics Discussion Series, no. 1999-02 (April 1999).

code that are not indexed for inflation. Inflation raises the effective tax rate on corporate source income, lowering the after-tax return on investment and leading to a reduction in the price-earnings ratio.[20]

The individuals who may be most affected by the interaction between inflation and capital gains taxation are risk-averse individuals. Risk-averse individuals place their investments in assets with low variability and low rates of return. Taxation of inflationary capital gains imposes higher capital gains rates on individuals who are risk averse by reducing or eliminating the after-tax return on safe investments. Even relatively modest rates of inflation, when combined with burdensome capital gains tax rates, can turn real capital gains into after-tax losses, discouraging a safe and steady stream of equity from entering capital markets.

V. LESSONS FROM BROADENED STOCK OWNERSHIP

The first lesson to be taken from the broadening of stock ownership is that Americans want access, control, and choice over their retirement and other saving options. Prior to the introduction of the IRA and 401(k) plan, there was little to no choice in retirement saving. Firms promised a specific pension benefit based on salary and years of service. Accumulating retirement savings using stocks, bonds, or savings accounts was possible, but was unlikely due to burdensome taxes, low rates of return, and the large amount of money needed to invest adequately. The introduction of the 401(k) plan, the IRA, and the proliferation of the mutual fund industry changed retirement planning by allowing the middle class to control their financial future.

The second lesson is the importance of a tax policy that minimizes the multiple taxation of saving and investment while shifting attention towards longer-term planning. IRAs and 401(k) plans remove some of the excess burden that the income tax places on saving and investment and some recent changes in the tax laws have made important progress in expanding IRAs.

However, current tax policy continues to discriminate against saving and investment, an issue frequently addressed in recent legislation. For example, the $2,000 annual IRA contribution limit introduced in 1981 has not been adjusted for inflation. Several proposals have been introduced that would increase the IRA contribution limit to a level that reflects the eroding effects of inflation and the need for expanded saving incentives.[21] Increasing the contribution limits would enhance the tax benefits of IRAs, allowing middle class Americans to shield a larger portion of their saving and investment from multiple taxation.

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[20] For a broad discussion of the interaction between inflation, taxes, and the stock market, see Martin Feldstein, "Inflation and the Stock Market," *American Economic Review* 70, (December 1980): 839-847.

[21] For a legislative history of IRAs and a summary of legislative issues regarding IRAs in the 106th Congress, see James R. Storey, "Individual Retirement Accounts (IRAs): Legislative Issues in the 106th Congress," CRS Report for Congress 96-20EPW, Washington, DC: Congressional Research Service, 02/08/00.

Recent U.S. tax policy towards saving and investment contains an underlying trade-off – a general reduction in the multiple taxation of saving and investment in exchange for planning for long-term financial needs. This policy has been very successful in getting Americans to take a more active role in their future, a role that many have embraced.

However, an unfortunate aspect of the tax code works against this policy. According to current tax law, senior citizens are required to begin withdrawals from IRAs by April 1 the year after they reach age 70½ . Withdrawals must be of an amount sufficient to empty their account according to an actuarial schedule, or a 50 percent excise tax is applied to the deficiency. This unfortunate aspect of the current tax code seems to be at odds with prevailing views regarding the proper role of federal tax policy, since it directly promotes the erosion of personal saving.

Another example of federal tax policy promoting the erosion of personal saving is in the tax treatment of capital gains attributed to mutual fund shareholders. Mutual funds are required by the tax law to distribute capital gains to shareholders on an annual basis – a taxable event for the taxpayer over which they have little control. These realizations are involuntary and capital gains taxes are due on the forced realizations. This tax treatment of gains that would otherwise be unrealized has been estimated to reduce the annual return of the average mutual fund shareholder by 2.3 percentage points a year, at least 10 percent of their annual return.[22]

The final lesson to be learned from the past two decades is the recognition of the role that price stability plays in creating the long-term certainty that is a necessary but not a sufficient condition for long-term planning and capital formation. The emphasis of the Federal Reserve on price stability lowered interest rates, stabilized financial markets, and created an environment where citizens and companies felt comfortable planning for the long-term. Given the importance of price stability, not only to stock ownership and retirement planning, but also to general economic growth, it seems appropriate to institute price-stability as the primary goal of monetary policy.

