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BUDGET DEFICITS AND INTEREST RATES Storm on the horizon or all clear?

BY JOSH BIVENS

Despite the fact that the unemployment rate is currently 9.7% and projected to rise throughout much of 2010, many policy makers remain reluctant to take further strong action aimed at job creation in the short-term. Further, many commentators have applauded this reluctance.

Policy makers most commonly cite a concern over the federal budget deficit to justify their inaction on the jobs crisis. A previous primer explored the economics and arithmetic of budget deficits (Bivens 2010) and addressed a broad range of arguments made about them. One of the most widespread (and most pedigreed) arguments used to malign budget deficits is the claim that rising deficits will lead to rising interest rates that will choke off any incipient recovery. Deficit hawks invoke this specter every time these rates nudge upwards and routinely issue warnings about how today's low rates can "turn on a dime." This paper shows how these fears are misplaced. It argues that economic fundamentals are placing great *downward*, not *upward*, pressure on interest rates, and consequently, today's low rates will persist right up until the economy has begun a robust recovery that sharply reduces the current slack in labor and capital markets. It examines the historical relationships between deficits, savings, and interest rates and reviews the economic theories behind these relationships. Its key findings are:

- There is no evidence that large increases in the federal budget deficits during recessions or even periods of slower-than-trend growth are associated with rising interest rates.
- The mechanisms behind this non-relationship are clear—rising *public* borrowing during recessions generally just makes up for falling *private* borrowing, leaving pressure on interest rates in the markets for savings and investment roughly unchanged. Further, private savings rates tend to rise during recessions as

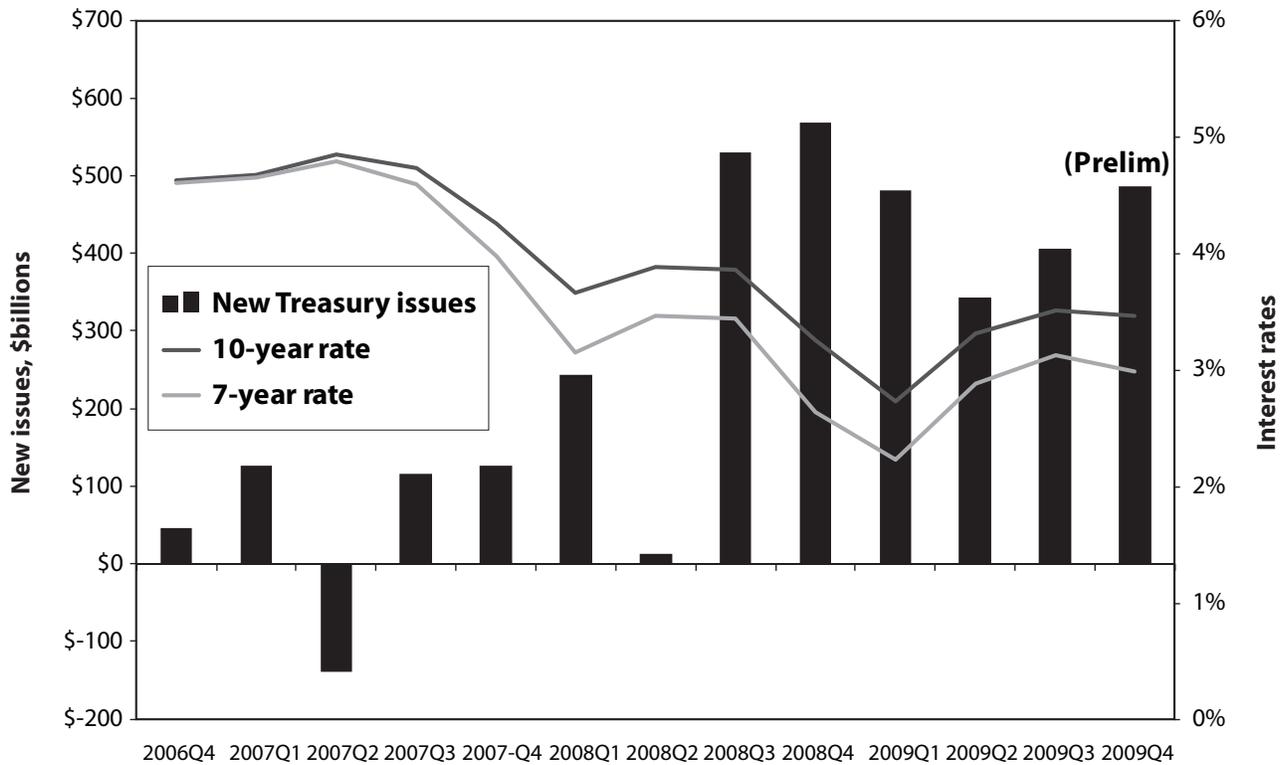
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FIGURE A

New Treasury issues and long-term interest rates



SOURCE: Treasury Department and Federal Reserve data.

households cut back consumption and businesses cut back on new investments. This, all else equal, increases the pool of funds available for borrowing and actually puts *downward* pressure on interest rates.

- The correspondence in the current recession between large increases in the federal budget deficit and historically low interest rates is *not* a fluke or a puzzle. Indeed, there is no serious reason to expect interest rates to rise until a robust recovery is underway and pre-recession unemployment rates are approached.

The arguments about budget deficits and interest rates, in a nutshell

Figure A provides the empirical base for ignoring interest rate fear-mongering in the current economic environment.

The bars in this figure show new borrowing by the federal government since the end of 2006, while the lines show interest rates on long-term Treasuries. As the figure shows, large recent increases in federal government borrowing have clearly not translated into spiking interest rates.

The most important thing to note about this lack of correspondence is that *it is not a puzzle*. This paper will explain why.

