TRANSFER PAYMENTS AND THE MACROECONOMY: THE EFFECTS OF SOCIAL SECURITY BENEFIT CHANGES, 1952–1991

Christina D. Romer

David H. Romer

University of California, Berkeley

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ABSTRACT

From the early 1950s to the early 1990s, increases in Social Security benefits in the United States varied widely in size and timing, and were generally not undertaken in response to short-run macroeconomic developments. This paper uses these benefit increases to investigate the macroeconomic effects of changes in transfer payments. It finds a large, immediate, and statistically significant response of consumption to permanent changes in transfers. The effects of temporary benefit changes, in contrast, appear small. The consumption effects of the permanent changes appear to decline at longer horizons, and there is no clear evidence of effects on production or employment. Finally, there is strong evidence of a sharply contractionary monetary policy response to permanent benefit increases, which may account for the apparent decline of the consumption effects and their failure to spread to broader indicators of economic activity.

Christina D. Romer
Department of Economics
University of California, Berkeley
Berkeley, CA 94720-3880
cromer@econ.berkeley.edu

David H. Romer
Department of Economics
University of California, Berkeley
Berkeley, CA 94720-3880
dromer@econ.berkeley.edu

I. INTRODUCTION

Government transfer payments are the relative unknowns of fiscal policy. There have been many studies of the short-run macroeconomic effects of changes in government purchases and taxes, but much less research has been done on the aggregate impacts of transfer payments.[1] Yet such payments are substantial. In the United States, for example, federal transfer payments account for about 10 percent of GDP and more than 40 percent of federal spending. This paper takes a step toward filling this gap in our knowledge by examining the macroeconomic impact of changes in Social Security benefits in the United States from 1952 to 1991.

For much of the postwar period, changes in Social Security benefits occurred somewhat randomly. The generosity and breadth of the program was expanded in several steps during the 1950s and 1960s. Until 1974, cost-of-living increases were not automatic, but were legislated at irregular intervals. And from 1974 until the early 1990s, tremendous variation in inflation and occasional bursts of retroactive payments resulting from idiosyncratic factors, as well as a legislated change in the timing of cost-of-living adjustments, led to irregular and variable benefit changes.

We use documents from the Social Security Administration, Congress, and the executive branch to identify the precise monthly timing and size of benefit changes over these decades. We present narrative evidence that the large majority of the changes were not made in response to current or prospective short-run macroeconomic developments, and we identify the few changes that were explicitly made for countercyclical purposes. Our sources also allow us to separate permanent and temporary benefit changes.

We then estimate how aggregate consumer spending responds to the relatively exogenous changes in Social Security benefits. We consider specifications both with and without control

[1] Studies of the macroeconomic effects of tax and spending changes in the United States include Ramey and Shapiro (1998), Blanchard and Perotti (2002), Hall (2009), Fisher and Peters (2010), Romer and Romer (2010), Barro and Redlick (2011), Ramey (2011), and Nakamura and Steinsson (2013). Oh and Reis (2012) document the importance of changes in transfers in short-run movements in government expenditures, and describe some of the channels through which they could have aggregate effects.

variables, and we compare the effects of changes in transfer payments with those of changes in taxes.

We find that permanent increases in Social Security benefits have a nearly one-for-one impact on consumer spending in the month they occur, and that this effect is highly statistically significant. The effect persists for roughly half a year and then appears to wane sharply—though the standard errors become large at longer horizons. The effect of permanent benefit increases is noticeably faster, but much less persistent, than the effect of tax changes. Interestingly, we find that temporary benefit changes (which mainly took the form of one-time retroactive payments in the period we consider) have a much smaller impact on consumption.

Though the benefit changes show up strongly in contemporaneous consumption, their impacts on broader measures of economic activity, such as industrial production and employment, are much less clear-cut. One possible explanation for this pattern is that the Federal Reserve tightened monetary policy in response to benefit increases, and so muted their broader impacts. And indeed, we find a rise in the federal funds rate in response to our benefit changes that is quantitatively large and highly statistically significant. The records of the Federal Reserve reveal that policymakers were very aware of the benefit increases and that those increases affected their decisions about monetary policy.

Our paper builds on and speaks to a range of literatures. Many papers examine the response of individuals to specific changes in transfer payments and taxes. Most find that as long as the changes are not large, individuals respond to them when they occur, even if they could have known about them in advance or their impact on lifetime resources is small.[2] Importantly, however, although this individual-level evidence is suggestive of a macroeconomic impact, it is possible that there are offsetting effects at the aggregate level. For example, there could be Ricardian-equivalence effects: the adverse implications for lifetime wealth of the higher future taxes needed to finance the changes on transfers could exert a downward influence

[2] See, for example, Johnson, Parker, and Souleles (2006), Sahm, Shapiro, and Slemrod (2012), and Parker, Souleles, Johnson, and McClelland (2013).

on all individuals' consumption. Likewise, there could be offsetting effects on aggregate consumption through higher interest rates, reduced confidence about government policy, and increased uncertainty about policy. Thus, a finding that when the payments arrive, individuals who receive tax rebates or transfer payments increase their consumption relative to individuals who do not is not enough to establish that the policies have important macroeconomic effects. It is therefore important to look directly at aggregate evidence.

Our examination of the short-run response of consumption expenditures to permanent increases in Social Security benefits is related to Wilcox (1989). Wilcox's interest is in the permanent income hypothesis: since the benefit increases are announced in advance, the hypothesis implies that consumption should not respond to their implementation. He shows, however, that over the period 1965–1985 permanent benefit increases have a statistically significant immediate impact on real retail sales and personal consumption expenditures. Our interest, in contrast, is with the macroeconomic effects of changes in transfers more broadly. We therefore examine whether benefit increases were made in response to short-run macroeconomic developments, and omit the few that fall into this category from our analysis. In addition, we focus on the magnitude of the effects rather than just whether they are nonzero, examine whether the impact persists and whether it spreads to broader indicators of economic activity, and investigate the response of monetary policy. We also identify temporary changes in benefits and study their effects.

Our paper is also related to recent work on the macroeconomic effects of changes in aggregate taxes and government purchases. While these papers have generally found a significant positive impact of fiscal expansion, the implied fiscal multipliers differ substantially in both size and timing. Our paper provides another estimate of the effect of fiscal expansion, using a type of fiscal change whose timing is relatively exogenous and can be identified quite accurately. It also allows us to examine whether the aggregate effects of transfer payments are similar to those of tax changes, as some traditional models imply. We find that the timing,

persistence, and ultimate magnitude of the effects are actually quite different.

Finally, much recent research has focused on the importance of monetary policy for the effects of fiscal policy (for example, International Monetary Fund, 2010, Christiano, Eichenbaum, and Rebelo, 2011, Woodford, 2011, and Nakamura and Steinsson, 2013). How do central banks tend to respond to fiscal changes, and are those responses consistent across types of actions? Our study provides both statistical and narrative evidence of a link between Social Security benefit increases and contractionary monetary policy.

The most important limitation of our study is simply that the amount of identifying variation that we are able to exploit is only moderate. Changes in Social Security benefits are small relative to the large changes in government purchases associated with major wars, and they are noticeably smaller than the tax changes that are the focus of Romer and Romer (2010). Our detailed information about the monthly timing of benefit changes allows us to pin down their effects in the very near term relatively precisely. But once we consider horizons beyond a few months, the limited amount of variation often yields confidence intervals that are wide enough to encompass a range of economically interesting hypotheses. Thus, this paper is only a first step in trying to understand the macroeconomic effects of government transfer payments.

Our analysis is organized as follows. Section II discusses our use of narrative sources to identify the timing, size, and nature of Social Security benefit changes and the motivations for them. It considers the complications involved in trying to use the series to analyze the short-run macroeconomic effects of changes in transfer payments and presents the resulting series of Social Security benefit changes. Section III examines the response of consumption and other aggregate indicators to relatively exogenous benefit increases. It considers a wide range of samples, specifications, and control variables, and it contrasts the effects of benefit increases with those of tax cuts. Section IV investigates the response of monetary policy to transfer payments using both statistical evidence and evidence from the policy record. Finally, Section V presents our conclusions and discusses the implications of our findings.

II. IDENTIFYING SOCIAL SECURITY BENEFIT CHANGES

The goal of the paper is to use Social Security benefit changes to examine how consumption and other macroeconomic variables respond to changes in transfer payments. Thus, a critical step is to identify changes in Social Security benefits that are useful for this purpose.

A. Motivation

To understand our methodology, it is perhaps helpful to start by considering a straightforward alternative. The National Income and Product Accounts (NIPA) report monthly data on aggregate Social Security payments starting in January 1959. From this, one can easily calculate the change in benefits each month. Why not just use this series as the right-hand side variable in our regressions?

The most prosaic problem with this approach is that it misses the 1950s. Starting in the mid-1970s, Social Security benefits were indexed to inflation, and by the 1990s, benefit changes were small and quite regular. In contrast, in the 1950s, 1960s, and early 1970s, benefit changes were legislated; as a result, they varied greatly in size and timing. This variation makes the early postwar period a particularly promising period for estimating the effects of transfer payments. Losing the 1950s is therefore a serious drawback to using the NIPA data.

A deeper problem is that the NIPA series reflects both the number of beneficiaries and the size of benefits. Changes in Social Security payments resulting from changes in the number of beneficiaries are likely to be correlated with other factors affecting the economy, and so cannot be used to provide reliable estimates of the effects of transfers. For example, suppose a change in demographic composition leads to a surge in retirements, and hence in Social Security benefits. This development is likely to be associated with a fall in overall income as workers move from employment to retirement, and thus potentially with a fall in consumption. But the fall would not have been the result of the increase in transfers, but of the retirements. Similarly, including changes in overall Social Security payments that are due to changes in the number of

beneficiaries could introduce cyclical bias if more people retire in downturns—say, because they lose their jobs. Thus, it is desirable to have a series that reflects changes in benefits stemming from changes in average payments per beneficiary, and from extensions of benefits to individuals not likely to respond by switching from employment to retirement (such as disabled people or stay-at-home spouses).

Even if we limit attention to changes in average benefits, the motivations for the changes can still introduce difficulties. In some cases, Social Security benefits were increased for explicit countercyclical reasons: policymakers believed that in the absence of action, economic performance would be weak, and so they raised benefits to try to offset the weakness. In such cases, one might not expect consumption to rise following the increases in benefits, because other factors (that is, whatever was causing the economy to be weak) were operating in the opposite direction. For this reason, if one's goal is to estimate the short-run macroeconomic effects of transfer payments, it is important to restrict attention to changes in benefits that were undertaken for reasons unrelated to the current or prospective short-run condition of the economy.

Finally, while most Social Security benefit changes have been intended as permanent, some have been explicitly temporary. For example, some permanent benefit increases have been retroactive for several months. In these cases, in the month of the increase beneficiaries received not only their higher regular monthly benefit, but also a one-time payment for the higher benefits in the preceding months. Many models of consumer behavior predict that permanent and temporary changes in income have very different impacts. For this reason, it is desirable to have a measure of benefit changes that separates permanent and temporary movements. The NIPA series does not do that, and so using it would force us to use imperfect statistical procedures to try to disentangle the two types of changes.

B. Methods Used for 1952–1974

To obtain a measure of changes in Social Security benefits for the first part of the postwar period that is free of the problems we have described, we use the narrative record. That is, we use contemporary documents to identify legislated changes in Social Security benefits, their key characteristics, and their motivation.

We identify the universe of possible legislated changes using a survey provided by the Congressional Research Service entitled *Major Decisions in the House and Senate on Social Security 1935–2000* (Congressional Research Service, 2001). We exclude several types of actions: ones that affected payments to future beneficiaries relative to what they otherwise would have received, but that did not directly raise or lower payments to existing beneficiaries; ones involving only small administrative changes; and ones that did not ultimately lead to the enactment of legislation.

For each substantive change, we look at a range of sources to determine the motivation behind it and its nature, size, and timing. The *Social Security Bulletin* typically has an article describing the specifics of the legislation and providing a detailed account of the Congressional debate. This article often provides the most comprehensive information about the size, timing, and permanence of the action (*Social Security Bulletin*, various issues). The reports of the House Ways and Means Committee and the Senate Finance Committee on the bill typically contain information about the motivation for the action as well as its size, though the final legislation often differs at least slightly from the versions analyzed in these reports (U.S. Congress, various years). The *Economic Report of the President* often discusses both the motivations for the actions and their sizes (U.S. Office of the President, various years). Finally, presidential speeches, particularly those made proposing the legislation or upon the signing of the final bill, are also useful sources (Woolley and Peters, *The American Presidency Project*).

We gather several pieces of information from these sources. We identify the size of the benefit change, measured as the change in spending at an annual rate. We include changes in

both old age and disability benefits, since they are often combined in the discussions in our sources. We also include changes to Supplemental Security Income (SSI) benefits, which provide additional support for low-income seniors and disabled individuals. The narrative record makes clear which benefit changes were one-time payments and which were permanent. In the 1952–1974 period, the one-time payments all took the form of retroactive benefit increases.

We also identify the months when Social Security checks reflected the benefit changes. The timing convention used in official discussions of Social Security is that if a benefit change is "effective" for a given month, it is reflected in the checks that are received early in the *following* month. We therefore date a change that is effective in a given month as taking place the following month. Social Security disability checks are received very late in the month for which they are effective. Since individuals would have had little time within the month to change their spending in response to such a change in benefits, we again date these changes as occurring in the month after they become effective.

Finally, we gather information on the motivations for the changes. The vast majority of changes were made either for equity reasons—to alleviate poverty among the elderly and disabled—or to allow benefits to keep up with inflation over the previous several years. A few, however, were explicitly undertaken for countercyclical purposes. Because these changes are likely correlated with other factors affecting the economy in the short run, we exclude these anti-recessionary changes from our analysis of the macroeconomic effects of the benefit changes. For almost all the changes, the precise monthly timing appears to have been determined largely by idiosyncratic factors, such as Congress's schedule and the speed with which changes could be implemented.

The appendix provides a brief description of each legislated change in benefits and the key information about it.

C. Methods Used for 1975–1991

Starting in 1975, Social Security benefits were indexed to inflation. By the 1990s, inflation was so low and the adjustments so regular that it seems unlikely that they greatly affected behavior. Moreover, their regular nature means that any impact they might have had on macroeconomic outcomes would probably have been obscured by the seasonal adjustment of the data.[3] From 1975 to roughly 1991, however, two features of the adjustments made them much more likely to affect macroeconomic outcomes. First, their timing varied: they occurred in July until 1982 and in January starting in 1984 (with no adjustment in 1983). Second, because inflation was so variable, there was substantial heterogeneity in the size of the adjustment. The July adjustments ranged from 5.9 percent in 1977 to 14.3 percent in 1980; and the January adjustments over 1984–1991 ranged from 1.3 percent in 1987 to 5.4 percent in 1991. As a result, data from this period have the potential to provide considerable identifying variation. Thus, it is useful to construct a series for benefit changes for these years and use it in our analysis.

Legislation played a very small role in benefit changes in this period. The Social Security Amendments of 1983 were the source of the change in the timing of the automatic cost-of-living adjustments. A few laws, such as some disability reforms in the 1980s, affected coverage but did not change payments to existing beneficiaries. There were also some changes to future benefits that did not have any immediate effects (such as the provision of the 1983 amendments that gradually raised the retirement age). Since these changes did not raise (or lower) disposable income significantly at a specific point, we omit them from our analysis.

Although the automatic cost-of-living adjustments were the main source of changes in Social Security benefits in this period, there were also some one-time payments whose timing was effectively random. In particular, there were one-time retroactive payments at various dates based on legal decisions, revisions to case review procedures, and, in one case, the

[3] Because the Bureau of Economic Analysis obtains many of the component consumption series only in seasonally adjusted form, it does not construct seasonally unadjusted consumption data. Thus, it is not possible to examine the impact of the regular annual adjustments on a seasonally unadjusted version of our focal outcome variable.

purchase of new computers that sped the processing of appeals. We identify these one-time payments by conducting Google news searches using the terms "Social Security" and "personal income," and "Social Security" and "retroactive." In addition to identifying the cost-of-living adjustments (which we are able to find more directly using official documents), these searches find a number of articles about one-time payments.

Because the changes in this period were not legislated, for the most part their sizes are not reported in our sources. Thus, our methods of estimating sizes differ from those we use for the earlier period. For the cost-of-living adjustments, we simply multiply total Social Security payments (as reported in the NIPA data) in the month before the increase by the percentage adjustment. This procedure holds enrollment fixed, and so shows just the change in payments coming from the change in average payments per beneficiary.[4]

In the case of the one-time payments, occasionally the news stories discuss the size of a change, but often they do not. To estimate the size of a payment, we therefore take the increase in the NIPA Social Security series in the month for which our news stories identify a payment. Since the usual month-to-month changes in this series are small, most of the changes in the months of substantial one-time payments are likely the result of the payments. Consistent with this interpretation, the estimates based on this approach correlate closely with the figures in the news articles in the few cases where the articles report the sizes of the one-time payments. Also, the increases are generally followed by decreases in the NIPA series of roughly the same magnitude the following month, suggesting that the movements were indeed the result of one-time payments.[5]

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[4] Our estimates of changes in benefits for the years before 1975 include changes in SSI payments as well as Social Security. While Social Security payments as defined in the NIPA data include payments from the Disability Insurance Trust Fund, they do not include SSI payments (which are grouped with miscellaneous government transfers in the "Other" category). For this reason, our estimates of the benefit changes from automatic cost-of-living adjustments are not precisely comparable to our estimates for the period before 1975. However, SSI payments are quite small, so this difference is unlikely to be consequential.

[5] The pattern is more complicated when the one-time payments were spread over two months (which occurred in November–December 1983), or when they were immediately followed by an automatic cost-

We classify the automatic cost-of-living increases as permanent and the various one-time payments as temporary. The Appendix provides additional details about the cost-of-living increases and lists the sources of the articles about the one-time payments. Table 1 presents the data for the full 1952–1991 period.

D. Identification

Before examining our series for Social Security benefit changes, it is useful to discuss how they might be used to identify the macroeconomic effects of changes in transfer payments. Our goal is to investigate the response of consumer spending and other macroeconomic variables to changes in transfers. The obvious concern is that there could be factors, such as the cyclical state of the economy, that affect both macroeconomic outcomes and legislated changes in benefits.

As we have described, we take several steps in the construction of our series for benefit changes to minimize such omitted variable bias. We focus as much as possible on changes in benefits for existing beneficiaries rather than changes in the number of beneficiaries, which could be endogenous responses to the state of the economy or have ambiguous effects on disposable income by lowering labor income while raising transfers. We also analyze the motivation for legislated changes and screen out those that had an explicit countercyclical purpose. Finally, we exclude the period after 1991, when the benefit increase are so small and regular that they could become part of the usual seasonal adjustment factors. However, some issues remain. Three appear particularly important.

Inflation. While benefit increases taken for equity reasons are clearly appropriate for our purposes, what about the many changes to keep up with inflation? Since inflation responds to the state of the economy, one might think there could be correlation between benefit increases to keep up with inflation and other factors affecting macroeconomic outcomes.

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of-living increase (which occurred in December 1983 and December 1984). But the behavior of Social Security payments in these episodes is consistent with the view that the increases in November–December 1983 and December 1984 reflected one-time payments.

Although this possibility could be relevant to studies of some issues, it is unlikely to be problematic for our analysis of the near-term behavior of consumption. Before 1974, the adjustments of benefits to inflation were ad hoc and irregularly spaced. After the adoption of indexing, adjustments still occurred at discrete intervals. Even if the state of the economy was positively affecting Social Security benefits through effects on inflation, one would not expect this omitted variable to cause a sharp rise in consumption in the particular month of the inflation adjustment. Nevertheless, in some of our empirical specifications, we control for lagged consumption growth as a way to ensure that other factors leading to serially correlated changes in consumption growth are not causing spurious results. Likewise, although we see no plausible reason that indexation to inflation at discrete intervals could introduce significant bias into our estimation, for completeness we also consider specifications that include inflation itself as a control variable.

Social Security Taxes. The second issue involves taxes. Because the Social Security program is explicitly self-financed, legislation increasing benefits has often included provisions raising payroll taxes. For example, the Social Security Amendments of 1954, which increased benefits starting in October of that year, legislated an increase in the Social Security tax base in 1955 and increases in the Social Security tax rate in 1970 and 1975.

The coupling of benefit increases with higher taxes means that there could be an omitted variable (the tax increases) that obscures the effects the benefit increases would have in isolation. In previous work (Romer and Romer, 2009), we identified these spending-driven Social Security tax changes from the same types of narrative sources described above. These immediate tax increases typically followed the benefit increases by at least a few months. Thus, the tax changes are unlikely to pose a major problem for our analysis, especially when we consider the very short-run effects of benefit increases. And, because we have data on the timing and size of these tax changes, we can consider specifications that control for them.

