

U. S. FISCAL POLICY AND CONSUMER SPENDING

*Charles Steindel**

The interaction of the tax and transfer programs of the United States and consumer spending has attracted increased attention over the past year, as a result of simultaneity of the 2001 tax cut and the first U.S. recession in a decade. This paper reviews the evidence on this interaction. The discussion is informed by the life cycle-permanent income theory of consumption. The theory assumes that households are rational forward-looking planners, and implies that policies with comparable impacts on after-tax income may have very different effects on spending. The U.S. experience supports some of the major implications of the theory; however, some of the evidence conflicts with the theory as set out in its most simple form and even as it has been commonly modified. Thus, theory and evidence remain somewhat misaligned. There is still a great deal to learn on this topic. Predictions and calculations of tax effects on spending remain subject to substantive error, though some broad qualitative conclusions seem to be valid.

The next section of the paper reviews the evolution of some of the thought on fiscal policy and spending in the U.S. A description of some major policy changes, and an assessment of their effects on spending, then follow.

1. American Thinking on Fiscal Policy and Consumer Spending

The last 40 years have seen numerous periods of discussion, both in academic and in policy circles, of the interaction between U.S. fiscal policy and consumer spending. In the early 1960s, a significant argument in favor of the Kennedy tax cut was that reductions in tax rates would lessen the tendency for personal tax revenues to rise much more rapidly than incomes during economic expansions, due to the highly progressive structure the tax system then had. This “fiscal drag,” it was argued, hampered consumer

* Federal Reserve Bank of New York. Sylvia Ellis provided research assistance. My colleagues at the Federal Reserve Bank of New York gave helpful comments.

All views expressed in this paper are those of the author and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.

spending and limited growth (see Heller, 1966). That same era saw arguments advanced that changes in personal income tax rates were a desirable tool for stabilization policy. Indeed, given the likely delays in the legislative process of changing tax law, in the 1965 Economic Report President Johnson proposed granting the executive limited authority to change rates.

These proposals clearly stemmed from a view that changes in consumer spending are very closely tied to changes in after-tax income – at the extreme, perhaps a view that there is a constant marginal propensity to consume. However, developments in economics began to cast doubt on the efficacy of such proposals. In the late 1960s and early 1970s a line of academic work in the U.S. focused on the policy implications of the emerging life cycle-permanent income model of consumer spending; most importantly its assumption that consumers are rational forward-looking planners. Specifically, the life cycle-permanent income theory asserts that consumer spending, C_t , is a function of total resources (factor income, Y , plus government benefits, B , less taxes, T) available to the household over a planning horizon:

$$C_t = f(\sum \gamma_{t+i} E(Y_{t+i} + B_{t+i} - T_{t+i})), \quad i=0 \dots H \quad (1)$$

where E is the expectations operator, γ is the discount factor applied to future income streams, and H is the length of the planning horizon (which may be infinite). In the usual permanent income formulation of the model (I) may be restated as:

$$C_t = \alpha(YP_t + BP_t - TP_t) \quad (2)$$

where YP , BP , and TP are the “permanent” components of Y , B , and T . In the purest form of the model, movements in Y , B , and T that do not affect their permanent components do not affect spending.¹

For fiscal policy analysis a key issue is identifying the permanent components of benefits and taxes, and relating them to actual policy changes. In the 1960s, during the discussion of what became the 1968 tax increase, Robert Eisner noted that a tax levied primarily to finance the Vietnam conflict was inherently temporary and would have less effect

¹ In the life cycle formulation, changes in the distribution of permanent income across age cohorts will affect spending.

restraining the growth of consumer spending than would a “permanent” tax increase with the same immediate impact on revenues.

This line of thought has had a major effect on American analysis of fiscal policy. Studies of the temporary tax changes of 1968 and 1975 found that they did not affect spending as much as changes in permanent income (Okun, 1971; Springer, 1975; Modigliani and Steindel, 1977; Blinder, 1981). These results were occasionally referenced in 2001; an important part of last year’s tax cut was a substantial payment made to taxpayers during the third quarter. These payments were called “rebates,” though, as will be discussed later, they were not precisely analogous to those made in 1975.

The life cycle-permanent income model has had further effects on U.S. thinking about fiscal policy, outside of countercyclical issues, most importantly in the area of the long-term consequences of the Social Security retirement system. In the early 1970s Alicia Munnell (1974) and Martin Feldstein (1974) noted that for most American workers, the present value of the retirement benefits expected from the Social Security system exceeded the present value of the payroll taxes they would pay into the system, even including the employer’s matching taxes in the computation. In effect, permanent benefits exceeded permanent payroll taxes, conceivably biasing aggregate consumption up and aggregate saving down. An enormous volume of research has followed on the longer-term consequences of the Social Security system. More recent work has focused on the distribution of all government benefits and tax burdens across generations (Notably, the generational accounts literature of Jagadeesh Gokhale and his collaborators, as in Auerbach, Gokhale, and Kotlikoff, 1994. Also see Banca D’Italia, 2000), as opposed to the estimation of the amount of consumer spending currently generated by the Social Security system.

Computations of the permanent components of government benefits and taxes depend on expectations over the length of the consumer’s planning horizon. In the early 1970s, Robert Barro (1974) argued that an *infinite* horizon was plausible (on the grounds that a consumer would take into account the welfare of her heirs). Given discounting of future income in the consumption decision, there would seemingly be rather little difference between the *lifetime* planning horizon of the standard life-cycle version of the model (used, for instance, by Munnell and Feldstein) and this infinite horizon, but such is not the case. Given an infinite horizon, and the plausible further assumption that government debt is ultimately

redeemed, Barro showed that tax and benefit changes would not affect permanent income, and thus have no effect on spending. While this “Ricardian equivalence” view may not be widely accepted, it shows that the logic of the life cycle-permanent income model can leave very limited scope for government policies to influence consumer spending.

Perhaps surprisingly, consideration in the late 1970s and early 1980s of the proposed and then enacted Reagan tax cuts did not center on their effects on permanent income, possibly because they were clearly discussed as “permanent” changes in the tax law. Instead, much of the focus was on the implications of changed marginal tax rates on the after-tax rate of return and, in turn, the implications of the change in the rate of return upon U.S. saving. Some empirical (Boskin, 1978) and theoretical (Summers, 1981) work of the time had suggested that, contrary to long-standing belief, there was a rather strong response of U.S. saving to changes in the real after-tax rate of interest, and hence to reductions in the marginal tax rate.² The sustained decline in personal saving rates in the U.S. during the expansion of the 1980s, following the enactment of the Reagan tax cuts (and the Tax Reform Act of 1986, which further cut top marginal rates) has probably helped to reduce academic interest in using changes in the tax code as a way to increase personal saving.

