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## The Effect of Tax Changes on Consumer Spending

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*Many supporters of the tax cut enacted this summer viewed it as an important stimulus to consumer spending. But an analysis of the effects of earlier income tax cuts suggests that the consumer response to such initiatives is, in fact, quite variable. Two conclusions stand out: First, consumers will be more likely to boost spending if the change in tax liabilities is permanent. Second, consumers will wait to increase spending until a tax change affects their take-home pay.*

The near-term effect of tax cuts on the economy has generated considerable interest among policymakers and economists this year. Much of the discussion has centered on the question whether tax cuts are an effective spur to consumer spending. This question was at the heart of the legislative debate over the Bush Administration's tax package, and it continues to stir controversy as various economic stimulus plans are put forward in the wake of the September 11 terrorist attacks.

In this edition of *Current Issues*, we cast new light on the debate by reviewing how past tax changes affected consumer spending. Specifically, we look at the impact of major federal income tax changes in 1968, 1975, and 1982 and the effect of changes in Social Security payroll taxes and benefits. Our study begins with a look at what economic theory predicts about consumer responses to tax cuts, and throughout the analysis, we compare actual responses with those implied by theory.

We find that while almost all of the tax and benefit changes examined in the study prompted changes in consumer spending, the magnitude of the responses varied greatly. In conformity with economic theory, the spending effect was larger when the tax change was legislated to have a permanent effect on tax liabilities. Contrary to theory, however, households adjusted their spending only after tax changes took effect. This finding challenges the standard assumption that forward-looking consumers will alter their spending behavior in anticipation of an income change.

### Life Cycle–Permanent Income Theory of Spending

Most economists believe that consumer spending decisions follow the broad criteria set out in the life cycle and permanent income theories—two closely related hypotheses that, in the remainder of this article, are treated as a single theory.<sup>1</sup> This theory holds that consumers wish to maintain a smooth flow, or “growth path,” of spending over their lifetimes. Thus, consumers will be reluctant to increase or reduce spending in response to a change in income unless they believe that the income change will persist. The shorthand formulation of this idea is that spending responds to changes in “permanent” income.

Applying this theory to tax changes, we conclude that consumers will be more likely to alter their spending behavior if they perceive a tax change to be lasting. For instance, a reduction in income tax rates or increase in personal exemptions that is placed permanently in the tax code should have a larger effect on consumer spending (per dollar of tax revenue lost) than a temporary rate reduction or increase in exemptions.

Another component of the theory that bears on tax changes and spending is the premise that consumers are forward looking. This premise suggests that consumers not only distinguish permanent from temporary changes in taxes, but also anticipate the impact of a tax change on their incomes even before it takes effect. Thus, consumers might begin to adjust their spending immediately after a tax change is passed into law, or even when the outlines of the change begin to firm up—developments that can

occur long before the change actually begins to affect tax payments. Indeed, if consumers do take the long view, then changes in the legal structure of tax liabilities should influence their spending decisions more than changes in the timing of tax payments. After all, one would expect a shift in the structure of annual liabilities to have a greater effect on permanent after-tax income than a revision in withholding schedules or a change in requirements for quarterly nonwithheld tax payments.

Of course, the life cycle–permanent income theory cannot be expected to predict accurately every change in spending associated with a change in taxes. In maintaining that consumers react differently to permanent and temporary changes in income taxes, the theory assumes that all consumers are in a position to spend or refrain from spending at will—that is, consumers can defer spending a tax refund because they can meet any unexpected financial needs by liquidating financial assets or borrowing at market rates. In fact, however, many households are unable to borrow on any sort of favorable terms, and as a consequence, their spending is closely tied to current cash income. Thus, these households might be expected to spend a temporary tax cut just as quickly as a permanent one.<sup>2</sup>

The liquidity constraints affecting some households make the application of the life cycle–permanent income theory to tax changes more complicated. Nevertheless, we would still expect to see that explicitly transitory changes would have less of an effect on spending than permanent changes.