The very short version as to why deficits are *not* leading to rising interest rates right now is as follows: deficits only put upward pressure on interest rates when there are no idle resources in the economy. Resources are idled as households and businesses pull back on new spending and throw the economy into recession. Further, part of this spending pullback is reduced demand for new investments, and this translates directly into *lower* interest

rates as less new borrowing is needed to fund investments. In short, the upward pressure put on interest rates by increased *public* borrowing is fully offset (and then some) by downward pressure on interest rates coming from reduced *private* borrowing.

The very short version of the case *against* federal budget deficits that is based on interest rate fears relies on the assumption that private-sector savings and investment demands are fixed, and consequently as the government begins borrowing more (i.e., it begins to run budget deficits) it is competing against (fixed) private-sector borrowers for (fixed) scarce private savings. This competition bids up the cost of borrowing (i.e., interest rates) and this rise in borrowing costs leads to less private investment. Future living standards depend in part on the size of the capital stock, so less investment today that leads to a smaller capital stock tomorrow can hamstring future growth.

This latter story is not implausible, and indeed there are economic times and places where policy makers should worry about just these circumstances. However, the United States in 2010 (as in 2009 and almost surely 2011) is not such a time and place. Today's increased public borrowing is not happening while private-sector borrowing is fixed, it is instead occurring in the midst of a record *reduction* in private-sector borrowing and spending

The rest of this briefing paper provides more background on the link between deficits and interest rates. The first section is an overview of how interest rates are determined in the U.S. economy, discussing issues related to the Federal Reserve and market for debt (or loanable funds). The second section examines trends in private savings and spending in the current recession and outlines their implications for interest rates. The third section examines trends in public borrowing and spending and outlines how public and private savings have interacted in the current recession to affect interest rates. It concludes by arguing that increases in the federal budget deficit will not push up interest rates for years to come and certainly not before a robust recovery is underway and pre-recession levels of unemployment are approached. As a robust recovery is achieved, then (and only then) the budget deficit should start being reduced.

The Federal Reserve and the market for loanable funds

The Federal Reserve (or, the Fed) controls a couple of crucial interest rates in the economy—essentially the rates that set the price for very short-term (overnight) loans of reserves from the Fed to banks. The common description that the Fed “sets” interest rates may give the impression that the Fed controls all interest rates in the economy. It does not.

The interest rates that matter most for the decisions of businesses and consumers to borrow and spend are interest rates on debt that is longer-term than overnight loans from the Fed, riskier than reserves at the Fed, and which can be affected greatly by movements in inflation.

Take interest rates in the market for corporate debt, for example. Firms that wish to expand plant and equipment purchases may decide to borrow (issue bonds) to finance this investment. These bonds are typically long-term—they often have maturity dates quite a bit longer than overnight—three, five, or 10 years or even longer. Further, these bonds are risky—most private corporations, even the largest, are less insulated from the risk of defaulting on debt than the federal government. Lastly, holding private debt for a long time leaves the lenders exposed to the risk that a burst of inflation will degrade the value of these bonds.

Because of this, real (inflation-adjusted) interest rates in the market for long-term and risky debt will be quite a bit higher than the very short-term rates controlled by the Fed. The Fed's movement of short-term rates can *influence* these longer-term rates; as the Fed cuts short-term rates this should create some downward pressure on longer-term rates, mostly by providing the possibility of financial arbitrage on the part of potential lenders. But the real interest rate for risky, longer-term debt is also largely determined in active markets, not just through conventional Fed policy.¹

How the market for risky, longer-term debt (or, the loanable funds market) works

In a well-functioning economy, interest rate adjustments theoretically allow any given household's extra savings to be seamlessly translated into greater investment spending. The

market where savings and investment meet is the market for *loanable funds*. Savings (whether provided by domestic or foreign lenders) constitutes the supply of loanable funds in the economy while investment spending constitutes the demand. When savings (supply) exceed investment (demand), then interest rates (the price of loanable funds) should fall.² Lower interest rates should then spur demand for new investments. If all of this happens seamlessly, any pullback in household spending on consumption goods that makes extra savings possible should not harm the economy, as the market for loanable funds ensures that investment spending (responding to lower interest rates) rises one-for-one to offset the decline in consumer spending.³

Unfortunately, there's a hitch in this argument that makes large pullbacks in consumer spending almost never seamless for the overall economy: both overall savings and the demand for new investments (that is, the two sides of the loanable funds market) *depend on national income*. As national income rises, even if the savings rate

remains constant, *overall* savings rise and provide extra supply in the loanable funds market. Further, as national income rises, firms tend to respond by stepping up investment demand.

