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Taxes, Deficits, and Economic Growth

By Daniel J. Mitchell

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Even assuming the Clinton Administration's forecast for this year is accurate, the United States economy's performance since 1989 will have been the worst seven-year period since the end of World War II. Adjusted for inflation, median household income has declined by 6.6 percent since Ronald Reagan left office.[1] And while the unemployment rate is reasonably low, many Americans are worried about the future and fear their children will be the first generation to have a lower standard of living than its parents.

The economy's sub-par performance has triggered a debate on how best to stimulate economic growth and boost income. The good news is that all sides of the debate agree that the key to economic growth is capital formation—increasing the levels of savings and investment (including investments in human capital). The bad news, however, is that there is a significant disagreement over the policy changes that will best meet that goal. On one side are those who argue that high tax rates dampen incentives and believe that correcting the anti-savings, anti-investment bias of the current income tax code will improve the economy's performance. The flat tax, they would argue, offers the best opportunity to generate a substantial and positive impact on job creation and income growth. The other side of the debate is dominated by those who believe the most important variable is the budget deficit. They argue that a lower budget deficit will lead to significant reductions in interest rates and that lower interest rates will spur higher levels of investment.

Finally, no discussion of economic growth would be complete without addressing the size of government. Regardless of whether it is financed through taxes or borrowing, government spending represents a transfer of resources from the private sector to the public sector. If government spends that money in a way that generates a sufficiently high rate of return, the economy will benefit. If the rate of return is below that of the private sector, however, then the rate of growth will be slower than it otherwise would have been.

Needless to say, the debate over growth has important policy implications. Should taxes be increased or decreased? Should the budget be balanced and, if so, how quickly? Is the deficit the real problem, or is it a symptom of an underlying problem of too much government? What is the impact of tax reform? What types of government spending count as investment? If certain policies increase growth, should that higher growth be included in government economic and revenue estimates?

Careful analysis of the historical and theoretical evidence yields three important conclusions that can help guide policymakers as they focus on the nation's economic problems:

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1 U.S. Bureau of the Census Current Population Reports: Series P60-189, "Income, Poverty, and Valuation of Non-Cash Benefits: 1994," (Washington, D.C.: U.S. Government Printing Office, 1996).

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1) The tax system is taking too much money out of the productive sector of the economy. Perhaps even more important, the structure of the tax system is grossly flawed and imposes a particularly steep penalty on the very behaviors—saving and investing—that are needed to promote growth.

2) Government borrowing is morally wrong because it imposes bills on future generations,[2] but the deficit should not drive economic policy. Contrary to what both political parties argue, there does not seem to be a strong relationship between the budget deficit and interest rates. Nor is there much reason to believe that lower interest rates, by themselves, will have a pronounced effect on investment. Moreover, focusing on the deficit can undermine sound economic policy by leading some to view higher taxes as an appropriate policy option.

3) Government spending is too high. Many programs fail to generate an adequate rate of return (and many, such as welfare programs, almost certainly have a negative return and have made things worse). Not all government spending, needless to say, is dependent on "rates of return," but legislators should fully understand that funding programs with money that could be more productively used by the private sector will result in less economic growth. Finally, for those who do view the deficit as the key variable, there is ample evidence that slowing the growth of spending—not higher taxes—is the only way to achieve a balanced budget.

Why Capital Matters

As stated above, there is very little controversy about what causes growth. There is near-unanimous agreement that salaries and wages are linked closely to productivity. The only way to raise the income of workers permanently—assuming no change in their skills—is through savings and investment. Simply put, workers are paid on the basis of what they produce, and giving them better tools allows them to produce more. The level of capital formation, for instance, largely explains why workers in the United States, Germany, and Japan earn more than workers in Brazil, India, and Nigeria. Similarly, workers in America today earn more than their parents because of net investment (increases in the capital stock). As a result, they are more productive, generating more output per hour of labor.

Economists of all persuasions recognize this relationship between investment and wages. Paul Samuelson, for example, a Nobel Laureate economist who endorsed Bill Clinton for President, has written:

> What happens to the wage rate now that each person works with more capital goods? Because each worker has more capital to work with, his or her marginal product rises. Therefore, the competitive real wage rises as workers become worth more to capitalists and meet with spirited bidding up of their market wage rates.[3]

Another example is taken from a 1991 report on economic growth prepared by the staff of the Joint Committee on Taxation, then controlled by the Democrats:

2 This moral argument is less stringent if the debt was incurred to win a war or for some other purpose which presumably yields benefits to future generations.