This paper has detailed the roots of the increase in stock ownership to the middle class over the past two decades. Mutual funds, IRAs, and 401(k) plans have made the retirement tools of the upper class available to all.

Joshua Hall
Economist

[22] Jeffery Laderman and Amy Barnett, "Mutual Funds: What's Wrong," *Business Week*, January 24, 2000.

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Encouraging Personal Saving and Investment: Changing the Tax Treatment of Unrealized Capital Gains

ENCOURAGING PERSONAL SAVING AND INVESTMENT: CHANGING THE TAX TREATMENT OF UNREALIZED CAPITAL GAINS

EXECUTIVE SUMMARY

This study examines the tax treatment of unrealized capital gains as they relate to forced distributions associated with regulated investment companies (such as mutual funds). Regulated investment companies pool investment money from numerous shareholders and invest in a diversified portfolio of securities to minimize risk and maximize returns. Increasingly, regulated investment companies, such as mutual funds, have become an important vehicle for middle-income households to invest in the stock market and save for the future.

Shareholders pay taxes on dividends earned by mutual funds as distributed by the companies in which the mutual fund owns stocks or bonds. Furthermore, shareholders pay taxes on the appreciation of their mutual fund shares when they sell their shares for more than the original purchase price. The selling of mutual fund shares creates a capital gain or, if the shares are sold for less than the original purchase price, a capital loss. Unfortunately, the current tax laws can force shareholders of mutual funds to pay capital gains taxes on their mutual funds even when shareholders choose not to sell shares.

Specifically, this report finds:

- In order to increase saving and investment by individuals and to promote tax neutrality among various investment vehicles, the tax treatment of unrealized capital gains should be modified.
- With respect to regulated investment companies, the realization point that triggers a capital gains tax liability should be moved from the corporate level down to the individual shareholder level.
- Since mutual funds are a popular vehicle for saving and investment of middle-income households, this tax reform would greatly increase the incentives for these people to invest and save for their future by increasing their pre-liquidation rate of return.
- The current tax treatment of mutual funds causes the average mutual fund investor between 10 percent and 20 percent a year in lost return.
- On a $10,000 investment earning a 10 percent annual rate of return, a 2.3 percentage point reduction in the pre-liquidation rate of return would cost a mutual fund investor almost $82,000 over a 30 year period – on a $26,000 investment a mutual fund investor would forego approximately $213,000 over a 30 year period.
- A change in the tax treatment of mutual funds would have a beneficial impact on all owners of mutual funds, but the benefits would primarily help those earning less than $100,000 a year.

ENCOURAGING PERSONAL SAVING AND INVESTMENT: CHANGING THE TAX TREATMENT OF UNREALIZED CAPITAL GAINS

The "right" amount of saving, the decision to allocate income to future rather than current consumption, is important to a nation's economic growth. Tax policy can, and often does, affect the saving decision through a variety of channels.

B. Douglas Bernheim and John Karl Scholz[1]

I. INTRODUCTION

The current tax system is counterproductive and biased against saving and investment. The tax system imposes large losses on the economy that reduce the economic welfare of households. The current levels of taxation can impose relatively high output and welfare costs on the economy. While the range of economic losses imposed by the current level of taxation is rather broad, a conservative estimate is that these excess marginal burdens range from 25 to 40 cents of the last dollars raised in federal revenue; other estimates range much higher.[2]

Taxation of capital gains has been part of the U.S. tax system since the ratification of the 16th Amendment to the Constitution in 1913, which allowed for the taxation of individual income. Since that time, debate has engulfed issues surrounding how, when, and if capital gains should be taxed. One such debate has focused on the realization of capital gains.

Realization of capital gains is the point in time at which ownership of capital assets, or various rights to capital assets, are exchanged for money. Although many economists argue that capital gains should not be taxed at all, some economists argue a completely opposite position and suggest that capital gains taxes should be levied on *unrealized* capital gains. Unrealized capital gains are the increases in the value of capital assets, for example stock prices, that are not sold for cash but are retained.

