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GREAT RECESSION?**

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Keynesian Fiscal Stimulus: What Have We Learned from the Great Recession?

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What have we learned from the Great Recession about Keynesian fiscal stimulus? This article contains five sections that develop the following five points: (1) There is confusion about what constitutes Keynesian fiscal stimulus; (2) Economists are deeply divided about fiscal stimulus; (3) A fundamental error has been committed by an influential economist in estimating the recession magnitude of the Keynesian multiplier; (4) A fundamental error has been committed by two influential economists in their analysis of the impact of the 2008 tax rebate on consumption spending; (5) Advocates of fiscal stimulus in recession should support keeping government debt low in prosperity.

There Is Confusion about What Constitutes Keynesian Fiscal Stimulus

Many supporters and opponents of Keynesian fiscal stimulus agree on one thing: “Keynesian fiscal stimulus means government spending, not tax cuts.” Both are wrong. Keynesian fiscal stimulus is the use of temporary tax cuts or temporary increases in government spending (transfers or purchases) to increase aggregate demand (“C+I+G”) during a recession when aggregate demand is too weak to generate normal production and employment. “Keynesian” means focusing on raising aggregate demand in a recession, and Keynesian fiscal stimulus means using tax cuts, transfers, and government purchases to increase aggregate demand.

Since the 1940s, traditional Keynesian economists have emphasized that both tax cuts and government spending (cash transfers or government purchases) increase aggregate demand.

Paul Samuelson's first edition (1948) of his introductory economics textbook, perhaps the most influential exposition of Keynesian macroeconomics to a broad audience, has this passage (p413-414):

“In addition to public-works expenditures and welfare expenditure, countercyclical compensatory fiscal policy can also rely on cyclically timed tax policies...Even without Congress changing any laws, it turns out that governmental tax collections fall off when national income falls off...This is a powerful factor stabilizing the whole economy and moderating the business cycle...Even this is not all. Congress can also change tax rates...Those who believe in countercyclical compensatory fiscal policy argue that the time to reduce tax rates is in depression, when over-all purchasing power is too low.”

In the early 1960s the Kennedy Administration experienced an internal debate between two Keynesian advisers, Walter Heller and John Kenneth Galbraith. Heller and Galbraith agreed that a tax cut and a government spending increase were each Keynesian fiscal stimulus that would raise aggregate demand and generate more output and employment when unemployment was high. For various reasons, Heller argued for a tax cut and Galbraith for a spending increase. Of course, today supply-side anti-Keynesian conservatives (for example, the editorial writers of the *Wall Street Journal*) claim the Kennedy tax cut worked because it induced more supply of labor and capital, not because it stimulated aggregate demand. But Heller's argument for the tax cut was Keynesian: it would lift aggregate demand.

Presidential candidate Ronald Reagan in 1980 and George W. Bush in 2000 each proposed a permanent “across-the-board” tax rate cut with the purpose of reducing the size of government, providing supply-side incentives, and cutting income taxes in proportion to household income. Both tax cuts, however, turned out to have the Keynesian effect of raising aggregate demand during a recession—Reagan's in 1982, Bush's in 2002—which helped mitigate the severity of each recession. In contrast to the Reagan and Bush tax cuts, taxes can be cut in a way that limits the dollars given to high-income households. The tax rebate of 2008, the

income tax withholding cut of 2009 that implemented President Obama's Making Work Pay Tax Credit (which constituted nearly a third of the dollars in the February 2009 \$800 billion fiscal stimulus package enacted by Congress), and the 2-percentage-point (from 6.2% to 4.2%) employee payroll tax cut in 2011 each limited the dollars that went to high-income households. All tax cuts or cash transfers to households are Keynesian—they raise aggregate demand—but some are more effective than others because some households have a higher propensity to spend, and they differ with respect to which households will do the spending and benefit most.

The debate over Keynesian fiscal stimulus, therefore, should not be framed as “government spending versus tax cuts.” Both are Keynesian fiscal stimulus. A Keynesian fiscal stimulus package can be designed to appeal to either liberals or conservatives. A liberal Keynesian fiscal stimulus package would consist of domestic spending and tax cut components that favor middle and low-income households while a conservative Keynesian fiscal stimulus package would exclude domestic spending and consist of tax cuts that are proportional to household income. Congressional liberals and conservatives who want to use Keynesian fiscal stimulus to raise aggregate demand in a recession should be able to negotiate a fiscal stimulus package that is intermediate between the two packages just described.

Advocates of Keynesian fiscal stimulus emphasize that it must be reinforced by monetary stimulus. Keynesian fiscal stimulus either temporarily reduces taxes or increases government spending, thereby requiring additional federal borrowing, so the Treasury must sell additional bonds to the public. Keynesians call upon the Federal Reserve to buy additional Treasury bonds from the public through its open market operations so that the fiscal expansion is reinforced by a monetary expansion that keeps interest rates from rising. The magnitude of the combined fiscal/monetary stimulus should be set large enough to raise aggregate demand back to normal.