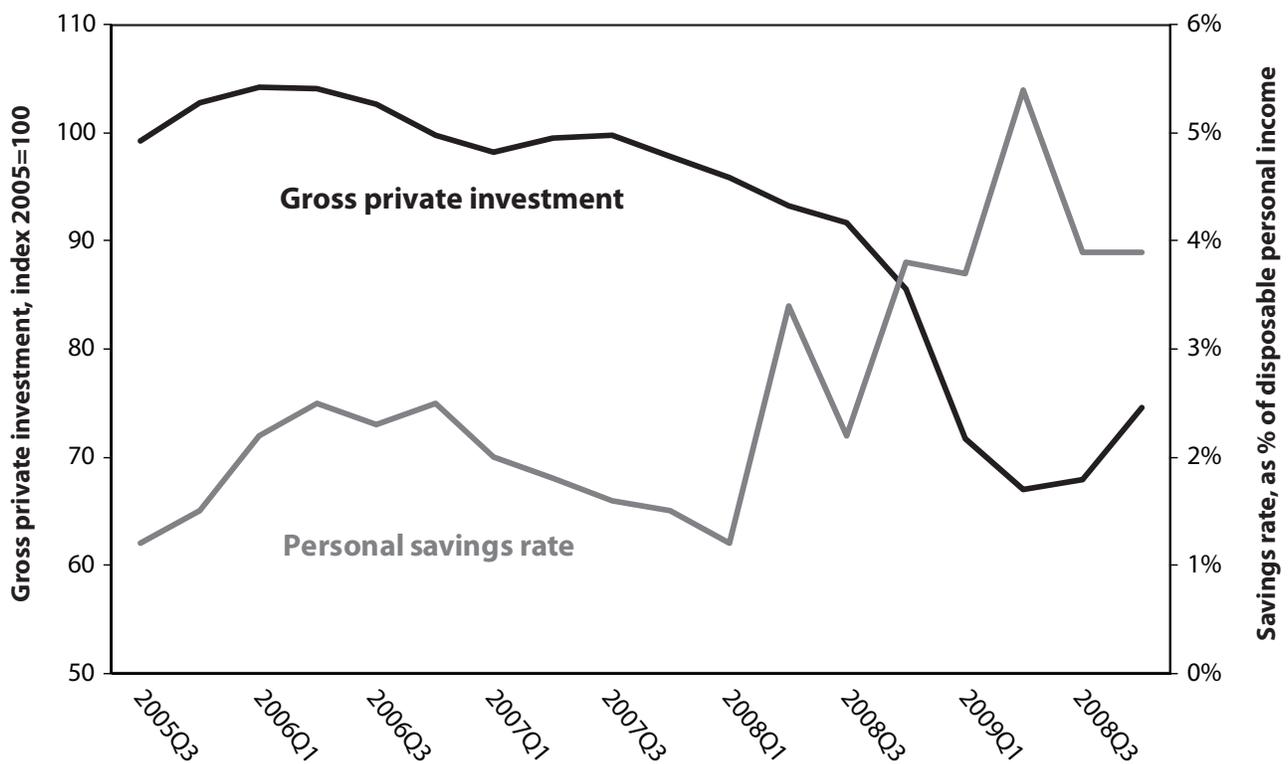
To put it more succinctly, many things besides interest rates determine the level of national savings and investment—and these other determinants have been moving wildly since the recession began. The next two sections describe these developments in the demand and supply side of the loanable funds market in some depth.

Private savings, spending, and interest rates in the current recession

The most important thing to note about developments in the private sector since the recession began is that *all* of the determinants of interest rates stemming from it are actually pushing them down, not up. Private *supply* for loanable funds has increased, while private *demand* has collapsed.

FIGURE B

Funds for borrowing: Demand down, supply up



SOURCE: Bureau of Economic Analysis.

Supply

On the supply side, the bursting of the housing bubble made tens of millions of households realize that they were less wealthy than they had previously thought. This has made them begin saving more to both meet long-run wealth goals (for retirement income or paying for kids' college education, for example) and to take precautions in the face of a higher probability that they will become unemployed.

Demand

On the demand side, this rise in savings by both households and businesses has not translated into a rise in investment demand.⁴ Instead, the pullback in consumer spending led to a large decline in total national incomes—not surprising, as consumer spending is roughly 70% of the overall U.S. economy. And because the overall state of the economy is a prime driver of the demand for new investment, this further led to a very sharp *reduction*

in demand for investments and the loanable funds often used to finance them.

Figure B illustrates this, charting the rise in the personal savings rate against the pronounced fall in total private investment. This quick examination of the private sector shows that leaping to the conclusion that interest rates must rise when public debt rises is to be guilty of ignoring what is happening in the private sector, both on the demand and the supply side of the loanable funds market.

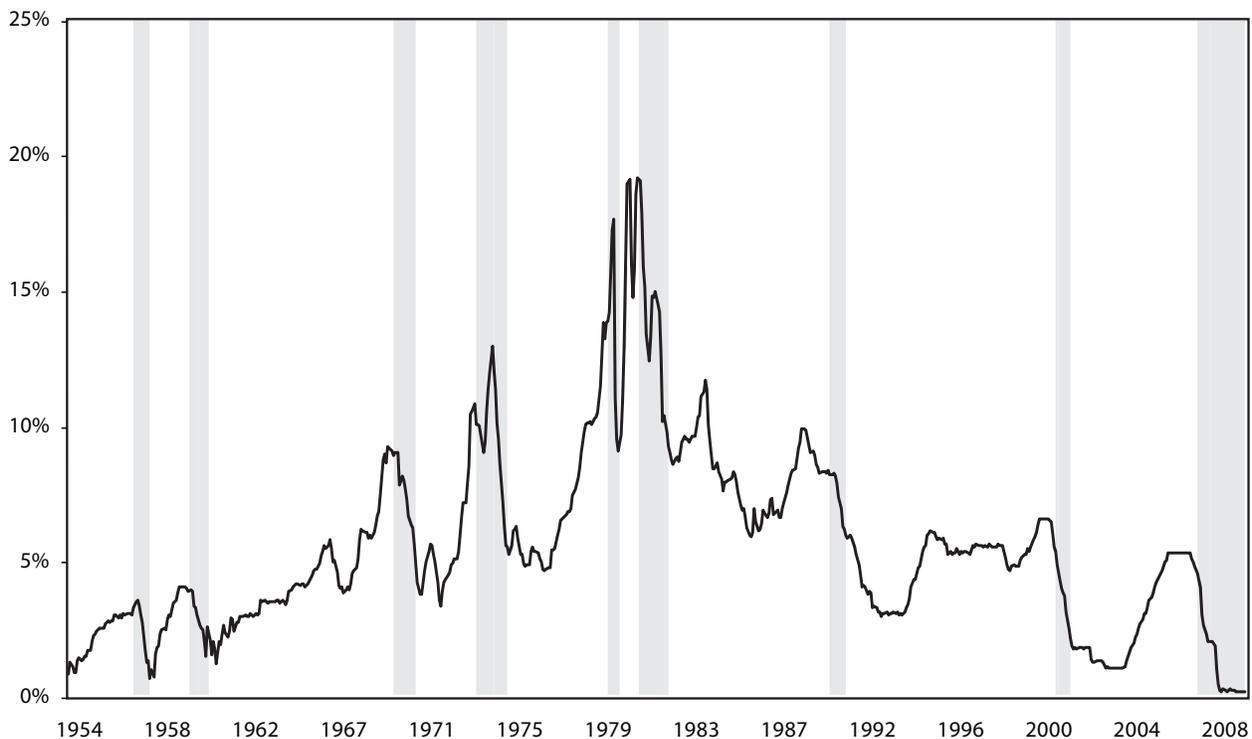
Federal Reserve policy

At the same time and in response to this same fall-off in private demand, the Fed has slashed the short-term rates it controls to effectively zero over the past three years (see **Figure C**).