3 Paul A. Samuelson and William D. Nordhaus, *Economics,* 12th Edition (New York: McGraw-Hill, Inc., 1985), p. 789.

> When an economy's rate of net investment (gross investment less depreciation)[4] increases, the economy's stock of capital increases. A larger capital stock permits a fixed amount of labor to produce more goods and services. The larger a country's capital stock, the more productive its workers and, generally, the higher its real wages and salaries. Thus, increases in investment tend to cause future increases in a nation's standard of living.[5]

According to a 1989 report on economic growth published by the Congressional Research Service:

> Capital deepening has been and will likely continue to be a central force for accelerating growth and potential output over the medium term. But as we have seen, a permanent increase in the long-term rate of growth will hinge on the United States' ability to increase the pace of technical advance and innovation. However, both of these routes to faster growth will be contingent upon the ability to increase the level of investment spending—more spending for capital equipment and more spending for research and development. To finance higher investment will, in turn, require that Americans raise the national rate of savings.[6]

Or consider the views of the White House. In the 1994 Economic Report of the President, the Administration noted that:

> The reasons for wanting to raise the investment share of the GDP [gross domestic product] are straightforward: Workers are more productive when they are equipped with more and better capital, more productive workers earn higher real wages, and higher real wages are the mainspring of higher living standards. Few economic propositions are better supported than these —or more important.

Competing Theories of Growth

Every economic school of thought—even Marxism—agrees that capital formation is the key to rising living standards. This happy consensus, however, does not translate into agreement about how to spur more savings and investment. In the political economic debate, at least in America, there are basically three (actually two and one-half) views on how to promote economic growth. These are:

✓ **Old-Fashioned Keynesianism.** This is the half-theory because it has so few adherents in America. In periods of economic sluggishness, Keynesians believe the government should increase spending, financed by borrowing, to give the economy a shot in the arm. This spending is supposed to stimulate aggregate demand, which causes private sector behavior to perk up. With a handful of exceptions, such as the failed 1993 stimulus bill, this approach does not receive much attention in Washington.

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4 Depreciation refers to the amount of capital that is used up or wears out during each period. For instance, a machine may have a life expectancy of five years. In order to measure increases in the capital stock accurately, increases in investment should be adjusted to reflect depreciation.

5 "Tax Policy and the Macroeconomy: Stabilization, Growth, and Income Distribution," Joint Committee on Taxation report for House Committee on Ways and Means, December 12, 1991, p. 21.

6 Craig Elwell, "The Goal of Economic Growth: Lessons from Japan, West Germany and the United States," Congressional Research Service, July 17, 1989.

- ✓ **1950s Republican/1990s Democrat Balanced Budget Orthodoxy.** The title is made up because this school of thought does not really have a name. Proponents of this approach, which is dominant in Washington, believe that the economy hinges on changes in the budget deficit. Contrary to old-fashioned Keynesianism, however, this orthodox approach argues that reducing the budget deficit is the key to economic growth. The theory works as follows: A lower budget deficit leads to lower interest rates, lower interest rates lead to more investment, more investment leads to higher productivity, and higher productivity means more growth. Although some of the proponents favor smaller government as a philosophical goal, the balanced budget crowd does not think taxes have a major effect on incentives to engage in productive behavior. As a result, they are skeptical of tax cuts and instead are willing to raise taxes.

- ✓ **The Free Market.** Another made-up title because other options—supply-side, conservative, classical liberal—do not capture the central tenet, the free-market approach believes that the keys to economic growth, at least in terms of fiscal policy, are the size of government and the structure of the tax system. In short, the free-market approach believes that total spending, regardless of whether it is financed by taxes or borrowing, hinders the economy's performance by transferring scarce resources from those in the private sector who have incentives to use them wisely to politicians and bureaucrats who oftentimes respond to political incentives. Because the size of government matters, free market advocates would prefer a government with a $1 trillion budget and a $200 billion deficit to a government with a $2 trillion budget that was balanced. On the tax side of the ledger, free market supporters believe taxes affect incentives to work, save, and invest. A major goal of these folks, therefore, is radical tax reform designed to minimize tax rates and eliminate multiple taxation of capital. These reforms, it is believed, will boost capital formation, which will increase productivity, which means faster economic growth.

Who Is Right?

The policy debate in Washington largely revolves between Options 2 and 3 (though there is also a fight amongst supporters of Option 2 over the size of government—Should the budget be balanced at level "X" or level "X+Y?"). Stripping away much of the rhetoric, the victor in this struggle depends on which set of relationships is more robust:

1) Are balanced budget proponents right that interest rates will fall significantly once deficit spending comes to an end? And are they correct in believing that investment is very sensitive to interest rates?

2) Are free market supporters correct in believing that there is an inverse relationship between economic growth and the size of government? Even more important, are they accurate in stating that decisions to work, save, and invest are significantly altered by the tax code?