Opponents of Keynesian fiscal stimulus often confuse the debate by asking what would happen if fiscal stimulus were not supported by monetary stimulus. This intellectually interesting question has nothing to do with the actual policy recommendation of advocates of Keynesian fiscal stimulus who always prescribe simultaneous monetary stimulus. The real debate is over whether Keynesian fiscal stimulus should be adopted along with monetary stimulus in a severe recession. Many economists oppose adopting any Keynesian fiscal stimulus, asserting either that the economy will automatically recover from a recession or that monetary stimulus alone is sufficient to engineer a recovery.

Advocates of Keynesian fiscal stimulus emphasize that it can and should be gradually phased out as the economy recovers from recession. Keynesian fiscal stimulus is temporary, not permanent. As the economy returns to normal and confidence is restored, the combined fiscal/monetary stimulus can be gradually phased out without halting the recovery because the rise in confidence shifts up the consumption function and the investment function. Advocates of Keynesian fiscal stimulus contend that confidence is a function of the actual output and employment in the economy. If a temporary fiscal stimulus raises aggregate demand and generates a rise in output and employment, this rise will cause confidence to rise, shift up the consumption and investment functions, and generate enough aggregate demand so that the fiscal stimulus can be gradually phased out.

During a severe recession, advocates of Keynesian fiscal stimulus place a higher priority on combating the recession than on balancing the federal budget or preventing an increase in federal debt. Keynesian fiscal stimulus involves a temporary increase in government borrowing and government debt. Keynes' practical policy message was that in a severe recession, stimulating aggregate demand is more important than preventing a rise in government debt. It

follows that advocates of Keynesian fiscal stimulus should be supporters of achieving a low ratio of federal debt to GDP during prosperity, because with a low ratio at the onset of a recession, there is better chance politically to enact sufficient fiscal stimulus to generate a strong recovery.

Economists Are Deeply Divided About Keynesian Fiscal Stimulus

The Great Recession revealed strong opposition to enacting Keynesian fiscal stimulus seven decades after Keynes wrote his *General Theory* (1936) and six decades after Samuelson (1948) explained it with a simple 45-degree-line diagram in the first edition of his introductory economics textbook. Today there is clearly strong resistance to fiscal stimulus not only in Congress and the general public but also within the economics profession (Seidman, 2011).

What a contrast is today's economics profession compared with the profession of the 1960s, when it seemed that an irrevocable shift from classical to Keynesian economics for treating recessions had occurred. Surely, it was thought, from now on most economists would always react to a recession by forcefully prescribing a combined fiscal/monetary stimulus large enough to raise aggregate demand back to normal. Following Samuelson's 1948 edition, most college economics textbooks of the mid 1960s explained this prescription by using a 45-degree-line diagram. At each level of output (Y) plotted horizontally, plotted vertically was the level of aggregate demand (D) that would be forthcoming from consumers, business firms investing in plant and equipment, and government purchasing goods or services (so $D=C+I+G$). D was a straight line with a positive slope but flatter than the slope of a 45-degree line from the origin. The economy would move to output Y^* where the aggregate demand line intersected the 45-degree line, because if output Y was greater than Y^* , the height of the demand line (demand D)

would be less than the height of the 45 line (which equaled output Y) so producers would cut production. If the aggregate demand (D) line shifted down—for example, because consumers and businesses became anxious in response to a stock market or housing market plunge or a financial crisis—the economy would move to a lower output Y^{**} where the new lower aggregate demand line intersected the 45-degree line. Hence, a shift down of the aggregate demand line would cause a recession.

A glance at the 45-degree diagram made the cure for recession straightforward. The government needed to shift the aggregate demand line back up to its normal position. Congress could do this by sufficiently cutting taxes or giving cash transfers to consumers so they would raise C , which in turn would induce business firms to raise I so they could produce enough to meet the new consumer demand; and/or by raising government purchases G .

In the 1960s there were, to be sure, several prominent economists who disagreed with the Keynesian remedy for recession-- for example, Milton Friedman and James Buchanan. From his monetarist perspective, Friedman contended that the economy would recover on its own from a recession as long as the Federal Reserve kept the money supply from contracting. He opposed fiscal stimulus as unnecessary to cure a recession and also as ineffective. He especially opposed “temporary” government spending because he believed it would become permanent. From his public choice perspective, Buchanan opposed deficit spending in a recession because he feared that Keynesian doctrine would undermine fiscal discipline because politicians would use it as an excuse to raise government spending, thereby leading to a dangerous surge of government indebtedness and the size of government. Moreover he contended it would impose a burden on future generations.

