Can Public Policy Raise the Saving Rate?

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Summary

The national rate of saving may not be in the spotlight as often as other policy issues, but it nonetheless has important effects on many issues that are, including the trade deficit and the future ability of Social Security to secure the well-being of retirees. By saving more (and consuming less), there are more resources available to expand the capital stock. A growing capital stock is important because it adds to labor productivity and promotes rising living standards.

By economic definition, saving equals investment. It is not where the saving comes from, but how much saving is available that determines the level of domestic investment. While it may not matter for overall investment where saving comes from, other consequences follow from how much of domestic investment is financed from domestic sources of saving. If saving from domestic sources is insufficient to finance total investment, then the shortfall is made up by importing saving. But, being a net importer of saving also means that we are a net importer of goods and services.

There are three sources of domestic saving: households, business, and government. The targets of past efforts to raise national saving have been households and the federal budget. Of the two, households may be less susceptible to policies intended to stimulate saving. The response of households to saving incentives is still open to question, and if household saving does not rise by more than any reduction in tax revenue, the net effect on national saving will be minimal, or could even be negative.

Increased saving by the federal government is much more likely to raise the national rate of saving. An increase in taxes may result in a decline in household saving, but any reduction in household saving is likely to be small relative to the increase in government saving.

This report will be updated as economic developments warrant.

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Introduction

The national rate of saving may not be in the spotlight as often as other policy issues, but it nonetheless has important effects on many issues that are. It is an accounting identity in economics that saving must equal investment. By saving more (and consuming less), there are more resources available to expand the capital stock. A growing capital stock is important because it adds to labor productivity and rising living standards.

In an economic sense there is no best saving rate. The rate at which we save is a reflection of our relative preferences for consuming now, or deferring consumption to some future time. But when the issue of saving arises in a public policy context it is usually because of concern that we may not be saving enough to promote long-run economic prosperity.[1]

If raising the national saving rate is a public policy goal, what are the options? This report discusses the various sources of saving in the United States and factors that determine the rates of saving. It then examines policies that might affect saving decisions in each sector of the economy and for the nation as a whole.

A Brief Accounting of National Saving

Saving, in a nutshell, is income minus consumption. In an economic sense, however, consumption is not the same as expenditures. Translating the theoretical notion of saving into a statistical measure is a challenge. This section uses a basic economic accounting framework to show the importance of saving to the overall economy.

U.S. saving is a part of the national income and product accounts (NIPA) published by the Department of Commerce, Bureau of Economic Analysis (BEA). The NIPA constitute the accounting framework used to produce quarterly estimates of gross domestic product (GDP). GDP is the total value of goods and services produced, and it can be calculated in two different ways. One way is to add up the value of all the goods and services produced (the product side of the accounts), and the other way is to add up all of the income earned in the production of those goods and services (the income side of the account).

On the product side, GDP is the total value of those goods and services produced for personal consumption (C), investment (I), government (G), as well as for export (X). On the income side, the income earned in the production of those goods and services can be accounted for as consumer spending (C), taxes (T), private saving (S), and spending for imported goods and services (M).

Since both of these approaches measure the same variable (GDP), they can be set equal to each other, in this way:

$$C + I + G + X = C + T + S + M$$

[1] For recent saving data, see CRS Report RS21480, *Saving Rates in the United States: Calculation and Comparison*, by Brian W. Cashell.

Subtracting consumption (C) from both sides simplifies the equality:

$$I + G + X = T + S + M$$

This can now be rearranged by subtracting government spending (G) and exports (X) from both sides, which gives:

$$I = S + (T - G) + (M - X)$$

This equation illustrates the importance of saving. Total investment is equal to the sum of private saving (S), public saving (T-G), and the net inflow of capital from abroad (M-X).[2] To put it more simply, investment equals saving.