In some sense, both sides are right. Unless economists want to repeal the laws of supply and demand, there can be no doubt that lower budget deficits will lower interest rates. And, all other things being equal, lower interest rates should mean more investment. It is also unambiguously true that lower taxes will reduce the price of providing labor and capital to the economy. And it is certainly accurate to note that a large government, by reducing the cost of not working, will adversely affect the economy's performance.

The real question is the magnitude of these effects. Would balancing the budget really reduce interest rates by two percentage points? Is the level of investment primarily driven by the interest rate? Just how sensitive are decisions to work, save, and invest to the rate of

taxation? To what extent do government spending programs actually undermine work effort?

Doubts Regarding Balanced Budget Orthodoxy

There is ample reason to question the robustness of the interest rate argument. According to the theory, lower budget deficits should result in lower interest rates. Yet there is little evidence to suggest that interest rates are significantly affected by changes in the U.S. budget deficit. This does not mean that the laws of supply and demand have been repealed. It simply means that in world capital markets, a shift of $30 billion, $40 billion, or $50 billion is unlikely to have a dramatic effect and can easily be overwhelmed by other factors such as monetary policy and demand for credit. [7]

Even if interest rates fall by a significant amount, the second link in the balanced budget chain of reasoning is very weak. Yes, interest rates must affect investment choices, but it appears that this variable is dwarfed by other influences.[8] Why invest, for instance, if there is no hope of making a profit? Real interest rates were negative during the 1930s in America, yet investment was moribund because investors did not see many opportunities to earn an adequate rate of return. Likewise, real interest rates were high in America during much of the 1980s, yet investment rose because people saw ways to make money. Moreover, since a large portion of investment is self-financed on the part of business, it is difficult to see how interest rates would have a dramatic impact.

All things being equal, it is a good idea to balance the budget. And, yes, lower interest rates will promote investment. Balancing the budget, however, is not a silver bullet for the economy. This approach is especially short-sighted if it is used as a reason to raise taxes or block pro-growth tax cuts. As the following section illustrates, changes in tax policy can have a pronounced effect on the economy's performance.

Why Free Market Supporters Are Right About Taxes and Capital Formation

The attached appendices provide a sampling of empirical work on the impact of taxes. To put that work in context, however, it is useful to walk through an example illustrating just how heavy the tax burden is on savings and investment. Between personal income taxes, corporate income taxes, capital gains taxes, and estate taxes, a single dollar of investment income can be subject to as many as four layers of tax in America. Added to that burden are provisions of the law, such as depreciation and the alternative minimum tax, which force taxpayers to overstate their income. Adding insult to injury is the heavy compliance cost of the current system.

The following example illustrates why savings and investment suffer in the current tax climate. A taxpayer has $100 of income and must decide what to do with it. He can consume the $100, spending it on food, vacations, clothing, haircuts, or some other product or service, in which case (with the exception of possible sales taxes) he will receive close to $100 in goods and services for his money. Or he can invest in the stock of a start-up company with

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7 For a complete discussion of the scholarly research on deficits and interest rates, see "Government Deficit Spending and Its Effects on Prices of Financial Assets," Department of the Treasury, May 1983.

8 Aldona Robins, Gary Robins, and Paul Craig Roberts, "The Relative Impact of Taxation and Interest Rates on the Cost of Capital," in Dale Jorgenson and Ralph Landau, eds., *Technology and Economic Policy* (Cambridge, Mass.: Bellinger Press, 1986).

the potential to provide new jobs to the community and produce goods that consumers desire. If the company succeeds, the investor most likely will profit. If it fails, he will lose his $100.

In this case, the investment bears fruit and yields a 10 percent rate of return, enabling the company to produce $10 of annual income for every $100 invested. Under the current tax code, 35 percent is skimmed off to pay the corporate income tax, leaving only $6.50 out of the original $10. This $6.50 then goes to the investor as a dividend. But there are other taxes. Depending on the investor's income, the personal income tax will take as much as 39.6 percent of his $6.50, leaving him with less than $4.00 of annual income from a "successful" $100 investment. In addition, he may face applicable state and local income taxes.

Finally, if the investor ever decides to sell the stock, he will be hit by one of the highest capital gains taxes in the industrialized world. To make a bad situation even worse, he will be taxed on the nominal gains, often meaning that taxes are paid on assets that have lost value in real terms (and do not forget that the person who sold him the stock originally may have been subject to capital gains taxes on that sale). The final insult is the estate and gift tax. Successful entrepreneurs who try to accumulate an estate to pass on to their children are penalized by inheritance taxes which can confiscate 55 percent of a deceased's assets.

Thanks to the tax code, a fortunate investor—one who actually earns money on his investments—may have to send more than 80 percent of his earnings to the government, not to mention having already paid taxes on the money used for the investment in the first place. Thus, government tax policy has created a very tilted playing field. By punishing saving and investment, the tax code encourages both individuals and businesses to consume rather than to build for America's future.