For example, if the stock price of Company XYZ was $100 on January 1 and ended the year at $150, shareholders of Company XYZ would have an unrealized gain of

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[1] B. Douglas Bernheim, and John Karl Scholz. "Saving, tax and." In Joseph J. Cordes, Robert D. Ebel, and Jane G. Gravelle (Editors). *The Encyclopedia of Taxation and Tax Policy*. The Urban Institute Press, 1999, page 325.

[2] For more information, see United States Congress. Joint Economic Committee. *Tax Reduction and the Economy*. April 1999.

$50. The capital gain ($50) is unrealized if the shares are not redeemed for cash, but are instead retained for the future.

Obviously, the taxation of unrealized capital gains would force taxpayers to either sell capital assets or channel money from some other productive source in order to pay the tax bill. Fortunately, the current tax system generally doesn't impose such an onerous tax on investors by taxing their unrealized capital gains. However, the devil is in the details in how "*realization*" is defined.

Realization, for purposes of taxing capital gains, is considered to be the point in time at which ownership of capital assets, or various rights to capital assets, are exchanged for money. This seems straightforward in the following example: An individual owns 100 shares of stock in Company XYZ, which were purchased for $100 (for a total cost of $10,000). The individual later sells all 100 shares on the open-market for $150 each, or $15,000. The individual has exchanged the shares for money. This creates a realized capital gain of $5,000 and a tax liability to the investor.

However, the concept of realization can be confusing for mutual fund shareholders. Mutual fund shareholders pay taxes on dividends earned by mutual funds as distributed by the companies in which the mutual fund owns stocks or bonds. Additionally, shareholders pay taxes on the appreciation of their mutual fund shares when they sell their shares for more than the original purchase price. The selling of mutual fund shares creates a capital gain, or if the shares are sold for less than the original purchase price a capital loss. Unfortunately, the current tax law treatment of capital gains realization also can force shareholders of mutual funds to pay capital gains taxes on their mutual funds even when shareholders choose not to sell shares.

This situation occurs in the following example: An individual owns 1,000 shares in Mutual Fund ABC, which were purchased for $10 per share (for a total cost of $10,000). The shares of the mutual fund represent ownership, or various rights to capital assets, in the mutual fund. In the course of the mutual fund's normal buying and selling of securities, any assets that are sold by the mutual fund at a price in excess of that at which they were purchased creates a realized capital gain and a tax liability. If Mutual Fund ABC realizes capital gains of $1 per share, the individual investors are responsible for the tax liability even if they themselves haven't "realized" or exchanged their shares for money. Even though the gains are reinvested, this is considered to be a realized gain to the mutual fund company. The tax liability is passed-through to the individual shareholders even though this is an *unrealized* gain to the shareholders of the mutual fund.

In the previous example, the mutual fund shareholder would be responsible for capital gains tax on $1,000, or $1 for each of the 1,000 shares owned of Mutual Fund ABC. This is because the mutual fund company is deemed by the tax laws to have "realized" a capital gain and, hence, tax is due. This is the case even if individual

shareholders do not redeem any shares and the mutual fund reinvests the gain in other capital assets.

Although only a few corporate investment structures are required to pass-through gains (and the tax liability) onto their shareholders, the most prevalent type of investment vehicles affected by this tax quirk in the definition of "realization" are mutual funds.

Mutual funds pool investment money from numerous shareholders and invest in a diversified portfolio of securities to minimize risk and maximize returns. Increasingly, mutual funds have become an important vehicle for low- and middle-income households to invest in the stock market and save for the future.

Throughout the course of a mutual fund's normal operations, fund managers buy and sell securities to maximize returns to shareholders. In order to eliminate corporate income tax liability on the gains earned from the sale of securities, mutual funds must distribute to their shareholders all of their ordinary income and net capital gain. The gains mutual funds distribute to individual shareholders are subject to capital gains taxation on the individual's federal and state tax returns. Any undistributed profits of the mutual fund are taxed at the corporate rate.

Even if individual shareholders do nothing more than buy and hold mutual fund shares, they could still be hit with a potentially large tax liability due to the distribution of gains from their mutual funds. Shareholders are then forced to either sell assets to pay the tax liability, or divert funds from other sources. This creates an opportunity cost to the shareholder and can result in lost economic gain due to compounding.