Other Fiscal Policy Actions. The final identification issue concerns other aspects of

fiscal policy: perhaps Social Security benefit increases were often made at the times of other expansionary fiscal actions. Again, because the benefit increases tended to be discrete events whose exact timing was determined by the idiosyncrasies of Congressional decision-making and other factors, high correlation at the monthly frequency is unlikely. More importantly, our narrative analysis of the history of the benefit increases shows that most were self-contained actions, not parts of broader programs of fiscal expansion. This pattern is extremely clear for the second part of the sample, when benefit increases were almost entirely the result of automatic cost-of-living adjustments, and for the 1950s, when Social Security legislation was considered essentially in isolation. But it also appears to be an accurate description of most of the changes in the 1960s and early 1970s. In addition, we explicitly exclude the increases that were parts of countercyclical stimulus packages, such as the one-time payments to seniors in the Tax Reduction Act of 1975.

As a further check on possible confounding effects from other fiscal actions, we will include general (relatively exogenous) tax changes as a control variable in some specifications. We create this series using our previous narrative analysis of postwar tax changes.

Explicitly controlling for other changes on the spending side of fiscal policy is harder. Monthly data on government purchases are not available, so there is no obvious control variable to include.[6] However, a first look at the data suggests little reason for concern. In quarterly data, the correlation between our measure of permanent changes in Social Security benefits and the growth rate of real federal government purchases is −0.02; its correlation with the growth rate of all of real federal government spending excluding Social Security benefits is −0.01; and its correlation with the measure of shocks to government spending developed by Ramey (2011) is −0.01.[7]

[6] In addition, measures of government spending are themselves likely to be correlated with other factors affecting the economy. Thus even if they were available monthly, they could not just be added to the regression.

[7] For our measure, we use the permanent Social Security benefit increases, expressed as a percent of personal income. The monthly data on personal income are from the Bureau of Economic Analysis,

Other Concerns. In addition to omitted variable bias, the other natural concern is accidental correlation in small samples. It could be that Social Security benefit increases happen to occur at the same times that other forces are affecting the economy in one direction or another. Again, many of the benefit changes are so sharp and discrete that strong correlation at very high frequencies is unlikely. However, to deal with the possibility of broader accidental correlation, we consider specifications that control for a range of other factors that affect macroeconomic outcomes.

Finally, monetary policy is another possible confounding factor. In addition to including some measures of monetary policy shocks as control variables in Section III, we examine the relationship between our benefit increases and monetary policy in detail in Section IV. We find evidence that monetary policy responds to Social Security changes, and so is part of the transmission mechanism.

E. New Series of Social Security Benefit Increases

Figure 1 shows our series of Social Security benefit increases. They are reported as the dollar change as a percent of personal income. Permanent and temporary changes are shown separately. The change in the monthly NIPA series for Social Security transfers (also expressed as a share of personal income), which beings in 1959, is also shown for comparison.[8]

One fact evident from the graph is that our series and the NIPA series are closely related. The sum of the permanent and temporary increases based on our narrative analysis matches the

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National Income and Product Accounts (NIPA), Table 2.6, http://www.bea.gov/iTable/index_nipa.cfm, downloaded 6/29/2012. Because the other fiscal indicators are quarterly, we sum the monthly values over the quarter to create a quarterly series. The growth rate of federal government purchases is from the NIPA, Table 1.1.1, series for government consumption expenditures and gross investment, downloaded 7/31/2013. Real federal government spending excluding Social Security benefits is calculated by taking federal current expenditures (NIPA, Table 3.2), subtracting government social benefits to persons [for] Social Security (NIPA, Table 2.1), and dividing by the price index for GDP (NIPA, Table 1.1.4), all downloaded 7/31/2013. We then calculate the difference in logarithms. The Ramey series on government spending news shocks as a share of GDP is from column C of Ramey_Govt_Public_Data.xls, http://www.econ.ucsd.edu/~vramey/research.html#data, "Data for Identifying Government Spending Shocks," Summary Data, U.S., 1939-2008, downloaded 7/31/2013.

[8] The monthly NIPA Social Security data are from the Bureau of Economic Analysis, NIPA, Table 2.6, series for government social benefits to persons—Social Security, downloaded 6/18/2012.

increases in the NIPA series fairly closely. There are some moderate short-run fluctuations in the NIPA series in the late 1970s and the 1980s that have no counterpart in our series. Whether they reflect one-time payments that were not large enough to be newsworthy or other factors is not clear. In addition, there are many small month-to-month movements in the NIPA series that have no counterpart in our series. At least in part, these movements reflect changes in the number of individuals choosing to enroll in Social Security rather than changes in benefits. There are also a few changes in the NIPA series that we exclude from our series because they were motivated by countercyclical considerations.[9]

The figure also reveals several characteristics of the new series. One is that the timing of benefit changes was highly uneven, particularly before 1975. This adds credence to the notion that there is substantial usable variation to exploit. Another is that the size of the changes varied greatly. The changes were largest in the 1970s and early 1980s, when inflation was largest; but there were also substantial changes in the 1950s, when inflation was lower than in most of the 1980s but increases in benefits were less frequent.

Finally, Figure 1 shows that one-time Social Security payments were often very large, particularly in the late 1960s, early 1970s, and the second half of the 1980s. The three in 1965, 1970, and 1971 were each between 1 and 2 percent of annual personal income. And most of the later one-time payments, though not as large relative to aggregate personal income, were very large for those receiving them. Our news stories provide figures for the average payment per recipient for three of these one-time payments: those in November–December 1983, December 1984, and July 1986. In 2012 dollars, these payments averaged $2271 per recipient in 1983, $1059 in 1984, and $557 in 1986.

[9] The NIPA series also often shows a large negative change in the month following a large temporary increase that does not show up explicitly in our series. This just reflects our measurement convention: we record a one-time payment in a single month as a positive value for that month and zero in the next month, rather than as a positive value in that month and an equal and opposite negative value in the next.

III. The Effects of Changes in Social Security Benefits on Macroeconomic Outcomes

The next step is to use the series constructed in Section II to investigate how changes in transfer payments affect the macroeconomy. We begin by discussing the variables we consider, sample periods, and specifications. We then turn to the results, their robustness, and the interaction of Social Security benefit changes with tax policy.

A. Outcome Variables and Sample Periods

Outcome Variables. The main outcome variable we examine is real personal consumption expenditures.[10] There are two main advantages of focusing on consumption. First, because changes in Social Security benefits affect households' disposable income directly, any macroeconomic effects might occur more quickly and sharply in consumption than in other aggregate variables. Second, consumption data are available monthly; using monthly data allows us to use information about the exact timing of benefit changes more effectively than we could with lower-frequency data.

One drawback to focusing on consumption is that monthly data are not available before 1959. However, both quarterly data on real consumption and monthly data on real retail sales (which generally move fairly closely with consumption) are available for the earlier period. We therefore construct monthly consumption data for the period before 1959 using a Chow-Lin procedure.[11]

We consider three other aggregate outcome series: real retail sales, industrial production,

[10] The data are from the Bureau of Economic Analysis, NIPA, Table 2.8.3, series for personal consumption expenditures, downloaded 6/18/2012.

[11] The data on retail sales, adjusted for seasonal variation, for 1947:1 to 1958:12 are from the U.S. Department of Commerce, *Business Statistics, 1979*, p. 216. We convert it to a real series by dividing by the seasonally-adjusted consumer price index for all urban consumers, series CUSR0000SA0, from the Bureau of Labor Statistics, www.bls.gov/data/, downloaded 6/27/2012. To create an estimate of monthly consumption, we use the Chow-Lin algorithm in RATS, which employs the variant of the Chow-Lin procedure proposed by Fernandez (1981). We estimate the algorithm over the period 1947–1958. The results are similar for this decade when we run the Chow-Lin procedure over the full sample 1947:1 to 1991:12.

and employment.[12] All three are available monthly beginning before 1950. Retail sales are more volatile than consumption but generally behave similarly. Thus, one might expect their response to Social Security benefits to be similar to that of consumption. In contrast, any response of industrial production and employment may not be as closely tied to the exact timing of benefit changes. For example, if Social Security benefit increases are not an important consideration in firms' planning, their production and employment decisions might exhibit delayed responses to benefit increases.

Sample Periods. Our baseline sample period is 1952–1991. Starting the sample in 1952 avoids the period of extreme macroeconomic volatility associated with the outbreak of the Korean War. And as described above, ending the sample in 1991 means that we exclude the period when benefit increases consisted of modest, relatively stable cost-of-living increases every January.

We consider two variants on the baseline sample. The first starts in 1959, and so excludes the period for which we have only estimated consumption data.[13] The second ends in 1974, and so excludes the period when benefit changes were largely the result of automatic cost-of-living adjustments.

B. Specifications

The logic of our approach to identifying Social Security benefit changes implies that there should not be systematic correlation between the changes and other factors affecting output. We focus on changes that were the result of policy decisions, and where the decisions do not

[12] The real retail sales series for 1947 to 1991 is constructed by taking nominal, seasonally-adjusted data for 1967:1 to 1991:12 from U.S. Department of Commerce, *Business Statistics, 1991*, p. A-56 and p. 37; for 1961:1 to 1966:12 from *Business Statistics, 1984*, p. 177; and for 1947:1 to 1960:12 from *Business Statistics, 1979*, p. 216. The series, which do not line up exactly because of data revisions, are combined using a ratio splice—starting with the most recent series and working backwards. The data are converted to real values by dividing by the consumer price index for all urban consumers. The industrial production series is from the Board of Governors of the Federal Reserve System, total index, series IP.B50001.S, www.federalreserve.gov/datadownload/Choose.aspx?rel=G17, downloaded 7/23/2012. The employment data are from the Bureau of Labor Statistics, total nonfarm employees, seasonally adjusted, series CES0000000001, www.data.bls.gov, downloaded 7/23/2012.

[13] Specifically, since our regressions use the change in consumption, this sample period starts in 1959:2.

appear to have been made in response to other factors affecting output in the short run or to be parts of broad policy programs that might have had large effects on the economy through their other elements. Thus, it is appropriate to examine how macroeconomic variables behave in the wake of the benefit changes without controlling for other factors.

Two additional considerations make this argument even more compelling for very short horizons, such as a few months. First, as we have discussed, the exact timing of the benefit changes we consider appears to be largely the result of idiosyncratic factors. Second, in the cases where other fiscal actions were taken in conjunction with the benefit changes (such as increases in Social Security taxes to help finance higher benefits), they were almost always separated from the benefit changes by at least several months.

Thus, our baseline specification regresses an outcome variable on the contemporaneous and lagged values of our measures of changes in Social Security benefits, with no controls. Since permanent and temporary benefit changes have been quite different in character and might have different macroeconomic effects, we enter them separately. The baseline specification therefore takes the form,

$$Y_t = a + \sum_{i=0}^{N} b_i^{PERM} SS_{t-i}^{PERM} + \sum_{i=0}^{N} b_i^{TEMP} SS_{t-i}^{TEMP} + e_i. \quad (1)$$

Here, Y is an outcome variable—for example, the growth rate of real personal consumption expenditures. SS^{PERM} and SS^{TEMP} are permanent and temporary changes in Social Security benefits, both measured as a fraction of personal income. *N* is the number of lags.

We also consider specifications that include control variables, both as a way of addressing some of the possible sources of omitted variable bias discussed above and as a check for the possibility of accidental correlation with other factors affecting outcomes. We pay special attention to two types of controls. First, to address the fact that there are sometimes modest tax increases in fairly close proximity to benefit increases, we consider controls for changes in taxes. Second, we consider specifications that include lagged values of the outcome variable. Doing so

controls for the usual dynamics of the outcome variable and provides a simple way of capturing the effects of any serially correlated omitted variables.

The regressions including lagged values of the outcome variable can be interpreted as simple (that is, univariate) VARs with the Social Security benefit changes treated as exogenous. There are several reasons not to treat them as endogenous. First, the purpose of our narrative work is to identify changes in benefits that were not responses to recent or prospective macroeconomic developments. Second, and perhaps more importantly, a finding that the benefit changes were typically preceded by systematic movements in macroeconomic variables could reflect reverse causation rather than an endogenous component of the benefit changes. Most obviously, news of coming benefit increases could cause consumption to rise before the increases took effect. Finally, empirically, we find no evidence that benefit changes are predictable on the basis of macroeconomic variables.[14]

Thus, we do not endogenize Social Security benefits in a VAR framework. To test for the possibility of anticipatory responses to benefit changes, in some specifications we include leads as well as lags of the benefits variables.

C. Results

We now turn to the findings. We begin with the simplest specification over the full sample period, and then consider variants.

Baseline Results. Figure 2 shows the results of estimating equation (1) using the change in the logarithm of real personal consumption expenditures as the dependent variable over the

[14] We perform Granger-causality tests for our series and industrial production, employment, real retail sales, and personal consumption expenditures (PCE). Specifically, we regress our series of permanent Social Security benefit changes (as a percent of personal income) on 12 own lags and 12 lags of the log difference of the relevant macro outcome variable. The F-statistic that the coefficients on the lagged macro variables are all zero has a p-value of 0.78 for industrial production; 0.63 for employment; 0.28 for retail sales; and 0.09 for PCE. For PCE, the near significance is not the result of the short lags, but rather of significant coefficients on the 10th and 12th lags.

sample period 1952:1–1991:12, with 12 lags of the right-hand side variables.[15] It shows the estimated responses of consumption (in logs) to both temporary (one-month) and permanent increases in Social Security benefits of 1 percent of personal income, together with the two-standard-error bands. For comparison, a benefit increase of 1 percent of personal income is slightly larger than the largest permanent increases, and about five times the average increase in the period when benefit increases were legislated rather than automatic.

The most striking result is the large, immediate response of consumption to a permanent increase in benefits. The point estimates suggest that a benefit increase of 1 percent of personal income raises consumption by 1.2 percent in the month it occurs, and that the effect persists for the next 5 months. The null hypothesis of no effect in the month of the increase is rejected with a *t*-statistic of 2.8. As detailed below, this result is very robust.

The standard errors rise as the horizon lengthens. As a result, 5 months after the benefit increase, the point estimate remains large (0.9) but is no longer statistically significant ($t = 0.9$). Thereafter, the estimated effect begins to decline. Unfortunately, the estimates are sufficiently imprecise that it is not possible to reject either the hypothesis that the effect remains one-for-one or the hypothesis that it returns to zero. After 9 months, for example, the two-standard-error confidence interval is (–3.8,1.7).

The figure shows that the response to a temporary benefit increase appears considerably weaker. The estimated impact in the month of the increase is only 0.1 ($t = 0.5$). The estimates remain small for several months after the temporary payment. Thereafter they rise considerably, but the standard errors are sufficiently large that the possibility that this pattern is just statistical noise cannot be rejected.

Two considerations suggest that the large point estimates for the effects of temporary payments at longer horizons likely reflect sampling error rather than true effects of the

[15] We have examined the narrative record for 1951 and found no permanent or temporary Social Security benefit changes in this year. We therefore code the two series as zero for the twelve months of 1951, and lose no observations because of the 12 lags.

payments. First, it is hard to think of a plausible mechanism that would cause households to raise their spending greatly 6 or 12 months after receiving a one-time payment. Second, closer examination of the data shows that the substantial estimated response at moderate horizons is largely the result of a few observations. For example, there was a sharp rise in consumption in early 1972, which followed a large retroactive increase in Social Security benefits in June 1971. Conventional accounts of this period attribute the rise to a cut in the excise tax on autos and abundant credit, not to the earlier one-time payment of Social Security benefits (see, for example, *Economic Report of the President*, 1973, p. 23).

That the results are so different for permanent and temporary Social Security benefit changes suggests that it is important to enter the two types of changes separately in the regression. This is something that can only be done with the series derived from the narrative sources. When one uses the change in the monthly NIPA series on Social Security benefit payments, or our new series with the permanent and temporary changes merged into a single right-hand-side variable, the results are a blend of the estimated effects for permanent and temporary changes, with large standard errors.[16]

Robustness. The results of the basic regression are very robust. Considering the two alternative sample periods (1959–1991 and 1952–1974) has little impact on the estimated impact of permanent and temporary benefit increases. Likewise, adding 12 lags of consumption growth to (1) has little effect. And as we discuss in a moment, controlling for changes on the tax side has only a small impact on the estimated effects of benefit changes.

Many studies have found that consumer confidence is a strong predictor of consumption growth (for example, Carroll, Fuhrer, and Wilcox, 1994). We therefore consider a variant of equation (1) that includes the contemporaneous value and 12 lags of the change in the

[16] To merge our series for permanent and temporary benefit changes into a single consistent series, it is necessary to express the temporary changes as a positive value in the month they occur, and an equal and opposite value in the subsequent month.

Conference Board index of consumer confidence.[17] To the extent that Social Security benefits affect consumption *through* consumer confidence, controlling for confidence could cause us to understate the overall effects of benefit changes. But we find that the immediate impact of a permanent increase in benefits remains close to one-for-one and statistically significant, and that the short-run effects of temporary increases remain small.

We consider a range of other control variables. If the inflation measure to which Social Security benefits are indexed were somehow correlated with other determinants of consumption, it would help to predict consumption growth in all periods, not just periods when Social Security benefits are adjusted for inflation. We therefore include the contemporaneous value and 12 lags of the inflation measure to which Social Security benefits are indexed.[18] Including this measure has little impact on the results, and in fact strengthens them slightly. The point estimates for the effect of a permanent benefit increase are now positive at almost all horizons, but the standard errors at longer horizons remain very large.

We do not want to control for all movements in monetary policy, since the response of monetary policy may affect how the benefit changes affect the economy (an issue we investigate in depth in the next section). It is reasonable, however, to control for unusual changes in monetary policy. We therefore control for the contemporaneous value and 24 lags of the dummy variable for contractionary monetary policy shocks constructed by Romer and Romer (1989, 1994). As with adding inflation, including this variable strengthens the findings slightly.

Finally, we find no evidence that consumption responds in advance of higher benefit payments. There is typically a lag of 2 to 4 months from the enactment of legislation to the actual increases in benefits. But when we include up to 3 leads of the changes in benefits, the coefficients on the leads are never close to statistically significant, and they are more often

[17] The data are from the Conference Board, http://www.conference-board.org/ea/index.cfm, downloaded 7/23/2012. Because the data are only available beginning in 1959, the sample period is 1960:2–1991:12.
[18] This measure for month t is CPI inflation over the four-quarter period ending in month $t - 4$. The data are from the Bureau of Labor Statistics, http://www.bls.gov/data/, series CWUR0000SA0, downloaded 9/14/2013.

negative than positive.

Figure 3 shows what is driving our finding concerning the short-run effects of permanent benefit increases. It is a scatter plot of the partial association of real consumption growth against the contemporaneous permanent change in Social Security benefits as a share of personal income. Specifically, it shows the residuals from regressions of both series on all of the other right-hand-side variables in the baseline specification over the period 1952:1–1991:12. The figure shows a clear, though not overwhelming, upward-sloping relationship. It also shows that there is no single observation driving the results.

Understanding the Different Effects of Permanent and Temporary Changes. An obvious question is why the effects of permanent and temporary changes in benefits appear to be so different. One possibility involves the sizes of the changes. A common finding in previous work on consumption is that households tend to behave as rule-of-thumb or Keynesian consumers in response to small changes in income, but to follow the predictions of the permanent income hypothesis more closely for large changes (for example, Hsieh, 2003). In our case, the permanent changes in benefits that we consider are generally small, while the changes that provide the bulk of the identification for temporary changes are large.

The biggest permanent change in benefits in our sample is the increase of 20 percent in October 1972, and only a few of the permanent changes exceed 10 percent. In contrast, the retroactive across-the-board increases in September 1965, April 1970, and June 1971 were all 30 percent or more of normal monthly benefits. And all three payments were coupled with increases in permanent benefits, so that the total Social Security payments beneficiaries received in the month exceeded their previous monthly benefits by 45 percent or more. In addition, as described in Section II, the various one-time payments in the 1980s were often substantial for the beneficiaries who received them. Thus, our finding that the temporary benefit changes in our sample period for the most part did not lead to large immediate changes in consumption is consistent with previous evidence about consumer behavior.

D. Benefit Changes and Tax Changes

There are two reasons that it is important to investigate the effects of introducing a measure of changes in taxes into our framework. First, as we have discussed, Social Security tax increases are the most likely potential omitted variable in our analysis: some of the benefit increases we consider were paired with tax increases that occurred at about the same time. If these tax increases had a direct contractionary effect on consumption, the fact that they are not included in our baseline specification could cause our estimates to understate the effects of the benefit increases. Second, comparing the macroeconomic effects of transfer payments with those of taxes is of interest in its own right. For example, it is an important consideration in the design of fiscal policy.