Since taxes have such a dramatic impact on incentives to work, save, and invest, it should come as no surprise that major tax changes almost always have a significant impact on the economy. Herbert Hoover's decision in 1930 to increase the top tax rate from 25 percent to 63 percent certainly contributed to the Depression. Lyndon Johnson's surtax on income tax liabilities, enacted in 1968, together with an increase in the capital gains tax helped end the 1960s expansion. Large tax increases, including inflation-induced bracket creep, contributed to the economy's dismal performance under Jimmy Carter. George Bush's record tax increase in 1990 was a principal cause of the recent recession and subsequent anemic recovery. And the sub-par performance of today's economy, particularly the decline in median household income, almost certainly is attributable in part to the record tax increase pushed through Congress in 1993 by Bill Clinton.

The Answer: The Flat Tax

Each of the tax code's many shortcomings can be addressed by targeted legislation, but a far better approach is simply to replace the existing system with a flat tax. There have been many flat tax proposals over the years, but they all share certain key features. These are:

- ✓ **One low tax rate.** All flat tax proposals have a single tax rate that applies to all income subject to tax. The actual rate imposed varies, but the upper limit would be about 20 percent. The Armey-Shelby flat tax legislation, for instance, begins with a 20 percent rate which phases down to 17 percent after a couple of years.
- ✓ **Tax income only once.** Flat tax proposals are designed to eliminate the tax code's bias against capital formation by ending the double- (and sometimes triple- and quadruple-) taxation of income generated through savings and investment. The key principle is that the

tax code not discriminate against income that is used for savings and investment as opposed to income that is consumed.

- ✓ **Elimination of deductions, credits, and exemptions.** All pure flat tax proposals eliminate provisions of the tax code that bestow preferential tax treatment on certain behaviors and activities. Included in this would be special tax breaks for businesses and corporations and, for individual taxpayers, the home mortgage interest deduction, the charitable contributions deduction, and the state and local mortgage interest deduction. Eliminating these "loopholes" solves the problem of complexity, allowing taxpayers to file their tax returns on a postcard-sized form.

Benefits of a Flat Tax

By addressing the many problems of the existing tax code in one fell swoop, the flat tax would have an immediate and dramatic positive impact. Included among the benefits are:

- ✓ **Faster economic growth.** A flat tax would spur increased work, saving, and investment. According to many economists, the rise in productive behavior would likely add one percentage point to the annual rate of economic growth. How significant is this? An increase in the growth rate of just one-half of one percentage point would boost an average family of four's yearly income by more than $5,000 after ten years.
- ✓ **Instant wealth creation.** Eliminating the second, third, and fourth layers of taxation on capital income would significantly boost the value of all income-producing assets. According to Professor Dale Jorgenson of Harvard University, enactment of a flat tax would immediately boost wealth by some $1 trillion.
- ✓ **Simplicity.** The 600-plus tax forms of the current system would be swept into the trash and replaced by two simple postcard-sized forms. Wage, salary, and pension income would be reported on the individual form and business and capital income would be reported on the business form. Neither form would require more than a few minutes to complete, substantially reducing the 5.4 billion-hour yearly burden of today's tax code.
- ✓ **Fairness.** All taxpayers and all income would be treated equally. A taxpayer with ten times the taxable income of his neighbor would pay ten times as much in taxes. Successful entrepreneurs no longer would be penalized by discriminatory tax rates, and no longer would the politically well-connected by able to benefit from special loopholes and preferences.
- ✓ **An end to micromanagement and political favoritism.** All deductions, credits, exemptions, loopholes, and preferences would be eliminated under a flat tax. Politicians would lose their ability to pick winners and losers, reward friends and punish enemies, use the tax code to impose their values on the economy. Investment decisions would be guided by economic forces rather than tax considerations.
- ✓ **Increased civil liberties.** The complexity of the tax code makes it nearly impossible for either taxpayers or IRS agents to follow the law. A greatly simplified tax code would eliminate virtually all of the conflicts and controversies that make the IRS one of the most feared agencies of the federal government.

The Spending Problem

While current tax policy represents a huge impediment to economic growth, policymakers also must focus on the size of government. To the extent that politicians and bureaucrats do not spend money as wisely or efficiently as it would be spent in the private sector, economic growth will lag as government increases in size. More specifically, many government programs do not generate benefits (or minimize costs) to the economy that exceed those which would have occurred had the money remained in private hands.

The appropriate approach for policymakers is to determine whether spending for a given program will yield enough benefits to offset the loss of the money to the private sector (including the incentive and compliance costs of collecting taxes). A certain level of transportation spending, for instance, will facilitate economic growth by permitting the efficient flow of goods and services. Policymakers should debate, of course, whether the spending could be privatized or conducted at the state and local level. And to the extent they believe it has to be conducted by Washington, they should do their best to ensure that funding is allocated according to sound guidelines rather than pork-barrel politics. Other types of spending, such as crime prevention, also may help the economy by reducing the cost of crime.