Yet, even this aggressive action by the Fed has not been enough to spur investment spending and counter-balance the pullback in consumer spending caused by

FIGURE C

Effective federal funds rate



NOTE: Shaded areas indicate recessions.

SOURCE: Federal Reserve data.

the bursting housing bubble. And with the interest rate controlled by the Fed now near zero, they are essentially out of their conventional ammunition. If, somehow, the Fed could engineer negative interest rates, this could conceivably spur enough new investment demand to pull the economy back out of recession. Indeed, researchers at the San Francisco Federal Reserve had argued that interest rates of negative 5% to 6% would be needed for interest rate cuts alone to push the economy back to full employment.

However, negative nominal interest rates are impossible—people can (and will) always choose to hold their wealth in the form of cash (or checking accounts) rather than bonds if interest rates actually became negative. While zero nominal interest rates can be associated with negative real interest rates when there is inflation, the last year has seen the longest sustained period of deflation in the past 50 years, and driving real rates down through rapid inflation in a recessionary economy is unlikely unless the Federal Reserve undertakes a radically different course than it has ever pursued before. It very likely should undertake this course, but left alone, real interest rates will not go steeply negative because of expected inflation anytime soon.

Public savings and spending (budget deficits), the Recovery Act, and interest rates

The initial pullback in private spending has now cascaded into lost jobs and decelerating wage growth, leading to even further downward pressure on spending. And even worse than that, the Fed's interest rate cuts traditionally spur economic activity in part through increased home sales and home building. The housing bubble led to massive over-building in the residential (and to a slightly lesser extent, the commercial) real estate market, so far fewer new housing units or commercial buildings will be needed anytime soon, making this important mechanism ineffective.

To stop this downward cascade of private spending from pulling the economy into a depression, the American Recovery and Reinvestment Act (ARRA) was passed to ramp up *public* spending on relief and investments. It is important to note that the influence of ARRA on the deficit is actually quite small relative to the purely mechanical influence of a slowing economy on the federal

budget. As incomes and asset prices fall and as the labor market weakens, tax collections fall and safety net spending expands, even absent any policy change. The rise in the deficit that accompanied the extraordinary fall in private spending over the past year (a rise often referred to as the result, in part, of “automatic stabilizers”) exceeded \$800 billion in 2009 alone. ARRA, by contrast, increased the deficit by roughly \$180 billion in fiscal year 2009 and just under \$400 billion in fiscal 2010.

As the economy falls, deficits rise—thankfully

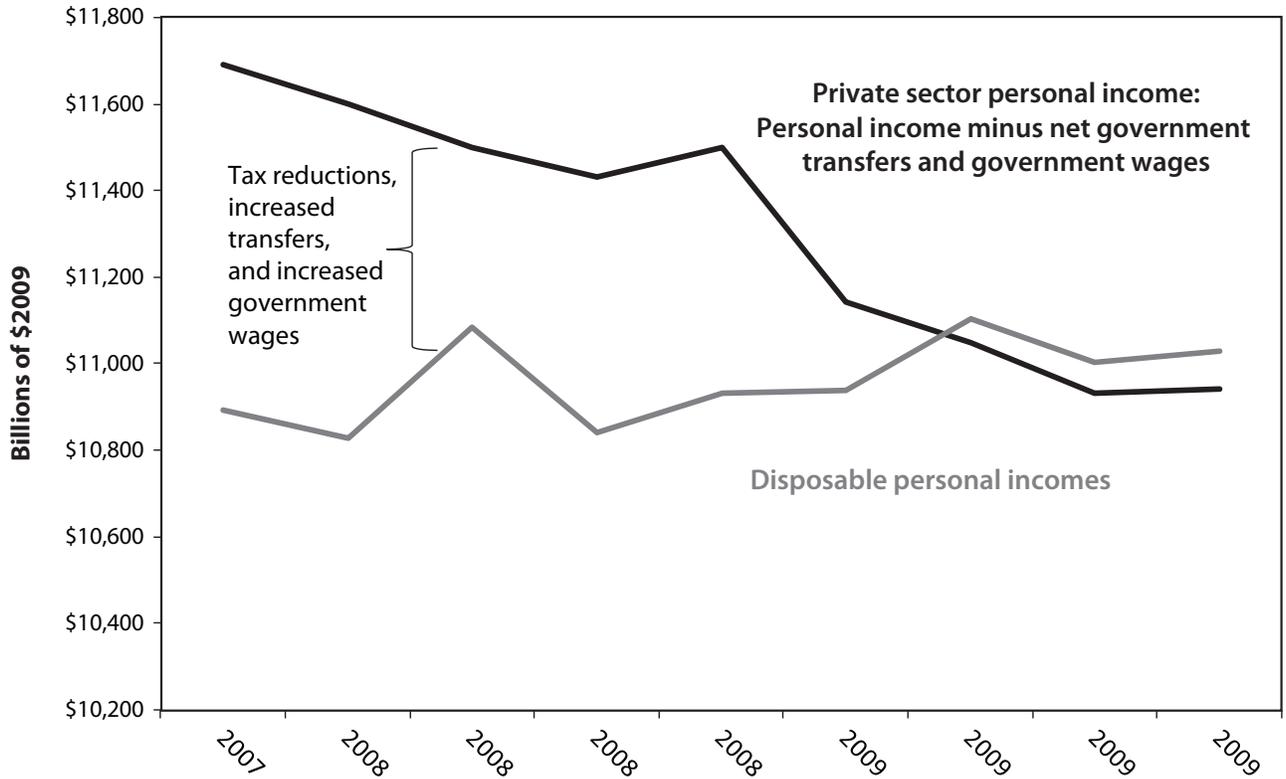
Given the conventional Beltway wisdom that budget deficits are always and everywhere damaging, it is perhaps surprising to hear that this large “automatic” rise in the budget deficit was a very good thing. Surprising or not, however, it certainly was. Without the rise in the government spending and reductions in taxes that led to the budget deficit, American households would have had over \$800 billion subtracted from their purchasing power.