Although direct owners of stocks pay taxes on dividends, they do not have to pay taxes on the appreciation of their securities until they sell their shares and actually realize a gain. For direct ownership of stocks, the realization point that triggers a tax liability is the selling of securities by the individual owner. In the case of mutual funds, the realization point that triggers a tax liability for shareholders is the selling of securities by the mutual fund in addition to the sale of the mutual funds shares by mutual fund shareholders.

Direct owners of stocks are allowed to defer taxation on the appreciated value of their stock shares, while mutual fund shareholders may be forced to pay taxes yearly even if they don't sell (i.e., redeem) any of their mutual fund shares. The current tax treatment of mutual funds is an economic disadvantage to low- and middle-income households, who invest in mutual funds because they cannot afford the relatively large amounts of capital necessary to build their own diversified portfolio of stocks.

In order to treat mutual fund shareholders and direct stock owners more equally, and to further increase and encourage saving and investment, the realization point that triggers a capital gains tax liability should be moved from the mutual fund level down to

the individual shareholder level. In essence, this would provide a rollover treatment of unrealized capital gains.

As the current U.S. Treasury Deputy Assistant Secretary for Tax Analysis Leonard Burman states with respect to rollover of gains in general: "Advocates of this approach argue that the tax code should distinguish between sales of assets to finance consumption and sales in which the proceeds are reinvested. It might also be argued that this option is a natural extension of the realization principle of taxation: that is, tax is due only when the owner of an asset has exchanged it for cash."[3] With respect to mutual funds, the ultimate economic owners of the assets of the mutual fund are its individual shareholders, not the mutual fund.

Furthermore, since mutual funds are a popular vehicle for saving and investment of low- and middle-income households, this tax reform would greatly increase the incentives for these people to invest and save for their future by increasing their rate of return. As Burman also states: "Deferral reduces the effective tax rate on assets that pay returns in the form of capital gains much more than on income-producing assets. Because the tax can be deferred, the money that would have gone to pay taxes can continue to earn returns until the tax is paid."[4]

The cost to the federal government of adopting the tax change proposed in this paper to the treatment of "unrealized" capital gains would be minimal. Any loss would primarily result from the time value of money, as taxation of gain is not forgone, but rather deferred until the shareholder sells their individual mutual fund shares. However, the gain to the individual investor is very significant. Furthermore, if the market rate of return on any deferred shareholder gain is greater than the interest rate of the government 30-year bond, the government would realize an overall revenue gain.

II. HISTORICAL BACKGROUND

The original rationale for the current tax treatment of mutual funds (referred to as "regulated investment companies" by the Internal Revenue Code) can be traced to the *Revenue Act of 1936*. Prior to that Act, corporate income was subject to the same tax rate regardless of whether their profits were distributed. The corporate tax rate was 13.75 percent on the eve of the Act.

Also, at this time, a surtax was applied to individual taxpayers who received profits from corporate dividends. This surtax ranged from 4 percent to 63 percent. Hence, for many individuals, the individual surtax rate was substantially higher than the

[3] Leonard Burman. *The Labyrinth of Capital Gains Tax Policy: A Guide for the Perplexed*. Washington, DC: The Brookings Institution, 1999, page 136.

[4] *Ibid.*, page 48.

corporate tax rate. Thus, many individuals could have had an incentive to avoid the burdensomely high individual surtax rate by shifting their investments to corporations with low rates of distribution, thus obtaining a tax deferral based on the difference between their marginal surtax rate and the corporation tax rate on undistributed profits.

In response to tax avoidance concerns, the *Revenue Act of 1936* imposed an additional level of corporate income tax, or a surtax, on the undistributed profits of a corporation. This surtax was in addition to the regular tax on distributed and undistributed profits. However, since a mutual fund represents a vehicle for a large number of small investors to pool their risks in order to diversify and secure good investments, mutual funds were allowed special tax treatment.

Since mutual funds (or regulated investment companies) are defined as firms investing primarily in stock or securities and deriving their income primarily as dividends, interest, and capital gains, they are exempt from taxation on the profits they distribute to their shareholders. Mutual funds are taxed at the corporate tax rate on any undistributed profits.