Over the last 20 years there has been considerable work modifying the basic life cycle-permanent income model to address some unexplained anomalies. In a pioneering study, Robert Hall (1978) found that the time series behavior of consumer spending is not in accord with the predictions of the model—consumption responds to new information on wealth with a lag.³ Angus Deaton (1992) noted that consumer responses to movements in income are surprisingly mild given the persistence of income changes in the U.S. Taxes are another matter; from the point of view of the theory the surprise seems to be that consumers show as much response to temporary tax changes as the data suggest. In contrast, some of the older literature (for

² Howrey and Hymans (1978) challenged Boskin’s results. Summers’ major theoretical point was that increases in the real rate reduce the discount factor for the expected stream of labor income for a consumer whose decisions are governed by an equation similar to (1). This reduction reduces consumer spending and raises saving. Steindel (1981) also noted this point, but put less stress on it, given the ambiguity of changes in the expected stream of property income to changes in the rate of return (Summers constructed his simulations assuming that the elasticity of property income to changes in the rate of return is .5).

³ Parker (2001) has recently focused on the lag of spending to wealth changes as a potential key to understanding the equity premium puzzle. Ludvigson and Steindel (1999), though, argue that there is no significant lag of spending to changes in permanent wealth.

instance, Modigliani-Steindel and Blinder) found that the existence of smaller response to temporary than to permanent tax changes supported the theory!

Modifications to the canonical theory to deal with these anomalies have generally emphasized liquidity constraints. The standard life cycle-permanent income theory assumes that consumers may costlessly lend or borrow at market interest rates to smooth out spending. This assumption is clearly unrealistic. Credit constrained households may be unable to spend their permanent income when their cash receipts fall short. To make up for the spending shortfall, they may consume a large portion of transitory increments to income. Furthermore, these consumers will be forced to reduce spending sharply when income drops, since they are spending such a high fraction of their income and find it quite costly to borrow. Such reasoning led John Campbell and N. Gregory Mankiw (1990) to argue that the addition of current income to an empirical version of the life cycle-permanent income model was justified.

At this time, the life cycle-permanent income model, modified to acknowledge liquidity constraints (and, perhaps, the costs of adjusting consumption to changes in income), is widely accepted as explaining aggregate U.S. consumption reasonably well. This modified model suggests that:

1. Consumers will respond more strongly to “permanent” changes in taxes or benefits than to transitory or temporary changes.
2. There will, however, be some nontrivial response to transitory changes in policy.

The next section of the paper uses the logic of this model to explore some historic changes in U.S. fiscal policy and their effects on consumer spending. Even with the modifications, some anomalies remain. After that discussion, more recent changes in policy will be described.

2. Observing the Effects of Fiscal Policy

There are significant issues involved in assessing the impact of past fiscal policy changes on spending. A traditional way to do so is in the context of an empirical consumption function. In this approach, the impact of a fiscal policy change is deduced by observing the fit of the equation in

the wake of a fiscal policy change. A close fit, when a policy change variable is included, allows the analyst to estimate the impact of the policy from the size of the move and its estimated coefficient. Alternately, if a policy change variable is excluded from the equation, the policy impact may be estimated from the errors of the equation.

The traditional approach was used in the early literature assessing the 1968 and 1975 tax changes. It has fallen out of favor in the last generation. Traditional consumption functions are vulnerable to the Lucas critique—household decision rules, and hence the parameters of the consumption function, are partly dependent upon consumers' assessment of the rules governing policy changes. Any fiscal policy change may well imply a change in the basic rules governing the formulation of fiscal policy (of course, in the most extreme formulation of the critique, changes in policy corresponding to previously determined rules would have no effects on real variables).⁴

It has proven to be quite difficult to construct consumption functions immune to the Lucas critique, at least short of building large-scale econometric models of the entire economy.⁵ Since Hall's work, aggregate consumer research has focused on "Euler equations"—examinations of how the time-series behavior of consumer spending changes in the context of changes in the economic environment. The advantage of this approach is that fewer structural identifying assumptions are needed to test hypotheses on consumer behavior. The disadvantage is that the lack of structure means that it is quite difficult to measure parameters of interest, such as the precise amount spending changes in the wake of a tax change.

Our examination of past fiscal policy changes in the U.S. will be informed by the more modern approach. In some instances, reference will be made to more recent studies of spending changes, either in the aggregate or in selected cross-sections, at the time policy events occur. In other

⁴ Indeed, in his seminal paper Robert Lucas discussed the issue of consumer responses to policy changes before bringing up monetary policy (Lucas, 1976). Clearly, the early 1960s discussion of fiscal drag and counter-cyclical tax changes (whether implemented by the President or legislated) was not greatly informed by these issues. In principle, consumer behavior should incorporate the tendency to legislate tax cuts to reduce fiscal drag (the 1964 tax cut is the most notable example, but there were others) and the likelihood of countercyclical tax policy. If so, the actual change in tax collections following a change in the law may be viewed as a change in transitory income and have little effect on spending.

⁵ The FRB/US model represents one such effort, but it primarily deals with the implications of monetary, not fiscal, policy changes. Reifschneider and Williams (2000) describe the model.

instances, no formal statistical tests will be done, but the approach will be to examine and draw inferences from changes in the growth of consumer spending and in the personal saving rate around the time policy changes were implemented.

Observation of changes in the growth of spending in the wake of policy changes is an obvious thing to do, but is not likely to be terribly informative about drawing interesting conclusions about policy effects. This is because of the reasonable argument that large segments of the U.S. population are credit-constrained, and will have spending governed by immediate changes in cash income. Any fiscal policy change should show up as a change in the growth of spending, which is not very illuminating. Changes in the personal saving rate may allow for some inference about the nature of the response in spending and of household perceptions of the nature of the policy change.⁶ To do this though, we need to overlook some of the flaws in the U.S. personal saving rate.

The personal saving rate is a very poor indicator of household thrift and U.S. capital accumulation (Peach and Steindel, 2000. Also Perozek and Reinsdorff, 2002). Personal saving consists, essentially, of the purchase of financial assets by households, less borrowing, plus investment (net of depreciation) in housing.⁷ This measure is a dubious proxy for increases in household wealth, since it excludes capital gains—the major source of changes in U.S. household wealth over any but the longest time period (Ludvigson and Steindel, 1999). One peculiar oddity this exclusion leads to is that the payment of income taxes resulting from the realization of capital gains reduces saving (since, perforce, households must reduce financial assets or borrow to pay the tax), even though the liquid assets accumulated by the seller exceeds the tax.⁸ Yet another problem is that purchases of long-lived consumer durable goods are considered spending, not asset

⁶ Steindel (2001) also makes major use of changes in the personal saving rate to examine the spending effect of income tax changes.

⁷ Personal saving also includes saving by noncorporate business and nonprofit institutions, including their acquisition of nonresidential capital.