In the broadest sense, saving is income less consumption. Consumption is typically taken to mean spending on goods and services by households. But consumption can also refer to the wear and tear (depreciation, or capital consumption) on the capital stock that occurs in the production of those goods and services. Thus, some saving must be allocated to the replacement of the existing capital stock as it ages or wears out. Only if saving is more than sufficient to replace the existing capital stock as it wears out, or becomes obsolete, will the capital stock grow.

For this reason, saving data distinguish between "gross" and "net" saving. The difference between the two measures is the estimated deterioration in the existing capital stock. In some cases, such as computers, capital may be completely depreciated in a very short period of time, while in others, such as buildings or heavy equipment, capital may take a long time to wear out.

Why Saving Matters

Given this accounting framework, it is easy to see the importance of saving to the economy. By definition, saving equals investment. It is not where the saving comes from, but how much saving is available that determines the level of domestic investment. However, the composition of saving does affect the ownership of the capital stock and determines who has a claim on the income generated by that stock. To the extent that domestic investment is financed by importing saving from abroad, foreigners will have a claim on the interest and dividend income produced by those investments.

The amount of saving that flows into the country also affects the balance of trade in goods and services. In order for foreigners to invest their savings in the United States, they must first buy dollars in foreign exchange markets. An increase in the inflow of foreign savings means an increase in the demand for dollars, and an increase in the supply of foreign currency in currency exchange markets. That tends to push up the value of the dollar relative to other currencies.[3]

[2] Just as there is a balance between the income and product sides of the NIPA, there is a balance in international payments. If Americans buy more goods and services from abroad than they export, then (at least in this simplified example) the net outflow of dollars will be used by foreigners to buy dollar-denominated assets, which thus helps to finance domestic investment.

[3] This does not necessarily mean that the value of the dollar will rise over time, but rather that it will be higher than otherwise would have been the case.

The increase in the exchange value of the dollar, in turn, makes U.S. exports more expensive to foreigners and imports less expensive to American consumers. That stimulates an increase in imports while discouraging exports. The result of increased imports and reduced exports is a larger trade, or current account, deficit. Thus, along with the increased net inflow of foreign saving, there is also an increase in the net inflow of foreign goods and services.

While it may not matter for overall investment where saving comes from, there are other consequences that follow from how much of domestic investment is financed from domestic sources of saving. If saving from domestic sources is insufficient to finance total investment, then the shortfall is made up by importing saving. But, being a net importer of saving also means that the United States is a net importer of goods and services.

Household Saving

The standard model of consumer spending used in economic analysis makes the basic assumption that consumers seek to avoid large swings in their living standards over the course of their lifetimes. Thus as incomes rise and fall both in the short and long term, individuals will vary their saving rate in order to minimize the effect on their consumption.

Typically, over the course of an individual's lifetime, income has a tendency first to rise over the course of a career, and then fall in retirement. The life cycle model presumes that, in order to dampen the effects of this income cycle on consumption, and living standards, individuals vary the rate at which they save. Saving will thus tend to be relatively higher during their peak earning years, and less at the beginning of their careers and during retirement.[4]

Any analysis of household saving must account for those factors which cause incomes to vary over the course of a lifetime. One is retirement. Ideally, if the assumptions of the life cycle model are valid, the purpose of saving is to avoid a drop in living standards after retirement. Insofar as retirement saving is paramount, the individual saving rates will tend to vary with age, and the overall household saving rate will tend to vary in response to demographic changes.

Another consideration is referred to as precautionary saving. The life cycle pattern of income described above is only a generalization. Individual incomes may vary substantially over periods of time in ways unrelated to the life cycle. The more likely and the more extreme those variations are may affect how much more individuals may save above and beyond what is needed for retirement. Thus variations in confidence about overall economic conditions and individual career prospects may influence the saving rate.

Recent history suggests that major shifts in equity values may also affect the overall household saving rate. An increase in equity values that is perceived to be durable may allow households to continue accumulating wealth while saving less out of current income.[5]

[4] The life cycle model was developed in order to reconcile two apparently contradictory observations. The first is that at any point in time, people with relatively more income tend to have relatively higher saving rates. The second was that as incomes rise over time there is no tendency for saving rates to rise. The life cycle model holds that saving is more a function of age than income.