Section 13(a)(3) of the *Revenue Act of 1936* allowed for this special treatment and endures today under Subchapter M of the *Internal Revenue Code of 1986*. To qualify as a regulated investment company under Subchapter M, a mutual fund company must distribute to its shareholders at least 90 percent of fiscal year earnings. Additionally, a mutual fund must distribute to its shareholders 98 percent of its earnings over every 12-month period ending October 31 and a every calendar year ending December 31.[5]

Hence, one justification for imposing a surtax on undistributed corporate profits was concern for avoidance of federal income tax by high income individuals. The surtax imposed as a result of the *Revenue Act of 1936* gave an incentive for corporations to distribute profits to individual shareholders as dividends, even though the distributions could be taxed at higher marginal rates. Given that the individual capital gains tax rates are currently lower than the corporate tax rate and that mutual funds represent a vehicle for a large number of small investors to pool their risks and secure good investment counsel, the tax reasons behind forcing the distribution of profits from the mutual fund to the individual shareholder may no longer be justified.

The retained profits of the fund should not be taxed because these profits are invested in assets (stocks, bonds or cash equivalents) for the benefit of the shareholder. Additionally, mutual funds should not be forced to distribute capital gains to their shareholders, which create burdensome and often unexpected tax consequences for individual mutual fund shareholders.

[5] Sources: U.S. Congressional Budget Office. "CBO Memorandum: The Contributions of Mutual Funds to Taxable Capital Gains." Washington, DC: October 1999. Page 1. Also, Investment Company Institute.

III. DEMOGRAPHIC CONSIDERATIONS

A review of the data shows that many millions of Americans would benefit from a deferral in the taxation of unrealized capital gains associated with mutual funds. Almost 78 million individuals, comprising over 49 million households (or 48.2% of all U.S. households), owned equities in early 1999.[6] Of those families owning equities, 38 percent owned both stocks and stock mutual funds, 15 percent owned only individual stocks and 47 percent owned only stock mutual funds.[7]

U.S. Household Ownership of Equities in 1999

	Percent of all U.S. Households	Number of Households (millions)	Number of individual investors (millions)
Any type of equity (net)	48.2	49.2	78.7
Any equity inside employer-sponsored retirement plans	31.8	32.5	52.0
Any equity outside employer-sponsored retirement plans	35.5	36.3	61.6
Individual stock (net)	26.1	26.7	40.0
Individual stock inside employer -sponsored retirement plans	10.5	10.7	14.0
Individual stock outside employer-sponsored retirement plans	21.4	21.9	32.8
Stock mutual funds (net)	40.9	41.8	66.8
Stock mutual funds inside employer-sponsored retirement plans	27.9	28.5	39.9
Stock mutual funds outside employer-sponsored retirement plans	27.2	27.8	44.4

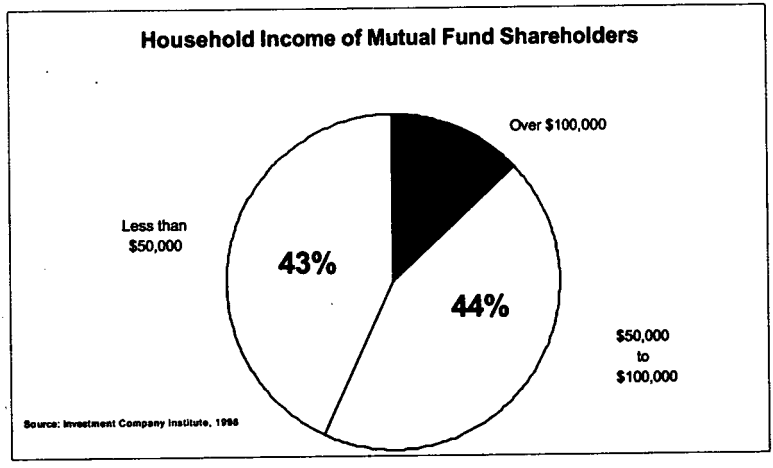
"Equity Ownership in America," Fall 1999, Investment Company Institute and the Securities Industry Association
Figure 12, page 13

[6] Investment Company Institute and the Securities Industry Association. "Equity Ownership in America." Washington, DC: Fall 1999. Page 5.