How important was this stabilization provided by deficit-financed increases in spending and tax reductions? Macroeconomic forecasters from Goldman Sachs, for example, estimate that the pullback in private spending that began the current recession was larger (scaled against the overall economy) than that which characterized the beginning of the Great Depression. In 1930, however, the government targeted budget balance as a goal and the initial shock to private spending was *amplified* by reductions in public spending. In the current recession, the large increase in the deficit accompanying the initial shock to private spending was instead *muffled* by a concomitant rise in public spending.

However, while these automatic stabilizers cushioned the initial shock to the economy from the reduction in private spending, they did not completely neutralize it. Further public spending and increases in the deficit were needed and this is why ARRA was passed. It has, so far, largely done its advertised job: in the first three quarters of implementation (the second, third, and fourth quarters of 2009), ARRA added between 2 and 3 percentage points to overall GDP and created or saved between 1.5 to 2 million jobs. Over 2009, 2010, and 2011, ARRA will add roughly \$700 billion to the deficit.

FIGURE D

**Private sector incomes collapse,
public sector stabilizes spending power**



SOURCE: Bureau of Economic Analysis.

Figure D provides some evidence on how large deficits and public spending, both those arising from automatic stabilizers as well as those associated with ARRA, have muffled the initial shock to the economy. The figure compares data on *personal income minus transfers*, which can be thought of as a rough proxy for spending power generated by the private sector of the economy, and *disposable personal income*, which includes the effect of taxes and transfers on households' purchasing power. Personal incomes minus transfers have fallen by almost 7% since the recession began, while disposable personal incomes have actually *risen* slightly. This stabilization of disposable personal income kept consumer spending from falling even more than the 1% it has declined since the recession began. In short, looking at Figure D, one realizes that if consumer spending had tracked *personal incomes minus*

transfers instead of *disposable personal income*, that is, if there had not been large increase in the deficit, the economic contraction would have been much, much greater.

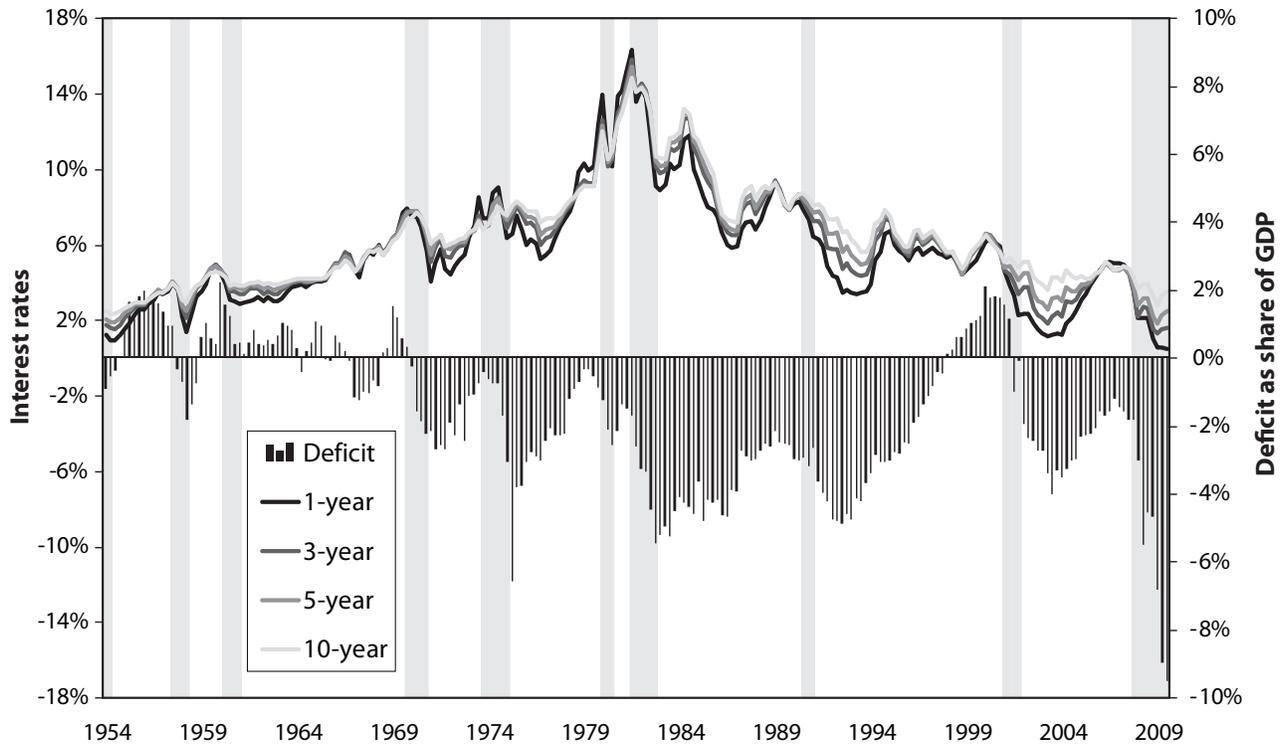
Will large deficits cause interest rates to rise?

We should not worry that large deficits (resulting either directly from the recession's impact on the federal budget or from temporary interventions aimed at fighting recession) will lead to large interest rate spikes and threaten to choke off the very recovery they were meant to encourage.

While the previous section provided the *reasoning* for this sanguine take (recent increases in public-sector borrowing are just mirroring pullbacks in private-sector borrowing), Figure E provides the *evidence*, tracking budget deficits and interest rates over time. In fact, large increases

FIGURE E

Federal budget deficit and interest rates on government debt



NOTE: Shaded areas indicate recessions.