The tax measure we use is a variant of the one developed in Romer and Romer (2010). In particular, our measure here is the sum of the tax changes that are the focus of that paper—legislated tax changes taken for long-run reasons or to reduce an inherited budget deficit—and legislated changes to finance a roughly contemporaneous increase in Social Security benefits.[19] In the earlier paper, we argue that the first set of tax changes should not be systematically correlated with other factors affecting macroeconomic developments in the short run. And once we control for Social Security benefit increases, the tax increases intended to help finance them should also be uncorrelated with other factors affecting the macroeconomy.

One limitation of the tax measure is that it does not separate permanent and temporary tax changes, and so does not permit us to compare the differences between the effects of permanent and temporary changes with the differences we find for Social Security benefit changes.

[19] Specifically, our measure consists of the "long-run" and "deficit-driven" tax increases from our earlier paper plus the "spending-driven" Social Security tax increases in 1951:1, 1955:1, 1957:1, 1959:1, 1966:1, 1968:1, 1969:1, 1972:1, 1973:1, and 1974:1. We exclude the spending-driven tax increase related to the Social Security Amendments of 1961 because that benefit increase was countercyclical, and so is excluded from the analysis. The size of the tax changes is measured using the revenue estimates in Romer and Romer (2009). For comparability with our measures of benefit changes, we measure the changes as a fraction of personal income. We assign the tax changes to specific months in the same way we assign them to specific quarters in our earlier paper. A tax change is assigned to the month it took effect unless the change occurred after the middle of the month; in that case, it is assigned to the following month.

However, most tax changes in the postwar period that were explicitly temporary were adopted for countercyclical purposes, and so are not included in our measure. As a result, the vast majority of the tax changes in our measure are permanent.

We estimate equation (1) described earlier including the tax variable. Since our earlier paper finds substantial lags in the effects of tax changes, we include the contemporaneous value and 24 lags of the tax measure.

Figure 4 shows the impact of controlling for tax changes on the estimated effects of a permanent increase in benefits. As one would expect, the estimates are larger when we control for tax changes. The difference is quite small for the first few months, but somewhat greater at longer horizons. For example, controlling for the tax changes has almost no effect on the estimated impact in the month of the increase, but raises it from 0.9 to 1.2 after 5 months, and from −0.3 to 0.2 after 8 months. All of these differences are small relative to the confidence intervals, however.

Though not shown in Figure 4, including the tax variable reduces the impact of temporary Social Security benefit changes, particularly at longer horizons. The standard-error bands, however, remain very large. That including the tax variable affects these estimates noticeably at long horizons is consistent with the view discussed previously that those point estimates were being driven by accidental correlation with other factors (such as the automobile excise tax cut passed in 1971).

Figure 5 displays the estimated cumulative responses of consumption to a permanent increase in Social Security benefits and to a tax cut of 1 percent of personal income implied by the regression including both types of changes (and temporary benefit changes as well). The estimated responses are noticeably different. Whereas the effect of a permanent benefit increase is strong and immediate, that of a tax cut is much slower. At the same time, while the impact of a benefit increase falls after five months and becomes imprecisely estimated, that of a tax cut rises steadily. The hypothesis that the contemporaneous responses are the same is

rejected at the 1 percent level.

The impact of tax changes in this expanded regression is very similar to the estimates in Romer and Romer (2010). The expanded regression includes 24 lags of the tax changes, and so it is possible to carry the cumulative response out for two years. The maximum cumulative impact of a tax cut of 1 percent of personal income on consumption is a rise 2.6 percent (t = 3.2) after 22 months.[20]

Recall that our tax measure is the sum of two components: the tax changes that we focus on in our earlier paper and the tax increases to pay for benefit increases. A natural question is what happens when we consider each component separately. When we perform this exercise, we find that the estimated impacts of the two types of tax changes are generally similar. The most obvious difference is that because there is much less variation in the measure based on Social Security taxes, the estimated effects of tax changes using that measure have standard errors more than twice as large as the estimates obtained using the other tax changes.

E. Other Outcome Variables

We now turn to an analysis of three other monthly measures of macroeconomic outcomes: real retail sales, industrial production, and employment. Table 2 shows the cumulative response of each variable to a permanent benefit increase of 1 percent of personal income. The table also shows the cumulative response of personal consumption expenditures (PCE) for comparison.

For retail sales, the point estimates suggest a somewhat larger impact of Social Security benefits than they do for consumption. For example, the estimated effect of a permanent 1 percent increase in benefits is 1.7 percent in the month it occurs, and peaks at 2.1 percent 4 months after the increase. The standard errors, however, are also larger. The t-statistic on the contemporaneous effect is 1.9, and that on the maximum effect is 1.1. All of this is consistent

[20] Though our baseline specification includes only twelve lags of the Social Security benefit changes, we also try including 24 lags of both permanent and temporary changes, along with the tax variable. The response of consumption to a permanent benefit increase becomes quite large and negative at long horizons, with very large standard errors.

with the fact that retail sales are more cyclically sensitive and more volatile than overall consumption.

The point estimates also suggest a nontrivial impact on industrial production. The estimated peak effect is 0.7 percent 3 months after a permanent benefit increase. The dominant feature of the estimates, however, is their imprecision. The *t*-statistics for the estimated positive effects never exceed 1, and the estimated impact turns sharply (but insignificantly) negative after 6 months.

Finally, there is no evidence of an employment response. The point estimates differ trivially from zero for 5 months before turning moderately negative. The hypothesis that the effect is zero cannot be rejected at any horizon; but, at almost all horizons, neither can the hypothesis that the effect is 0.5 percent or that it is −0.5 percent.

IV. THE RESPONSE OF MONETARY POLICY

The previous section provides clear evidence of a large short-run impact of Social Security benefit increases on consumption. However, the effect becomes smaller and less precisely estimated after a few months. Moreover, there is little evidence of an impact on broader indicators of economic activity, such as industrial production or employment, at any horizon.

A possible explanation for the apparent failure of the effects of benefit increases to persist or to spread more broadly is that monetary policymakers respond to the increases by tightening policy. This tightening may choke off the expansionary impact of the benefit increases. To see if this is likely, this section examines both statistical and narrative evidence concerning the Federal Reserve's response to changes in Social Security payments.

A. Specification and Data

To examine the statistical evidence, we estimate regressions analogous to those for consumer spending, using the monthly change in the federal funds rate as the dependent

variable. That is, our baseline specification is

$$(2) \qquad \Delta FF_t = a + \sum_{i=0}^{N} b_i^{PERM} SS_{t-i}^{PERM} + \sum_{i=0}^{N} b_i^{TEMP} SS_{t-i}^{TEMP} + e_i,$$

where ΔFF is the monthly change in the federal funds rate and, as before, SS^{PERM} and SS^{TEMP} are our new series on permanent and temporary changes in Social Security benefits (as a share of personal income).

One can think of equation (2) as a very simple form of the Federal Reserve's reaction function. This raises at least two issues. The first is the appropriate indicator of policy. We follow the standard practice of using the funds rate as the indicator, even though the period we consider (1952–1991) includes times when the Federal Reserve was not explicitly targeting the funds rate. As discussed in Romer and Romer (2004), monetary policymakers routinely discussed the implications of their actions for the funds rate throughout our sample period, even when they were focusing on other indicators. And as stressed by Taylor (1999), conducting policy in terms of other immediate targets still causes the funds rate to respond systematically to economic developments.

The second issue is whether to include other arguments in the reaction function, such as the measures of inflation and the output gap that are usually included (or expectations of those variables). If the Federal Reserve responds to Social Security benefit changes, it is most likely because it expects them to affect inflation and output. Therefore, asking whether changes in Social Security benefits have an effect above and beyond any actual or anticipated effect on inflation and output would likely miss important channels through which the changes might influence monetary policy. Thus, our basic specification does not include those variables.

Nevertheless, we try including many of the same control variables we use when estimating the response of consumption. To the degree that benefits respond to past inflation, it is possible that the Federal Reserve could be reacting to the inflation and not to the benefit increases. Thus, despite the concern noted above, we consider some specifications that control for

inflation. In addition, because monetary policy shocks have large effects on the funds rate, it important to check for accidental correlation between such shocks and permanent Social Security benefit increases. We also control for tax changes, both to see whether including them alters the estimated response of monetary policy to benefit changes, and to compare the Federal Reserve's response to tax actions with its response to benefit changes.

Finally, we consider specifications that include several lags of the change in the funds rate as additional explanatory variables. These lags should capture the impact of any serially correlated other factors affecting monetary policy. We also test whether leads of our Social Security measures appear to affect policy. Doing so can test whether the Federal Reserve is sufficiently proactive that it responds to news of the benefit changes, rather than to their implementation. If leads matter, particularly in an unexpected direction, that could also be evidence of important omitted variables in the regression.

We consider a similar set of sample periods as before. Because the Volcker disinflation was associated with dramatic swings in the funds rate that could have a disproportionate influence on the estimates, we place considerable emphasis on the sample period starting in 1952:1 and ending just before the start of the disinflation (1979:9). We also again consider the full sample period, 1952:1–1991:12, and the period when increases in Social Security benefits were individually legislated rather than the result of automatic cost-of-living adjustments, 1952:1–1974:12.[21]

Monthly data for the federal funds rate are available from the Board of Governors starting in 1954:7.[22] We extend the series back to 1950:1 using data reported by Martens (1958).

B. Results

The consistent finding from the regressions is that the Federal Reserve responds to

[21] Since there is no break in the funds rate series in 1959, as there is with personal consumption expenditures, we do not consider the 1959–1991 sample. The results for this sample are similar to those for the full sample.

[22] We use series RIFSPFF_N.M., monthly average, available at http://www.federalreserve.gov/releases/h15/data.htm, downloaded 2/22/2008.

permanent Social Security benefit increases by raising the funds rate. The response is quite rapid, substantial, and highly statistically significant. As with the results for consumption, we find no evidence that monetary policy responds to temporary Social Security benefit changes.

Figure 6 shows the results from estimating (2) over the pre-Volcker period, 1952:1–1979:9, including 12 lags of the benefit changes. It reports the implied cumulative response of the federal funds rate to a permanent Social Security benefit increase of 1 percent of personal income. The response is 81 basis points in the month of the benefit increase and rises to a maximum of roughly 250 basis points 5 months after the increase. The null hypothesis that monetary policy does not respond is overwhelmingly rejected at short horizons; the maximum *t*-statistic is 4.0 after 3 months. The two-standard-error confidence interval for the effect after 5 months is 105 to 399 basis points.

The results for other sample periods are similar. Ending the sample period in 1974:12 rather than 1979:9 has little effect other than increasing the standard errors slightly and increasing the estimated response at long horizons slightly. Extending it through 1991:12, and thus including the period of interest rate volatility during the Volcker disinflation, has almost no impact on the estimated response after 5 months. But it causes the response to be somewhat slower and the standard errors to be somewhat larger. For example, the maximum *t*-statistic falls to 2.5.

For temporary Social Security benefit changes, the estimated response of the Federal Reserve is generally negative (that is, it lowers the funds rate in response to temporary benefit increases), but not statistically significant. In the baseline sample period (1952:1–1979:9), the contemporaneous impact is −0.1 ($t = -0.8$). After 5 months it is −0.7 ($t = -1.9$). This relative lack of an impact is consistent across samples and specifications.

Including the contemporaneous value and twelve lags of inflation in the regression has the somewhat surprising effect of increasing the estimated impact of permanent Social Security

benefit increases on the funds rate.[23] Including the Romer and Romer dummy variable for monetary policy shocks reduces the maximum response of the funds rate trivially. In both cases, the impact remains highly statistically significant.

Including 12 lags of the change in the funds rate (in addition to the twelve lags of the benefit increases) has little effect on the estimated impact of the permanent benefit changes on monetary policy; if anything, it raises the estimated response slightly. This suggests that accidental correlation between benefit changes and monetary policy shocks or other factors affecting Federal Reserve behavior does not appear to be driving the results.

As an additional test along these lines, we try excluding the largest permanent benefit increase (in October 1972), which occurred near of the beginning of a very large run-up in the funds rate in 1972–1974. Omitting this increase lowers the maximum response of the funds rate from 252 basis points to 215, accelerates the response slightly, and substantially changes the response at longer horizons. But the maximum *t*-statistic is still well over 3 (3.5 after 2 months).

Finally, including three leads of the permanent Social Security benefit increases reveals no evidence of anticipatory Federal Reserve responses. The coefficients on the leads are small and far from statistically significant (0.1, 0.3, and 0.1, starting with the 3-month lead, each with a standard error around 0.3). The coefficients on the contemporaneous and lagged values of the benefit changes are largely unchanged.

Figure 7 shows the partial association of the contemporaneous change in permanent Social Security benefits and the change in the federal funds rate.[24] As with the similar graph for consumption, the figure helps explain why the results are so robust. While there are some clear outliers, such as October 1972, there are a large number of powerful observations. As a result, eliminating a handful from the sample is unlikely to overturn the key results. Similarly, though

[23] We try including both the measure of inflation used in the modern Social Security indexation formula, which we also use in the robustness checks for consumption, and the more straightforward monthly change in the seasonally-adjusted consumer price index for all urban consumers.

[24] Specifically, it shows the residuals of regressions of both the funds rate and the contemporaneous permanent benefit change on the other right-hand-side variables in the baseline specification. The regressions are run over the pre-Volcker sample of 1952:1–1979:9.

some of the powerful observations are around the time of the 1974 monetary policy shock, many others are not associated with shifts to anti-inflationary policy. So it is not surprising that controlling for monetary policy shocks does not eliminate the strong estimated response of the funds rate to permanent benefit increases.

C. Including Tax Variables

Changes in taxes are an important source of shocks to the economy, and they sometimes occur at about the same time as increases in Social Security benefits. It is therefore useful to see if the estimated response of monetary policy to changes in benefits is sensitive to the inclusion of a measure of tax changes. In addition, the response of monetary policy to tax changes is of interest in itself. We therefore examine whether such a response is present and how it compares with the response to Social Security changes.

We use the same measure of relatively exogenous tax changes as in Section III, and we again include the contemporaneous value and 24 lags.[25] Adding the tax variable to (2) has little impact on the estimated response of monetary policy to Social Security changes. Figure 8 shows the cumulative impact of a permanent Social Security benefit increase of 1 percent of personal income on the funds rate, both in the baseline case and when the tax variable is included, for our focal sample period of 1952:1–1979:9. The estimated monetary policy response is slightly smaller when the tax series is included in the regression. But the effect is still present and highly statistically significant.[26]

Figure 9 shows the cumulative response of the funds rate both to a permanent benefit increase and to a tax cut of 1 percent of personal income from the regression including both variables. As with the responses of consumption, the responses of the funds rate to benefit and tax changes are very different. Whereas the Federal Reserve appears to raise the funds rate

[25] As in Section III, our tax measure also includes spending-driven tax changes related to Social Security benefit increases.

[26] The response of monetary policy to temporary Social Security changes is affected somewhat more by the inclusion of the tax series. It becomes more strongly negative, and is statistically significant at longer horizons.

quickly and strongly in response to a benefit increase, it actually cuts the funds rate slowly but significantly in response to a tax cut. The difference in the response is highly significant up through month 7. Though not shown in the figure, after 12 months the cumulative response of the funds rate to a tax cut turns positive. After 24 months, the cumulative impact is a rise in the funds rate of 2.2 percentage points (t = 2.9).[27]

The different speeds of the responses of monetary policy to benefit and tax changes may not be surprising. In Section III, we found that consumer spending appears to respond much more rapidly to Social Security benefit increases than to tax cuts. Therefore, a Federal Reserve that was seeking to smooth the economy would likely respond more quickly to the benefit changes, which is precisely what we find.

Finally, the estimated responses of the federal funds rate to both Social Security and tax changes in the expanded regression are little changed when we include 12 lags of the funds rate as an additional control variable. This suggests that serially correlated omitted variables are not driving our findings.

D. Narrative Evidence

The regressions provide strong evidence of a link between increases in Social Security benefits and monetary policy. But we can go a step further and ask whether there is direct evidence of Federal Reserve behavior behind such a link. The records of Federal Reserve meetings provide information about the reasoning underlying monetary policy decisions. If Social Security benefit increases affected the conduct of policy, it should be evident in those records.

The policy record from this period shows clearly that monetary policymakers believed that Social Security benefit increases had a stimulative effect on the economy. Moreover, it shows that they thought that the timing of the effect coincided closely with the actual benefit increases,

[27] In the results reported in Figure 8, we include 12 lags of the Social Security benefit changes. If we include 24 lags of both permanent and temporary benefit increases, the response of the funds rate to a permanent benefit increase rises gradually over the second year.

rather than being anticipatory or working with substantial lags. The record also provides strong evidence that Federal Reserve officials thought that benefit increases called for tighter monetary policy.

Our sources are detailed accounts of meetings of the Federal Open Market Committee (FOMC). Through the meeting of March 15–16, 1976, the accounts are thorough summaries prepared after the meetings. They are often over 100 pages for a single meeting, and remarks are attributed to specific participants. These accounts are referred to as "Minutes" through May 1967 and "Memoranda of Discussion" thereafter. For simplicity, we refer to all of these summaries as "Minutes." After the March 15–16, 1976 meeting, our sources are the meeting transcripts. (Board of Governors of the Federal Reserve System, various years.)

Benefit Increases and Consumption. Throughout our sample period, the staff of the Federal Reserve and the members of the FOMC were very clear that they believed that Social Security benefit changes had a direct and immediate impact on consumption.

One relatively extensive early discussion occurred around the time of the September 1965 benefit increase, which was legislated in July 1965. According to the staff presentation at the August 10 meeting (*Minutes*, 8/10/65, p. 28),

> The mailing of checks to Social Security beneficiaries, including both the new higher scale of payments and lump-sum retroactive benefits, will be adding to disposable personal income shortly. ... How rapidly, and for what goods or services, recipients of the benefits will spend their funds is a big unknown; we have very little basis for estimating the consumption function for this older age group. But it's hard to believe that the bulk of it won't get into the spending stream fairly promptly.

At the next meeting, one FOMC member referred to "the fiscal stimuli the economy would be receiving in the next few weeks," suggesting that the timing of the perceived effect was closely linked to the timing of the change in benefits (*Minutes*, 8/31/65, p. 48).[28] And at the following meeting, the staff presentation commented (*Minutes*, 9/28/65, p. 17):

[28] For simplicity, we refer to all the regional bank presidents and members of the Board of Governors as "members" of the FOMC, even if they were not voting members of the committee.

> Total consumer spending ... will no doubt continue to be strong. The relationship between such spending and personal incomes is relatively stable, and incomes have recently been augmented by a large lump-sum social security benefit payment as well as by an increase in current payments. The spending propensities of the aged are no doubt higher than those of other segments of the population.

The discussion of the September 1965 benefit increase is unusual only in its detail. More commonly, participants appear to have taken it almost as given that benefit increases, by raising disposable income, raised consumption. They often commented on the impact of changes in benefits on household income, and either stated or implied that those changes would feed through to household spending.

Benefit increases received relatively little attention in the 1950s, when the meeting summaries were often relatively short and benefit increases were generally moderate. However, Federal Reserve officials did occasionally note their impact. For example, in March 1959, following a benefit increase the previous month, the staff presentation on the economy noted, "the recent advance [in personal income] reflected mainly a further rise in wage and salary payments, but higher old-age and survivors' benefit payments were also of importance in causing the rise. With personal income advancing further, retail sales in February were strong" (*Minutes*, 3/24/59, p. 7; see also 11/27/56, p. 7, and 5/27/58, p. 4).

In the 1960s and 1970s, the consumption effects of Social Security benefit changes were mentioned frequently. As described above, there was a long discussion around the 1965 increase. Similarly, in April 1970 (the month of a large benefit increase), the staff presentation commented, "we are now at the point where additional income supplements—including social security payments as well as the Federal pay raise—should begin to stimulate consumer demands" (*Minutes*, 4/7/70, p. 26). Thus again, the timing of the effect was linked to the timing of the actual change in benefits. In November 1972, the staff explicitly attributed the rise in retail sales the previous month partly to the benefit increase that had occurred then: "The upward course in retail sales in real terms is particularly impressive; the sharp rise in October

reflects both strength in new car buying and substantial gains in other lines, stimulated in part by the recent boost in social security benefits" (*Minutes*, 11/20/72, p. 5).