⁸ The realization of a capital gain generally involves the sale of an asset from one household to another, and will not affect the aggregate amount of financial assets owned by the household sector. Of course, the household paying capital gains tax will typically have the cash available to pay the tax as a result of the sale. At the time of the sale, the purchasing household must have found the transaction to be satisfactory. The payment of the capital gains tax is the only direct substantial effect on the aggregate saving and income data resulting from the transaction. The current treatment would suggest that these transactions are a “burden” on the household sector.

accumulation.⁹ Another problem is that sponsors' contributions to defined-benefit pension plans are included in personal saving; these contributions are directly controlled (within parameters set by federal government rules) by the sponsors and will fluctuate with interest rates and the value of the stock market. However, these fluctuations have no direct effect on the pensions beneficiaries receive or those current workers anticipate. Other limitations of personal saving is that it omits saving done by corporations and governments; furthermore, in recent years the bulk of new capital in the U.S. has originated from government and external sources; etc, etc.

These criticisms all apply to the level of the personal saving rate. It's almost meaningless to make any inferences about consumer behavior by comparing two widely separated observations of the saving rate; since the distortions in the measure differ greatly in their magnitude over longer time intervals. However, it's unlikely that these distortions change much over very short periods, so changes in the posted saving rate may give a good idea of changes in consumer behavior in response to changes in income.

Hence, a simple way to observe the impact of tax changes on spending is to look at the behavior of the personal saving rate around the time of a tax change. On the flow side, personal saving is defined as personal income less personal tax payments less spending. If a tax cut is regarded as permanent, it will likely have little effect on the measured saving rate — there will be increases in permanent income, realized income, and spending.¹⁰ If a tax cut is regarded as transitory (which simply means not permanent), the saving rate should increase at the time of the cut, since after-tax income will increase, but spending will be little changed. Again, the focus of the observation is on changes in the personal saving rate, not its level. The next section will look at the major federal income tax changes of 1968, 1975, and 1982, using the conceptual framework of the life cycle-permanent income model, and paying close attention to the behavior of the saving rate.

⁹ This problem has been compounded by the growing popularity among U.S. households for leasing, rather than purchasing, motor vehicles. A new car obtained through a lease is included in business capital spending; a new car purchased by a household is included in consumer spending. There can be erratic, offsetting changes in the U.S. personal and capital spending series resulting from the marketing efforts of motor vehicle producers, which can shift the relative attractiveness of leasing and purchase.

¹⁰ Of course, this assumes that the propensity to consume out of permanent income is reasonably close to one and the measured saving rate is reasonably close to the true propensity to save from permanent income.

Another issue is determining the timing of household responses to a fiscal policy change. The broad outlines of a change in taxes and benefits may become apparent months before the change is legislated. Moreover, the legislation of tax and spending law may well occur long before its “effective date”. In the United States, the effective date of a change in benefits or the payment of a tax rebate (like those of 1975 and 2001) might be considered the date the checks start to be mailed. The issue is much subtler for changes in the income tax structure. For most components of income, taxes are computed on a calendar year basis.¹¹ Discussion of tax policy often refers to changes in law taking place on some date such as July 1. As will be discussed below, American analysts talk about the “10% surcharge starting on July 1, 1968” or the “10% cut in income tax rates effective July 1, 1982.” These changes are somewhat fictitious. A 5% surcharge was levied on income taxes liabilities for calendar year 1968; the rate structure for income taxes in 1982 was 5% less than that for 1981. The full 10% changes took effect for the following calendar years. What happened on those July 1sts were changes in tax withholding. The vast majority of U.S. income taxes are collected by employers withholding from paychecks. A worker gives her employer certain guidelines (for instance, the number of dependents in the household), and, given these instructions, and schedules set by the Internal Revenue Service (which has considerable administrative discretion in these matters), the employer computes the amount to be withheld. The 10% amounts and the midyear dates are really rough (and as will be seen in discussing the 1982 event, the word “rough” is quite appropriate) guidelines to the change in withholding that took place at those times.

Given these complexities, when should an analyst expect to observe a consumer response to a change in fiscal policy? In the purest form of the forward-looking life cycle-permanent income model spending may well change considerably in advance of the “effective date,” or even in advance of the enactment of the legislation. If such extreme forward-looking behavior was widely prevalent, we might observe no change in consumer spending around the effective date! Observation of the personal saving rate around the time of a fiscal policy change can help determine whether

¹¹ Capital gains taxes have generally varied according to the specific length of time an asset was owned, and can, in principle, vary according to the specific date of sale. In the U.S. it has not been the practice to vary federal calendar year tax liabilities on other types of income according to the specific time of the year they were earned. However, Americans who change state residency during a year will need to file income tax returns to both states (if, like most, they have a state personal income tax) and “split” their income, exemptions, and deductions across the jurisdictions.

households behave in this fashion. If, say, a tax cut looms on the horizon, consumers may start to increase spending, and the saving rate will fall. At the “effective date,” when actual tax payments decline, the saving rate might rise. If the tax cut is viewed as temporary, primarily effecting transitory income, this effective date rise in the saving rate should take it back above its earlier norm. If the tax cut is viewed as augmenting permanent income, the saving rate should rebound to about its earlier level.¹²

2.1 *Three Income Tax Changes*

2.1.1 *The 1968 Surcharge*

Starting in the middle of 1968 a 10% surcharge was levied on personal and corporate taxes. At its early-1968 enactment, the surcharge had no expiration date, but in public discussion it was clearly associated with the financing of the Vietnam War. A war tax would appear to be a *prima facie* temporary tax. In 1969 the surcharge was reduced to 5% and given an explicit 1971 expiration date.¹³

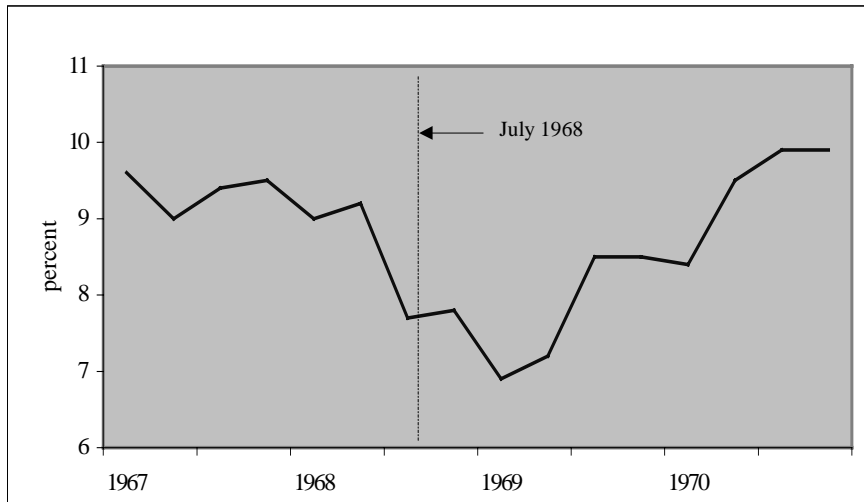
Around the time of the enactment of the surcharge, Robert Eisner predicted that it would have limited effect on consumer spending, precisely because it was so clearly temporary (Eisner, 1971). The behavior of the personal saving rate after the mid-1968 enactment of the surcharge suggests that he was correct. As can be seen in Chart 1, the saving rate fell sharply in the second half of 1968, which is consistent with the tax having a limited restraining effect. It is generally believed that a one-dollar change in permanent income in the U.S. will change spending by about 70 cents. Several studies suggest that the effect of the surcharge was perhaps $\frac{1}{2}$ the effect of permanent 10% tax increase – in other words, a reduction in spending of roughly 35 cents for each dollar of revenue the federal