### Observing the Impact of Tax Changes

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 a tax change becomes effective. Personal saving is defined as after-tax income less spending. A change in permanent income should not change the *rate* of saving out of permanent income. Assuming that after-tax income prior to a tax change is roughly equal to permanent income, a tax cut regarded

as permanent will likely have little effect on the measured saving rate because spending will increase proportionately with after-tax income. By contrast, if the tax cut is regarded as transitory, the saving rate should rise at the time of the cut, because after-tax income will increase but spending will be little changed. The focus of the observation is on *changes* in the personal saving rate, not the *level* of the rate. At any point in time, the level of the personal saving rate may give a very distorted picture of household saving out of permanent income (Peach and Steindel 2000). However, these distortions are unlikely to change much over very short periods, at least compared with major changes in federal tax collections, so changes in the posted saving rate can give a good idea of changes in consumer behavior.

The analysis becomes more complicated if consumer spending changes in anticipation of a future tax change. For instance, if consumers increase spending prior to a tax cut (permanent or transitory), the saving rate will fall in advance of the effective date of the cut. By the time of the effective date, spending may show little or no further increase, but after-tax income will rise, boosting the saving rate. If the tax cut is regarded as permanent, the saving rate after the effective date could be roughly unchanged from the rate prevailing before the start of the upward revision in spending, assuming that no other major events affecting saving have occurred. If the tax cut is regarded as temporary, the post-cut saving rate will be higher than the earlier level.

The table summarizes the hypothesized effects of permanent and temporary tax cuts on the personal saving rate. The effects of tax *increases* would, of course, be the reverse of those shown in the table.

### The Spending Effects of Three Income Tax Changes

How do actual consumer responses to income tax changes compare with those predicted by the life cycle–permanent income theory? In this section, we track the effects of major federal income tax changes on the personal saving rate in recent decades.

#### Effects of Tax Cuts on the Personal Saving Rate: What Economic Theory Predicts

	Permanent Cut		Transitory Cut	
	Anticipated	Not Anticipated	Anticipated	Not Anticipated
Before effective date	Saving rate falls	No effect	Saving rate falls (but less than in permanent case)	No effect
After effective date	Saving rate returns to previous level	Minimal or no effect	Saving rate rises above previous level	Saving rate rises above previous level

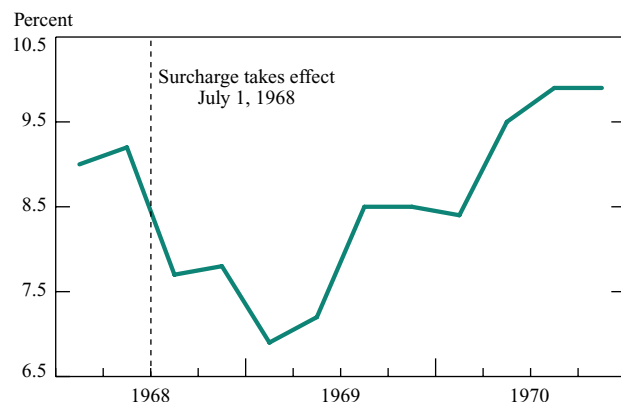
### The 1968 Tax Surcharge

Early in 1968, a 10 percent surcharge on personal and corporate taxes was signed into law. Initially, the surcharge had no expiration date, but its close association with the financing of the Vietnam War meant that the public would have regarded it as a temporary war tax. In 1969, the surcharge was reduced to 5 percent and given an explicit 1971 expiration date.<sup>3</sup>

Around the time the surcharge was proposed, economist Robert Eisner (1971) predicted that it would have limited effect on consumer spending, precisely because it was so clearly temporary. The behavior of the personal saving rate after the surcharge took effect in mid-1968 suggests that Eisner was correct (Chart 1). The rate fell sharply in the second half of the year, a sign that the surcharge was placing at most a modest restraint on spending. Indeed, while a one-dollar change in permanent income is generally thought to change spending by about 70 cents, several studies have indicated that the effect of the surcharge was perhaps one-half that of a permanent 10 percent tax increase—in other words, a drop in spending of roughly 35 cents for each dollar of revenue the government gained.<sup>4</sup>

The saving rate decline in the second half of 1968 supports the life cycle–permanent income theory’s prediction that temporary tax changes will prompt few changes in consumer spending patterns. However, the fact that the decline did not begin until after the effective date of the surcharge contradicts the notion, also implicit in the theory, that households act in anticipation of tax changes. Although the surcharge was put into law some months before it began to affect tax payments and had been widely discussed long before then, households did not alter their spending behavior in advance.