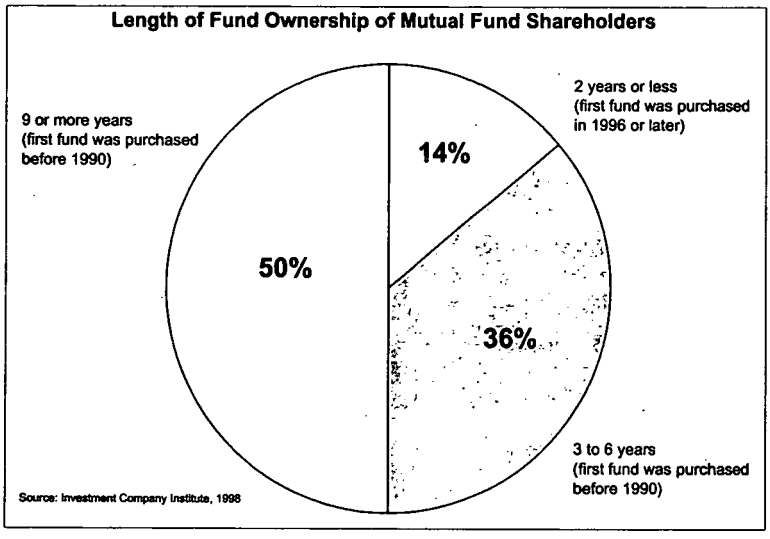
[7] *Ibid.*, page 5.

According to the Investment Company Institute (ICI), as of 1998, 87 percent of households that owned shares in mutual funds had an annual household income under $100,000. More importantly, 43 percent of households that own mutual funds have an annual household income less than $50,000.

A change in the tax treatment of mutual funds as proposed in this paper would have a beneficial impact on all owners of mutual funds, but the benefits would primarily help those making less than $100,000 a year save for their future.



Additional information from the ICI shows that many mutual fund shareholders entered the mutual fund market nine or more years ago. This implies that investors of mutual funds primarily are saving for the future, not engaging in tax avoidance or day-trading behavior. In fact, 75 percent of respondents who own mutual funds outside of employer-sponsored plans indicated that their primary financial goal was to save for retirement.[8]



The amount of assets held in mutual funds has increased dramatically over the past few years. From 1994 to 1998, individually held assets in mutual funds have increased over 138 percent from $1.265 trillion in 1994 to $3.021 trillion. Additionally, over half of all mutual fund assets are held by individuals.

[8] Investment Company Institute. "1998 Profile of Mutual Fund Shareholders." Washington, DC: Summer 1999. Figure 51, page 80.

Institutional Markets For All Mutual Funds					
Assets (in billions)	1994	1995	1996	1997	1998
Individual	$1,265 58.50%	$1,602 56.80%	$1,955 55.40%	$2,442 54.70%	$3,021 54.70%
Institutional	$897 41.50%	$1,219 43.20%	$1,571 44.60%	$1,571 45.60%	$2,504 45.30%

Source: Investment Company Institute, 1998

* Institutional assets invested in mutual funds in 1998 amounted to $2.5 trillion, representing 45.3% of all mutual fund assets. The remaining 54.5% of mutual fund assets represent investments of individuals. Institutions include fiduciaries (banks and individuals serving as trustees, guardians, and administrators), business organizations (including corporations, retirement plans, insurance companies, and other financial instituions), nonprofit organizations, and other institutional investors.

As the assets of mutual funds have increased, so has the amount of capital gain distributions that have been distributed to shareholders -- from a 1990 low of $8 billion to a 1997 high of $184.1 billion. In this time period, capital gain distributions by mutual funds have increased a sharp 2,201 percent.

Capital Gain Distributions to Shareholders All Types of Mutual Funds (billions of dollars)	
Year	Equity, Hybrid and Bond Funds
1990	8.0
1991	13.9
1992	22.1
1993	35.9
1994	29.7
1995	54.3
1996	101.1
1997	184.1
1998	166.0

Source: Investment Company Institute

This dramatic increase in the dollar amount of forced capital gain distributions has caused the average American family to be hit with a sizeable tax liability, even if they did not sell shares in their mutual fund. According to calculations by the Congressional Budget Office (CBO) based on ICI data tabulations, traditionally-held individual mutual

fund accounts (not including IRAs or pensions which defer taxation) distributed $50.81 billion in capital gains in 1997.[9] This amounts to 27.6 percent of the $184.1 billion in total capital gain distributions by mutual funds.