After 1974, when Social Security cost-of-living adjustments became standard, the impact of the benefit changes received less attention from the Federal Reserve. However, there were some discussions of them. In late 1974 and early 1975, for example, the staff consistently projected that the first automatic cost-of-living increase, scheduled for July 1975, would boost consumption when it occurred. In September 1974, nine months before the scheduled increase, "The upturn in consumer spending projected by the staff for the latter half of 1975 was based on the increase in disposable income expected to result from increased social security payments and an anticipated redistribution of income toward wage earners .... There was no assumption of a significant decline in the rate of saving" (*Minutes*, 9/10/74, p. 11). And quite late in our sample period, in a discussion of the "consumption function" and the forecast for the path of the saving rate, Federal Reserve Chairman Alan Greenspan stated, "[Unintelligible] COLA on social security, you have to assume [the marginal propensity to consume] is about .9" (2/9–10/88, pp. 11–12; brackets in original).

Throughout, the Federal Reserve's view was that benefit increases would be spent quickly. We have found no cases where an increase in consumption was attributed to a delayed impact of a benefit increase, and none where there were discussions of increased spending based on anticipations of higher benefits. There were, however, three cases where officials expected that an increase would be translated into higher consumption only gradually. In July 1971, the staff presentation stated, "The second-quarter saving rate, at 8.3 per cent, was boosted temporarily by the payment late in June of the retroactive portion of the increase in social security benefits ... [which] came too late to influence spending appreciably .... Some part of these checks will now be spent ..." (Minutes, 7/27/71, p. 29). In March 1975, after describing various factors expected to contribute to a substantial spike in disposable income (including the 1975 Social Security cost-of-living adjustment and a very large one-time tax rebate), the *Minutes* reported,

"The staff believed that consumers, even though they were not optimistic and were inclined to be cautious in their spending, by and large would spend the additional income. However, they would do so with a lag, so that the saving rate would rise sharply at first and then decline again by the end of the projection period [in 1976:Q2]" (*Minutes*, 3/18/75, p. 29). And in February 1988, the economist presenting the forecast said that while "I think the potential would be a fairly high marginal propensity" to consume out of the recent cost-of-living increase in benefits, "[u]nless that is spent very rapidly, we would tend, in the short run, to have a slightly higher saving rate" (*Minutes*, 2/9–10/88, p. 12).

Benefit Increases and Monetary Policy. Throughout the postwar period, monetary policymakers have been concerned with keeping inflation low and the real economy stable. Even when they had other objectives (such as avoiding large swings in interest rates), or emphasized a particular intermediate target as a way of achieving those goals (such as nonborrowed reserves for a period starting in October 1979), they put considerable direct emphasis on these goals. In light of policymakers' belief that Social Security benefit increases were expansionary, one would therefore expect that they would view them as calling for tighter monetary policy.

The narrative record confirms this expectation. During the core part of our sample period when benefit increases were often discussed, policymakers consistently viewed them as a consideration weighing on the side of more contractionary monetary policy. Interestingly, in the narrative sources, increases in Social Security benefits are often discussed together with other expansionary fiscal actions. That is, in contrast to our empirical finding of little correlation between Social Security benefit changes and other changes in fiscal policy, monetary policymakers appear to have perceived, at least in some episodes, a correlation between benefit increases and other stimulative fiscal actions. To the extent that their contractionary monetary policy actions in the wake of the benefit increases were responses to those other actions rather than to just the benefit increases, our regressions may somewhat overstate the effects of benefit

increases on monetary policy.

Again, a particularly extensive discussion occurred at the August 10, 1965 FOMC meeting, shortly before the large permanent benefit increase scheduled for September. At this meeting, four committee members explicitly argued that looser fiscal policy called either for not easing monetary policy or for tightening. One member's view was that he "would not relax the present degree of firmness in view of the stimulus that would be provided by larger defense expenditures and a more expansionary fiscal policy" (*Minutes*, 8/10/65, p. 55). In a prepared statement, another member stated, "I would not want to ease policy right now, for a considerable degree of new fiscal stimulus lies immediately ahead of us. Some of this will come from the enlarged Social Security payments, but the most important impetus is probably the Vietnam buildup" (p. 65). A third "would be reluctant to move in the direction of greater ease in view of the possibility that price pressures might develop from the impending step-ups in defense expenditures, from the increases in Social Security benefits and military pay scales beginning in September, and from possible increases in Civil Service pay scales" (p. 70). And the fourth member's view was that (pp. 48–49):

> In view of the impact of the fiscal stimulation which had been anticipated earlier and that which would result from the new military situation, ... excessive total demand could become more definitely the major stabilization problem. ... In view of the strength of business, the fiscal situation, and developing seasonal pressures, he thought [the policy he was advocating] would be consistent with some upward movement in interest rates.

Finally, the staff presentation stated, "it would seem premature now to add monetary stimulation to the picture—at least not until the dimension of consumer responses to the Social Security payments becomes more evident or the pace of the defense buildup becomes clearer" (p. 29).

This pattern continued in response to other Social Security benefit increases. In April 1968, when the recent Social Security benefit increase was cited as one factor stimulating the economy (*Minutes*, 4/2/68, p. 39), many members discussed the link between fiscal policy and

appropriate monetary policy in very clear terms. The vice-chair of the committee said, "The appropriateness and timing of an additional discount rate increase must be importantly influenced by the progress or lack of it with respect to Vietnam and on the fiscal front" (p. 49). Another argued that "little real progress had been made in either cutting expenditures or raising taxes. Hence, he felt that movement towards greater monetary restraint was still needed" (p. 50). Another's view was that "further monetary tightening would be in order if it became clear that fiscal action was not likely to be taken" (p. 84; see also pp. 16, 39, 70, 72, 87).

The FOMC's views around the time of the April 1970 benefit increase were similar. Both members and the staff commented on the expansionary effects of the benefit increase (*Minutes*, 1/15/70 pp. 34, 47; 4/7/70, pp. 26, 36). Interestingly, the vice-chair of the committee suggested the possibility of a direct impact of expansionary fiscal policy on inflationary expectations: "Expectations of future inflation remain widespread and deeply embedded, despite the slower economic growth. In part this seems to reflect growing cynicism as to the ability or will of Government policy to deal effectively with inflation. Fiscal actions taken and initiatives not taken in the last few months have contributed importantly to this cynicism" (*Minutes*, 1/15/70, p. 47). Other members drew implications for monetary policy from fiscal policy. One argued that "in view of the lessening fiscal restraint and the persistent inflationary expectations of business, he would permit only a very minor shading away from the taut money market conditions of early December" (p. 62). Another's view was (*Minutes*, 1/15/70, pp. 74–75),

> [I]f the latest statistics were anywhere near the mark, the economy's advance had slowed significantly; and he believed the Committee had to give serious consideration to the possibility that it might slow more than was desirable. But with business capital outlays slated to rise substantially in this half-year and in view of the prospective fiscal stimulus in the months ahead, he thought the Committee faced risks in the other direction as well. Policy, it seemed to him, had to strike a balance between those two sets of risks.

And another member said that there should not be "a relaxation of the general atmosphere of credit restraint", and that "[h]opes for help from the fiscal front [in providing that restraint], I submit, are far too uncertain to be a basis for any different monetary strategy" than the very

tight policy the FOMC was pursuing (p. 100).

As a final example, consider policy around the time of the 1974 benefit increases. Again, the Social Security increases were discussed as an expansionary influence on the economy (*Minutes*, 1/21–22/74, p. 56; 8/20/74, p. 36; 9/10/74, p. 11). And again, fiscal policy was thought to be directly relevant to monetary policy. In January, one member's view was that "fiscal policy might become more stimulative, and monetary policy might have to be more conservative than otherwise if the combination of fiscal and monetary policies was to be moderately conservative—as the Chairman had suggested it should be" (*Minutes*, 1/21–22/74, p. 100). Another member argued that "given the inflation and a stimulative fiscal policy, the question was just how stimulative monetary policy should be. ... [H]e would not increase the Committee's longer-run target for monetary growth" (p. 107). In February, another member commented simply that "The possibility of an easing in fiscal policy provided an opportunity for the System to ease monetary policy less than it otherwise might" (*Minutes*, 2/20/74, p. 72). And at the same meeting, the vice-chair cited that fact that "the Federal budget was likely to be reasonably stimulative" as a reason not to undertake "a decisive move toward ease" (p. 56).

In short, the record of policymakers' thinking shows clearly that the association between Social Security benefit increases and tighter monetary policy is not a coincidence. Policymakers consistently believed that benefit increases were expansionary, and that monetary policy should counteract expansionary fiscal policy.

V. CONCLUSIONS AND IMPLICATIONS

This paper shows that Social Security benefit increases over the period 1952–1991 were highly variable in timing and size, and presents evidence that most of the increases were not taken in response to current or prospective macroeconomic developments or as part of larger policy programs. As a result, these benefit increases can be used to estimate the short-run macroeconomic effects of changes in transfers.

Our first finding is that transfers matter. Our estimates suggest that a permanent increase in Social Security benefits raises consumer spending in the first month the larger checks arrive almost one-for-one—that is, virtually all of the higher transfers move quickly into higher expenditures. The estimated impact remains near one for about half a year, and then declines sharply. The initial impact is highly statistically significant, but the standard errors increase as the horizon lengthens.

We find a marked difference in the response of consumer spending to temporary and permanent benefit changes. While the estimated response to permanent changes is roughly one-for-one and statistically significant, the estimated response to temporary changes is small and not statistically significant. And, for both types of changes, we find no evidence of a response before the payments are actually received.

In addition to finding that the effect of permanent benefit increases on consumption declines after about half a year, we also fail to find clear evidence of an impact of permanent increases on broader macroeconomic outcomes, such as production and employment. One plausible explanation involves monetary policy. We find that monetary policy turns sharply contractionary following permanent benefit increases, and that the response is rapid and overwhelmingly statistically significant. Narrative evidence from Federal Reserve records confirms that monetary policymakers believed that the benefit increases stimulated the economy and called for a contractionary response.

Finally, we find that both consumption and monetary policy respond very differently to permanent Social Security benefit changes and tax changes. Consumption rises immediately following a permanent benefit increase, but rises only slowly following a tax cut. The effect, however, dissipates fairly quickly for benefit increases, but is much more long-lasting for tax cuts. The funds rate rises sharply following a benefit increase, whereas it initially falls following a tax cut, and only rises after about a year.

These findings have implications for both research and policy. On the research side, our findings about the behavior of consumption echo the results of many previous studies that neither the permanent income hypothesis nor a simple hand-to-mouth model provides a complete description of consumption behavior. As stressed by Wilcox (1989), the fact that consumption responds when permanent benefit increases are implemented even though the changes are announced in advance contradicts the permanent income hypothesis. Moreover, the fact that consumption rises even though the future tax increases to pay for the higher benefits are often enacted in the very same legislation is arguably a particularly striking failure of Ricardian equivalence. At the same time, a hand-to-mouth or liquidity constraints view is contradicted by our finding that consumption does not respond to temporary benefit increases.

The results are somewhat more supportive of more nuanced views of consumption behavior. The fact that aggregate consumption responds much more to permanent benefit changes than to temporary ones is consistent with the notion that households smooth consumption in response to temporary changes. And, because the temporary changes in our sample are typically quite large, our findings are consistent with previous work suggesting that the permanent income hypothesis describes household behavior reasonably well when large payments are involved.

Another strand of the literature that our findings speak to is the work on adjustment costs. We find that the near-term response of consumption to permanent benefit increases is immediate and virtually one-for-one. This could suggest that the elderly behave differently from other consumers, or that adjustment costs may be less important in some circumstances. Determining the reasons for the rapid response is important for understanding whether our results for Social Security increases are likely to carry over to other types of transfers.

Our results also cast doubt on the view of traditional Keynesian models and of such authors as Blanchard and Perotti (2002) that the short-run macroeconomic effects of changes in transfers and changes in taxes are approximately equal and opposite. Our results suggest that

the speed, persistence, and size of the responses of consumption and of monetary policy to a permanent increase in transfers and to a tax cut of the same size may in fact be dramatically different.

On the policy side, the fact that we find little impact from large temporary increases in transfers could raise questions about the efficacy of such payments for countercyclical purposes. And, if the findings for temporary transfers carry over to temporary tax changes, our results could raise similar concerns about the countercyclical effectiveness of such tax changes. However, because the temporary transfers that drive our estimates are quite large, our estimates do not speak directly to the issue of whether small temporary transfers could have a greater impact.

Another policy implication of our study involves the interaction of monetary and fiscal policy. The strong counteracting monetary policy response to permanent Social Security benefit increases likely explains why their effects were relatively short-lasting and did not spread to broader economic indicators. Similarly, the different monetary policy responses that we find to benefit changes and tax changes may be an important source of the stark differences we find in the effects of permanent benefit changes and tax changes. These results support the view that the effects of fiscal policy are very dependent on the conduct of monetary policy. And they suggest that if fiscal policymakers want to achieve some objective, coordination with monetary policymakers may be essential.

TABLE 1

Social Security Benefit Changes, 1952-1991
(Percent of Personal Income)

Date	Permanent	Temporary	Date	Permanent	Temporary
Oct. 1952	0.24		Jul. 1975	0.38	
Oct. 1954	0.21		Jul. 1976	0.31	
Dec. 1956	0.14		Jul. 1977	0.29	
Aug. 1957	0.08		Jul. 1978	0.31	
Oct. 1958	0.05		Jul. 1979	0.47	
Feb. 1959	0.19		Jul. 1980	0.69	
Dec. 1960	0.05		Jul. 1981	0.56	
Jan. 1961	0.06		Jul. 1982	0.39	
Sep. 1965	0.41	1.86	Aug. 1983	0.03	
Jan. 1966	0.03		Nov. 1983		0.17
Nov. 1966	0.02		Dec. 1983		0.21
Mar. 1968	0.51		Jan. 1984	0.19	
Apr. 1970	0.49	0.98	Dec. 1984		0.25
Jun. 1971	0.38	1.51	Jan. 1985	0.19	
Oct. 1972	0.78		Jul. 1985		0.16
Feb. 1973	0.22		Jan. 1986	0.16	
Feb. 1974	0.14		Jul. 1986		0.17
Apr. 1974	0.34		Jan. 1987	0.07	
Jul. 1974	0.19		May 1987		0.16
Aug. 1974	0.01		Jan. 1988	0.21	
			Mar. 1988		0.12
			Jan. 1989	0.19	
			Mar. 1989		0.14
			Nov. 1989		0.08
			Jan. 1990	0.23	
			Jan. 1991	0.27	

Sources: See Appendix for a detailed description of each benefit change.

TABLE 2

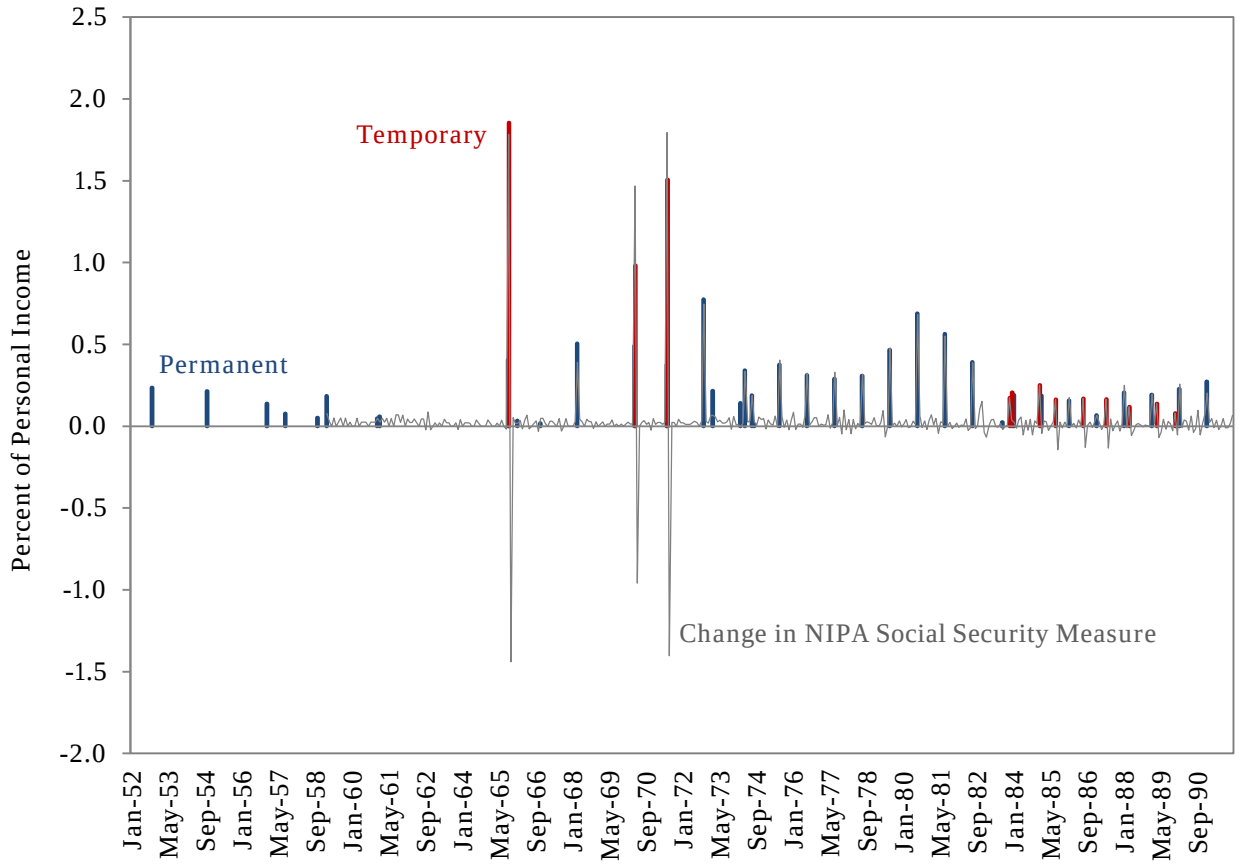
Cumulative Impact of a Social Security Benefit Increase of 1% of Personal Income
(Percent)

	Real PCE		Real Retail Sales		Industrial Production		Employment	
Month	Impact	SE	Impact	SE	Impact	SE	Impact	SE
0	1.19	0.42	1.72	0.92	0.38	0.71	−0.00	0.20
1	1.02	0.57	2.11	1.25	0.34	0.96	0.07	0.27
2	0.91	0.69	1.64	1.53	0.69	1.17	0.02	0.33
3	1.01	0.81	2.00	1.78	0.71	1.37	0.02	0.39
4	0.99	0.91	2.12	2.00	0.46	1.54	0.01	0.44
5	0.95	1.00	1.46	2.21	−0.20	1.70	−0.09	0.48
6	0.35	1.10	0.16	2.42	−1.70	1.86	−0.34	0.53
7	0.02	1.20	−0.39	2.63	−1.95	2.02	−0.51	0.58
8	−0.30	1.30	−0.17	2.85	−2.40	2.19	−0.53	0.63
9	−1.05	1.40	−1.42	3.07	−3.25	2.36	−0.76	0.67
10	−1.55	1.50	−2.48	3.29	−4.13	2.53	−0.96	0.72
11	−1.08	1.59	−2.67	3.51	−4.63	2.70	−1.18	0.77
12	−2.40	1.63	−4.27	3.58	−5.28	2.76	−1.31	0.79

Notes: The estimated impact shows the effect on the level of each variable relative to the initial value (in percent), at different horizons. SE is the standard error of the cumulative impact at each horizon. The results are based on estimating equation (1) over the sample period 1952:1–1991:12, including 12 lags each of permanent and temporary benefit changes.