¹² Yet another complication is the freedom American taxpayers have to change their withholding (subject to potential penalty for underpayment of tax during the course of a year). Hypersophisticated consumers may well increase their spending, and reduce their tax withholding, well in advance of the effective date of a tax cut. For these individuals, the effective date of a tax cut will produce no change in either their spending or their saving.

¹³ The tax increase was under consideration for many months before its enactment, and during this period its connection to the war was made quite clear. For descriptions of the contentious debate over this tax see Stein (1996) and Steindel (1973).

Chart 1

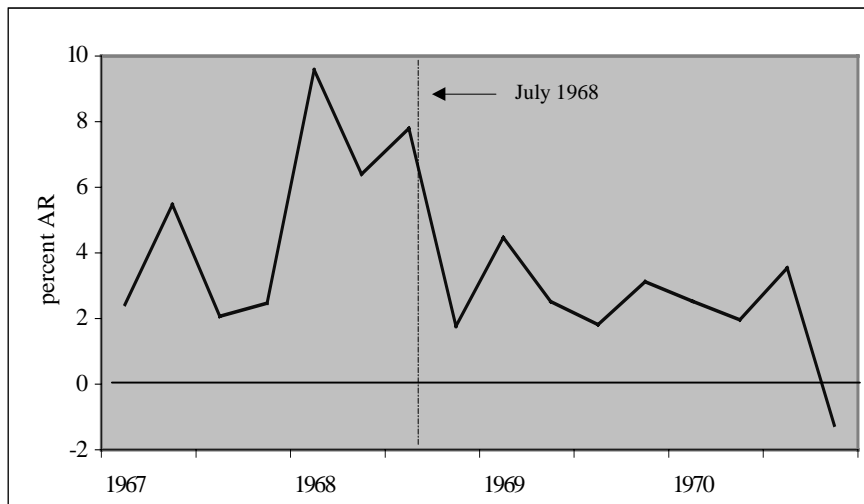
Personal Saving Rate



Source: Bureau of Economic Analysis.

Chart 2

Real Personal Consumption Growth



Source: Bureau of Economic Analysis.

government gained.¹⁴

Chart 2 does show, nonetheless, that there was a substantive slowing in spending in the wake of the tax increase, with the growth of real consumption considerably lower in late 1968 and thereafter than during the first three quarters of the year.¹⁵ The very rapid growth of spending in early 1968 suggests that consumers did not cut back in anticipation of the tax increase.

2.1.2 *The 1975 Rebate*

In the spring of 1975 a package of temporary changes in the income tax was enacted with the more or less specific aim to spur spending.¹⁶ The major element of the package was a “rebate” check of \$50 mailed to every individual income taxpayer in May 1975.¹⁷

The second quarter of 1975 saw a remarkable surge in the personal saving rate concomitant with the receipt of the rebate checks (see Chart 3). The saving rate in the second half of 1975 fell back to approximately its first quarter level. If consumers were simply waiting a short while to spend their checks, the saving rate might have fallen well below its first quarter level in the third or fourth quarters. The surge in the saving rate in the second quarter of 1975, and its continued high level in the second half of the year, suggests that little of the rebate was spent in 1975 (one study suggests as little as $\frac{1}{4}$).¹⁸ Consumers appear to have viewed the rebate as a one-time windfall rather than as an increment to permanent income and spent little of it at the time it was received. The data on the growth of real

¹⁴ Okun (1971), Modigliani and Steindel (1977), and Blinder (1981) found that the surcharge had about $\frac{1}{2}$ the effect of a permanent tax increase; Springer (1975) found that the evidence was more consistent with the surcharge having no effect on spending than its having the effect of a permanent tax increase.

¹⁵ Monthly data suggest that the slowdown started in August 1968, not long after the effective date of the tax increase.

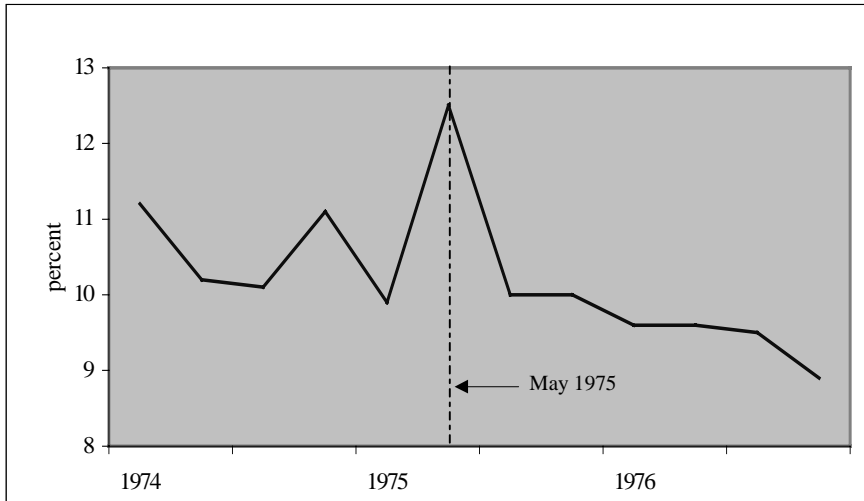
¹⁶ The 1973-75 recession is now dated to have ended in March 1975, but the economy continued to operate with wide margins of unused capacity and high unemployment well after the formal trough.

¹⁷ The other elements of the package were increases in the standard deduction and personal exemptions. Originally enacted to apply only to 1975, these changes were made permanent by legislation later in that year.

¹⁸ Modigliani and Steindel (1977). Blinder (1981) also found that the rebate had little effect on spending.