IV. ECONOMIC CONSIDERATIONS

American mutual fund shareholders are often unaware of the tax that they will owe on a fund's capital gain distributions before the distributions are received. The importance of forced distribution of capital gains by mutual funds is evidenced by the extensive media coverage advising shareholders of mutual funds about the economic consequences.

For example, *Business Week* ran a special report titled "Mutual Funds: What's Wrong," that highlighted some of the economic consequences of forced distributions. "The gains are triggered when managers take profits – a process over which the fund shareholder has no control. Over the past five years, taxes have effectively cost fund shareholders about 2.3 percentage points a year..."[10] Another article states that "...it's common for a stock fund's after-tax return to be 15 percent to 20 percent less than its pretax return."[11]

For a shareholder portfolio that starts out with $10,000 in the first year and returns 10 percent a year before taxes, a 2.3 percentage point reduction in pre-liquidation return would amount to $4,940 over 10 years, $23,188 over 20 years and a $81,924 over 30 years. According to the Investment Company Institute, the median value of stock mutual funds held outside of employer-sponsored retirement plans in 1999 was $26,000.[12] Assuming the same 10 percent rate of return, the same 2.3 percentage point reduction would amount to $12,845 over 10 years, $60,288 over 20 years and $213,002 over 30 years!

Another article points out the confusion mutual fund investors face when they have to calculate their cost basis (the average cost they paid for their shares).[13] The average cost basis needs to include reinvested dividends and capital gains -- the same

[9] U.S. Congressional Budget Office. "CBO Memorandum: The Contributions of Mutual Funds to Taxable Capital Gains." Washington, DC: October 1999.

[10] Jeffrey Laderman and Amy Barrett. "Mutual Funds: What's Wrong." *Business Week.* January 24, 2000. Page 72.

[11] Leonard Wiener. "The Best-Laid Tax Plans Can Falter When Gains Soar." *U.S. News & World Report.* January 24, 2000. Page 68.

[12] Investment Company Institute and the Securities Industry Association. "Equity Ownership in America." Washington, DC: Fall 1999. Page 43.

[13] Kathy Jones. "Easy Pickin's." *Kiplinger's.* February 2000. Pages 84-87.

dividends and capital gains on which mutual fund owners have already paid taxes. Although many mutual fund companies now calculate the average cost basis for their shareholders, the failure of some taxpayers to account for reinvested dividends and capital gains could result in some taxpayers paying tax twice on the same reinvested dividends and capital gains.

Changing the tax treatment of mutual funds to allow the realization point that triggers a capital gains tax liability to be moved from the mutual fund level to the shareholder level would increase the rate of return to shareholders and relieve many shareholders of the burdensome necessity of accounting for reinvested capital gain distributions. A change in tax treatment would also relieve part of the potential burden on the average American family of being taxed twice on the same gains.

V. POLICY ALTERNATIVES

In order to increase the incentives for the average American to save and invest for the future, it is recommended that the realization point that triggers a capital gains tax liability be changed from the corporate level (for companies such as mutual funds) down to the shareholder level. This would create a more equal tax treatment between investments in mutual funds and investments in direct stock ownership.

A potential tax avoidance scheme could be unintentionally created if this proposal became legislation, without some measures of anti-abuse language. Since mutual funds would be able to trade securities without incurring a tax liability for their shareholders, an incentive would exist for wealthy individuals to form their own "mutual fund." This would allow them to diversify and trade securities without incurring a tax liability until the individuals redeemed their shares in their own created "mutual fund."

Therefore, parallel with changing the tax treatment of unrealized capital gains, it is suggested that anti-abuse language be drafted in legislation that would concretely define the investment companies that would be eligible for this change in tax treatment (e.g., a mutual fund as an entity that is a vehicle for a large number of small investors to pool their risks in order to diversify and secure good investments). This anti-abuse language may necessitate the minimum number of investors required to be considered for this change in tax treatment or individual asset ceilings.