**Chart 1**  
**Personal Saving Rate around the 1968 Tax Surcharge**



Source: U.S. Bureau of Economic Analysis/Haver Analytics.

### The 1975 Tax Rebate

In the spring of 1975, a package of temporary changes in the income tax was enacted with the more-or-less specific aim of boosting spending.<sup>5</sup> The major element of the package was a “rebate” check of \$50 mailed to every individual income taxpayer in May 1975.<sup>6</sup>

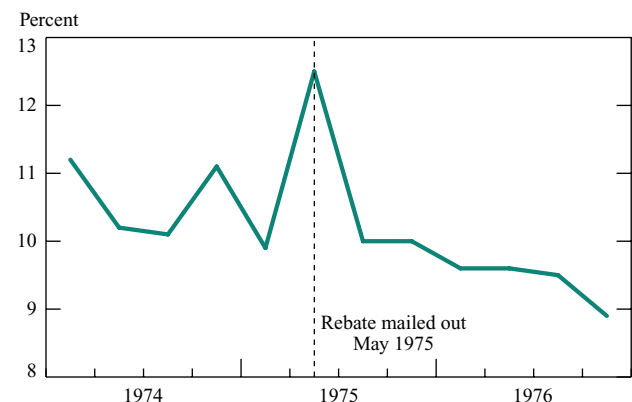
The second quarter of 1975 saw a remarkable surge in the personal saving rate concomitant with the receipt of the rebate checks (Chart 2). The saving rate in the second half of 1975 fell back to roughly its first-quarter level. If consumers were simply waiting a short while to spend their checks, the 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 maintenance at near its first-quarter level in the second half of the year, suggest that little of the rebate was spent in 1975 (perhaps as little as one-quarter<sup>7</sup>). Consumers appear to have viewed the rebate as a one-time windfall rather than as an increment to permanent income and consequently spent little of it at the time it was received. The rebate was proposed and enacted rather quickly, so this episode reveals little about the anticipatory effects of tax changes.

### The 1982 Tax Cut

The Economic Recovery Tax Act of 1981, signed into law in August 1981, included three staged permanent cuts in federal income tax rate structure: a 5 percent cut effective October 1, 1981; a 10 percent cut effective July 1, 1982; and a 10 percent cut effective July 1, 1983.

The 5 percent cut of 1981 was accompanied by other tax changes. Some of these changes could have more than offset the stimulative impact of the cut on spending, so it is not clear that the rise in saving in fourth-quarter 1981 (Chart 3) can tell us anything about the impact of this tax cut.<sup>8</sup>

**Chart 2**  
**Personal Saving Rate around the 1975 Tax Rebate**



Source: U.S. Bureau of Economic Analysis/Haver Analytics.

The 1982 cut took place without other tax changes taking effect. The relative stability of the saving rate following the July 1 effective date could imply that the permanent tax cut was seen as an increase in permanent income and largely spent upon receipt. Nevertheless, the 1982 experience raises some questions about the life cycle–permanent income theory. First, the saving rate changed little before July 1982, suggesting that consumers were not anticipating this widely advertised tax cut, passed into law nearly a year ahead of the event. Second, examination of the mechanics of the tax cut suggests that households were responding not to changes in permanent tax liabilities—as the life cycle–permanent income theory would predict—but to changes in tax payment schedules. While the 1982 tax change reduced the personal income tax rate by 10 percent, the schedules prepared by the Internal Revenue Service in connection with the change allowed employers to reduce tax withholding by less than 10 percent. If consumers had their eye on liabilities, the saving rate would have fallen in the second half of 1982 (since permanent tax liabilities fell more than tax payments) and then rebounded in the spring of 1983, as households made smaller than usual final tax payments. In the event, the saving rate did decline toward the end of 1982, but then continued to drop through the first half of 1983.<sup>9</sup>