In too many cases, however, there is strong reason to believe that the federal government is spending money in ways that do not produce good results for the economy. Some programs, such as welfare, reduce the cost of not working and inevitably undermine productive economic behavior. Other types of spending, such as the budgets for regulatory agencies, can have significantly negative rates of return because of the heavy costs they impose on the private sector. Unfortunately, policy makers usually do not subject government programs to this type of cost/benefit analysis.

Note that one important conclusion from using this approach is that the deficit is not the critical variable. The key is the size of government, not how it is financed. Taxes and deficits are both harmful, but the real problem is that government is taking money from the private sector and spending it in ways that often are counter-productive. As a result, fiscal policy should focus on reducing the level of government spending, with particular emphasis on those programs that yield the lowest benefits and/or impose the highest costs. The importance of reducing spending, it should be noted, exists regardless of whether the budget happens to be balanced and is not contingent on changes in the tax system (just as reforming the tax system and adopting other pro-growth tax changes should not be contingent on what happens to the spending side of the ledger).

Conclusion

There is no magic formula to boost growth. The economy can only grow if people work more or work better. Unfortunately, much of the world has adopted policies that impose increasingly steep tax penalties on those who add to the economy's wealth. Compounding the damage of these policies are spending programs that shield people from taking responsibility for their own lives. The combination has been an unmitigated failure.

This raises a particularly important issue for those on the left. They must decide what is more important: keeping a tax system that may satisfy an ideological impulse to punish success, or adopting a system that helps boost the living standards of the less fortunate. It is certainly true that modest reforms like reducing the tax rate on capital gains or big reforms like the flat tax will boost after-tax income of the rich. The empirical evidence, however, shows that other income classes will benefit as well — and may benefit even more.[9]

Critics of tax reform complain that it is nothing more than "trickle-down" economics that relies on tax cuts for the "rich" to boost wages. Such rhetoric may be useful politically, but it cannot change economic reality. Economist John Shoven has explained:

> The mechanism of raising real wages by stimulating investment is sometimes derisively referred to as "trickle-down" economics. But regardless of the label used, no one doubts that the primary mechanism for raising the return to work is providing each worker with better and more numerous tools. One can wonder about the length of time it takes for such a policy of increasing saving and investments to have a pronounced effect on wages, but I know of no one who doubts the correctness of the underlying mechanism. In fact, most economists would state the *only* way to increase real wages in the long run is through extra investments per worker.[10]

For a profession usually chided for its lack of agreement, economists are nearly unanimous in their recognition that capital formation is the key to economic growth. Policymakers seeking to boost living standards and take-home pay face two competing options for how best to achieve the goal of more savings and investment: Should they focus on the deficit or should they shrink the size of government and reform the tax system? While these goals need not conflict, to the extent there is a division, there should be little doubt that a myopic fixation on the deficit will not necessarily produce the right policy results. Adopting a flat tax, by contrast, combined with long-overdue reductions in the level of government spending, will generate the desired outcome of a more prosperous economy.

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9 Barry J. Seldon and Roy G. Boyd, "The Economic Effects of a Flat Tax (Draft)," National Center for Policy Analysis, Dallas, Texas (forthcoming).

10 John B. Shoven, "Alternative Tax Policies to Lower the U.S. Cost of Capital," in *Business Taxes, Capital Costs and Competitiveness*, American Council for Capital Formation Center for Policy Research, July 1990, p. 3.

APPENDIX 1:
Taxes Affect Decisions to Work

Joint research by economists from Princeton University and Brigham Young University, based on a random survey of physicians, found that a one percentage point increase in marginal tax rates is associated with a reduction of as much as 1.11 percent in hours worked.[11]

A University of California economist found that because of the Tax Reform Act of 1986 (which lowered tax rates), the work effort of high-income married women rose by 0.8 percent for every one percent their after-tax wages increased.[12]

Another economist found that "Husbands of retirement age, 60 and over, show substantial variation in hours of work, related systematically to wages and income in the expected way." Moreover, "Wives in all age groups are quite sensitive to wages and income."[13] In other words, as after-tax income falls, so does the incentive to work.