SOURCE: Federal Reserve data.

in the budget deficit since 1954 are associated with large *falls* in interest rates. It is important to note again that *this is not a puzzle*. Large increases in the budget deficit occur exactly when the economy enters recession, hence the deficit rises just as private demand for loanable funds plummets. This is not a coincidence—it is automatic stabilizers (and sometimes legislated fiscal policy responses) in action. The plummeting private spending is also associated with a decline in private demand for loanable funds, as firms shelve plans for new plant and equipment. Further, as the economy enters recession, the Fed invariably begins cutting the interest rates that it controls.

Is public borrowing crowding out corporate financing?

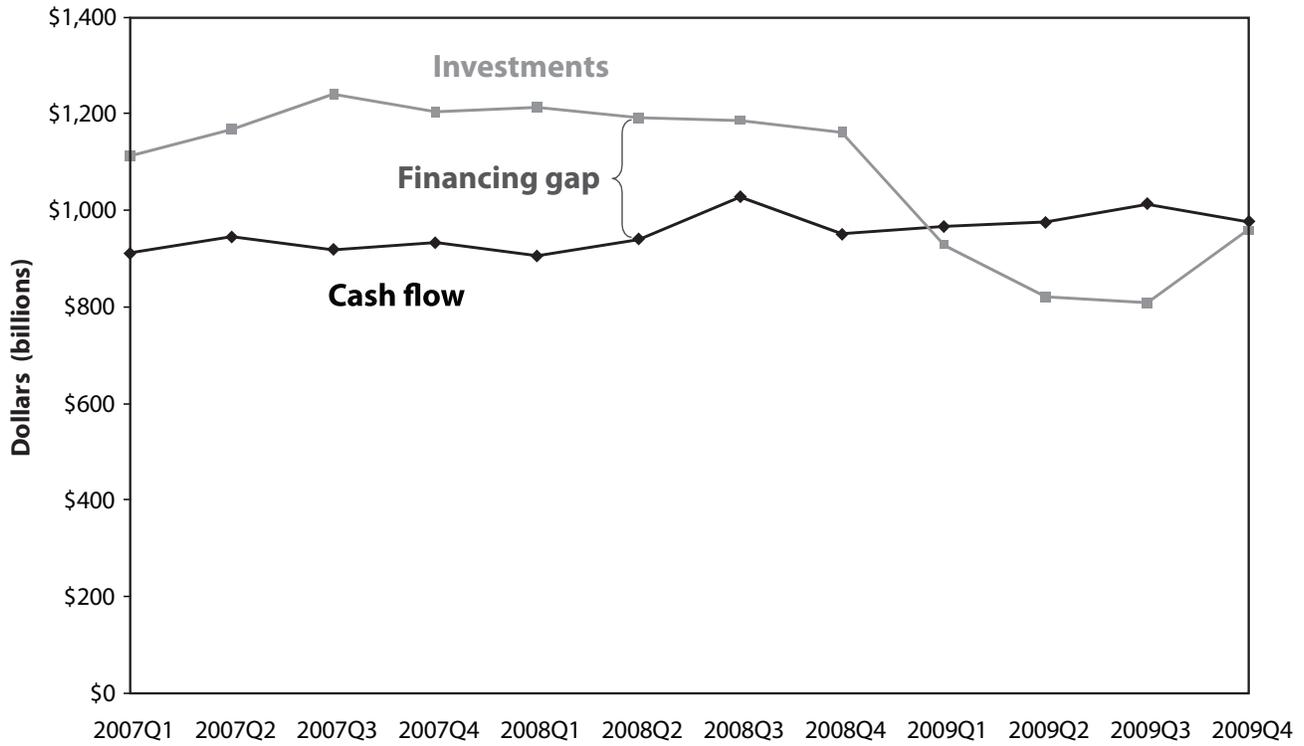
Figure F provides more direct evidence that growing public demands in the loanable funds market are not crowding

out desired private investments. This figure shows the corporate “financing gap”—the difference between cash flow and investment in fixed assets and inventories. If investments exceed cash flow internal funds, then firms will have to go into the loanable funds market to borrow.

For all of 2009, the corporate sector financing gap was actually *negative*—meaning that there was, on net, no need for the corporate sector to venture into the loanable funds market, as all investment could have been financed with internal funds. This negative financing gap is especially striking given the very large recession-induced decline in corporate cash flow. In this context, with demand for new investments and new borrowing in the private sector so small that it could be completely financed out of rapidly shrinking internal funds, it seems very hard to make the case that anybody is being “crowded out” of private investment opportunities by public borrowing.

FIGURE F

Cash flow and investment demands in the corporate sector



SOURCE: Federal Reserve data.

How soon do we need to worry about rising interest rates?

Given this pronounced weakness in private demand for new borrowing, interest rates will only begin rising if the economy begins moving briskly back to full employment. In a sense, rising interest rates would actually be *evidence that the economy is recovering*, not evidence that incipient recovery is being choked off by profligate government spending.

In short, we should worry about the impact of deficits on interest rates *only after* a robust recovery has put idle resources (labor and capital) back to work. This has not happened yet and is still years from happening. The Congressional Budget Office (CBO), for example, projects that a return to the pre-recession (2007) unemployment rate will occur only in 2014.⁶ Further, this recession also saw the capacity utilization rate (the share of the nation’s factory capacity that is in use) reach the lowest level since data on this began being collected in 1967. In short, absent

extraordinarily fast growth in coming years, there will be idle resources in the economy for quite some time.

Crowding-in more likely than crowding-out

Currently the economy is nowhere near the point where private activity is being crowded out. Private demand for loans has plummeted, and idle resources abound. Further, most economic studies of private investment decisions actually find that current GDP growth has a greater impact on investment than interest rates have.⁷ So, a stimulus package that adds to GDP will substantially *crowd-in* private investment through this so-called “accelerator” effect (rising GDP leading to rising investment spending).