Chart 3

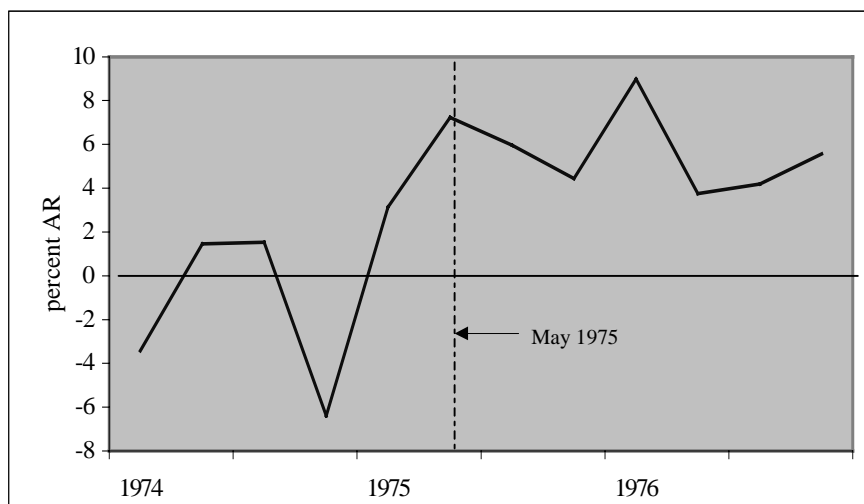
Personal Saving Rate



Source: Bureau of Economic Analysis.

Chart 4

Real Personal Consumption Growth



Source: Bureau of Economic Analysis.

spending, Chart 4, show a spurt in the second quarter of 1975 and then somewhat faster growth than at the start of 1975. This may be consistent with a lagged response to the rebate, but forces such as the emergence of the cyclical recovery spurring faster growth of pretax income and boosting confidence should have also contributed to the pickup in consumption.

2.1.3 *The 1982 Tax Cut*

The Economic Recovery Tax Act of 1981 (ERTA) included 3 staged permanent cuts in Federal income tax rates: a 5% cut, effective October 1, 1981, a 10% cut, effective July 1, 1982, and a final 10% cut effective July 1, 1983.

The 5% cut of 1981 was accompanied by other changes in taxes. Some of these other changes could have more than offset the stimulative impact of this cut on spending, so it is not clear that the rise in saving in 1981 Q4 (see Chart 5), or the fall in consumer spending at that time (Chart 6), can tell us anything about the impact of this tax cut.¹⁹

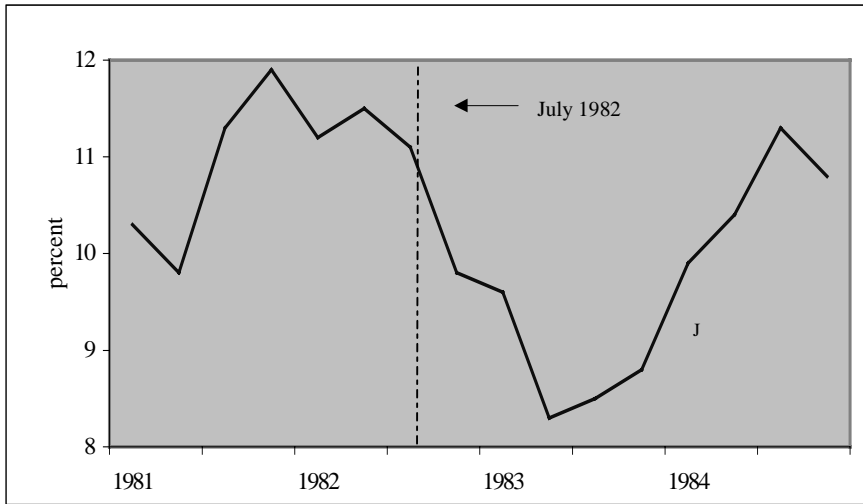
The 1982 cut took place without other tax changes taking effect. The initial stability of the saving rate following the July 1 effective date and its decline late in the year would suggest that the permanent tax cut was regarded as an increase in permanent income and, perhaps, that households began to take into account the pending 1983 reduction. Given the large size of the tax cut, the stimulus to spending provided by it could well be given significant credit for helping to end the very deep 1981-82 recession (the growth rate of real consumption in the fourth quarter of 1982 was the fastest since early 1978).

Nevertheless, the 1982 experience raises some puzzles for the life cycle-permanent income theory. First of all, of course, the tax cut was enacted very far in advance of its effective date. The long period of weakness in spending leading up to the middle of 1982 suggests that there was little if any anticipatory effect. Some curious puzzles are also raised by the mechanics of the 1982 cut. The withholding schedules prepared

¹⁹ Two of the other changes included expanded access to tax-favored Individual Retirement Accounts and a brief window of opportunity in the fall of 1981 for individuals to purchase tax-free "All-Saver" certificates of deposits from depository institutions. Both of these changes may have encouraged some people to save more out of current income in order to take advantage of these tax-privileged investments.

Chart 5

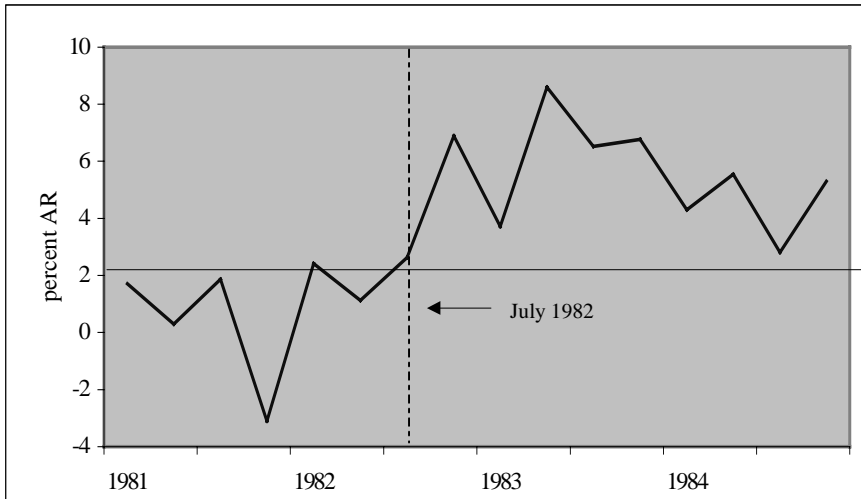
Personal Saving Rate



Source: Bureau of Economic Analysis.