Two other economists estimated that "wives' labor supply will increase by 3.8 percent" in response to a reduction in the marriage penalty.[14]

A comprehensive study in *The Journal of Human Resources* found that taxes reduce married males' hours of work by 2.6 percent and married females' by between 10 percent and 30 percent.[15]

According to a statistical study in *Econometrica*, yearly hours of work for white married women increase by 2.3 percent for every one percent increase in after-tax earnings.[16]

While husbands are not as sensitive to taxes as wives, the impact of taxes on their behavior is nonetheless dramatic. One study found that they work eight percent less than they would in the absence of taxes.[17] This indicates a loss in economic output of at least $1,000 per person.[18]

All studies acknowledge that higher after-tax incomes increase incentives to work by increasing the "price" of leisure, but some assume this effect is offset because lower taxes allow workers to achieve a certain level of income by working fewer hours. While this trade-off is relevant when looking at individual choices, two economists note that "the generalization of the individual analysis to the economy as a whole is invalid" because "It will be impossible for *all* individuals to consume both more goods and more leisure as the in-

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11 Mark Showalter and Norman K. Thurston, "Taxes and Labor Supply of High-Income Physicians," unpublished manuscript, October 21, 1994.

12 Nada Eissa, "Taxation and Labor Supply of Married Women: The Tax Reform Act of 1986 as a Natural Experiment," unpublished manuscript, September 1994.

13 Robert E. Hall, "Wages, Income, and Hours of Work in the U.S. Labor Force," in G. Cain and H. Watts, eds., *Income Maintenance and Labor Supply* (Chicago: Markham, 1973).

14 Jerry Hausman and Paul Ruud, "Family Labor Supply with Taxes," *American Economic Review*, Vol. 74, No. 2 (May 1984), pp. 242-248.

15 Robert K. Triest, "The Effect of Income Taxation on Labor Supply in the United States," *The Journal of Human Resources*, Vol. XXV, No. 3, pp. 491-516.

16 Harvey S. Rosen, "Taxes in a Labor Supply Model with Joint Wage-Hours Determination," *Econometrica*, Vol. 44, No. 3 (May 1976), pp. 485-507.

17 Jerry Hausman, "Labor Supply," in Henry J. Aaron and Joseph A. Pechman, eds., *How Taxes Affect Economic Behavior* (Washington, D.C.: The Brookings Institution, 1981), pp. 27-83.

18 Robert E. Hall and Alvin Rabushka, *Low Tax, Simple Tax, Flat Tax* (New York: McGraw-Hill Book Co., 1983).

dividual work-leisure analysis implies."[19] The actual economy-wide response to changes in tax rates will be higher than almost all studies indicate.[20]

One econometric model found that a one percent reduction in tax rates increased work effort for lower-income workers by 0.1 percent, for middle and upper-middle-income workers by 0.25 percent, and for upper-income workers by more than 2.0 percent.[21]

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19 James Gwartney and Richard Stroup, "Labor Supply and Tax Rates: A Correction of the Record," *American Economic Review*, Vol. 73, No. 3 (June 1983), pp. 446-451.

20 This is confirmed by other economists. See, for example, Paul Craig Roberts, "The Breakdown of the Keynesian Model," *The Public Interest*, No. 52 (Summer 1978), pp. 20-33; Norman B. Ture, "The Economic Effects of Tax Changes: A Neoclassical Analysis," in Richard H. Fink, ed., *Supply-Side Economics: A Critical Appraisal* (Frederick, Md.: University Publications of America, 1982); and William G. Laffer, "Virtues and Deficiencies of Supply-Side Economics Viewed From an Austrian Perspective," unpublished manuscript, September 28, 1990.

21 Michael K. Evans, "New Developments in Econometric Modelling: Supply-Side Economics," in Fink, *Supply-Side Economics: A Critical Appraisal*.

APPENDIX 2: Taxes Reduce Savings and Investment

In a book on taxes and capital formation, Norman B. Ture and B. Kenneth Sanden noted, "The bias against saving in the present tax system results from the fact that, with few exceptions, taxes are imposed both on the amount of current saving and on the future returns to such saving, whereas the tax falls only once on income used for consumption."[22]

Economist John Shoven estimates that a reduction of 20 percent in the top rate for capital gains would cause the stock market to rise by 3 percent.[23]

Undersecretary of the Treasury Lawrence H. Summers has written that "increases in the real after-tax rate of return received by savers would lead to substantial increases in long-run capital accumulation." Further, "bequests may account for a large fraction of national capital formation," which strengthens the argument that taxes influence savings.[24]

A study in *The American Political Science Review* noted that "Nations...where the extractive [tax] capacity of government did not significantly increase, relative to the economic product, have, in a sense, opted for...an increasing rate of private capital accumulation."[25]

Analyzing the decline in savings, a study by three experts concluded that Social Security and other transfer programs have led to a "decline in U.S. saving."[26]

Two other economists also concluded that Social Security reduces savings because workers no longer worry as much about retirement.[27]

Econometric results, according to a study published in the *Journal of Public Economics*, "suggest that dividend taxes have important effects on investment decisions" and that "an increase of 10 percent in the stock market would raise the investment rate by about 15 percent."[28]

Writing in the *National Tax Journal*, three economists found "significant effects for the after-tax return on saving, after-tax cost of borrowing, or both." The Reagan tax cuts "had a major impact on U.S. economic growth."[29]

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22 Norman B. Ture and B. Kenneth Sanden, *The Effects of Tax Policy on Capital Formation* (Washington, D.C.: Institute for Research on the Economics of Taxation, 1977).