Lastly, a robust economic recovery will actually provide its own moderating pressure on interest rates. As national income begins growing again, total national savings will mechanically rise—total national savings is generally an increasing function of national income, so as income rises savings will rise as well. This increase in

FIGURE G**10-year Treasury rates**

NOTE: Shaded areas indicate recessions.

SOURCE: Treasury Department data.

national savings will increase the supply of loanable funds, which will put downward pressure on interest rates.

Opponents of stimulus will use any uptick in interest rates to generate fear that deficits are threatening to choke off growth. In the last two weeks of June 2009 there were numerous stories about rising long-term interest rates and the role of deficits. The **Figure G** shows just how odd those claims were—long-term rates are wobbling up and down a little, but they have been very low since the fall of 2008 and remained so throughout the passage of ARRA.

The effect of the “flight to safety”

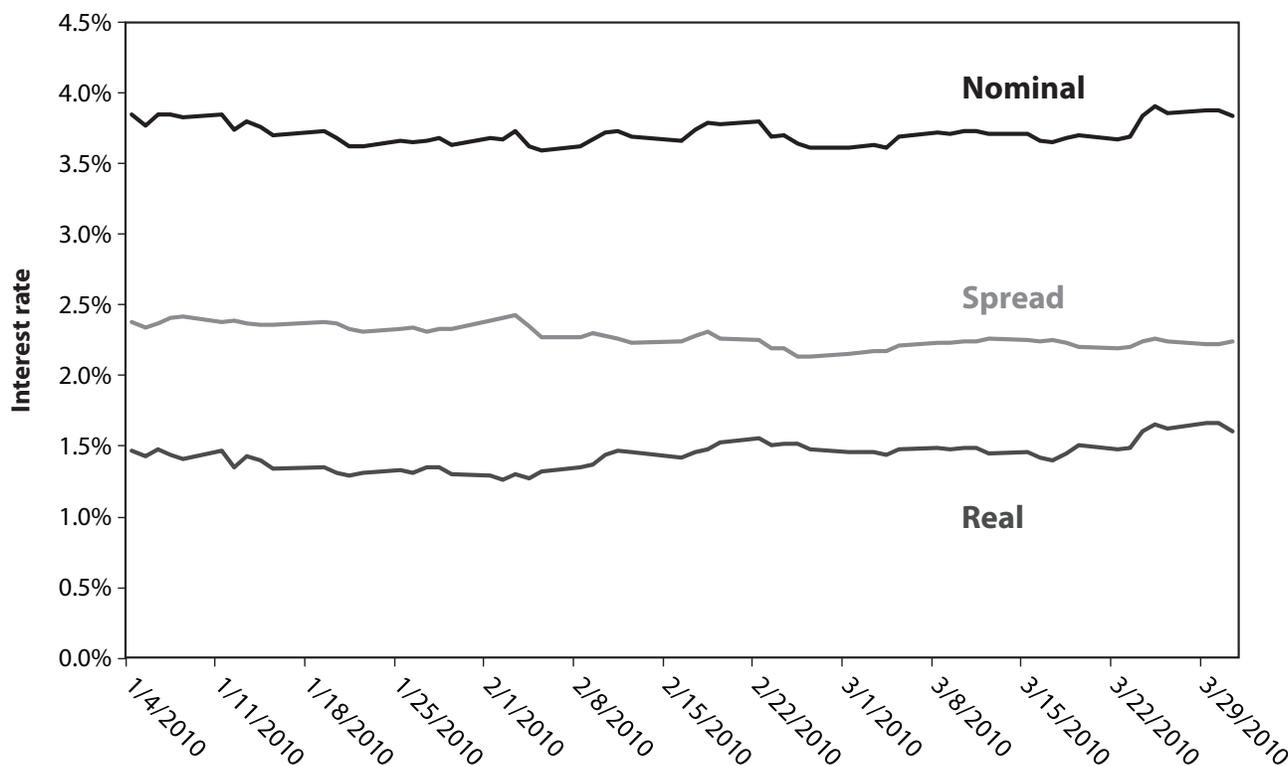
So, what happened in late spring 2009 to nudge up Treasury interest rates? Interest rates on government debt have many determinants besides the level of the federal deficit. The most important determinant over the past year has been the perceived level of risk of private alternatives to government debt as stores of wealth: the financial

crisis and widespread threat of bankruptcy in almost all major financial institutions made investors around the world scared of essentially *all* private debt instruments. They flocked to holding government bonds (this is sometimes labeled a “flight to safety”), driving up the prices of these bonds and driving down their interest rates to historical lows. As fears of widespread financial institution bankruptcy abate, it is expected that eventually investors would be willing to exchange public for private debt instruments, and this would lead to an uptick in interest rates on public debt. Again, this would not be a problem, rather it would be an indicator of economic recovery and stabilization.

Similarly, the last two weeks of March 2010 also saw a slight uptick in long-term rates. Given that these rates remained far below the pre-recession levels, it would have been obviously strange to make much of this. Instead, many commentators wrote that the large spread between

FIGURE H

**No inflation expectations in sight:
10-year nominal and real Treasury yields**



SOURCE: Treasury Department data.

short- and long-term interest rates were a worrisome sign, reflecting either fears of a default on government debt or higher expected inflation fears. However, most market indicators of expected inflation (which would surely be a precursor to wholesale default) show no such signs. The interest rate spread between nominal and inflation-protected bonds, for example, has not moved at all in the past few months (see **Figure H**). In short, while worries break out every time the long-term rate wobbles upward, there remain no signs at all that deficit spending is pushing up interest rates to a degree that is offsetting private-sector pressures that are pushing these rates down.

Are foreign investors providing a reprieve from higher interest rates?