Chart 6

Real Personal Consumption Growth



Source: Bureau of Economic Analysis.

for employers by the Internal Revenue Service in connection with the July 1, 1982 tax change allowed for a reduction in tax payments of less than 10% (apparently, there had been a tendency for taxpayers to underwithhold over the course of a year and to make large final payments at the filing deadline in April of the next year). Nonetheless, in line with the law, there was certainly a 10% reduction in the schedule of personal tax liabilities on July 1, 1982, meaning in reality a 5% reduction for calendar year 1982. If consumers strictly followed the life cycle-permanent income model, the discrepancy between the change in payments and the change in liabilities should have been an unimportant detail.²⁰ In principle, an increase in spending might have been observable in early 1982 (from a tax year standpoint, the time at which the cut became effective). Alternately, the increase in spending in the second half of 1982 could have been consistent with a 10% cut in tax liabilities starting then. In either instance, the saving rate should have been depressed at some point during 1982 (the first half, if consumers were responding to a 5% reduction in tax liabilities starting in January 1982 but experienced no change in tax payments at that point; the second half, if consumer were responding to a 10% reduction in tax liabilities starting in July 1982 but were experiencing a smaller reduction in tax payments) and rebounded in the spring of 1983, as final payments were reduced. Saving did decline toward the end of 1982, but continued to drop through the first half of 1983.

2.1.4 Summary of the Effects of the Three Income Tax Changes

The behavior of the personal saving rate around the effective dates of the 1968 surcharge, the 1975 rebate, and the 1982 tax cut suggest that households do distinguish between “permanent” and “temporary” income tax changes. However, the response to the 1982 cut suggests that households do not appear to distinguish between changes in tax liabilities and changes in tax payments, which is somewhat in contradiction of the strict life cycle-permanent income theory. Moreover, it’s arguable that the responses to the 1968 surcharge and the 1982 tax cut should have begun to take place well before their effective dates. The surcharge went through a lengthy legislative process, and the 1982 tax cut was legislated a year in advance. Studies of some other changes in federal tax and spending

²⁰ To indicate how unimportant, recall that taxpayers are free to change withholding as they wish, though with some risk of penalty.

programs have specifically examined whether consumers respond to changes in payments, instead of liabilities, and whether consumers anticipate changes in the law in their spending.

2.2 *Other Fiscal Changes*

Changes in the Social Security system provide good benchmarks for examining whether consumers anticipate changes in taxes and spending. Increases in U.S. old-age benefits have always been announced at least six weeks in ahead of time. Increases in old-age benefits are the epitome of permanent income increases, and are for all practical purposes the equivalent of permanent tax cuts. Forward-looking beneficiaries might therefore boost their spending in advance of the actual increase. In fact, research shows that there has been consistently a noticeable increase in retail sales the month that an increase in benefits takes effect, not before (Wilcox, 1987).

Changes in social security payroll taxes are also known well in advance. Most notably, a series of rate increases were legislated for future years in 1983. Additionally, every year many high wage-earners experience a temporary cut in tax payments when their earnings exceed the annual ceiling for the old-age tax. This cut would surely be well anticipated, since the wage ceiling for the old-age tax is announced in the fall of the prior year. Research has found a depressing effect on spending by a sample of households around the time payroll tax rate hikes take effect. In addition, it has been found that spending by high-wage households increase at the time the wage ceiling is passed (Parker, 1999).

Returning to the income tax, a study has found that households boost their spending around the time that income tax refunds are received (Souleles, 1999). An income tax refund is the epitome of a (temporary) tax cut known well in advance, since (barring filing errors) its amount is known in advance of receipt.

2.3 *Lessons Drawn from Past Changes*

The differing consumer responses to the 1968, 1975, and 1982 income tax changes suggest that households do indeed differentiate permanent changes in taxes from temporary ones. Consumers are forward-

looking. However, the apparent failure of spending to change in anticipation of the 1968 and 1982 effective dates, the apparent failure of consumers to distinguish between the 1982 change in liabilities and withholding, as well as the reaction of spending to preannounced changes in social security benefits and taxes, suggest there are limits to this forward-looking behavior. Consumers do not appear to allow tax or benefit changes to affect spending until they observe changes in their cash income, and they seem to gauge the size of a permanent change in taxes by looking at its immediate effect on cash income (judging from the 1982 experience).

The standard explanation for the limitations to forward-looking behavior is “liquidity constraints” (e.g., Wilcox, 1987). The spending of many consumers is limited to their cash on hand. Liquidity constraints may help explain the patterns of response to tax refunds and social security benefit increases, as well as the pattern of response to the 1982 tax cut. However, the sluggish response to the 1975 rebate—much of which must have gone to liquidity-constrained households—and the responsiveness of spending by upper-income households to the annual end of payroll tax payments suggest that other forces are at work as well. Before discussing some of these forces, it is worthwhile to explore the 2001 experience.

2.4 The Tax Cut of 2001

The 2001 tax cut was signed into law in June. The bill seemed to have both “permanent” and “temporary” aspects.²¹ On the permanent side, phased reductions in the basic schedule of rates were enacted, somewhat reminiscent of the 1982 law. The first changes in withholding took effect on July 1, 2001. However, unlike the 1982 act, the impact of the reduction in the basic tax rate structure on permanent income could be muted by the rather complex provisions regarding the Alternative Minimum Tax,²² and the scheduled roll-back of all the reductions in 2011.

The supposedly temporary feature of the tax bill was the “rebate” checks mailed to taxpayers in the summer of 2001. These rebate checks

²¹ Viard (2002) discusses the law in some detail.

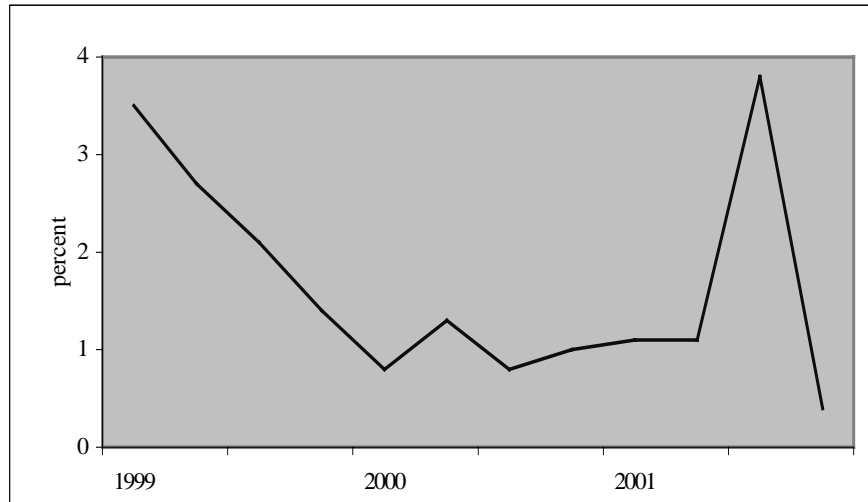
²² The Alternative Minimum Tax (AMT) is a method of computing personal income tax liability for high income individuals and households which involves adding back certain deductions and tax-exempt income categories to taxable income, and then computing a tax liability according to a special schedule. The taxpayer owes the higher of the AMT or ordinary income tax. Reductions in the AMT were legislated in the recent tax bill, but these reductions end after 2004.