#### *Other Tax and Spending Changes*

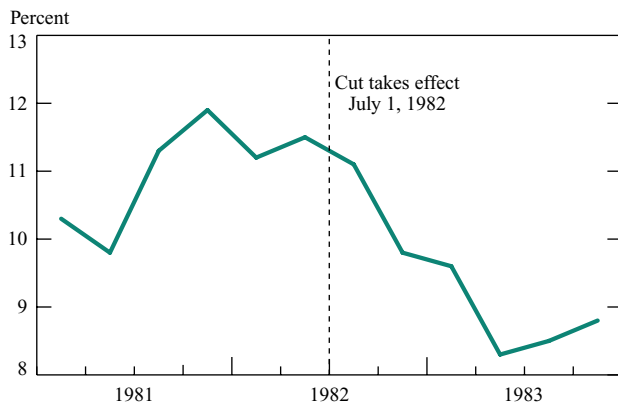
Like the major tax changes just described, changes in government benefits—and in the payroll taxes used to fund those benefits—can clarify how consumers respond to changes in their incomes. In examining the spending effects of these changes, we draw on a number of existing studies that consider specifically whether consumers react to changes in payments received from the government (a kind of negative tax), and whether consumers alter their spending in advance of the changes.

Social Security benefits are a case in point. Increases in old-age benefits are the practical equivalent of permanent tax cuts. Moreover, these increases have always been announced at least six weeks ahead of time. Thus, forward-looking beneficiaries might be expected to boost their spending in advance of the actual increase. However, research on retail sales provides evidence to the contrary. While retail sales rise markedly the month an increase in benefits takes effect, they show little change before (Wilcox 1989).

Changes in Social Security payroll taxes shed further light on the anticipatory effects of tax changes. In 1983, legislators passed a series of rate increases, designed to be implemented over a span of years. Since these increases were clearly foreseen, theory would predict little or no impact on consumer spending at the time the changes went into effect. Yet a recent study of a sample of households (Parker 1999) found that spending was in fact depressed around the times the payroll tax rate rose. Also contrary to theory is the behavior of high-wage workers when their earnings for the year exceed the ceiling for Social Security taxes. This temporary reprieve from old-age taxes is fully anticipated, since the wage ceiling is announced in the fall of the preceding year. The Parker study found that in this case too, workers responded only after the tax change went into effect—that is, they did not increase their spending until they passed the wage ceiling.

Research on household responses to income tax refunds points to a similar conclusion. An income tax refund is the epitome of a fully anticipated tax cut since its amount is known in advance of receipt. Theory suggests that forward-looking consumers will not wait for the arrival of a refund check before increasing spending. However, a recent study finds that households do not boost their spending until about the time that income tax refunds are received (Souleles 1999).

**Chart 3**  
**Personal Saving Rate around the 1982 Tax Cut**



Source: U.S. Bureau of Economic Analysis/Haver Analytics.

#### **Lessons Drawn from Past Changes**

The differing consumer responses to the 1968, 1975, and 1982 income tax changes indicate that households do indeed distinguish permanent changes in taxes from temporary ones. In this sense, households are forward looking. However, the apparent failure of spending to change in anticipation of the 1968 and 1982 effective dates, the failure of consumers to distinguish between the 1982 change in liabilities and withholding, and the failure of spending to react to preannounced changes in Social Security benefits and taxes all suggest that there are limits to 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).

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The standard explanation for such departures from forward-looking behavior centers on liquidity constraints (Wilcox 1989). As we noted earlier, 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 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 upper-income households to the annual end of payroll tax payments suggest that other forces are at work as well.

One possibility is that households may not pay full attention to upcoming changes in taxes and benefits. Tax laws change constantly in complex ways, and consumers may lack the time to determine precisely how a proposed or enacted tax change will affect their individual finances. Many people may find it more sensible to put off adjustments to their spending until they see the effect of a tax change on their take-home pay. In any event, while the ability of consumers to differentiate between permanent and temporary income tax changes is consistent with the standard life cycle–permanent income theory, consumers’ apparent failure to anticipate future changes in taxes suggests that, on this count, the theory falls short.

### **Current Tax Changes**

A major change in income tax structure was signed into law in June 2001. The legislation includes phased reductions in personal income tax rates as well as increases in personal exemptions and deductions through 2009. In 2011, the provisions of the law expire.