How dramatic has been the change of the economics profession over the last four decades, witnessing the gradual erosion of support by professional economists for Keynesian fiscal stimulus to combat a recession. There are two reasons for this erosion: (1) the resurgence of classical economics; and (2) the belief that monetary policy alone can generate a recovery. Let's consider each reason in turn.

A classical resurgence was launched and led in the 1970s by Lucas, Sargent, Barro, and Prescott, who contended that the economy automatically recovers quickly from any recession. Hence, government intervention is unnecessary, and "fiscal stimulus" would generate harmful government indebtedness. New classical economists rarely mentioned "aggregate demand." They ignored the possibility that a plunge in aggregate demand could generate a recession, or that the cure for a recession would involve raising aggregate demand. Instead, they assumed output is determined by the supplies of labor and capital. If at any moment labor or capital were not fully employed, their prices would drop, promptly inducing full employment. They contended that fluctuations in output were due to fluctuations in the supplies of labor and capital or due to technology shocks. New classical economics gained adherents as the Great Depression faded into history. Whether the Great Recession reduces its influence on the economics profession remains to be seen.

By contrast, non-classical economists recognized that recessions are usually caused by a fall in aggregate demand, but they favored monetary over fiscal stimulus to raise aggregate demand because they doubted that fiscal stimulus would be implemented competently and appropriately by Congress. These economists judged that Congressional politics would generate long delays in enacting fiscal stimulus in response to a recession, would fill any stimulus package with wasteful pork barrel projects distorted by parochial and special interest politics,

and would also prevent the termination of fiscal stimulus once the recession was over. They therefore concluded that monetary stimulus alone should be relied on to combat a recession.

However, the Great Recession revealed the impotence of monetary stimulus alone to overcome a severe recession. The Federal Reserve cut the federal funds rate from about 5% in mid 2007 to nearly 0% in late 2008, yet the economy continued to suffer from inadequate aggregate demand for goods and services, evidenced by the huge 6% gap in 2009 between actual and normal GDP (the GDP that would be generated if the unemployment rate were normal).

Money enters the economy through the Federal Reserve's open market operations in which the Fed buys Treasury bonds and pays with new money, and sellers of these bonds deposit their Fed checks in their banks, thereby increasing bank reserves. It is true that as a consequence, banks experience an increase in idle reserves that they would prefer to lend out at interest. But in a severe recession a pessimistic private sector is unwilling to borrow and spend, even if banks have offered very low interest rates. This is now called the "zero-bound problem" confronting monetary policy in a recession, but in his 1948 first edition (and subsequent editions) Samuelson said it best (p353-54):

"In terms of the quantity theory of money, we may say that the velocity of circulation of money does not remain constant. 'You can lead a horse to water, but you can't make him drink.' You can force money on the system in exchange for government bonds...but you can't make the money circulate against new goods and new jobs...You can tempt businessmen with cheap rates of borrowing, but you can't make them borrow and spend on new investment goods."

Monetary policy relies on stimulating loans. But every potential borrower knows that a loan is supposed to be paid back. If business firms forecast weak demand for their products, then even a 0% long-term interest rate won't induce much borrowing by firms. If consumers are worried about their own job security and debt, even a 0% interest rate won't induce much consumer borrowing.

Thus, there is a fundamental difference between fiscal stimulus in the form of tax cuts or cash transfers, and monetary stimulus. A recipient of a Federal tax cut or a federal cash transfer correctly takes it for granted that the money does not have to be paid back. Thus, the recipient generally spends some of it, uses some of it to pay down debt, and saves the rest. By contrast, any potential borrower takes it for granted that any borrowing must be repaid. Monetary stimulus can lower interest rates, but if potential borrowers fear they won't be able to repay a loan, they won't borrow and there will be no additional spending. A crucial difference, therefore, between fiscal and monetary stimulus is whether the money must be paid back.

Classical economists like Robert Barro, of course, insisted that tax cuts and transfers will have to be paid back when future taxes are increased to repay the government debt, and that "rational" forward-looking individuals, firms, and state and local governments will all recognize this and will therefore entirely save all tax cuts or transfers to prepare for the coming repayment they must make. Hence, said classical economists, fiscal stimulus in the form of tax cuts or transfers will *not* boost spending by households, firms, or state and local governments. But, replied Keynesians, there is absolutely no empirical evidence that people actually think: "I'd better entirely save this tax cut or transfer in order to be ready to make the coming repayment to the government." There is lots of empirical evidence that people (other than classical economists) don't think this way about what to do with tax cuts or cash transfers. Just ask them, and listen to what they say. Much of the economics profession has let classical economists like Barro get away with this key assumption in the face of overwhelming empirical evidence that the assumption is false.