[5] Saving rates derived from the NIPA are based on current income and expenditures, they do not reflect changing asset prices. For that reason, some analysts consider changes in net worth a more meaningful measure of saving.

These factors may all be largely beyond the influence of public policy which suggests that government's ability to influence household thriftiness may be limited. One approach that has been tried is to offer tax advantages for those households that save. In 1982, individual retirement accounts (IRAs) were introduced as a way to stimulate household saving. Whether they did so has become a subject of some controversy.[6]

After the introduction of IRAs, substantial amounts of funds flowed into the new accounts. But that alone was not evidence of any effect on the total amount of household saving. The question is not just whether household saving rose after the introduction of IRAs, but rather whether households saved more than they would have in the absence of IRAs.

Comparing an actual outcome with a hypothetical base is a common problem in economic analysis. Sometimes a theoretical argument can be made as to what the effects of a specific policy are. That is not the case with respect to the effects of IRAs on household saving. A change in the rate of return of saving has two different and offsetting effects on the amount an individual chooses to save. Which of them dominates is an empirical question.

A rise in the rate of return may motivate an individual to save more simply because it makes saving preferable to consumption. It raises the cost of current consumption relative to saving in much the same way as a rise in the cost of beef relative to chicken will tend to increase the consumption of chicken and reduce the consumption of beef. This is referred to in the jargon of economics as a "substitution effect."

But there is another way in which a rise in the rate of return may influence saving behavior. Perhaps the easiest way of explaining this is in the context of what is known as a "target saver." If the goal of saving is to accumulate a given level of wealth by retirement age, a higher rate of return on saving means that goal can be satisfied while saving less. In the jargon of economics, this is referred to as the "income effect," because the increase in income as a result of the higher rate of return allows individuals to meet their goals while saving less.

Which of these two effects dominates and what the net effect of an increase in the rate of return on saving is have been the subject of some controversy. That the personal saving rate fell following the introduction of IRAs did little to encourage those who hoped that giving tax advantages to saving accounts would encourage new saving.

There is another consideration, with respect to IRAs, that needs to be taken into account. In theory, economic incentives are effective only at the margin. At their introduction, the tax benefits of IRA contributions were limited to the first $2,000. That limit increased to $5,000 in 2008.[7] A substantial share of total household saving is accounted for by households that save more than $5,000. It is unclear why a benefit limited to the first $5,000 of saving would motivate those who would save that much in the absence of IRAs to increase the amount they save. Rather, it seems more likely that people in those circumstances would simply change where they put their savings in order to take advantage of the higher after tax rate of return.[8]

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[6] See CRS Report RL30255, *Individual Retirement Accounts (IRAs): Issues and Proposed Expansion*, by Thomas L. Hungerford and Jane G. Gravelle.

[7] See CRS Report RS22019, *IRAs and Other Savings Incentives: A Brief Overview*, by Jane G. Gravelle.

[8] Jane Gravelle, "Do Individual Retirement Accounts Increase Saving?," *Journal of Economic Perspectives* (Spring 1991), pp. 133-149.

Even assuming that tax-favored saving accounts do generate additional household saving, the provision of the tax advantage results in a reduction in federal tax revenues increasing the budget deficit and cutting the saving rate of the federal government. For IRAs to raise the national saving rate any increase in household saving would have to be larger than the reduction in federal revenues.

Empirical studies of the effects of IRAs on saving have come to different conclusions. Poterba, Venti and Wise examined the financial holdings of similar households over time after the introduction of IRAs. They found that the non-IRA financial assets did not decline as would have been the case if households simply shifted saving from non-IRA investments into IRAs. They argue that the bulk of contributions to IRAs represented new saving.[9] But some of that increase in household saving was still offset by a reduction in federal government saving.