were not strictly analogous to those of 1975. The 2001 rebates were payments reflecting the reduction in 2001 tax liability resulting from the partial replacement, effective for all of 2001, of the 15% tax bracket by a new 10% bracket. If taxpayers did not receive these checks in 2001, and did not change their withholding or estimated tax payments, they would be receiving unusually large refunds (or make unusually small final settlements) in early 2002.²³ Thus, the checks were actually accelerated refunds, rather than a pure rebate with no effect on future tax payments. Receipt of the 1975 rebate had no repercussions for future tax payments. This difference suggests that the 1975 experience is not entirely valid for estimating the impact of the 2001 rebate.²⁴

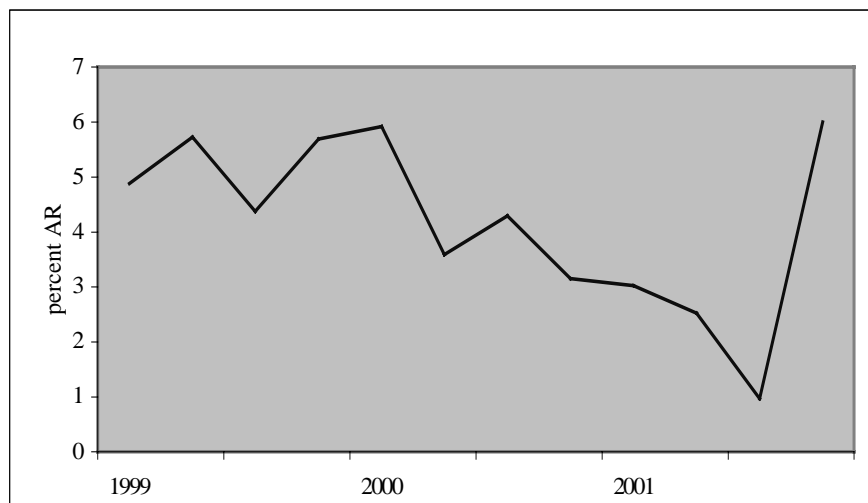
The personal saving rate rose sharply in the third quarter of 2001 as the rebate checks were mailed (Chart 7). The saving rate fell back to a level slightly below its first half pace in the fourth quarter of 2001. The growth of real consumer spending picked up sharply in the fourth quarter, after faltering in the third quarter (Chart 8)). At this time it is quite difficult to decide how much of the improvement in spending toward the end of the year may be attributable to the tax cut. The September 11 terrorist attacks prompted an abrupt but short-lived cessation of many types of discretionary spending, with somewhat more lasting effects on travel-related expenditures. Consumer attitudes clearly improved in the fall, resulting in a rebound in spending—heavily aided by major financing incentives by the motor vehicle industry. Nonetheless, the rebound in spending appears to be continuing into the early part of 2002, and it is certainly arguable that the tax cut may be having some lagged impact.

²³ The 2001 individual income tax return (Form 1040) referred to the rebate as “an advance payment.” Households who did not receive the full amount were eligible for a “rate reduction credit.”

²⁴ Another analogy to the 2001 episode may be the March 1992 reduction in personal income tax withholding rates (with no change in liabilities). This change boosted disposable income in that year by approximately \$15 billion. The personal saving rate was basically unchanged from February to June 1992. The stable saving rate may suggest that the withholding change was viewed as similar to a permanent tax change. However, the withholding change amounted to less than 1/3 of one percent of 1992 personal income (the 2001 rebate was about 1/2 percent of income for the year and a much higher portion of income earned in the third quarter, when it was distributed to taxpayers), and its effects could have been swamped by other developments affecting household spending. Shapiro and Slemrod (1995) examined the 1992 adjustment in withholding.

Chart 7**Personal Saving Rate**

Source: Bureau of Economic Analysis.

Chart 8**Real Personal Consumption Growth**

Source: Bureau of Economic Analysis.

3. Why the Anomaly?

U.S. taxpayers do appear to distinguish between “permanent” and “temporary” tax changes, and thus behave somewhat in accord with the life cycle-permanent income theory. However, consumers do not appear to react to tax or transfer changes until they actually affect cash income. Aside from liquidity constraints, what limits the forward-looking behavior of U.S. households?

Consumers may be responding to the extraordinary complexity of both the U.S. tax system and the tax policy process. U.S. personal taxes are, as has been noted, levied, according to a progressive schedule, on the basis of calendar year income (defined in a complex fashion; among other things, long-term capital gains are taxed on a separate schedule) less certain expenses. It is not a simple matter to determine how a legislated tax change will affect one’s tax liability for that calendar year. In the face of that complexity, a reasonable strategy may be to wait to see how the tax change affects cash income before adjusting consumption.

The tax policy process may add further complexity. Tax changes in the United States require the concurrence of both houses of Congress and the President.²⁵ Important components of tax bills have been the result of last-moment agreements, and may be influenced by procedural considerations.²⁶ A further complication is the frequency of major tax bills in the United States; most years see tax changes of some consequence. All these factors suggest that it is extremely difficult to predict the elements of a tax bill before its final passage by Congress and approval by the President; moreover the frequency of changes in the law should mute any formal distinctions between “permanent” and “temporary” changes.

4. Conclusion

In accord with the life cycle-permanent income model, the response of U.S. consumers to explicitly temporary fiscal policy moves is smaller

²⁵ Congress has the Constitutional power to override a presidential veto of a tax law or any other bill with a two-thirds margin in favor in both Houses. There have been no recent vetoes of tax legislation, but in 1944 President Roosevelt’s veto of a wartime tax bill was overridden.

²⁶ For instance, the 2011 expiration date on the provisions of the 2001 law was apparently influenced by Senate rules distinguishing the consideration of spending and tax bills having effects for more or less than ten years.

than to others. However, in contrast to the predictions of the pure form of the model, households do not anticipate policy changes until there is an actual effect on their cash flow, and they even seem to gauge the size of “permanent” policy by its short-term cash flow impact. Some of these conflicts with the model may reflect the existence of liquidity constraints hampering the ability of many households to borrow against their permanent income. However, it is also possible that the surprising sluggishness of the response reflects the complexity of the U.S. tax system and the policy process. Since the tax law often changes, tax changes that are not explicitly “temporary” may not necessarily be viewed as “permanent”.²⁷

A possibly promising line of future research on fiscal policy effects would appear to lie in explicit modeling of household expectations of fiscal policy changes.²⁸ For instance, it is conceivable that systematic policy changes – those in accord with expectations formed on the basis of historic experience – have different impacts than nonsystematic changes. Of course, such a line of research parallels the very long-standing work in monetary policy coming on the heels of the Lucas critique. There may be an inherently greater degree of difficulty in modeling fiscal policy in such a fashion than there is in the monetary area, since elections and other political considerations probably complicate the fiscal decision-making process relative to that of monetary policy.