Over the past four decades most textbooks for introductory economics, intermediate macroeconomics, and especially graduate macroeconomics, have given less and less attention to

the use of fiscal stimulus to combat a recession. Some textbooks taught students how the economy is supposed to recover automatically on its own. Other textbooks focused on the use of monetary stimulus alone to counter a recession. Many economics PhD programs ignored the possible role of Keynesian fiscal stimulus in combating a recession. Emerging from these PhD programs, young economics professors naturally either ignored or commented negatively on the use of fiscal stimulus to combat a recession in their undergraduate economics courses. Undergraduates emerging from these college economics courses had a much more negative view of the use of fiscal stimulus to combat a recession than students who emerged from college economics courses in the mid-1960s.

This weakening of support within the economic profession for fiscal stimulus had a dramatic impact on Congress and the general public. In the mid-1960s, advocates of fiscal/monetary stimulus could tell doubters in Congress that the overwhelming majority of economists prescribed a combined fiscal/monetary stimulus to combat a recession. Today, advocates of fiscal stimulus can no longer make that claim. Congressional opponents of fiscal stimulus have heard correctly that there are many prominent macroeconomists, including several Nobel prize winners, who oppose fiscal stimulus to counter even a severe recession.

It is illuminating to examine in detail a recent representative exposition of opposition to Keynesian fiscal stimulus by John Cochrane of the University of Chicago who has published op ed articles in the *Wall Street Journal* as well as technical articles in scholarly journals. His article in the January 2011 issue of the *European Economic Review* is entitled “Understanding Policy in the Great Recession: Some Unpleasant Fiscal Arithmetic.” He begins the article this way:

“I offer an interpretation of the macroeconomic events in the great recession of 2008-2009 and the subsequent outlook, focused on the fiscal stance of the U.S. government and its link

to potential inflation. What happened? How did the policies work? Are we headed for inflation or deflation? Will the Fed be able to fight deflation, and follow an ‘exit strategy’ when it’s time to fight inflation? Will large government deficits lead to inflation? If so, what will that event look like?”

Note that this paragraph focuses entirely on prices—inflation or deflation--without mentioning real output, employment, or unemployment. But the Great Recession witnessed a plunge in real output and employment and a sharp and sustained rise in unemployment, with little change in the modest inflation rate of the U.S. economy. Cochrane’s entire paper, like his initial paragraph, focuses mainly on prices and largely ignores real output, employment, and unemployment.

A section of Cochrane’s paper is entitled “fiscal stimulus.” He begins the section with a revealing paragraph:

“Starting in February 2009, the U.S. government engaged in a large ‘fiscal stimulus’ designed to raise aggregate demand, with multi-trillion dollar deficits projected to last many years. The question here is, will these deficits actually ‘stimulate’ as promised, within the fiscal-monetary framework I am exploring?”

But the key issue is not whether the fiscal stimulus package would stimulate the economy in Cochrane’s fiscal-monetary framework. What matters is whether the package would raise real output and employment in the actual economy. If Cochrane’s fiscal-monetary framework is unrealistic, it doesn’t matter what the package would do in his framework. Cochrane ignores the simple straightforward Keynesian explanation of how tax cuts and government spending increases are supposed to raise real output and employment when the economy is in recession—namely, that tax cuts and transfers enable consumers to spend more, and in response to this additional demand, producers find it profitable to raise production, employment, and investment in plant and equipment. Instead, Cochrane launches into an explanation in his framework which focuses entirely on rational agents’ expectations of future debt and inflation. He assumes,

without any empirical evidence, that actual people will think, “I won’t spend any of this year’s tax cut because I have to save it all in order to be ready to pay the higher future tax that will be made necessary by this year’s tax cut.” He says:

“The main argument for real fiscal stimulus is that people disregard future taxes. But is there a voter left in the country who is unaware that taxes are likely to rise?”

The real issue, however, isn’t whether people think taxes are likely to rise in the future. The issue is whether, upon receiving a tax cut in a recession, the typical person will decide he must save it all. Cochrane offers no empirical evidence about how the typical person actually thinks and behaves upon receiving a tax cut in a recession.

Finally, Cochrane comments on Milton Friedman’s famous “helicopter drop.” He begins with an important correct statement:

“A helicopter drop is at heart a *fiscal* operation. It is a transfer payment. To implement the drop, the Treasury would borrow money, issuing more debt, and write checks. Then the Federal Reserve would buy the debt, so that the money supply increased. Even a drop of real cash from real helicopters would be recorded as a transfer payment, a fiscal operation.”

But what, according to Cochrane, would be the impact of such a helicopter drop on an economy in recession? Cochrane’s answer is, “no effect at all.” How does he reach this conclusion? He says:

“Suppose a helicopter drop is accompanied by the announcement that taxes will be raised the next day, by exactly the amount of the helicopter drop. In this case, everyone would simply sit on the money.”