The Internal Revenue Code already provides a definition of a "publicly offered regulated investment company." Specifically, section 67(c)(2)(B) defines a "publicly offered" fund as one the shares of which are (a) continuously offered pursuant to a public offering, (b) regularly traded on an established securities market, or (c) held by or for no fewer than 500 persons at all times during the taxable year.

Additionally, due to the increasing amount of revenue received by the U.S. Treasury associated with capital gains taxes, it may be necessary to place a cap on the amount of capital gains that can be deferred each year to minimize the revenue loss to the government. For simplicity reasons, it is suggested that the ceiling be set equal to $2,500 for single tax filers and $5,000 for joint tax filers. This would reduce the revenue cost as well as insure that the benefits from changing the realization point of taxation of capital gains would primarily go to low- and middle-income investors.

VI. CONCLUSION

Tax policies are often evaluated based on three criteria: efficiency, equity and simplicity. An efficient tax policy is defined as a policy that raises the most amount of revenue while causing the least distortion in consumer behavior absent the tax. Equity implies that a tax policy should tax people with similar incomes and circumstances the same. Tax simplicity suggests that tax policy be simple to understand and comply with, or reduce the complexity of an existing tax policy.

Changing the tax treatment of unrealized capital gains so that the point of realization that triggers a capital gains tax liability is moved from the corporate level to the individual level is efficient, equitable and simple.

In the long run, changing the realization point of capital gains taxation from the corporate level to the individual level will increase economic efficiency by increasing the returns shareholders will receive on their investment. Additionally, in the long run, an increase in investor returns would likely result in an increase in tax revenue to the government. Hence, both individual investors and the U.S. Treasury would benefit from this tax change. Lastly, this proposed tax change would move toward more equal tax treatment between investments in mutual funds and investments in direct stock ownership.

Mutual funds have increasingly become an important vehicle for low- and middle-income households to invest in the stock market and save for the future. Changing the realization point of capital gains taxation from the corporate level to the individual level is equitable and fair since shareholders of mutual funds are primarily affected by the current tax treatment of unrealized capital gains.

Although a change in the tax treatment of mutual funds would have a beneficial impact on all owners of mutual funds, the benefits would primarily help those making less than $100,000 a year, low- and middle-income investors, with 43% of households owning mutual funds earning less than $50,000 a year.

The forced distribution of a capital gains tax liability by regulated investment companies onto individual shareholders increases the complexity taxpayers must confront when filing their yearly income tax returns. Changing the realization point of capital gains taxation may make it easier for taxpayers to figure out their cost-basis when they redeem their shares for cash. This change may also help to reduce the instances where taxpayers pay more in tax than necessary because of failure to adjust their cost-basis for reinvested capital gains.

This treatment is a type of capital gains rollover. As the current Clinton Administration U.S. Treasury Deputy Assistant Secretary for Tax Analysis Leonard Burman states with respect to rollover of gains in general: "Advocates of this approach argue that the tax code should distinguish between sales of assets to finance consumption and sales in which the proceeds are reinvested. It might also be argued that this option is a natural extension of the realization principle of taxation: that is, tax is due only when the owner of an asset has exchanged it for cash."[14] As Burman also states: "Deferral reduces the effective tax rate on assets that pay returns in the form of capital gains much more than on income-producing assets. Because the tax can be deferred, the money that would have gone to pay taxes can continue to earn returns until the tax is paid."[15]

The current tax treatment of taxing reinvested capital gains of regulated investment companies causes the average mutual fund investor between 10 percent and 20 percent a year in lost return. On a $10,000 investment earning a 10 percent annual rate of return, a 2.3 percentage point reduction in the rate of return would cost a mutual fund investor $81,924 over a 30 year period. With the same rates of return on a $26,000 investment, the median value of stock mutual funds held outside of employer-sponsored retirement plans in 1999, the loss would amount to $60,288 over 20 years and an incredible $213,002 over 30 years!

In order to increase the incentives for the average American to save and invest for the future, it is recommended that the realization point that triggers a capital gains tax liability be changed from the corporate level (for companies such as mutual funds) down to the shareholder level.

Jason J. Fichtner
Senior Economist

[14] Leonard Burman. *The Labyrinth of Capital Gains Tax Policy: A Guide for the Perplexed.* Washington, DC: The Brookings Institution, 1999, page 136.

[15] *Ibid.*, page 48.

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