It is clearly not true that we need to rely on foreign financing of recent budget deficits to keep interest rates from

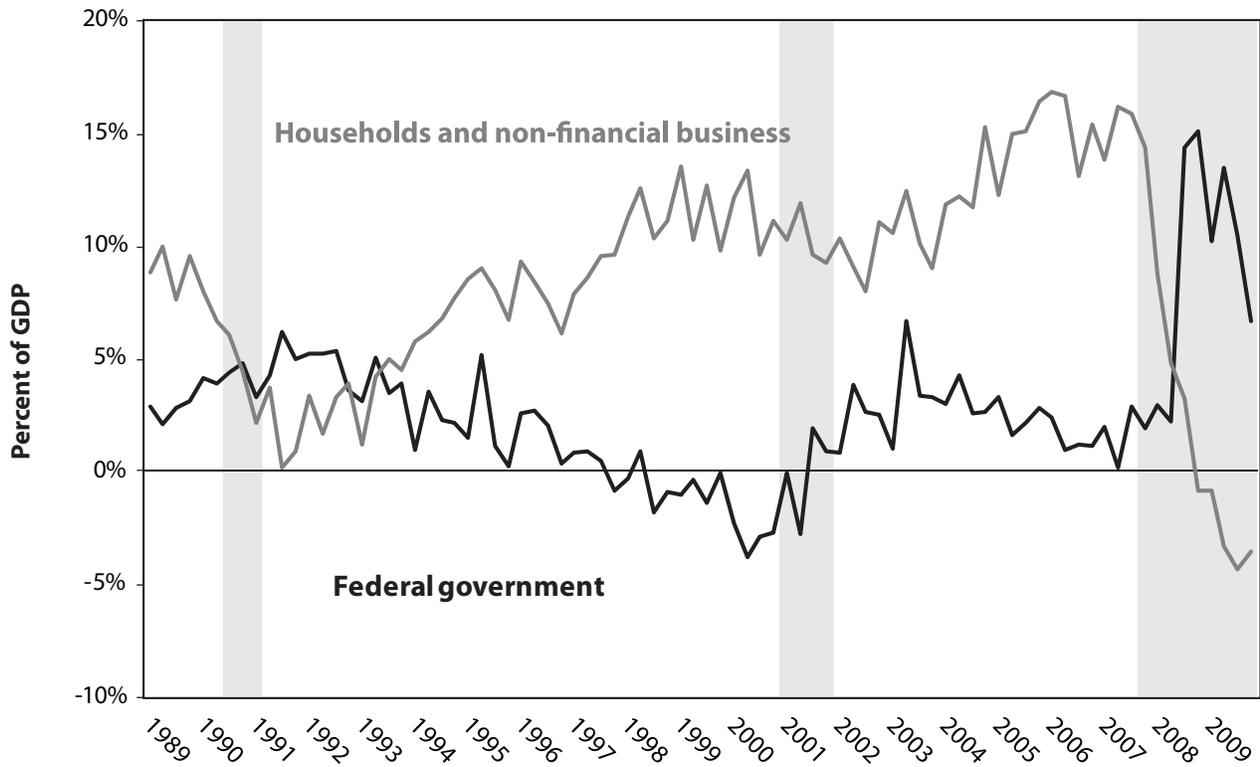
rising, though many often raise this fear when discussing the deficit. **Figure I** shows that private-sector savings in the United States rose more than public-sector borrowing over the past year, meaning that the additions to public debt of this time could be fully accommodated by domestic savings. Foreign financing can indeed be necessary to keep interest rates low during economic expansions, but it is not needed to stem upward pressure on rates during recessions and periods of idle resources.⁸

Conclusion

The connection between persistent low interest rates and the expanding federal deficit in 2008 and 2009 is often presented as both a puzzle and also a fluke that is likely to quickly reverse and imperil any incipient economic recovery. Both of these scenarios are wrong. The correspondence of low interest rates and growing deficits is not a puzzle,

FIGURE I

Borrowing by the federal government and the private sector, as percent of GDP



NOTE: Shaded areas indicate recessions.

SOURCE: Federal Reserve data.

rather it is fully predicted by mainstream economics. As long as private demand for new borrowing and spending is weak, then increased public borrowing will not cause sustained upward pressure on interest rates. Strong private demand for spending and borrowing will mark a robust

recovery that sharply reduces the current slack in labor and capital markets. Only when unemployment rates and capacity utilization rates are back near pre-recession levels should policy makers worry about the impact of deficits on interest rates.

Endnotes

1. Note that the Fed could intervene directly in the market for long-term debt by purchasing longer-term assets—even private assets. To a limited degree, the Fed has done this in the current recession. Traditionally, however, the Fed restricts itself to setting the very short-term interest rates mentioned above.
2. This assumes that there is not an infinitely elastic supply of savings available to the economy at a fixed interest rate. For a large country like the United States, this assumption is almost surely correct.
3. It is worth noting that *investing* in this regard has a very specific meaning: building new plants and equipment or building new residential housing. Buying a share of stock is not investing to an economist—it's just transferring ownership. Investing is something that increases the physical capital stock of the economy. Of course, spending money to augment human capital is also a productive investment. In the macroeconomic statistical aggregates, however, only investments in physical capital are measured and tracked.
4. This obviously begs the question of just how often the economy is “well-behaved.” Many economists (including the author of this report) who would self-identify as Keynesian would argue that the economy is very rarely well-behaved absent government management, at the very least through a Federal Reserve that took economic growth into account when making monetary policy decisions.
5. For more on this, see Irons, Edwards, and Turner (2009).
6. It's worth noting as well that the pre-recession unemployment rate of 4.9% is by no means as low as unemployment can go. In the late 1990s the unemployment rate dipped below 4% without sparking any economic overheating.
7. See Bernanke, Gertler, and Gilchrist (1999); Carpenter, Fazzari, and Peterson (1998); and Binswanger (1999) for evidence on this.
8. Of course, it is far from clear that foreign financing that keeps interest rates low during economic expansions is a good long-term economic strategy. A forthcoming briefing paper will examine this issue in some depth.

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