Why does Cochrane say the announced tax increase would occur “the next day?” Because he is surely correct that many people would wait just one day to see if it’s true before spending their tax cut. From this Cochrane hopes the reader will leap to the conclusion that when taxes are cut in a recession, people will save the entire tax cut to get ready to pay more

taxes sometime in the future. But he offers no empirical evidence that people think and behave this way when they receive an actual tax cut in an actual recession.

A Fundamental Error in Estimating the Recession Magnitude of the Keynesian Multiplier

The Keynesian multiplier is the ratio of the increase in real output to the increase in government spending or tax cut that generates it. Suppose the economy is at full employment and full capacity utilization when the government increases spending or cuts taxes (supported by a monetary stimulus). With hardly any unemployed labor or capital available, real output hardly increase so the multiplier is near zero. By contrast, suppose the economy is in a severe recession with high unemployment and low capacity utilization. Then the increase in spending or tax cut would cause employers to hire unemployed workers and utilize idle machines, thereby increasing real output; hence, the multiplier would be positive. Moreover, the newly employed would enjoy an increase in income enabling them to raise their consumption spending, inducing producers of consumer goods to hire unemployed workers, utilize idle machines, and raise real output, thereby making the multiplier larger. What matters for fiscal stimulus to combat a recession is the size of the multiplier in a recession when unemployment is high and capacity utilization low, not the size of the multiplier in a fully employed economy.

Picture an aggregate supply aggregate demand diagram in which the supply curve is initially flat but then curves upward to become steep at the full employment level of output Y^* . When the economy is in severe recession at a low value of real output Y with high unemployment a low capacity utilization, a shift right of aggregate demand (D) can raise real output with only a slight bidding up of wages, costs, and prices, so the aggregate supply (S)

curve is relatively flat. But when output is at full employment Y^* , a shift right of aggregate demand curve mainly bids up wages, costs, and prices, with hardly any increase in real output so the aggregate supply curve is steep. Thus, when the economy is in a severe recession, a shift right of the D curve by magnitude ΔD causes a relatively large increase in real output ΔY —hence, the multiplier is large-- but when the economy is at full employment, a shift right of the D curve by the same magnitude ΔD causes a relatively small increase in real output ΔY —hence, the multiplier is small. Thus, it is a fundamental error to estimate the value of the multiplier in a fully employed economy and then assume this value holds when the economy is in a severe recession.

Yet Robert Barro makes exactly this error. He tries to estimate a value for the multiplier using data from a fully employed economy and then asserts that this multiplier value would hold when the economy is in a severe recession. Barro summarizes his research in a truly revealing article in a 2009 *Economists' Voice* article entitled “Voodoo Multipliers.” Barro begins his article by saying that, according to Keynesians:

“If the government buys another airplane or bridge, the economy’s total output expands by enough to create the airplane or bridge without requiring a cut in anyone’s consumption or investment. The explanation for this magic is that idle resources—unemployed labor and capital—are put to work to produce the added goods and services. If there is a social cost, it is only that people who used to be unemployed have less leisure because they are working.”

He then writes:

“So where is the flaw in the argument? The theory (a simple Keynesian macroeconomic model) implicitly assumes that the government is better than the private market at marshaling idle resources to produce useful stuff. Unemployed labor and capital can be utilized at essentially zero social cost, but the private market is somehow unable to figure any of this out. Implicitly, there is something wrong with the price system. Keynes thought that the problem lay with wages and prices that were stuck at excessive levels. But this problem could be readily solved by expansionary monetary policy...”

Barro seems oblivious to the problem confronting expansionary monetary policy in a severe recession when interest rates are already very low. He ignores Samuelson's 1948 quote given above that you can force money on the system in exchange for government bonds but you can't make the money circulate against new goods and new jobs, and you can tempt businessmen with cheap rates of borrowing but you can't make them borrow and spend on new investment goods. Moreover, he ignores the recent literature of macroeconomists who admit there is a serious "zero-bound" problem confronting monetary policy in a severe recession. With interest rates already very low and consumers and businesses pessimistic, many macroeconomists recognize that it is doubtful that monetary stimulus alone can generate a recovery.

Barro ignores all this and simply asserts that even in a severe recession:

"A much more plausible starting point is a multiplier of zero. In this case, the real GDP is given, and a rise in government purchases requires an equal fall in the total of other parts of GDP—consumption, investment, and net exports...I think this perspective, not the supposed macroeconomic benefits from fiscal stimulus, is the right one to apply to the many new and expanded government programs that we are likely to see this year and next."

Barro continues:

"Aside from theory, what is true about multipliers in the data? Because it is not easy to separate movement in government purchases from overall business fluctuations, the best evidence comes from large changes in military purchases that are driven by shifts in war and peace. A particularly good experiment is the massive expansion of U.S. defense expenditures during World War II. This case works well because the United States from 1941 to 1945 did not suffer from the massive destruction of property and life that led to large declines in real GDP in many other countries during WWII. In any event, the usual Keynesian view is that the WWII expansion provided the stimulus that finally got the U.S. economy out of the great Depression."