23 Shoven, "Alternative Tax Policies to Lower the U.S. Cost of Capital."

24 Lawrence H. Summers, "The After-Tax Rate of Return Affects Private Savings," *American Economic Review*, Vol. 74, No. 2 (May 1984), pp. 249-253.

25 David Cameron, "The Expansion of the Public Economy: A Comparative Analysis," *The American Political Science Review*, Vol. 72 (1978), pp. 1243-1261.

26 Jagadeesh Gokhale, Laurence J. Kotlikoff, and John Sabelhaus, "Understanding the Postwar Decline in United States Saving: A Cohort Analysis," unpublished manuscript, November 1994.

27 Lawrence H. Summers and Chris Carroll, "Why Is United States National Saving So Low," *Brookings Papers on Economic Activity*, Vol. 2 (1987), pp. 607-635.

28 James M. Poterba and Lawrence H. Summers, "Dividend Taxes, Corporate Investment, and 'Q'," *Journal of Public Economics* 22 (1983), pp. 135-167.

29 Allen Sinai, Andrew Lin, and Russell Robins, "Taxes, Saving, and Investment: Some Empirical Evidence," *National Tax Journal*, Vol. XXXVI, No. 3 (1983), pp. 321-345.

APPENDIX 3: Growth Is Weaker When Government Penalizes Economic Behavior

A 1983 World Bank study of 20 countries found that low-tax nations experience faster growth, generate more investment, and enjoy more rapid increases in productivity and standards of living than high-tax nations.[30]

The tax system imposes between 22 cents and 54 cents of losses for every dollar raised, according to a labor-supply economist. For working wives, the losses are even higher: more than 58 cents for very dollar of tax revenue.[31]

Another study found that each 1.0 percent increase in the federal tax burden reduces economic growth by 1.8 percent and lowers national employment by 1.14 percent.[32]

According to a statistical study published in the *American Economic Review*, for every dollar paid to the federal government in taxes, 33.2 cents is lost to the economy.[33]

The increased tax burden between 1965 and 1980 drove an estimated 1.9 million people out of the U.S. labor force.[34]

Statistical research published in *Lloyd's Bank Review* has found that in the U.K. each one percent rise in payroll taxes causes hiring to fall by approximately 1.4 percent. The same study estimated that each $1 of additional tax revenue costs $3 in lost economic output.[35]

A study printed in the *American Sociological Review* concluded that "Increases of one percent in the tax burden relative to household income are directly associated with a 2.8 percent decline in economic growth over three years, or just under one percent annually."[36]

An *American Economic Review* study found that every dollar of taxes could impose as much as $4 of lost output on the economy, with the probable harm ranging between $1.32 and $1.47.[37]

A 1981 analysis of the Swedish economy in the *Journal of Political Economy* found "The estimated long-run effects [of high marginal tax rates] are sufficient to explain up to 75 percent of the recent decline in the measured growth of the Swedish GNP."[38]

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30 Keith Marsden, "Links Between Taxes and Economic Growth: Some Empirical Evidence," World Bank Staff Working Paper No. 605, 1983.

31 Hausman, "Labor Supply."

32 William C. Dunkelberg and John Skorburg, "How Rising Tax Burdens Can Produce Recession," Cato Institute *Policy Analysis* No. 148, February 21, 1991.

33 C. L. Ballard, J. B. Shoven, and J. Whalley, "General Equilibrium Computations of the Marginal Welfare Costs of Taxes in the United States," *American Economic Review*, Vol. 75, No. 1 (1985), pp. 128-138.

34 Otto Eckstein, "Tax Policy and Core Inflation, A Study Prepared for the Use of the Joint Economic Committee" (Washington, D.C.: U.S. Government Printing Office, 1980). See also L. Godfrey, "Theoretical and Empirical Aspects of the Effects of Taxation on the Supply of Labour" (Paris: Organization for Economic Cooperation and Development, 1975).

35 Michael Beenstock, "Taxation and Incentives in the U.K.," *Lloyd's Bank Review*, No. 134 (October 1979), pp. 1-15.

36 Roger Friedland and Jimy Sanders, "The Public Economy and Economic Growth in Western Market Economies," *American Sociological Review*, Vol. 50 (August 1985), pp. 421-437.