In contrast, Engen, Gale, and Scholz found the opposite. They begin by pointing out the many difficulties involved in separating new saving from saving that would have occurred anyway. In particular, they argue that one reason for the growth of non-IRA assets after the introduction of IRAs was the boom in the stock market. They found that saving incentives have a strong effect on the allocation of saving and wealth, but that there was little or no effect on the overall level of household saving.[10]

Social Security and Household Saving

As it currently stands, Social Security is partially funded. That means that part of the benefits now being paid to retirees are funded from their earlier contributions and part are transfers from the working population. To the extent that Social Security operates on a pay-as-you-go basis, it tends to reduce aggregate household saving because it transfers income from workers, who tend to be savers, to retirees who save relatively less.

A shift toward a fully funded retirement system would require some combination of increased contributions and reduced benefits. But the net effects of those changes on household saving are uncertain. Households might reduce their saving in order to pay higher contributions. Reducing benefits might prompt households to save more to make up for the lost future income. It is also conceivable that some current household saving is motivated by uncertainty regarding the future of the Social Security program. To the extent that any Social Security reform inspired greater confidence in future benefits, saving might fall. However, any reduction in household saving that might result is likely to be outweighed by the increase in public sector saving resulting from either benefit cuts or increased contributions.[11]

[9] James M. Poterba, Steven F. Venti, and David A. Wise, "How Retirement Saving Programs Increase Saving," *Journal of Economic Perspectives* (Fall 1996), pp. 91-112.

[10] Eric M. Engen, William G. Gale, and John Karl Scholz, "The Illusory Effects of Saving Incentives on Saving," *Journal of Economic Perspectives* (Fall 1996), pp 113-138.

[11] See CRS Report RL30708, *Social Security, Saving, and the Economy*, by Brian W. Cashell.

Business Saving

Business saving, as it appears in the national economic accounts, is the sum of undistributed profits and capital consumption or depreciation. How much a firm contributes to saving is a consequence of how it allocates its income. It can either pay it out as dividends, use it to replace its existing stock of capital as it wears out or becomes obsolete, or can use it to increase its total net stock of productive capital. How a firm decides to allocate its income will be in large part determined by whether or not it is in an expanding or shrinking market. If the market for a firm's production is increasing, its dividend distribution to stockholders is likely to be smaller than would be the case for a firm in a stagnant or diminishing market.

The fact that households are the ultimate owners of the business sector implies that business and household saving rates are linked. For example, a firm may invest in replacing worn out capital and further expanding its stock of capital rather than making a large dividend distribution. The increased capital stock of the firm raises its productivity and profits, increasing the wealth of the stock holding households.

If the goal of household saving is to accumulate wealth, they may have reason to be indifferent between saving out of dividend distributions or having the value of their stock holdings increase. Firms in an expanding market with increasing investment and profit opportunities will likely face less demand for dividend distributions than will firms in shrinking markets.

Whether changes in business saving affect household saving is an empirical question. There is evidence to suggest that business and household saving are closely interrelated. Bosworth, for example, found that business and household saving were closely related in a number of countries. In the United States, he found strong evidence that variations in business saving influenced household saving decisions.[12]

If an increase in business saving causes households to save less, then any policy intended to stimulate business saving might have little effect on total private sector saving.

Public Saving

The public sector can also be a source of saving. Saving by both the federal and state and local government is simply the difference between revenues and expenditures. When the public sector is in deficit, it is absorbing funds that might otherwise be available to the private sector to finance investment spending. When the public sector is in surplus, the excess of revenues can be used to reduce outstanding public debt. Debt reduction is equivalent to saving. Instead of buying the debt issues of other institutions, government can buy back its own debt issues.

Just as household saving may be affected by changes in business saving, changes in the public sector saving rate can influence household thriftiness. One way this might happen was initially suggested by Barro.[13] Consider the case of an increase in government spending. Barro argued that

[12] Barry P. Bosworth, *Saving and Investment in a Global Economy* (Washington: Brookings Institution Press, 1993).