His last sentence is correct. There was a dramatic reduction in the U.S. unemployment rate from 1939 to 1942 driven by the sharp rise in military and related spending in preparation for a possible entry into a world war. An analysis confined to 1939 to 1942 might be therefore be useful. Instead, Barro focuses on 1943-44. He writes:

“I have estimated (in my book, *Macroeconomics, A Modern Approach*) that World War II raised U.S. real defense expenditures by \$540 billion (1996 dollars) per year at the peak in 1943-44, amounting to 44% of trend GDP. I also estimated that the war raised real GDP above trend by \$430 billion per year in 1943-44. Thus, the multiplier was 0.8 (430/540). The other way to put this is that the war lowered components of GDP aside from military purchases.”

But by 1942 the U.S. economy was at full employment with a very low unemployment rate. Barro continues:

“In an earlier study in the *Journal of Political Economy*, I got a similar regression-based estimate for the multiplier effect on real GDP from temporary defense purchases—for a sample from 1942 to 1978, the coefficient was 0.71, with a standard error of 0.06.”

Why does Barro choose to begin his sample in 1942? By omitting 1939-42 when the U.S. economy moved from high unemployment to full employment, Barro confines his World War II data to the period when the U.S. economy was already at full employment.

Unfortunately, Barro is not the only economist who claims to estimate the magnitude of the multiplier in a recession by using data generated in a fully employed economy. There is a large recent literature that regresses the change in real output against the change in government spending or taxes for all quarters in the sample. But only a small fraction of the quarters in the sample are recession quarters, so these studies mainly estimate the value of the multiplier when the economy is not in recession. What matters for Keynesian counter-cyclical fiscal policy, however, is that value of the multiplier when the economy is in recession, not the value of the multiplier in a full employment economy.

A Fundamental Error in Measuring the Impact of the 2008 Tax Rebate

Many commentators including two influential economists have claimed that looking at U.S. data before and after a particular fiscal stimulus during the Great Recession proves that that

fiscal stimulus didn't work. In making this claim, they are making a fundamental error. This section focuses on the assertions of Martin Feldstein and John Taylor and is based on Lewis and Seidman (2011) which provides a detailed critique of Feldstein's and Taylor's influential 2008 op ed articles in the *Wall Street Journal* and their 2009 *AER Papers and Proceedings* articles. Feldstein and Taylor wrote each article independently, not as joint authors.

In their *WSJ* op ed and *AER* articles, Feldstein and Taylor each addressed the question: "Did the 2008 rebate fail to stimulate consumer spending?" Each asserted that aggregate time series data from the U.S. Bureau of Economic Analysis' (BEA) National Income and Product Accounts (NIPA) before and after the rebate proves that the rebate failed.

In February 2008 Congress enacted an economic stimulus package that included a tax rebate for households. The U.S. Treasury mailed checks to households mainly in May, June, and July. Most single individuals received \$300 plus \$300 per dependent child while most married couples received \$600 plus \$300 per dependent child. For example, a family of two parents and three children received \$1,500. The rebate amount phased in for low-income households and phased out for high-income households.

Before discussing Feldstein and Taylor, it is useful to state how a rebate is supposed to work. After receiving a rebate check from the U.S. Treasury, a household deposits the additional cash in its checking account and its saving initially increases by the amount of the rebate. Gradually, the household spends more than it otherwise would have. Thus, immediately after a household receives a rebate check, there should be a spike in saving, but not a spike in spending, relative to what it would have been without the rebate. The key issue is the time path of consumption spending following receipt of the rebate compared to what it would have been—in particular, the spending differential during the year following the receipt of the rebate.

To assess the impact of any policy, a comparison is required between what actually happened after the policy was implemented, and what would have happened if the policy had not been implemented. But what would have happened can only be estimated—it cannot be known with certainty. Yet both Feldstein and Taylor claim that by looking only at actual data before and after the policy they can prove that it didn't work. This is a fundamental error.