37 Edgar K. Browning, "On the Marginal Welfare Cost of Taxation," *American Economic Review*, Vol. 77, No. 1 (March 1987), pp. 11-23.

38 Charles E. Stuart, "Swedish Tax Rates, Labor Supply, and Tax Revenues," *Journal of Political Economy*, Vol. 89, No. 5 (1981), pp. 1020-1038.

According to a former Treasury Department official, between 75 percent and 80 percent of the additional wealth generated by increased savings and investment goes to workers.[39]

Another study in the *Journal of Political Economy* estimated that the corporate income tax costs more in lost output than it raises for the government. The "excess burden" is "123 percent of revenue."[40]

A 1984 study in the *American Economic Review* estimated "20.7 cents of welfare loss per additional dollar of tax revenue."[41]

A study of U.S. taxes at the state level found that low-tax states grew 35 percent faster than high-tax states between 1970 and 1980.[42] The relationship between growth and taxes among the states has been shown in literally dozens of studies.[43]

Another economist was able to illustrate a very strong inverse relation between average per capita growth rates and average tax rates on income and profits in developed countries.[44]

According to an article in the *Journal of Political Economy*, based on worldwide data, increasing the tax burden by ten percentage points will reduce annual growth by two percentage points.[45]

In a paper presented at the World Bank, two economists uncovered an "impressive negative relation between the rate of growth and the ratio of tax revenue to GDP" as well as a "negative association between growth and...the 'marginal' income tax rate."[46]

Of the explosive growth of Hong Kong, Taiwan, Singapore, and South Korea, Hoover economist Alvin Rabushka has written that

> The four Asian tigers adopted supply-side tax policies decades before the Reagan and Thatcher revolutions. Finance ministers oversaw systems of taxation that featured low rates and/or low levels of direct taxation of individuals and businesses, the absence of or very light charges on capital income (interest, dividends, capital gains), and a smorgasbord of inducements for domestic and foreign enterprises to invest and reinvest in each economy.[47]

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39 Norman B. Ture, "Supply Side Analysis and Public Policy," in David G. Raboy, ed., *Essays in Supply Side Economics* (Washington, D.C.: Institute for Research on the Economics of Taxation, 1982).

40 Jane G. Gravelle and Laurence J. Kotlikoff, "The Incidence and Efficiency Costs of Corporate Taxation When Corporate and Noncorporate Firms Produce the Same Good," *Journal of Political Economy*, Vol. 97, No. 4 (1989), pp. 749-780.

41 Charles Stuart, "Welfare Costs per Dollar of Additional Tax Revenue in the United States," *American Economic Review*, Vol. 74, No. 3 (June 1984), pp. 352-362.

42 Richard K. Vedder, "Rich States, Poor States: How High Taxes Inhibit Growth," *Journal of Contemporary Studies*, Fall 1982, pp. 19-32.

43 See Bruce Bartlett, "Impact of State and Local Taxes on Growth: Bibliography," Alexis de Tocqueville Institution, 1995, and Richard K. Vedder, "Do Tax Increases Harm Economic Growth and Development?" *Arizona Issue Analysis*, Report No. 106, September 20, 1989 (Annotated Bibliography).

44 Charles Plosser, "The Search for Growth," unpublished manuscript, August 1992.

45 Robert G. King and Sergio Rebelo, "Public Policy and Economic Growth: Developing Neoclassical Implications," *Journal of Political Economy*, Vol. 98 (October 1990), pp. S126-S150.

46 William Easterly and Sergio Rebelo, "Fiscal Policy and Economic Growth: An Empirical Investigation," unpublished manuscript, March 1993.

47 Alvin Rabushka, "Tax Policy and Economic Growth in the Four Asian Tigers," *Journal of Economic Growth*, Vol. 3, No. 1.

Other studies have found that the economy is harmed when government spends tax revenue:

A National Bureau of Economic Research study, using worldwide data, found that an increase "in government spending and taxation of 10 percentage points was predicted to decrease long-term growth rates by 1.4 percentage points."[48]

According to Daniel Landau, "The results of this study [published in the *Southern Economic Journal*] suggest a negative relationship exists between the share of government consumption expenditure in GDP and the rate of growth of per capita GDP."[49]

Two economists found that increases in U.S. government outlays for social programs "are associated with reductions in the growth rate."[50]

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48 Eric M. Engen and Jonathan Skinner, "Fiscal Policy and Economic Growth," National Bureau of Economic Research, *Working Paper Series*, No. 4223, December 1992.

49 Daniel Landau, "Government Expenditure and Economic Growth: A Cross-Country Survey," *Southern Economic Journal*, Vol. 49 (January 1983), pp. 783-792.

50 John McCallum and Andre Blais, "Government, Special Interest Groups, and Economic Growth," *Public Choice*, Vol. 54 (1987).