The personal tax provisions most relevant to 2001 were a 1-percentage-point reduction in marginal tax rates above 15 percent, effective July 1, and the so-called rebate—\$300 to individuals and \$600 to married couples—mailed to households from July through September. The rate reduction may be classified as a modest permanent income tax cut (assuming that consumers ignore or heavily discount the 2011 expiration date). The rebate is a bit more complex. Strictly speaking, the checks reflect the partial replacement of the 15 percent tax bracket by a new 10 percent bracket, a change made retroactive for all of 2001. The rebate does represent a reduction in permanent tax liabilities for calendar year 2001; the corresponding reduction in tax withholding will take effect on January 1, 2002. Thus, from a life cycle–permanent income point of view, the midyear tax change combined a sizable permanent cut in tax liabilities (about \$40 billion to \$50 billion for calendar year 2001, factoring in both the reduction in the top marginal rates and the introduction of the 10 percent bracket) with an even larger near-term reduction in tax *payments* (the

law reduced the annual rate of personal tax payments more than \$150 billion in third-quarter 2001). Because the tax change had aspects of both a transitory and a permanent cut, one could argue that its near-term impact could have been somewhere between the slight effect of the one-time 1975 rebate and the apparently large effect of the permanent 1982 tax cut.

The September 11 terrorist attacks have abruptly ended the debate about the effects of this tax change. Substantial changes in the economic and financial landscape, together with the ensuing policy moves, have ruled out any accurate assessment of the stimulus provided by the rebate checks. Further tax and benefit changes to encourage household spending are now under consideration. Past experience suggests that spending will be greater if households regard these changes as permanent. However, experience also indicates that spending increases are unlikely to occur before the changes in law and benefits take effect. Thus, a temporary change implemented in the near term could boost spending, at least modestly, while a permanent change that does not take effect for some time would likely have little or no immediate anticipatory impact on spending.

### **Conclusion**

The last generation has seen a plethora of changes in personal income taxes, payroll taxes, and Social Security benefits. Household responses to these events suggest the following general conclusions:

- Consumer spending will not change until a tax change affects take-home pay. Consumers measure the size of a tax change by its immediate effect on tax payments, not its effect on tax liabilities.<sup>10</sup>
- Consumer spending will react more strongly to a permanent than to a temporary tax change.

These observations are broadly, but not completely, supportive of the view that consumer spending conforms to the life cycle–permanent income theory, modified to recognize the existence of liquidity constraints on spending (see Campbell and Mankiw [1990] for a fuller description of this modified model). However, the failure of scheduled changes in taxes and benefits to prompt households—even upper-income households—to spend in advance suggests that we have much more to learn about consumer responses to policy changes.

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### **Notes**

1. The life cycle and permanent income theories were independently developed and differ in some details, but are similar enough that for many purposes they can be considered as one.



2. The life cycle theory further asserts that the distribution of a tax change across age cohorts influences its spending effects. According to the theory, households save primarily to finance retirement. Thus, retired households should spend more and save less of a tax cut—permanent or transitory—than working households.
3. The tax increase was under consideration for many months, and during this period its connection to the war was made quite clear. Stein (1996) and Steindel (1973) describe the debate over this tax.
4. Studies of the surcharge include Okun (1971), Springer (1975), Modigliani and Steindel (1977), and Blinder (1981).
5. The 1973-75 recession is now marked as ending in March 1975, but the economy continued to operate with wide margins of unused capacity and high unemployment well after the formal trough.
6. The package also included increases in the standard deduction and personal exemptions. Originally enacted to apply only to 1975, these changes were later made permanent by legislation.
7. See Modigliani and Steindel (1977). Blinder (1981) also finds that the rebate had little effect on spending.
8. Other changes included expanded access to IRAs and a brief window of opportunity in the fall of 1981 for individuals to purchase tax-free “all-saver” certificates of deposit 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.
9. Conceivably, the decline in the saving rate toward the end of 1982 is consistent with households’ starting to take into account the pending 1983 tax reduction. However, other developments, such as improved economic prospects following the 1981-82 recession, could have spurred spending and reduced saving at that time.

It is also possible that households were focusing on tax liabilities in 1982, and that the behavior of the saving rate may have stemmed from lags in households’ upward adjustment of spending. However, if households were careful to distinguish liabilities from payments, why did the spending adjustment begin only after July 1982?
10. We have seen that households in 1982 did not distinguish a change in tax payments from a change in tax liabilities. Households behaved in a similar way in March 1992, when a reduction in personal income tax withholding rates—unaccompanied by a change in liabilities—boosted disposable income about \$15 billion. The fact that the personal saving rate remained largely unchanged in the wake of this event suggests that households viewed the change in withholding as a permanent tax cut and consequently spent a large portion of the proceeds.

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*The views expressed in this article 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.*

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