Table 1 shows the rebates paid in each month in 2008. The total rebate actually paid out in the two quarters was \$92.6 billion: \$77.9 billion in 2008.2 and \$14.7 billion in 2008.3. Figure 1 shows personal consumption outlays (seasonally adjusted quarterly amount in current dollars) for each quarter from 2007.1 through 2009.4 but omits the two quarters when the rebates were received, 2008.2 and 2008.3. It cannot be known with certainty what personal consumption outlays would have been in 2008.2 and 2008.3 had there been no rebates. Figure 2 shows a plausible path for personal consumption outlays in 2008.2 and 2008.3 had there had been no rebates. Figure 3 gives the actual values for personal consumption outlays in 2008.2 and 2008.3. Compared to the plausible path shown in Figure 2 (and also shown in Figure 3), actual personal consumption outlays were \$18 billion higher in 2008.2 and \$18 billion higher in 2008.3, a total of \$36 billion higher for the two quarters. Thus, if this plausible path would have occurred had there been no rebates, then the \$92.6 billion rebates raised personal consumption outlays \$36 billion above what they would otherwise have been, so the increase in consumption outlays due to the rebates would have been 39% of the rebates ($\$36/\$92.6=39\%$). Of course, this path is only plausible, not certain. It is therefore uncertain that that every \$100 of rebate raised consumption outlays \$39.

But in his *WSJ* article, Aug 6, 2008, Feldstein asserts that he can tell the rebate didn't work simply by examining actual data before and after the rebate. He says:

“Recent government statistics show that only between 10% and 20% of the rebate dollars were spent. The rebates added nearly \$80 billion to the permanent national debt but less than \$20 billion to consumer spending. This experience confirms earlier studies showing that one-time tax rebates are not a cost-effective way to increase economic activity.”

He continues:

“Here are the facts. Tax rebates of \$78 billion arrived in the second quarter of the year. The government’s recent GDP figures show that the level of consumer outlays only rose by an extra \$12 billion, or 15% of the lost revenue. The rest went into savings, including the paydown of debt.”

Feldstein’s numbers are from the August 4 “News Release” of the BEA, “Personal Income and Outlays: June 2008” in which the BEA says:

“In April, May, and June, changes in disposable personal income (DPI)—personal income less personal current taxes—were affected by the Economic Stimulus Act of 2008. The federal government issued rebate payments of \$1.9 billion in April, \$48.1 billion in May, and \$27.9 billion in June.”

The August 4 Release used by Feldstein presents disposable income and personal outlays at seasonally adjusted annual rates; dividing each number by 4 yields the actual quarterly amount shown in Table 2. Each number in parenthesis in Table 2 is the change from one quarter to the next. For example, personal outlays increased from \$2,577.3 billion in 2007.4 to \$2,601.2 billion in 2008.1, a change of +\$23.9 billion; and increased from \$2,601.2 billion in 2008.1 to \$2,637.1 billion in 2008.2, a change of +\$35.9 billion. Each number in brackets is the change in the change. For example, the change in personal outlays was +\$23.9 billion from 2007.1 to 2008.1 but was +\$35.9 billion from 2008.1 to 2008.2, so the change in the change was +\$12.0 billion.

Feldstein points out that the actual quarterly amount of personal outlays increased \$23.9 billion from 2007.4 to 2008.1 and increased \$35.9 billion from 2008.1 to 2008.2 (as shown in parentheses in our Table 2). He says this “extra” \$12 billion increase (as shown in brackets in Table 2) is only 15% of the \$78 billion rebate received in 2008.2. Feldstein assumes that, had

there been no rebate, the actual quarterly amount of personal outlays would have increased \$23.9 billion in 2008.2 simply because it increased \$23.9 billion in 2008.1. He then assumes that it increased \$12 billion more than \$23.9 billion--\$35.9 billion—solely because of the \$78 billion rebate in 2008.2. With these assumptions, he concludes that the \$78 billion rebate caused only a \$12 billion increase in outlays ($\$12/\$78=15\%$). But just because outlays increased \$23.9 billion in 2008.1 doesn't mean outlays would have increased \$23.9 billion in 2008.2 had there been no rebate. There's no reason to expect personal outlays to increase the same amount every quarter. For example, the BEA reports (not shown in Table 2) that from 2007.3 to 2007.4 personal outlays increased \$31.8 billion, not \$23.9 billion.

What would have happened had there been no rebate in 2008.2 depends on what else was occurring in the economy. House prices, stock market price indices, and the University of Michigan's index of consumer sentiment all fell significantly (Bear Stearns nearly failed in March). These declines might have caused personal outlays to increase less than \$23.9 billion had there been no rebate. Suppose that without the rebate other factors would have caused outlays to increase only \$11.9 billion, not \$23.9 billion. Then the \$78 billion rebate would have caused an "extra" \$24 billion, not an "extra" \$12 billion; \$24 billion is about 30%, not 15%, of the \$78 billion rebate. Thus, Feldstein's assertion that actual data before and after the rebate proves the rebate didn't work is based on a fundamental error.