[13] Robert Barro, "Are Government Bonds Net Wealth?," *Journal of Political Economy* (November/December 1974), pp. 1095 - 1117.

if taxpayers regard the well-being of their children equally with their own, it should not matter to them whether the spending increase is financed by increasing taxes or by borrowing. If the new spending is financed by borrowing instead of raising taxes, households will expect that at some time in the future taxes will have to raised to pay the increased interest on the debt or to pay off the debt.

Knowing that, if they are perfectly rational and if they are farsighted, they will increase their saving so as to be able to meet that future burden. If this assumption of extreme rationality were correct then any change in government saving would be completely offset by a change in household saving. There is little empirical evidence, however, to suggest that households react in this way to changes in government saving.[14]

That is not to say that household saving is unaffected by variations in public sector saving. Any change in household income affects both saving and consumption. Consider a tax increase, which would raise the public sector saving rate. In order to pay the increase in taxes households must either reduce consumption or saving.

How much of a tax increase is paid by reducing saving may depend on whether the tax increase is perceived to be temporary or permanent. The life cycle model, described above, assumes that one purpose of saving is to help insulate households from substantial variations in consumption over the course of their lifetimes. If that assumption is correct, an increase in taxes that is perceived to be permanent is more likely to be paid by a reduction in household consumption. A permanent tax increase would reduce income over the course of an individual's entire lifetime, and it is likely that lifetime consumption would be reduced as well.

An increase in taxes that is perceived to be only temporary is more likely to be paid by temporarily reducing saving. If it were paid entirely out of saving, then there would be no net effect on the national saving rate.

One complication of any government action to increase public saving, be it increases in taxes or spending cuts, is that it may contribute to slower economic growth in the short run. It is a periodic dilemma for policymakers that the short run goal of promoting full employment conflicts with the long-term goal of increasing national saving.

Social Security and Public Saving

With respect to federal government saving, the measure that matters is the unified budget surplus or deficit. For some purposes, the budget is divided into two accounts; one of these is referred to as "on-budget," and the other is "off-budget." The so-called off-budget account consists almost entirely of Social Security receipts and outlays.

Other things being equal, an increase in tax revenues will raise government saving. It makes no difference to government saving whether the revenues are in the on- or off-budget accounts. Revenues that are credited to the Social Security trust fund contribute to government saving in exactly the same way as revenues that fund current federal government outlays. Without the

[14] Edward M. Gramlich, "Budget Deficits and National Saving: Are Politicians Exogenous?," *Journal of Economic Perspectives*, vol. 3, no. 2 (Spring 1989), pp. 23-35.

revenues from Social Security taxes, the current budget deficit would be larger, and the federal government's borrowing needs would be larger as well.

Any reform of Social Security that shifts away from a pay-as-you-go towards a more fully funded program would necessarily involve some combination of increased contributions and reduced benefits. Any such change would raise the public sector saving rate. It might be that households would reduce their saving in order to meet the pay higher contributions, but it is unlikely that any reduction in household saving would completely offset the rise in public saving.

Conclusion

From a macroeconomic perspective, it makes no difference who saves. But, how much households, businesses, and government save collectively affects the level of domestic investment, inflows of foreign saving, and the balance of trade. Economic theory offers no single standard against which to assess the national saving rate as too high, or too low. However, some of the consequences of how much, or how little, we save are often seen by policymakers as signs of economic weakness.

The three sources of domestic saving are households, business, and government. Households and the federal budget have been the targets of past efforts to raise national saving. Of the two, economists have greater confidence in the latter. The response of household saving to past efforts is still open to question, and if household saving does not rise by more than any tax revenue lost, the net effect on national saving will be minimal, or could even be negative.

Increased saving by the federal government is much more likely to translate into a higher national rate of saving. An increase in taxes may result in a decline in household saving, but any reduction in household saving is likely to be small relative to the increase in government saving.

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