FIGURE 1

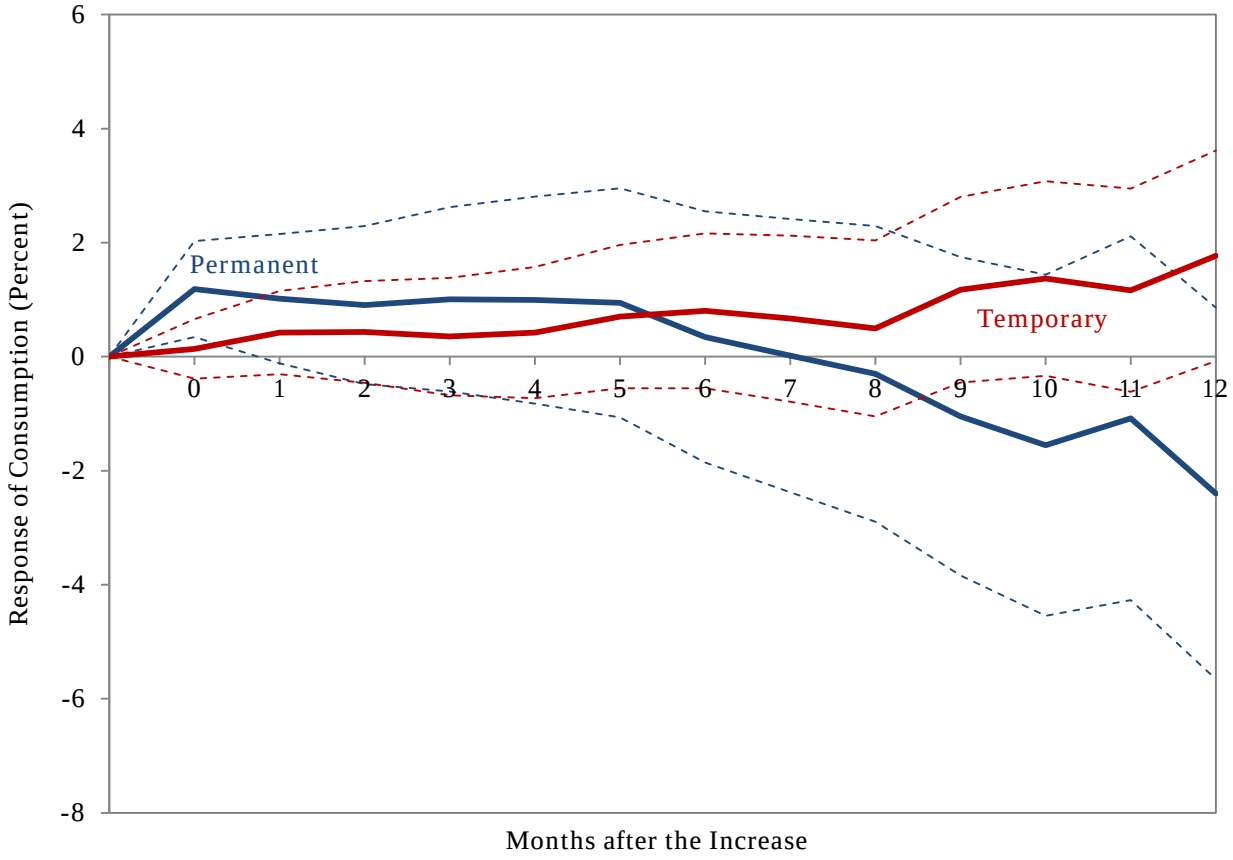
New Series on Permanent and Temporary Social Security Benefit Changes,
along with the Change in the NIPA Series for Social Security Transfers



Sources: Set text for details of the new series and the source of the NIPA data.

FIGURE 2

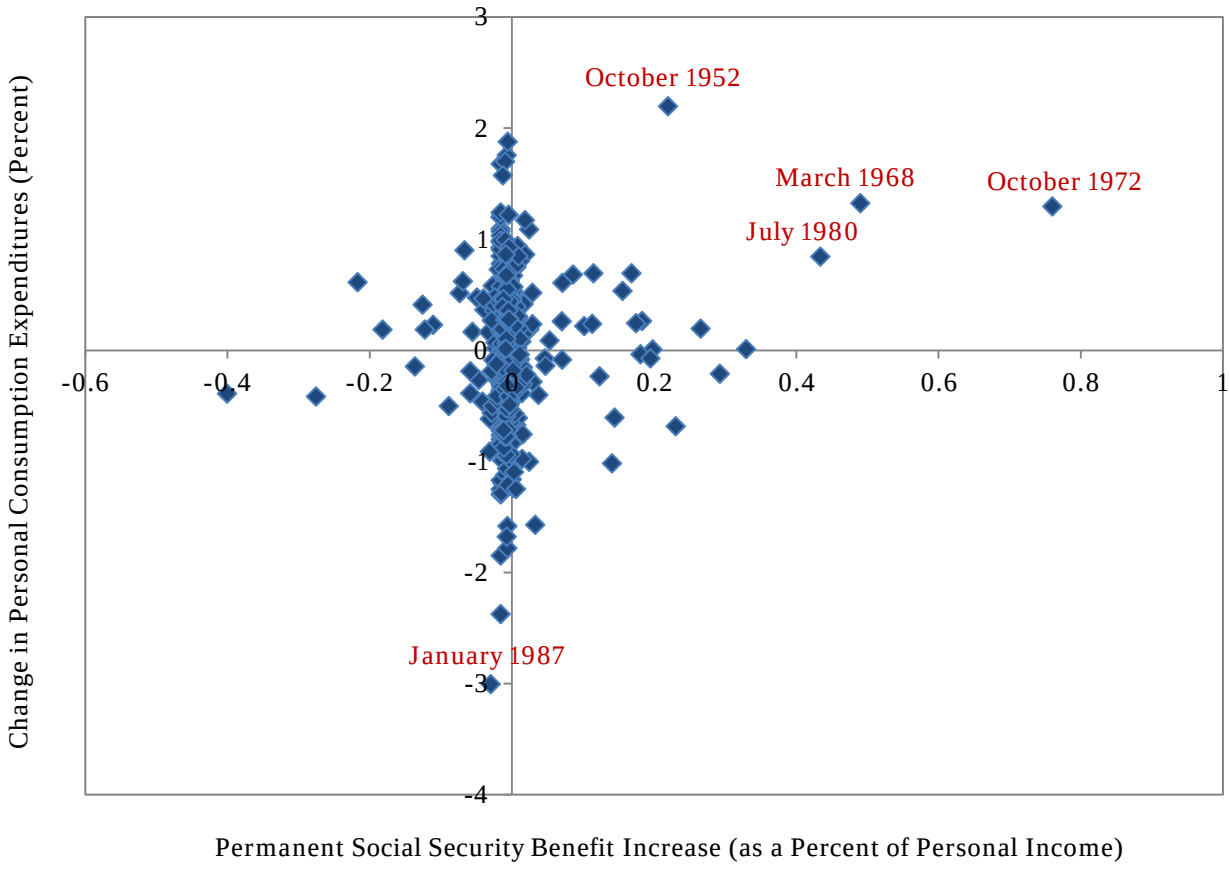
Cumulative Impact of a Permanent and a Temporary Social Security Benefit Increase of 1% of Personal Income on Personal Consumption Expenditures



Notes: The figure shows the results from estimating equation (1) over the sample period 1952:1–1991:12, including 12 lags each of permanent and temporary benefit changes. The dashed lines show the two-standard-error confidence bands.

FIGURE 3

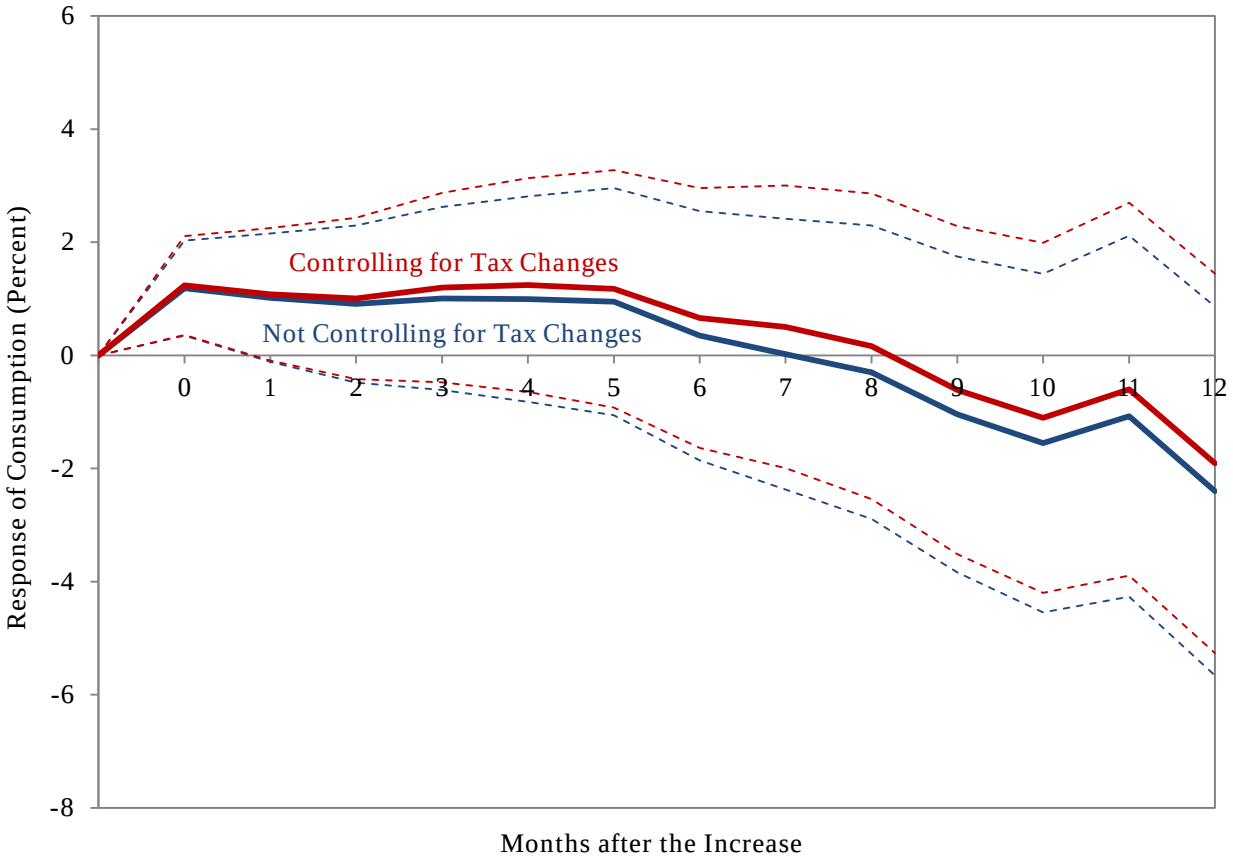
Partial Association of Permanent Social Security Benefit Increases
and the Contemporaneous Change in Personal Consumption Expenditures



Notes: The figure graphs the residuals of a regression of permanent Social Security benefit increases on all of the other right-hand-side variables in the baseline specification of equation (1) against the residuals of a regression of the percentage change in real PCE on the same variables. The sample period is 1952:1–1991:12.

FIGURE 4

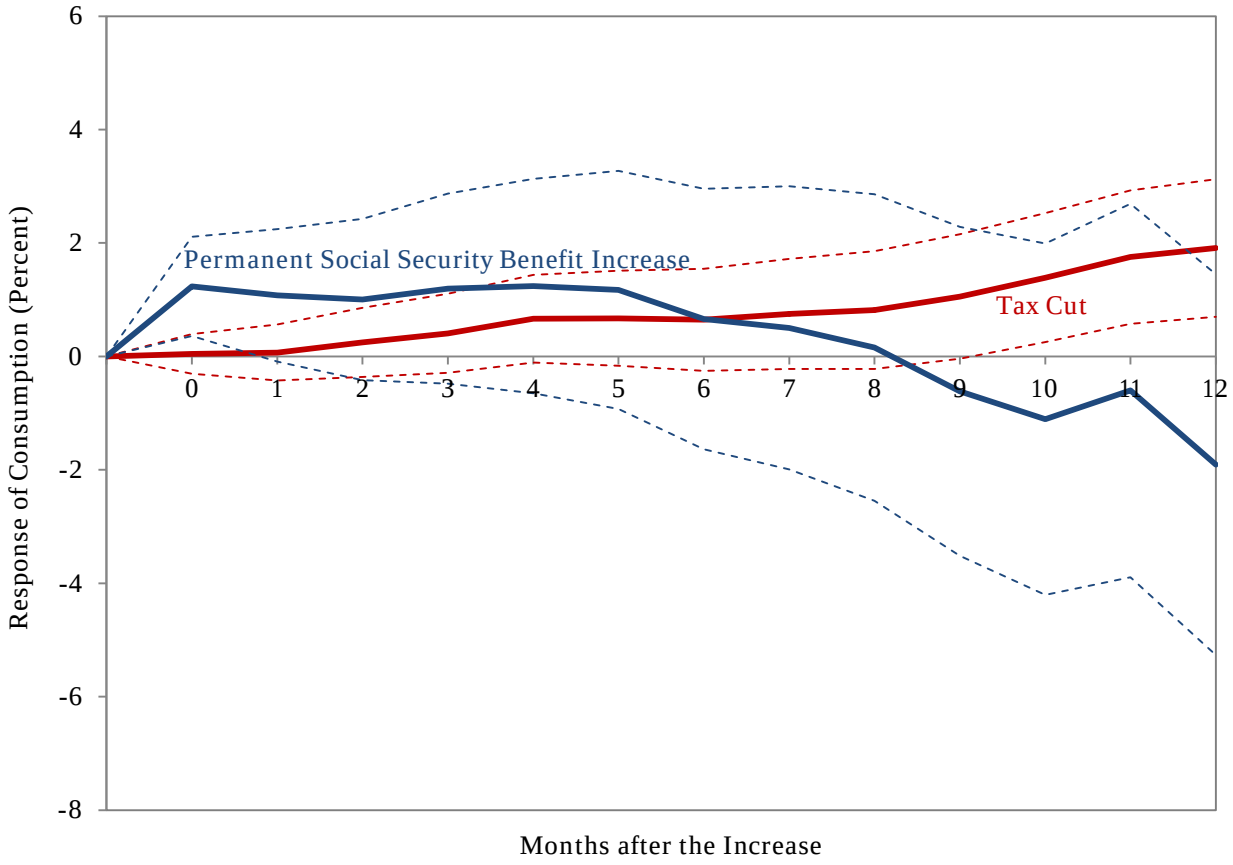
Cumulative Impact of a Permanent Social Security Benefit Increase of 1% of Personal Income on Personal Consumption Expenditures, with and without Controlling for Tax Changes



Notes: The results are from estimating equation (1) with and without including the contemporaneous value and 24 lags of the tax shock variable as an additional control variable. The sample period is 1952:1–1991:12. The dashed lines show the tw0-standard-error confidence bands.

FIGURE 5

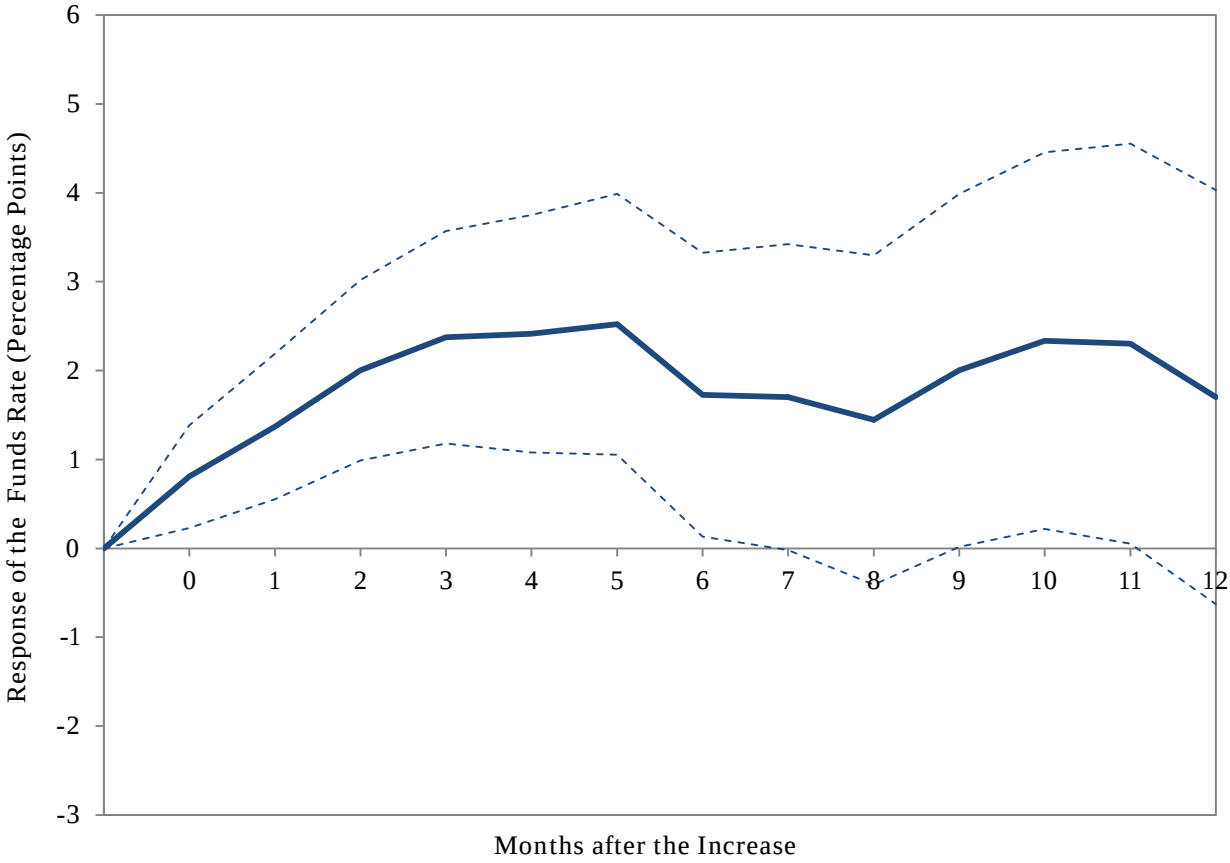
Cumulative Impact of a Permanent Benefit Increase and a Tax Cut of 1% of Personal Income on Personal Consumption Expenditures in the Regression Including Both Variables



Notes: The results are from estimating equation (1) including the contemporaneous value and 24 lags of the tax shock variable as an additional control variable. The sample period is 1952:1–1991:12. The dashed lines show the tw0-standard-error confidence bands.

FIGURE 6

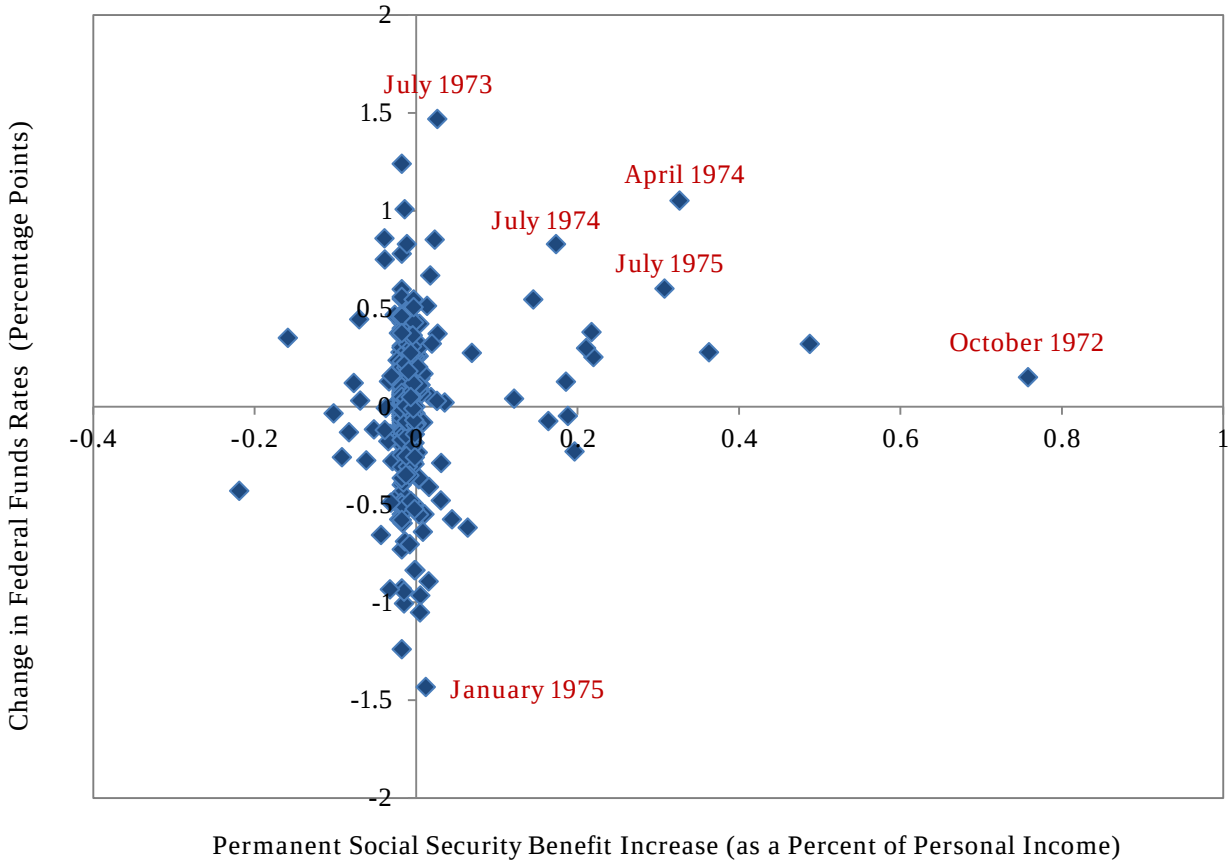
Cumulative Impact of a Permanent Social Security Benefit Increase of 1% of Personal Income on the Federal Funds Rate



Notes: The figure shows the results of estimating equation (2) over the sample period 1952:1–1979:9, including 12 lags each of permanent and temporary benefit changes. The dashed lines show the tw0-standard-error confidence bands.