Despite the very real difficulties of this line of research, there may be a need to get a better sense of the potency of fiscal policy. In a low-inflation environment, the zero bound on nominal interest rates complicates the ability of monetary policy to cope with negative shocks (Reifshneider and Williams, 2000). Expansionary fiscal policy may be more needed than in earlier years to stabilize the economy. Greater understanding of the sources and size of fiscal effects on consumer demand will aid the design of such policies, whether in the form of “automatic stabilizers” or discretionary changes in taxes and transfers.

²⁷ And vice versa. A phased repeal of the federal tax on telephone bills was legislated to start in 1966. The repeal was delayed because of revenue needs arising from the Vietnam conflict. The tax is still in place.

²⁸ Bütler (1999) examined the long-term impact of public pensions when expectations of policies are explicitly modeled.

REFERENCES

- Auerbach, A.J., J. Gokhale and L.J. Kotlikoff (1994), "Generational Accounts: A Meaningful Alternative to Deficit Accounting," *Journal of Economic Perspectives*, Vol. 8, No. 1, pp. 55-110.
- Banca d'Italia (2000), *Fiscal Sustainability*, Rome, Banca d'Italia.
- Barro, R.J. (1974), "Are Government Bonds Net Wealth?", *Journal of Political Economy*, Vol. 82, No. 6, pp. 1095-1117.
- Blinder, A.S. (1981), "Temporary Income Taxes and Consumer Spending," *Journal of Political Economy*, Vol. 89, No. 1, pp. 26-53.
- Boskin, M.J. (1978), "Taxation, Saving, and the Rate of Interest," *Journal of Political Economy*, Vol. 86, No. 2, pp. S3-S27.
- Bütler, M. (1999), "Anticipation Effects of Looming Public-Pension Reforms," *Carnegie-Rochester Series on Public Policy*, Vol. 50, No. 1, pp. 119-59.
- Campbell, J.Y. and N.G. Mankiw (1990), "Permanent Income, Current Income, and Consumption," *Journal of Business and Economic Statistics*, Vol. 8, No. 3, pp. 265-79.
- Deaton, A. (1992), *Understanding Consumption*, New York, Oxford.
- Economic Report of the President* (1965), Washington, U.S. Government.
- Eisner, R. (1971), "What Went Wrong?," *Journal of Political Economy*, vol. 79, No. 3, pp. 629-41.
- Feldstein, M. (1974), "Social Security, Induced Retirement, and Aggregate Capital Accumulation," *Journal of Political Economy*, Vol. 82, No. 5, pp. 905-26.
- Hall, R.E. (1978), "Stochastic Implications of the Life Cycle-Permanent Income Hypothesis: Theory and Evidence," *Journal of Political Economy*, Vol. 86, No. 6, pp. 971-87.
- Heller, W.W. (1966), *New Dimensions of Political Economy*, Cambridge, Harvard.
- Howrey, E.P. and S.H. Hymans (1978), "The Measurement and Determination of Loanable-Funds Saving," *Brookings Papers on Economic Activity*, No. 3, pp. 655-85.

- Ludvigson, S. and C. Steindel (1999), "How Important is the Stock Market Effect on Consumption?," *Federal Reserve Bank of New York Economic Policy Review*, Vol. 5, No. 2, pp. 29-51.
- Lucas, R.E., Jr. (1976), "Econometric Policy Evaluation: A Critique," in K. Brunner and A.H. Meltzer (eds.), *The Phillips Curve and Labor Markets*, Carnegie-Rochester Series on Public Policy, Vol. 1, New York, Elsevier-North Holland.
- Modigliani, F. and C. Steindel (1977), "Is a Tax Rebate an Effective Tool for Stabilization Policy?" *Brookings Papers on Economic Activity*, No. 1, pp. 175-203.
- Munnell, A.H. (1974), *The Effect of Social Security on Personal Savings*, Cambridge, Ballinger.
- Okun, A.M. (1971), "The Personal Tax Surcharge and Consumer Demand, 1968-70," *Brookings Papers on Economic Activity*, No. 1, pp. 167-211.
- Parker, J.A. (1999), "The Reaction of Household Consumption to Predictable Changes in Social Security Taxes," *American Economic Review*, Vol. 89, No. 4, pp. 959-73.
- (2001), "The Consumption Risk of the Stock Market," *Brookings Papers on Economic Activity*, No. 2, pp. 279-333.
- Peach, R. and C. Steindel (2000), "A Nation of Spendthrifts? An Analysis of Trends in Personal and Gross Saving," *Federal Reserve Bank of New York Current Issues in Economics and Finance*, Vol. 6, No. 10.
- Perozek, M.G. and M. Reinsdorf (2002), "Alternative Measures of Personal Saving," *Survey of Current Business*, Vol. 83, No. 4, pp. 13-24.
- Reifschneider, D. and J.C. Williams (2000), "Three Lessons for Monetary Policy in a Low-Inflation Era," *Journal of Money, Credit and Banking*, Vol. 32, No. 4, part 2, pp. 936-66.
- Shapiro, M.D. and J. Slemrod (1995), "Consumer Response to the Timing of Income: Evidence from a Change in Tax Withholding," *American Economic Review*, Vol. 85, No. 1, pp. 274-83.
- Souleles, N.S. (1999), "The Response of Household Consumption to Income Tax Refunds," *American Economic Review*, Vol. 89, No. 4, pp. 947-58.

- Springer, W.L. (1975), "Did the 1968 Surcharge Really Work?" *American Economic Review*, Vol. 65, No. 4, pp. 644-59.
- Steindel, C. (1973), *Fiscal Policy Under the Johnson Administration, 1966-1968*, unpublished honors thesis, Department of Economics, Emory University.
- (1981), "The Determinants of Private Saving," in J.J. Enzler, W.E. Conrad and L. Johnson (eds.), *Public Policy and Capital Formation*, Washington, Board of Governors of the Federal Reserve System.
- (2001), "The Effect of Tax Changes on Consumer Spending," Federal Reserve Bank of New York Current Issues in Economics and Finance, Vol. 7, No. 11.
- Stein, H. (1996), *The Fiscal Revolution in America*, Washington, American Enterprise Institute.
- Summers, L.H. (1981), "Capital Taxation and Accumulation in a Life Cycle Growth Model," *American Economic Review*, Vol. 71, No. 4, pp. 533-44.
- Wilcox, D.W. (1989), "Social Security Benefits, Consumption Expenditure, and the Life Cycle Hypothesis," *Journal of Political Economy*, Vol. 97, No. 2, pp. 288-304.
- Viard, A.D. (2002), "The Federal Budget: What a Difference a Year Makes," Federal Reserve Bank of Dallas' *Southwest Economy*, No. 1, http://www.dallasfed.org/htm/pubs/swe/1_2_02b.html.