FIGURE 7

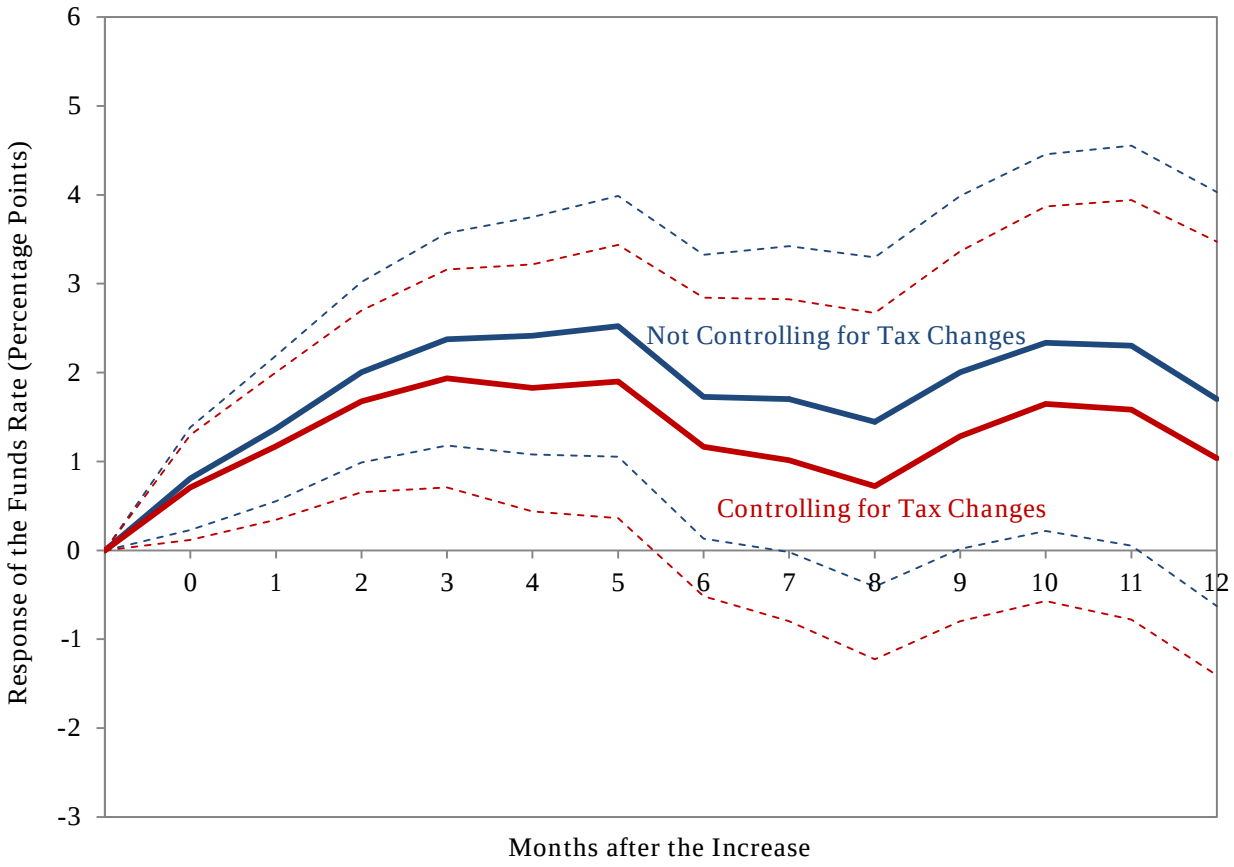
Partial Association of Permanent Social Security Benefit Increases
and the Contemporaneous Change in the Federal Funds Rate



Notes: The figure graphs the residuals of a regression of permanent Social Security benefit increases on all of the other right-hand-side variables in the baseline specification of equation (2) against the residuals of a regression of the change in the funds rate on the same variables. The sample period is 1952:1–1979:9.

FIGURE 8

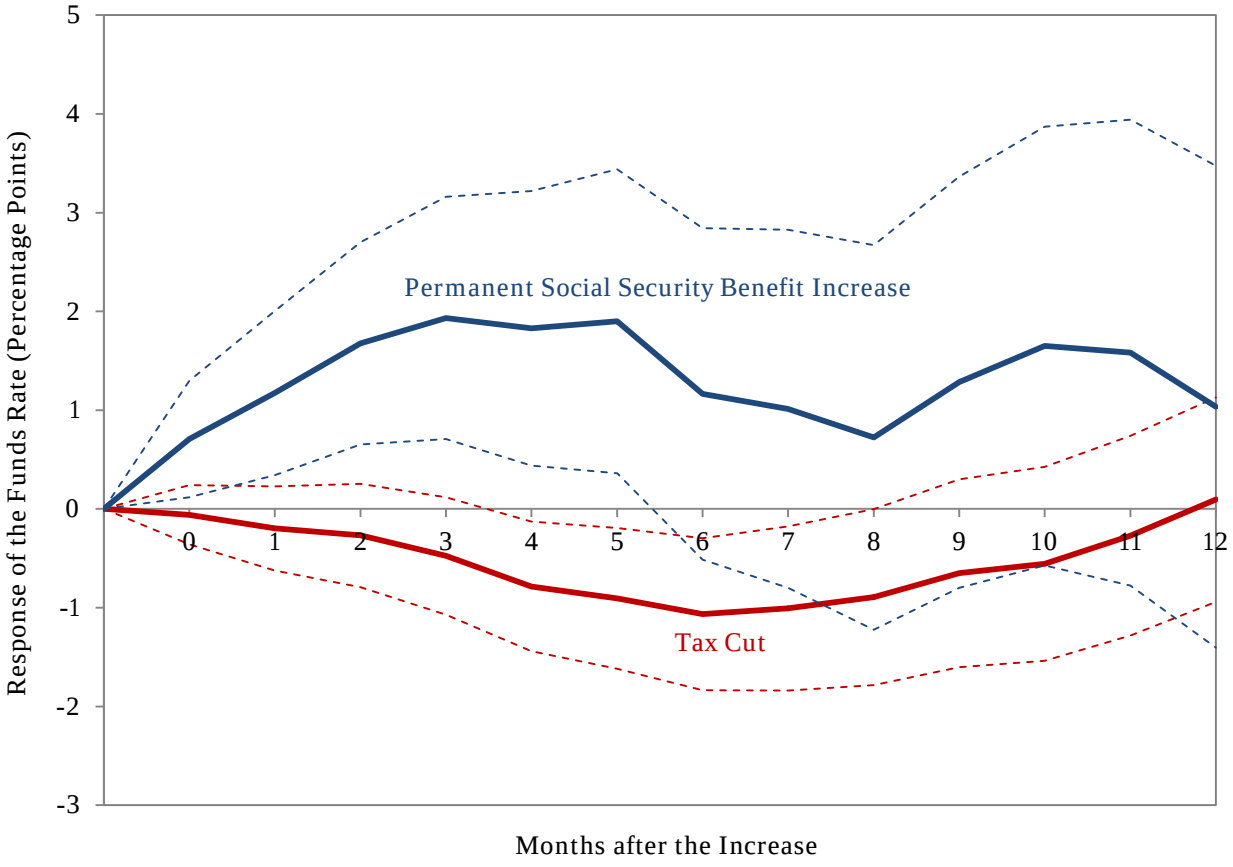
Cumulative Impact of a Permanent Social Security Benefit Increase of 1% of Personal Income on the Federal Funds Rate, with and without Controlling for Tax Changes



Notes: The results are from estimating equation (2) with and without including the contemporaneous value and 24 lags of the tax shock variable as an additional control variable. The sample period is 1952:1–1979:9. The dashed lines show the tw0-standard-error confidence bands.

FIGURE 9

Cumulative Impact of a Permanent Benefit Increase and a Tax Cut of 1% of Personal Income on the Federal Funds Rate in the Regression Including Both Variables



Notes: The results are from estimating equation (2) including the contemporaneous value and 24 lags of the tax shock variable as an additional control variable. The sample period is 1952:1–1979:9. The dashed lines show the tw0-standard-error confidence bands. The dashed lines show the tw0-standard-error confidence bands.

APPENDIX

SOCIAL SECURITY BENEFIT INCREASES 1952-1991

This appendix describes Social Security benefit changes from 1952 to 1991.[29] We include changes in both the old-age and survivors insurance program (OASI) and the disability insurance program (DI). We also include changes in the Supplemental Security Income (SSI) program, which provides benefits from general revenue for impoverished beneficiaries. We do not include changes in the health insurance component of Social Security (the Medicare program and some early precursors).

For the period before 1975, all Social Security benefit changes were individually legislated. For these, we discuss the size, timing, motivation, and permanence of the moves, as well as the key sources of this information. After 1975, most near-term changes in benefits were automatic cost-of-living increases, though legislation occasionally affected the timing of these changes. Also, there were occasional retroactive payments related to a new interpretation of rules and processing efficiencies, which we identify from news reports. For these post-1975 benefit changes, we again discuss the size, permanence, and timing of the changes, along with any information on the reasons for the actions. Since our interest is in the short-run macroeconomic effects of benefit changes, we measure the size of the changes by the near-term impact on the level of benefits.

Social Security Act Amendments of 1952 (Enacted July 18, 1952)

October 1952: $0.6677 billion permanent benefit increase

This legislation increased old-age and survivors benefits by roughly 12½ percent. It also provided additional funds to the states for public assistance for impoverished aged, blind, and disabled beneficiaries.

The motivation for the increase was to keep up with the inflation that had occurred during the Korean War. The report of the Senate Finance Committee stated that "The rapid rise in wages and prices during the last few years makes immediate benefit adjustments imperative" (Senate Finance Committee, 82d Congress, 2d Session, Senate Report No. 1806, "Social Security Act Amendments of 1952," June 23, 1952, p. 2). The 1953 *Economic Report of the President* also suggested this motivation as well, stating that the Social Security system "has been partially strengthened against the tide of inflation" (p. 123).

The Finance Committee report stated disbursements would occur in the last three months of 1952, so the first higher checks were received in October (Senate Finance Committee, 82d Congress, 2d Session, Senate Report No. 1806, "Social Security Act Amendments of 1952," June 23, 1952, p. 16). The *Social Security Bulletin* also said that the new benefits table was applicable to September 1952, and so would be reflected in October checks (Cohen, "Social Security Act Amendments of 1952," September 1952, p. 4). The increase in Social Security benefits was expected to cost $400-450 million in the first full year of operation (1953) (Senate Finance Committee, Senate Report No. 1806, p. 16). The public assistance provisions cost an additional $242.7 million annually (Cohen, "Social Security Act Amendments of 1952," Social Security

[29] We have also examined the narrative record for 1951 and found no Social Security benefit increases in this year.

Bulletin, September 1952, p. 9). Therefore, we identify an increase in benefits of $667.7 million ($425 million—the midpoint of the estimates—plus $242.7 million) in October 1952. The Social Security benefit increase was intended to be permanent. The public assistance increase was legislated for two years, with the understanding it would come up for renewal (Cohen, p. 9). Since people quite likely expected the increase to be renewed, we treat the entire benefit rise as permanent.

There were no tax increases included in this legislation. According to the Senate Finance Committee, the rise in earnings over the previous three or four years meant that the trust fund would remain in actuarial balance despite the benefit increase (Senate Finance Committee, 82d Congress, 2d Session, Senate Report No. 1806, "Social Security Act Amendments of 1952," June 23, 1952, p. 8).

Social Security Amendments of 1954 (Enacted September 1, 1954)

October 1954: $0.64 billion permanent benefit increase

This legislation raised Social Security benefits substantially, extended Social Security taxes and eventual benefits to many people not previously covered (most notably self-employed farmers), and extended the public assistance provisions of the 1952 amendments.

The primary motivation for the benefit increase was again to ensure that benefits kept pace with inflation that had already occurred. The report of the Ways and Means Committee stated: "The level of benefits thus established will represent a realistic floor of protection in line with current price and wage levels" (Ways and Means Committee, 83d Congress, 2d Session, House Report No. 1698, "Social Security Amendments of 1954," May 28, 1954, p. 15). The Senate Finance Committee report said the increase was needed "to bring benefits more in line with present-day price and wage levels" (Senate Finance Committee, 83d Congress, 2d Session, Senate Report No. 1987, "Social Security Amendments of 1954," July 27, 1954, p. 1).

According to the *Social Security Bulletin*, the benefit increase was effective in September, and so affected checks starting in October 1954 (Cohen, Ball, and Myers, "Social Security Act Amendments of 1954: A Summary and Legislative History," September 1954, p. 3). The same source estimated that in 1955 (the first full year of higher benefits), the cost of Social Security benefits overall would be higher by $640 million (p. 14). The Senate Finance Committee report gave a slightly higher number of around $700 million (Senate Finance Committee, 83d Congress, 2d Session, Senate Report No. 1987, "Social Security Amendments of 1954," July 27, 1954, p. 32), but we use what appears to be the final number from the *Social Security Bulletin*. The increase was for "beneficiaries presently on the rolls as well as for those qualifying in the future" (Cohen, Ball, and Myers, p. 7). That is, it was intended to be permanent.

As discussed in Romer and Romer (2009, pp. 30-31), the legislation increased Social Security taxes by $0.5 billion in January 1955 to partially pay for the spending increase.

Social Security Amendments of 1956 (enacted August 1, 1956)

December 1956: $0.485 billion permanent benefit increase
August 1957: $0.2784 billion permanent benefit increase

These amendments primarily extended benefits to people unlikely to be working. In particular, it allowed widows and mothers with dependent children to receive full retirement

benefits at age 62 rather than age 65. (The law also allowed working women and wives to take reduced benefits starting at age 62, but this provision was not expected to account for a significant fraction of the cost, at least initially). The amendments also set up the disability insurance program, which provided cash benefits for people aged 50-65 who had contributed to the Social Security program and who were unable to work because of disability.

The motivation for the act was to increase the economic security provided by the Social Security program. The Ways and Means Committee report said that the changes would "strengthen the old-age and survivors insurance program" (Ways and Means Committee, 84th Congress, 1st Session, House Report No. 1189, "Social Security Amendments of 1955," July 14, 1955, p. 2). President Eisenhower, in his signing statement, expressed some concern about the expansion of benefits, but was "hopeful that this new law, on the whole, will advance the economic security of the American people" (Eisenhower, "Statement by the President Upon Signing the Social Security Amendments of 1956," August 1, 1956, p. 1).[30]

According to a Senate Finance Committee print, the lower age of benefits for women was payable beginning in November 1956, so it appeared in December 1956 checks (Senate Finance Committee, "Old-Age, Survivors, and Disability Insurance and Public Assistance: Showing Changes Made by the Social Security Amendments of 1956," 1956, p. 12).[31] The *Social Security Bulletin* indicates that the disability payments first showed up in checks in August 1957 ((Myers, "Old-Age and Survivors Insurance: Financing Basis and Policy Under 1956 Amendments," September 1956, Table 3, p. 18). The new disability benefits were estimated to cost $116 million in 1957 (Myers, Table 6, p. 20). Since this amount was for only five months, this implies an increase in benefits at an annual rate of $278.4 million. The total increase in benefits from the amendment in 1957 was $601 million (Myers, p. 18). Subtracting off the $116 million due to disability payments leaves $485 million for the benefit increases beginning in December 1956. All of the changes were intended to be permanent.

The legislation also increased the Social Security tax rate effective January 1, 1957 to pay for the benefit increases. The revenue effect was $0.9 billion at annual rate (Romer and Romer, 2009, p. 32).

Social Security Amendments of 1958 (enacted August 28, 1958)

October 1958: $0.2 billion permanent benefit increase
February 1959: $0.709 billion permanent benefit increase

This act increased benefit amounts by about 7 percent for both retired and disabled workers. It also provided dependents' benefits for people receiving disability payments.

The primary motivation for the increase was to keep up with inflation. The Ways and Means Committee report said: "The old-age and survivors insurance benefit structure ... [has] not been revised by the Congress since 1954. Since that date there have been significant increases in wages and prices .... In the light of these developments, it is imperative that the Congress take prompt action to assure that the program be kept both effective and actuarially

[30] All presidential speeches cited in the paper are available from the *American Presidency Project*, www.presidency.ucsb.edu.

[31] The act also included expanded benefit payments for disabled children, which were payable beginning in January 1957. Because the *Social Security Bulletin* shows that these benefits were small, we include them in the December 1956 figure (Myers, "Old-Age and Survivors Insurance: Financing Basis and Policy Under 1956 Amendments," September 1956, Table 3, p. 18).

sound" (Ways and Means Committee, 85th Congress, 2d Session, House Report No. 2288, "Social Security Amendments of 1958," July 28, 1958, pp. 1-2). President Eisenhower seconded this motivation in his signing statement, saying: "The increases in benefits and in the tax base are desirable in the light of changes in the economy since these provisions were last amended in 1954" (Eisenhower, "Statement by the President Upon Signing the Social Security Amendments," August 29, 1958, p. 1).

According to the *Social Security Bulletin*, the higher benefit rates became effective in January 1959, and so first were reflected in checks for February 1959 (Schottland, "Social Security Amendments of 1958: A Summary and Legislative History," October 1958, p. 4). Disbursements were expected to be about $650 million higher in 1959 than under previous law (Myers, "Old-Age, Survivors, and Disability Insurance: Financing Basis and Policy Under the 1958 Amendments," October 1958, p. 19). Since the higher benefits were paid for only eleven months in that year, the increase at an annual rate was $709 million. The new dependents' benefits for disabled workers were payable in September 1958, so the first checks arrived in October 1958 (Schottland, p. 7). The *Social Security Bulletin* stated that disbursements in 1959, the first full year under the new dependents' benefits, would be $200 million (Myers, p. 20). All benefit increases in the law were permanent.

The Social Security Amendments of 1958 also legislated a tax increase of $1.1 billion beginning in January 1959 and another of $1.9 billion in January 1960. Though both increases were designed to offset the new spending in the legislation, the second occurred more than twelve months after the spending increase. Therefore, following our usual procedures, the first is classified as spending-driven; the second as deficit-driven (Romer and Romer, 2009, pp. 33-34).

Social Security Amendments of 1960 (enacted September 13, 1960)

December 1960: $0.2 billion permanent benefit increase
January 1961: $0.25 billion permanent benefit increase

One of the main changes contained in this law is not something we consider in this paper: the creation of a limited program to help pay for health care for the needy aged. The act did, however, also contain some benefit increases. It expanded disability benefits to disabled people younger than age 50. It also increased survivor benefits for children.

Most of the discussion of motivation focused on the high and rising cost of health care, and the problems faced by the elderly in paying for insurance and care (Senate Finance Committee, 86th Congress, 2d Session, Senate Report No. 1856, "Social Security Amendments of 1960," August 19, 1960, pp. 1-2). The motivation for the non-health related portions appears to have been a desire to increase the insurance component of the program. According to the *Social Security Bulletin*, the benefit extensions were recommended by the administration (Mitchell, "Social Security Legislation in the Eighty-sixth Congress," November 1960, pp. 16-17).

The increase in disability benefits was payable for November 1960, and so was reflected in December checks (Mitchell, "Social Security Legislation in the Eighty-sixth Congress," *Social Security Bulletin*, November 1960, p. 18). According to another article in the *Social Security Bulletin*, the cost of the new benefits in their first full year (1961) was estimated to be $200 million (Myers, "Old-Age, Survivors, and Disability Insurance: Financing Basis and Policy Under the 1960 Amendments," November 1960, p. 35). The increase in survivors' benefits was payable in December 1960, and so affected checks in January 1961 (Mitchell, p. 20).

Disbursements were estimated to be $250 million more in 1961 than they would have been under previous law (Myers, p. 34). The changes were all permanent.

The law contained no revenue provisions. Under intermediate cost estimates, it was estimated that the trust fund remained actuarially sound with the benefit increase (Myers, "Old-Age, Survivors, and Disability Insurance: Financing Basis and Policy Under the 1960 Amendments," *Social Security Bulletin*, November 1960, p. 36). The health care provisions were paid for out of general revenues (Mitchell, "Social Security Legislation in the Eighty-sixth Congress," *Social Security Bulletin*, November 1960, p. 14).

Social Security Amendments of 1961 (enacted June 30, 1961)

The Social Security Amendments of 1961 raised benefits and changed the Social Security program in important ways. In particular, it raised minimum benefits for retirees and disabled beneficiaries substantially, and raised benefits to widows and widowers by 10 percent. It also allowed men to retire at age 62 with an actuarially fair reduction in benefits.

This act is the one permanent change in Social Security benefits whose timing was explicitly motivated by the weak state of the economy. President Kennedy outlined the increase as part of his overall strategy to end the recession and encourage growth. He said: "I recommend that Congress enact five improvements in benefits, to become effective April 1. ... Besides meeting pressing social needs, the additional flow of purchasing power will be a desirable economic stimulus at the present time. Early enactment will serve this end" (Kennedy, "Special Message to the Congress: Program for Economic Recovery and Growth," February 2, 1961, p. 5). The 1962 *Economic Report of the President* was even more explicit that the timing was deliberately countercyclical. It said: "While transfer programs—like any Federal outlays—ought to stand on their merits, the precise timing of worthwhile new programs properly depends on economic conditions. The objectives of economic stabilization in 1961 argued strongly for speeding the introduction of programs like improvements in social security, scheduled to be adopted later" (p. 83). The Ways and Means Committee emphasized that "Under the improvements recommended in your committee's bill, additional purchasing power will be placed in the hands of people who very much need it" (Ways and Means Committee, 87th Congress, 1st Session, House Report No. 216, "Social Security Amendments of 1961," April 7, 1961, p. 3). Because the timing of the increase appears to be correlated by design with the state of the economy, we exclude this observation from our empirical analysis.

For completeness, however, it is useful to describe the other aspects of the benefit increase. According to the *Social Security Bulletin*, the benefit changes were effective August 1961 and so were reflected in the checks received in September (Cohen and Mitchell, "Social Security Amendments of 1961: Summary and Legislative History," September 1961, p. 3). The *Social Security Bulletin* gives two estimates of the aggregate size of the increase. In one article, it says new or increased benefits of $815 million would be paid in the first 12 months (Cohen and Mitchell, p. 4). In another, it gives an estimate of $310 million for the last four months of 1961 (implying an annual rate of $930 million) and "about $900 million higher than under the previous law" for 1962 (Myers, "Old-Age, Survivors, and Disability Insurance: Financing Basis and Policy Under the 1961 Amendments," *Social Security Bulletin*, September 1961, p. 17). $900 million seems a reasonable middle-ground estimate.

If we were including this episode in the analysis, it would be important to consider that about $440 million was to be paid to early retirees (Cohen and Mitchell, "Social Security

Amendments of 1961: Summary and Legislative History," *Social Security Bulletin*, September 1961, p. 4). Since most of these early retirees presumably would have been working previously, this portion of the benefit increase likely did not constitute an increase in personal income.

There were two tax increases included in the legislation. Social Security tax rates were increased in both January 1962 and January 1963. The earlier increase was relatively small ($0.4 billion), while the later increase was more substantial ($2 billion). Because the 1963 increase was more than twelve months after the related benefit increase, we classified that increase as being for deficit reduction (Romer and Romer, 2009, pp. 35-36).

Social Security Amendments of 1965 (enacted July 30, 1965)

September 1965: $2.32 billion permanent benefit increase
$10.62 billion one-time payment
January 1966: $0.2 billion permanent benefit increase

The main component of the Social Security Amendment of 1965 was the creation of the Medicare program. It also included a 7 percent increase in Old-Age, Survivors, and Disability Insurance (OASDI) benefits and a number of smaller changes in benefits for particular groups (such as eligible children aged 18-21 attending school).

The main motivation for the act was to provide greater security to the elderly by establishing a mandatory health insurance program. The problems of rising costs and lack of insurance had been discussed frequently in the 1950s and early 1960s (Cohen and Ball, "Social Security Amendments of 1965: Summary and Legislative History," *Social Security Bulletin*, September 1965, pp. 3-4), and a limited health benefit program for the aged had been created by the 1960 Social Security amendments. President Kennedy proposed what became the Medicare program in early 1963. He said: "A proud and resourceful nation can no longer ask its older people to live in constant fear of a serious illness for which adequate funds are not available" (Kennedy, "Special Message to the Congress on the Needs of the Nation's Senior Citizens," February 21, 1963, p. 3). The Ways and Means Committee report gave a very similar motivation for the action (Ways and Means Committee, 89th Congress, 1st Session, House Report No. 213, "Social Security Amendments of 1965," March 29, 1965, pp. 20-21).

The motivation for the benefit increase part of the bill was more prosaic: a need to keep up with inflation and raise standards of living. The Ways and Means Committee report stated: "The last general benefit increase was ... payable for January 1959. Since that date there have been changes in the wages, prices, and other aspects of the economy. ... [T]he combined effect of the 7-percent increase and the hospital insurance benefits will be to provide a substantial improvement in levels of living" (Ways and Means Committee, 89th Congress, 1st Session, House Report No. 213, "Social Security Amendments of 1965," March 29, 1965, p. 84).

President Johnson, in his Budget Message, said that the benefit increase and hospital insurance program were part of "an overall fiscal policy designed to maintain our steady economic expansion" (Johnson, "Annual Budget Message to the Congress, Fiscal Year 1966," January 25, 1965, p. 1). Though President Johnson talked about the fact that "our economy is still producing at a level well below its potential" (p. 1), it is clear the 1965 act was not countercyclical in any conventional sense. The 1965 *Economic Report of the President* emphasized that conditions were "excellent" (p. 3); the Administration just believed "continued rapid expansion of output is called for in 1965" (p. 98).

The two largest components of the benefits increase, the 7 percent increase to OASDI and the continuation of children's benefits to age 21, were made retroactive to January 1965. According to the 1966 *Economic Report of the President*, "The retroactive portion of increased benefits, amounting to $885 million, was disbursed in September" (p. 52). We therefore identify a one-time payment at an annual rate of $10.62 billion in September 1965. The *Social Security Bulletin* projected that additional cash payments because of the act would be $2.32 billion in 1966 (Cohen and Ball, "Social Security Amendments of 1965: Summary and Legislative History," September 1965, p. 16). We take this as a measure of the permanent increase in benefits (at an annual rate), which appeared in checks in September 1965.

In addition to the temporary and permanent increases in benefits in September 1965, the act also raised taxes. There was a $6 billion spending-driven tax increase in January 1966 and another $1.5 billion spending-driven increase in January 1967 (Romer and Romer, 2009, pp. 41-42).

Tax Adjustment Act of 1966 (enacted March 15, 1966)

November 1966: $0.115 billion permanent benefit increase

The main feature of the Tax Adjustment Act of 1966 was a temporary tax increase "designed to reduce inflationary economic pressures generated by the increased military and economic expenditures for Vietnam in an economy rapidly approaching full employment" (Joint Committee on Internal Revenue Taxation, "Summary of the Tax Adjustment Act of 1966," March 29, 1966, p. 1). But it also included a small increase in Social Security benefits for older seniors. The act granted Social Security benefits to those 72 years of age or older, even if they had no quarters of qualifying employment. Because the benefit increase was added late in the legislative process, it was not discussed in the Committee reports. However, President Johnson, in his signing statement, said the motivation for this provision was "bringing economic security to older citizens" (Johnson, "Statement by the President Upon Signing the Tax Adjustment Act of 1966," March 15, 1966, p. 1).

According to the summary of the act by the Joint Committee on Internal Revenue Taxation, the new benefits were payable for October 1966, so the checks would reach households in November (Joint Committee on Internal Revenue Taxation, "Summary of the Tax Adjustment Act of 1966," March 29, 1966, p. 2). Payments in the first full fiscal year under the law (1968) were estimated to be $115 million (p. 26). The benefit increase was legislated to be permanent.

The Tax Adjustment Act of 1966 included an excise tax increase of $0.9 billion starting in April 1966. Since it was designed to counteract the impact of a long-run cut in excise taxes on telephones and automobiles, we classify it as being for long-run purposes (Romer and Romer, 2009, pp. 42-43). The tax increase was explicitly temporary. There were no changes in Social Security taxes associated with the benefit increase.

Social Security Amendments of 1967 (enacted January 2, 1968)

March 1968: $3.5 billion permanent benefit increase

The Social Security Amendments of 1967 provided a 13 percent increase in old-age, survivors, and disability insurance benefits. It also included substantial increases in the public assistance and child welfare provisions of the Social Security Act.

The motivation for the increase appears to have been to increase standards of living for the elderly and to reduce poverty. In 1966, President Johnson commissioned a study "of ways and means of making social security benefits more adequate" (Cohen and Ball, "Social Security Amendments of 1967: Summary and Legislative History," *Social Security Bulletin*, February 1968, p. 4). In a speech to Congress, Johnson said: "I propose Social Security legislation which will bring the greatest improvement in living standards for the elderly since the Act was passed in 1935" (Johnson, "Special Message to the Congress Proposing Programs for Older Americans," January 23, 1967, p. 2). And in his signing statement, he said that because of the increase in benefits, "1 million more people will be lifted above the poverty line" (Johnson, "Statement by the President Upon Signing the Social Security Amendments and Upon Appointing a Commission To Study the Nation's Welfare Programs," January 2, 1968, p. 1). The Congressional reports did not give much additional information about motivation. Instead, they emphasized that Congress was following the Administration's recommendations (see, for example, Senate Finance Committee, 90th Congress, 1st Session, Senate Report No. 744, "Social Security Amendments of 1967," November 14, 1967, p. 7).

A summary of the amendments said that the increased benefits were "first payable for the month of February 1968 and will be reflected in checks received early in March" (Senate Finance Committee and Ways and Means Committee, 90th Congress, 1st Session, "Summary of Social Security Amendments of 1967," December 1967, p. 1). The same summary gave a dollar value of the benefit increase of more than $3 billion in the first twelve months (p. 1). Other miscellaneous benefit increases (such as additional survivors' benefits for children) bring the total somewhat higher. The *Social Security Bulletin* gave a total for the increase in disbursements under the new law of $2.9 billion in calendar year 1968 (Myers and Bayo, "Financing Basis of Old-Age, Survivors, and Disability Insurance and Health Insurance Under the 1967 Amendments," February 1968, p. 25). Since this was for only 10 months, it suggests an annual rate increase of approximately $3.5 billion. The benefit increase was permanent.

The Social Security Amendment of 1967 also raised taxes substantially in three steps. There were increases of $2 billion in January 1968, $3 billion in January 1969, and $3.6 billion in January 1971. The first two are classified as spending-driven because they occurred within a year of the related spending increases; the third is classified as deficit-driven (Romer and Romer, 2009, pp. 47-48).

Tax Reform Act of 1969 (enacted December 30, 1969)

April 1970: $4.116 billion permanent benefit increase
$8.232 billion one-time payment

The Tax Reform Act of 1969 primarily reduced taxes and reformed the tax code. But it also included a 15 percent increase in Social Security benefits.

President Johnson recommended an increase in his lame-duck Budget Message in January 1969. He gave as the motivation, "To enable social security beneficiaries to share more equitably in the productivity of our Nation" (Johnson, "Annual Budget Message to the Congress, Fiscal Year 1970," January 15, 1969, p. 11). President Nixon, in an address to Congress nine months later, stressed past inflation as the primary motivation for the increase: "The impact of an inflation now in its fourth year has undermined the value of every Social Security check and requires that we once again increase the benefits to help those among the most severely victimized by the rising cost of living" (Nixon, "Special Message to the Congress on Social Security," September 25, 1969, p. 1). He went even further and advocated automatic indexing

(also p. 1), but that provision was not included in this legislation. The Ways and Means Committee report did not give a clear indication of its motivation, saying only that extensive hearings had revealed "a pressing and urgent need for an across-the-board increase in the social security payments" (Ways and Means Committee, 91st Congress, 1st Session, House Report No. 91-700, "Social Security Amendments of 1969," December 5, 1969, p. 1).

None of the sources suggest that the increase was motivated by the state of the economy. President Nixon in his signing statement suggested that the increase in Social Security benefits was slightly larger than he thought necessary. He also said that it was irresponsible to be increasing the budget deficit (as this bill did) "at a time and in a way that raises prices" (Nixon, "Statement on Signing the Tax Reform Act of 1969," December 30, 1969, p. 1).

The *Social Security Bulletin* made clear that the higher benefits first appeared in the checks delivered in early April ("Notes and Brief Reports: Effect of OASDI Benefit Increases," June 1970, p. 17). It also reported that the new law raised benefits relative to previous law by about $343 million per month (p. 17). Therefore we date a permanent increase in benefits in April of $4.116 billion at an annual rate. Both the Ways and Means Committee report and the *Economic Report of the President* for 1970 said that the higher benefits were retroactive to January 1970 (Ways and Means Committee, 91st Congress, 1st Session, House Report No. 91-700, "Social Security Amendments of 1969," December 5, 1969, p. 2; and 1970 *Economic Report of the President*, p. 62). Since the April check was for benefits payable in March, this leaves 2 months of retroactive benefits. Using the $343 million per month yields a one-time payment (which also came in April) of $686 million, or $8.232 billion at an annual rate. This payment was clearly temporary.[32]

The Tax Reform Act of 1969 included a number of tax cuts. We classify some of them as countercyclical (−$6.7 billion in January 1970; −$4.7 billion in January 1971; and −$1.1 billion in January 1972), and some as being for long-run purposes (−$1.0 billion in January 1971 and −$1.0 billion in January 1972). There was no increase in payroll taxes to pay for the substantial benefit increase (Romer and Romer, 2009, pp. 49-53). The Ways and Means Committee report explained that "a recent revision in the long-range cost estimates of the system showed for the old-age, survivors, and disability programs an actuarial surplus ... sufficient to meet the cost of a 15-percent benefit increase" (Ways and Means Committee, 91st Congress, 1st Session, House Report No. 91-700, "Social Security Amendments of 1969," December 5, 1969, pp. 1-2).

Public Law 92-5: Public Debt; Social Security Benefit Increase (enacted March 17, 1971)

June 1971: $3.443 billion permanent benefit increase
$13.776 billion one-time payment

Public Law 92-5 was originally a bill to increase the ceiling on the national debt. Very late in the legislative process, a 10 percent Social Security benefit increase was added. This increase, along with other major revisions to the Social Security and Medicare programs, had been debated as the Social Security Amendments of 1970, which never passed the Senate.

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[32] The 1970 *Economic Report of the President* gave a figure of $4.4 billion for the permanent increase and $2.8 billion for the one-time payment (p. 62). While the $4.4 figure is not much different from the $4.1 billion we obtain from the *Social Security Bulletin*, the $2.8 billion is wildly different. At an annual rate, that would be nearly $34 billion, which is implausibly large. For example, it is vastly different from the rise in personal income in April 1970. For this reason, we assume it is an error of some sort and use the number from the *Social Security Bulletin*.

Congressional documents provide remarkably little information about the motivation for the benefit increase. However, given that the increase was a response to President Nixon's proposal, it is safe to assume that the President's motivation was central. Nixon argued forcefully for indexing Social Security benefits. In response to the House's passage of the Social Security Amendments of 1970, which included this provision, he issued a statement that said: "People receiving social security benefits have been among those hardest hit by a 5-year inflation of their cost of living. This reform would give them the peace of mind that comes from the certainty that the purchasing power of their benefit checks will not be eroded" (Nixon, "Statement About Passage by the House of the Social Security Amendments of 1970," May 22, 1970, p. 1). Thus, clearly a prime motivation was keeping up with inflation. President Nixon was disappointed that the 1971 measure did not include the cost-of-living escalator. But he said he signed it because "This measure provides some of the relief which the 26 million social security recipients have urgently needed for a long time" (Nixon, "Statement on Signing Bill Increasing Social Security Benefits," March 17, 1971, p. 1).

The benefit increase was made retroactive to January 1971. The *Social Security Bulletin* said, "The payment for May, mailed early in June, will be the first to reflect the 10-percent increase in monthly benefits, and a separate payment sent later in June will cover the retroactive amount of the increase for the months of January through April" ("Social Security in Review: Social Security Act Amended," May 1971, p. 1). A committee print from the Ways and Means Committee said that the cost of the permanent 10 percent benefit increase in calendar year 1971 would be $3.156 billion (Ways and Means Committee, 92d Congress, 1st Session, "Actuarial Cost Estimates for The Old-Age, Survivors, and Disability Insurance System as Modified by the Social Security Provisions of Public Law 92-5," March 24, 1971, p. 7). Since this was for only 11 months of higher checks, this is an increase of $3.443 billion at an annual rate. The retroactive payment, which was obviously temporary, was equal to four monthly payments, or $1.148 billion. At an annual rate, this is $13.776 billion.

Public Law 92-5 also included a spending-driven tax increase in January 1972 of $3.1 billion (Romer and Romer, 2009, p. 54).

<u>Public Law 92-336: Public Debt; Social Security Benefit Increase</u> (enacted July 1, 1972)

October 1972: $8 billion permanent benefit increase

A 20 percent increase in Social Security benefits was attached to a bill increasing the ceiling on the national debt. The bill also put in place automatic indexing of benefits going forward.

The motivation for the increase is a bit opaque. In March 1971, an advisory council recommended a number of changes to Social Security, including a 5 percent increase in benefits. The recommendations became part of a bill (H. R. 1) that was debated in 1971 and 1972. President Nixon, in message to Congress, recommended passage of this legislation (Nixon, "Special Message to the Congress on Older Americans," March 23, 1972, p. 2). The motivation appeared to be to make benefits more adequate and more secure in the face of inflation. The Ways and Means Committee Report on the bill discussed the need to "guarantee that future inflationary changes in the prices of goods and services will not erode the purchasing power of their benefits" (Ways and Means Committee, 92d Congress, 1st Session, House Report No. 92-231, "Social Security Amendments of 1971," May 26, 1971, p. 5). The benefit increase grew to 20 percent and was included as a Senate amendment to the debt ceiling bill (Ball, "Social Security Amendments of 1972: Summary and Legislative History," *Social Security Bulletin*, March 1973,

p. 12). President Nixon signed the legislation, but decried the fact that it was not completely self-financing. That he was concerned that the legislation threatened "to escalate the rate of inflation" suggests strongly that there was no countercyclical motivation to the bill (Nixon, "Statement on Signing a Bill Extending Temporary Ceiling on National Debt and Increasing Social Security Benefits," July 1, 1972, p. 1).

The *Social Security Bulletin* said that the benefit increase was effective for September 1972, indicating the first higher checks would be received in October ("Social Security in Review: Social Security Provisions Amended," September 1972, p. 1). The 1973 *Economic Report of the President* gave an estimated annual cost of $8 billion (p. 42). This number is broadly consistent with totals given in the *1973 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*, which shows total disbursements in Fiscal Year 1972 of roughly $35 billion (93d Congress, 1st Session, House Document No. 93-130, July 16, 1973, p. 6). A 20 percent increase would thus be $7 billion. The increase was permanent.

Public Law 92-336 included increases in the earnings base for Social Security taxes in January 1973 and January 1974, and increases in the Social Security tax rate in 1973 and later years. However, all of these changes other than the 1973 increase in the base were amended by the Social Security Amendments of 1972 before they went into effect (Ball, "Social Security Amendments of 1972: Summary and Legislative History," *Social Security Bulletin*, March 1973, p. 15). Together, the two laws increased taxes by $10.0 billion in January 1973 and another $2.9 billion in January 1978 (Romer and Romer, 2009, pp. 56-57). The 1973 change was spending-driven; the 1978 change, which was long after the spending increase, was for deficit reduction.

Social Security Amendments of 1972 (enacted October 30, 1972)

February 1973: $2.3 billion permanent benefit increase
February 1974: $1.4 billion permanent benefit increase

The Social Security Amendments of 1972 included a number of further increases and reforms originally debated in H. R. 1 in 1971 and 1972, but not included in the July 1972 increase. It raised benefits for widows and widowers, increased minimum benefits, and liberalized disability provisions. It also included introduction of a new federal program to provide minimum benefits to needy aged, blind, and disabled people: Supplemental Security Income (SSI). SSI replaced an existing federal-state joint program. The law also included many Medicare provisions, including coverage of the disabled, which are not the focus of our study.

The motivation for the bill was not keeping up with inflation, since that had been taken care of in Public Law 92-336 in March 1972. According to the Senate Finance Committee report, "In addition to making more adequate provision for widows and for disabled persons, the committee bill contains several provisions aimed at strengthening the work incentive features of the social security system" (Senate Finance Committee, 92d Congress, 2d Session, Senate Report No. 92-1230, "Social Security Amendments of 1972," September 26, 1972, p. 135). President Nixon, in his signing statement, said the legislation "will end many old inequities and will provide a new uniform system of well-earned benefits for older Americans, the blind, and the disabled" (Nixon, "Statement on Signing the Social Security Amendments of 1972," October 30, 1972, p. 1). The legislation was thus part of the reform process begun in 1971.

A committee print showed that most of the Social Security benefit increases were effective in January 1973, so the first higher checks would have come in February (Senate Finance

Committee and Ways and Means Committee, 92d Congress, 2d Session, "Summary of Social Security Amendments of 1972," November 17, 1972, pp. 1-8). The print gave an estimate of the increase in expenditures for Social Security cash benefits in calendar year 1974 (the first full year under the program) of $2.3 billion (p. 40). The new payments for Supplemental Security Income were effective January 1974 ("Social Security in Review: Social Security Amendments of 1972," *Social Security Bulletin*, January 1973, p. 2). SSI payments were made at the end of the month, so we date the first checks as February 1974. The committee print set the increase in SSI benefit payments in 1974 (which include 12 months of payments, so was at an annual rate) at $1.4 billion (p. 43). Both benefit increases were permanent.

As discussed regarding Public Law 92-336, the Social Security Amendments of 1972 changed some of the financing provisions of the previous act before they took effect, with the end result that the two acts together raised taxes $10.0 billion in January 1973 and $2.9 billion in January 1978 (Romer and Romer, 2009, pp. 56-57).

Public Law 93-66: Extension of Renegotiation Act of 1951 (enacted July 11, 1973)
Social Security Amendments of 1973 (enacted December 31, 1973)

February 1974: $0.27 billion permanent benefit increase
April 1974: $4.07 billion permanent benefit increase
July 1974: $2.33 billion permanent benefit increase
August 1974: $0.16 billion permanent benefit increase

Public Law 93-66 included a Social Security benefit increase of 5.9 percent ("Social Security in Review: Social Security Act Amended," *Social Security Bulletin*, September 1973, p. 1). It also raised SSI payments.

The motivation for the act was to provide a cost-of-living increase before automatic indexing took effect. Under the March 1972 act, which established indexing, the first automatic adjustment was to take place in January 1975. According to a committee print summarizing the act, "The new law provides for a special cost-of-living increase applicable only to benefits for June 1974 to December 1974, to be reflected in the checks people receive in early July 1974" (Senate Finance Committee and Ways and Means Committee, 93d Congress, 1st Session, "Summary of the Provisions of the Acts Extending the Temporary Debt Ceiling and the Renegotiation Act, Including the Social Security Provisions," July 17, 1973, p. 3). President Nixon reiterated this motivation in his signing statement, saying: "The critical feature of this bill ... is an increase in social security benefits of more than 5 percent next year in order to meet the rising costs of living" (Nixon, "Statement About Signing a Bill Increasing Social Security Benefits," July 11, 1973, p. 1).

Before the benefit increases took effect, however, a larger benefit increase was passed in the Social Security Amendments of 1973. This law raised cash benefits 11 percent in two steps: "7 percent payable with the benefit for March 1974 and 4 percent additional with the benefit for June" ("Social Security in Review: Social Security Act Amended," *Social Security Bulletin*, March 1974, p. 1). Automatic adjustment for inflation was then rescheduled to begin in July 1975. The new bill also increased SSI benefits further and made additional reforms to the program.

The motivation for the larger benefit increases was additional inflation. According to the Senate Finance Committee report: "Since this action [the July 1973 increase] was taken by the Congress, the cost of living has continued to rise, with a corresponding decline in the real

income of about 30 million social security beneficiaries. The Committee believes that these beneficiaries should not have to wait until the middle of next year for a cost-of-living increase" (Senate Finance Committee, 93d Congress, 1st Session, Senate Report No. 93-553, "Social Security Amendments of 1973," November 21, 1973, p. 10). President Nixon gave a similar rationale for the action, saying: "The bill I sign today will replace that increase in order to reflect more closely the rise in the cost of living since the last social security increase took effect in September of 1972" (Nixon, Statement About Signing a Bill to Increase Social Security Benefits," January 3, 1974, p. 1).

The first stage of the increase affected benefits for March 1974 and so was reflected in April checks. To deduce the size of the increase, we use the summary of provisions for the earlier law, which said that a 5.6 percent increase for 7 months cost $1.9 billion (Senate Finance Committee and Ways and Means Committee, 93d Congress, 1st Session, "Summary of the Provisions of the Acts Extending the Temporary Debt Ceiling and the Renegotiation Act, Including the Social Security Provisions," July 17, 1973, p. 3). That implies that a 1 percent rise for 12 months cost $0.5816 billion. Therefore, the 7 percent increase in April 1974 cost $4.07 billion at an annual rate. In July there was a 4 percent increase, which by the same reasoning involved additional expenditures of $2.33 billion at an annual rate. We deduce very similar estimates using figures in the report of the Senate Finance Committee (Senate Finance Committee, 93d Congress, 1st Session, Senate Report No. 93-553, "Social Security Amendments of 1973," November 21, 1973, p. 77). The benefit increases were permanent.

The SSI benefit increases took place on a slightly different schedule: the first was effective in January 1974 (with the start of the federal Supplemental Security Income program); the second was effective in July ("Social Security in Review: Social Security Act Amended," *Social Security Bulletin*, March 1974, p. 1). Because SSI checks go out late in the month, we date the increases in February and August 1974. The SSI increases were not given as straight percentages but as dollar figures. The benefit increases work out to 7.7 percent for January and 4.3 percent for July. A committee print gave a gross cost of the SSI cash benefits in 1974 (under the Social Security Amendments of 1972) of $3.5 billion (Senate Finance Committee and Ways and Means Committee, 92d Congress, 2d Session, "Summary of Social Security Amendments of 1972," November 17, 1972, p. 43). To calculate the cost of the benefit increase in January, we multiply $3.5 billion times 7.7 percent, for an annual rate cost of $0.27 billion. For the July increase we then multiply the resulting total of $3.77 billion ($3.5 billion + $0.27 billion) by 4.3 percent, for an annual rate cost of $0.16 billion. These changes were also permanent.

Both the pieces of Social Security legislation affected taxes. Together, they raised revenues by $4.2 billion in January 1974. The motivation for the tax increase was to pay for the benefit increase (Romer and Romer, 2009, p. 58).

Tax Reduction Act of 1975 (enacted March 29, 1975)

The Tax Reduction Act of 1975 included a one-time payment of $50 to all recipients of Social Security and SSI. This payment came from general revenues, not from the Social Security trust fund.

The motivation for this benefit payment was, like the rest of the act, to fight the recession occurring at the time. The Ways and Means Committee report on the bill, for example, said: "The U.S. economy has experienced its sharpest decline since the 1930's. The unemployment rate in January 1975 was 8.2 percent, the highest since 1941, and actual output is over $200

billion below potential output. This bill deals with these problems by providing a $20 billion tax reduction in 1975" (Ways and Means Committee, 94th Congress, 1st Session, House Report No. 94-19, "Tax Reduction Act of 1975," February 25, 1975, p. 3). Likewise, in his signing statement, President Ford said: "Our country needs the stimulus and the support of a tax cut and needs it now. I have therefore decided to sign this bill so that its economic benefits can begin to work" (Ford, "Address to the Nation Upon Signing the Tax Reduction Act of 1975," March 29, 1975, pp. 1-2). Because the payment was clearly for countercyclical purposes, we exclude it from our analysis.

The payments to Social Security and SSI beneficiaries were made in May and June of 1975. According to a committee print, the cost of the one-time payment was $1.7 billion (Ways and Means Committee, 94th Congress, 1st Session, "Summary of the Major Provisions of Public Law 94-12: Tax Reduction Act of 1975," April 1, 1975, p. 16). Assuming all of those payments reached households in a single month, that would be $20.4 billion at an annual rate. The payment was explicitly temporary.

Cost-of-Living Adjustment (June 1975)

July 1975: $5.048 billion permanent benefit increase

Beginning in July 1975, Social Security benefits were automatically adjusted for inflation, provided the rise in the CPI over the previous year was more than 3 percent. The cost-of-living adjustments were effective in June, and so were first reflected in checks in July. The cost-of-living adjustment effective June 1975 was 8.0 percent (Social Security Administration, http://www.ssa.gov/oact/cola/colaseries.html). To deduce a dollar value for the increase in benefits, we multiply the National Income and Product Accounts (NIPA) figure for Social Security transfers in June 1975 by 0.08. This gives an estimate of $5.048 billion. All automatic cost-of-living adjustments were permanent.[33]

Cost-of-Living Adjustment (June 1976)

July 1976: $4.608 billion permanent benefit increase

The cost-of-living increase effective June 1976 was 6.4 percent. Multiplying this percentage times the June number for Social Security transfers yields $4.608 billion. The benefit increase appeared in checks in July.

Cost-of-Living Adjustment (June 1977)

July 1977: $4.750 billion permanent benefit increase

The cost-of-living increase effective June 1977 was 5.9 percent. We estimate the increase in benefits in July to have been $4.750 billion.

[33] The 1975 adjustment was to inflation over the period 1974:Q2–1975:Q1. The 1976–1984 adjustments were to inflation over the four quarters ending in the January–March quarter preceding the adjustment. Since 1985, the adjustments have been to inflation in the four quarters ending in the July–September quarter preceding the adjustment.

Social Security Amendments of 1977 (December 20, 1977)

The Social Security Amendments of 1977 were a comprehensive reform to restore long-run solvency to the Social Security system. The Senate Finance Committee report emphasized that the bill "includes several provisions designed to improve the financial status of the social security cash-benefits trust funds which, under present law, face serious deficit situations both over the long run and in the next several years" (Senate Finance Committee, 95th Congress, 1st Session, Senate Report No. 95-572, "Social Security Amendments of 1977," November 1, 1977, p. 1). President Carter, in his signing statement, said that the legislation would assure "that the social security system will be financially sound well into the next century" (Carter, "Social Security Amendments of 1977 Statement on Signing S. 305 into Law," December 20, 1977, p. 1).

The primary benefit change involved correcting a flaw in the benefit formula that essentially corrected for inflation twice. This change, though large, only affected future beneficiaries and had no immediate impact on benefits paid. According to a Senate Finance Committee print summarizing the amendments, overall OASDI benefits would be reduced $440 million in calendar year 1978 (Senate Finance Committee, 95th Congress, 1st Session, "Summary of H. R. 9346, the Social Security Amendments of 1977 as Passed by the Congress," December 23, 1977, p. 16). The source of this change was various small provisions, such as the elimination of retroactive benefits for people for whom the payment would lead to permanently reduced benefits. Since most of these provisions also applied only to new beneficiaries, we do not include them in our analysis.

The Social Security Amendments of 1977 included a number of tax increases, all of which were designed to deal with the long-run solvency problems of the Social Security system. There were increases of $8.8 billion in January 1979; $1.7 billion in January 1980; $17.2 billion in January 1981; and $1.5 billion in January 1982. Later tax increases called for in the legislation were modified by the Social Security Amendments of 1983 (Romer and Romer, 2009, pp. 62-64).

Cost-of-Living Adjustment (June 1978)

July 1978: $5.72 billion permanent benefit increase

The cost-of-living increase effective June 1978 was 6.5 percent. We estimate the increase in benefits in July to have been $5.72 billion.

Cost-of-Living Adjustment (June 1979)

July 1979: $9.653 billion permanent benefit increase

The cost-of-living increase effective June 1979 was 9.9 percent. We estimate the increase in benefits in July to have been $9.653 billion.

Cost-of-Living Adjustment (June 1980)

July 1980: $15.787 billion permanent benefit increase

The cost-of-living increase effective June 1980 was 14.3 percent. We estimate the increase in benefits in July to have been $15.787 billion.

Cost-of-Living Adjustment (June 1981)
July 1981: $14.750 billion permanent benefit increase

The cost-of-living increase effective June 1981 was 11.2 percent. We estimate the increase in benefits in July to have been $14.750 billion.

Cost-of-Living Adjustment (June 1982)
July 1982: $10.885 billion permanent benefit increase

The cost-of-living increase effective June 1982 was 7.4 percent. We estimate the increase in benefits in July to have been $10.885 billion.

Social Security Amendments of 1983 (enacted April 20, 1983)
August 1983: $0.75 billion permanent benefit increase

The Social Security Amendments of 1983 implemented the consensus recommendations of the National Committee on Social Security Reform. It was primarily designed to ensure the actuarial soundness of the Social Security system. The Ways and Means Committee report said: "The primary focus of your Committee's bill is on restoring the financial soundness of the old age and survivors' insurance (OASI) program, which is facing severe cash shortfalls over the next 7 years" (Ways and Means Committee, 98th Congress, 1st Session, House Report No. 98-25, Part 1, "Social Security Act Amendments of 1983," March 4, 1983, p. 1). President Reagan in his signing remarks said: "We promised that we would protect the financial integrity of social security. We have" (Reagan, "Remarks on Signing the Social Security Amendments of 1983," April 20, 1983, p. 1).

Most of the benefit changes were either small changes relative to current law or affected only new beneficiaries. For example, the automatic cost-of-living increase scheduled for July 1983 was postponed until January 1984, and cost-of-living adjustments from then on were scheduled to occur in January (Svahn and Ross, "Social Security Amendments of 1983: Legislative History and Summary Provisions," *Social Security Bulletin*, July 1983, p. 25). This was a change in benefits relative to current law, not an actual decline in July 1983, so is not included in our sample. Likewise, the act gradually raised the retirement age. This change explicitly exempted those near retirement. The act also extended the Federal Supplemental Compensation program, which provided extra weeks of unemployment compensation benefits. Because such extensions in unemployment insurance inherently have a countercyclical component, it too is excluded.

The one benefit change that is relevant for our study is a permanent increase in SSI benefits effective July 1, 1983. The Ways and Means Committee report explained that this increase "would be in lieu of the cost-of-living increase in the Federal SSI benefits standard that would occur July 1, 1983 under current law" (Ways and Means Committee, 98th Congress, 1st Session, House Report No. 98-25, Part 1, "Social Security Act Amendments of 1983," March 4, 1983, p. 109). The amendments delayed the automatic cost-of-living adjustment for SSI to January 1984. Because SSI checks come late in the month, we date the increase in benefits in August 1983. The Senate Finance Committee report gave the cost of the SSI increase (based on Congressional Budget Office estimates) of $750 million in fiscal year 1984 (the first full year under the law) (Senate Finance Committee, 98th Congress, 1st Session, Senate Report No. 98-23,

"Social Security Act Amendments of 1983," March 11, 1983, p. 69).

The Social Security Amendments of 1983 included a number of tax increases, all aimed at dealing with the long-run solvency of the program. The increases were $12.1 billion in January 1984; $8.8 billion in January 1985; $4.2 billion in January 1986; $15.5 billion in January 1988; and $10.3 billion in January 1990 (Romer and Romer, 2009, pp. 72-73).

Retroactive Payments (November and December 1983)

November 1983 $5.3 billion one-time payment
December 1983 $6.4 billion one-time payment

According to an Associated Press (AP) news article: "A modernized data processing system has helped the Social Security Administration catch up with a backlog of cases which needed to be recomputed" (*Miami News*, "2 Million Social Security Checks to be a Little Fatter," October 19, 1983, p. 3A). The article said retroactive payments averaged $1000 for those receiving them, and gave a date for the arrival of the checks as "about December 3." As described in Section II, for cases such as this where we can identify a retroactive payment, we use the change in the NIPA Social Security transfers measure in the relevant month. Because the timing is ambiguous and appears to be spread over November and December 1983, we include both months. There were increases of $5.3 billion in November 1983 and $1.1 billion in December 1983. Since the December increase was on top of the increase in November, our estimate of the one-time payment in December is the November increase ($5.3 billion) plus the December increase ($1.1 billion), for a total of $6.4 billion. Because these are one-time retroactive payments, we classify them as temporary.

Cost-of-Living Adjustment (December 1983)

January 1984: $5.954 billion permanent benefit increase

The Social Security Amendments of 1983 delayed the July 1983 COLA for 6 months. The cost-of-living increase effective December 1983 was 3.5 percent. We estimate the increase in benefits in January 1984 to have been $5.954 billion.

Retroactive Payment (December 1984)

December 1984: $8.6 billion one-time payment

An AP news article said a group of beneficiaries (those who had earnings in 1982) had their checks recomputed and would be getting retroactive payments averaging $480 per person (*Spartanburg Herald-Journal*, "Social Security Benefits Going Up," October 31, 1984, p. A3). The checks were expected in December. The rise in Social Security transfers in December 1984 was $8.6 billion, which we use as our estimate of the size of the payment. This figure is moderately smaller than that implied by the article, which said more than 2 million people would get benefits averaging $480, implying an increase at an annual rate of about $12 billion. The one-time payment was temporary.

Cost-of-Living Adjustment (December 1984)

January 1985: $6.37 billion permanent benefit increase

The cost of living increase effective December 1984 was 3.5 percent. We estimate the increase in benefits in January 1985 to have been $6.37 billion.

Retroactive Payment (July 1985)

July 1985: $5.7 billion one-time payment

An AP news story on personal income in July 1985 reported a "$5-billion growth in retroactive Social Security payments that resulted from a recalculation of benefits for people who are still working while drawing payments" (*Lewiston (Maine) Daily Sun*, "S. S. Benefits Hike Aids U.S. Income Rise," August 20, 1985, p. 8). The rise in NIPA Social Security transfers for that month was $5.7 billion, which is the estimate we use. The change was temporary.

Cost-of-Living Adjustment (December 1985)

January 1986: $5.720 billion

The cost-of-living increase effective December 1985 was 3.1 percent. We estimate the increase in benefits in January 1986 to have been $5.720 billion.

Retroactive Payment (July 1986)

July 1986: $6.3 billion one-time payment

An AP news story on personal income for July 1986 stated: "The government said a large part of the increase came from retroactive adjustments to Social Security benefits for recent retirees" (*Sarasota Herald-Tribune*, "Personal Income Up; Housing Starts Fall," August 21, 1986, p. 1D). The average payment for those receiving the adjustment was $265 (*Wall Street Journal*, "Social Security Payments to Increase for 2 Million," July 1, 1986, p. 2). The increase in NIPA Social Security transfers in July 1986 was $6.3 billion, which is very similar to the annual rate implied by the *Wall Street Journal*'s statement that the retroactive benefits "will be more than $500 million" (p. 2). The increase was temporary.

Cost-of-Living Adjustment (December 1986)

January 1987: $2.548 billion permanent benefit increase

The Omnibus Budget Reconciliation Act of 1986 (signed October 21, 1986), eliminated the 3 percent minimum for the cost-of-living adjustment. The cost-of-living increase effective December 1986 was 1.3 percent. We estimate the increase in benefits in January 1987 to have been $2.548 billion.

Retroactive Payment (May 1987)

May 1987: $6.4 billion one-time payment

An AP article on personal income for June 1987 said: "The June and May increases in personal incomes were affected by a large increase in retroactive payments for Social Security benefits, which inflated the May advance" (*New York Times*, "June Spending Up 0.7% As Incomes Gained 0.4%," July 28, 1987, p. D2). The rise in NIPA Social Security transfers in May

was $6.4 billion. The increase was temporary.

Cost-of-Living Adjustment (December 1987)
January 1988: $8.480 billion permanent benefit increase

The cost-of-living increase effective December 1987 was 4.2 percent. We estimate the increase in benefits in January 1988 to have been $8.480 billion.

Retroactive Payment (March 1988)
March 1988: $4.9 billion one-time payment

An AP article on personal income for May 1988 reported: "March income was boosted by profit-sharing payments to auto workers and retroactive Social Security payments" (*Reading Eagle*, "May Personal Income Up Slightly," June 24, 1988, p. 27). The rise in NIPA Social Security transfers in March was $4.9 billion. The increase was a temporary, one-time payment.

Cost-of-Living Adjustment (December 1988)
January 1989: $8.58 billion permanent benefit increase

The cost-of-living increase effective December 1988 was 4.0 percent. We estimate the increase in benefits in January 1989 to have been $8.58 billion.

Retroactive Payment (March 1989)
March 1989: $6.2 billion one-time payment

An article in the *New York Times* reported that "the March slowdown [in personal income growth] came despite huge special payments to Americans that month. ... [T]he Social Security Administration paid retroactive increases in benefits" (*New York Times*, "The Savings Rate Keeps Climbing," April 28, 1989, p. D1). The rise in NIPA Social Security transfers in March was $6.2 billion. The increase was temporary.

Retroactive Payment (November 1989)
November 1989: $3.7 billion one-time payment

An AP article on the December rise in personal incomes explained that the rise "was reduced by decreases in retroactive Social Security benefit payments and in subsidy payments to farm proprietors" (*Daily Gazette*, "Personal Income, Spending Reported Higher," January 30, 1990, p. D12). This discussion of changes implies a rise in retroactive payments in the previous month (November 1989). The increase in NIPA Social Security transfers in November was $3.7 billion. The increase was temporary.

Cost-of-Living Adjustment (December 1989)
January 1990: $10.744 billion permanent benefit increase

The cost-of-living adjustment effective December 1989 was 4.7 percent. We estimate the increase in benefits in January 1990 to have been $10.744 billion.

Cost-of-Living Adjustment (December 1990)

January 1991: $13.489 billion permanent benefit increase

The cost-of-living adjustment effective December 1990 was 5.4 percent. We estimate the increase in benefits in January 1991 to have been $13.489 billion.

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