In his *WSJ* article, November 25, 2008, Taylor gives this account of the mid-2008 rebate to households:

"The major part of the first stimulus package was the \$115 billion, temporary rebate payment program targeted to individuals and families that phased out as incomes rose. Most of the rebate checks were mailed or directly deposited during May, June, and July. The argument in favor of these temporary rebate payments is that they would increase consumption, stimulate aggregate demand, and thereby get the economy growing again. What were the results? The chart nearby reveals the answer [Chart 1 below is a copy of Taylor's *WSJ* chart which he

includes in his *AER* article]. The upper line shows disposable personal income through September. Disposable personal income is what households have left after paying taxes and receiving transfers from the government. The big blip is due to the rebate payments in May through July. The lower line shows personal consumption expenditures by households. Observe that consumption shows no noticeable increase at the time of the rebate. Hence, by this simple measure, the rebate did little or nothing to stimulate consumption, overall aggregate demand, or the economy.”

Taylor therefore claims that by looking only at how actual data changed from May through July he can infer that the rebate didn't work. Taylor's chart shows a spike in disposable income but no spike in consumption spending. But what Taylor's chart of actual data doesn't show, and cannot show, is what would have happened to spending from May through the next twelve months had there been no rebate. In mid-2008, several other influences--the fall in house and stock prices and the unprecedented high level of consumer debt—would likely have reduced spending. Yet actual spending did not fall until September. It is therefore possible that the rebate kept spending steady when it otherwise would have fallen. Of course, no one can know with certainty what would have happened to spending had there been no rebate, but Taylor does not acknowledge this point. His assertion is based on a fundamental error.

U.S. aggregate time series data can be analyzed in a standard way that avoids this error committed by Feldstein and Taylor. Consumer spending can be regressed against a set of variables likely to influence such spending, including a tax rebate. If the regression equation fits the data well and yields a rebate coefficient estimate with a small standard error that is insensitive to the inclusion of other plausible variables in the equation, it will provide a good prediction of what consumer spending would have been during the Great Recession had there been no rebate. This prediction can then be compared to actual consumer spending during the Great Recession.

In fact, after publicizing their results in the *Wall Street Journal* obtained by committing the fundamental error described above, Taylor and Feldstein turn to the standard regression method and report results in their 2009 AER articles. Their regression results are critiqued in detail by Lewis and Seidman (2011). Not surprisingly, the Taylor and Feldstein regressions do not yield a precise robust coefficient estimate for the tax rebate variable because there have been very few anti-recession tax rebates. Lewis and Seidman show that the rebate coefficient estimate and standard error are sensitive to the inclusion of other plausible variables. Taylor and Feldstein claim that the rebate variable is “statistically insignificant” and that their regressions therefore prove that the rebate had no effect. Lewis and Seidman point out that “insignificant” means only that, given the large standard error, the hypothesis that the true rebate coefficient is zero can’t be rejected. Lewis and Seidman show that the hypothesis that the true rebate coefficient is half the true ordinary disposable income coefficient also can’t be rejected. Thus, even when Taylor and Feldstein use a proper method for estimating the impact of a rebate, they misinterpret their regression results and claim erroneously that their regressions prove that tax rebates don’t work.

By contrast, a very different way of analyzing the impact of the 2008 rebate is reported in a study that uses cross-section individual household micro data (Parker, Souleles, Johnson, and McClelland, 2010). The study exploits the fact that different households received the tax rebate in different weeks and the week each household received the rebate was assigned randomly. Jonathan Parker, Nicholas Souleles, David Johnson, and Robert McClelland (2010) use micro-data consisting of the reports of individuals of the dollar amounts of their recent consumer expenditures from the Consumer Expenditure Survey conducted by the U.S. Bureau of Labor Statistics. They write:

“Using special questions added to the Consumer Expenditure Survey, we measure the response of household spending to the economic stimulus payments (ESPs) disbursed in mid-2008. We find that, on average, households spent 12-31% of their stimulus payments on non-durable goods during the three-month period in which the payments were received. Further, there was also a substantial and significant increase in spending on durable goods, in particular autos. Improving on previous research, these spending responses are estimated with precision using only variation in the timing of ESP receipt.”

Their conclusion for the 2008 rebate is similar to the conclusion from their *AER* article (Johnson, Parker, and Souleles 2006) on the effect of the 2001 tax rebate using the same kind of micro data:

“Using questions expressly added to the Consumer Expenditure Survey, we estimate the change in consumption expenditures caused by the 2001 federal income tax rebates and test the permanent income hypothesis. We exploit the unique, randomized timing of the rebate receipt across households. Households spent between 20 to 40 percent of their rebates on nondurable goods during the three-month period in which their rebates arrived, and roughly two-thirds of their rebates cumulatively during this period and the subsequent three-month period. The implied effects on aggregate consumption demand are substantial. Consistent with liquidity constraints, responses are larger for households with low liquid wealth or low income.”

Given the finding of the studies of the 2001 and 2008 tax rebates using individual micro data, and the fundamental error committed by Feldstein and Taylor concerning the 2008 rebate, one lesson that should be drawn from the Great Recession is that it provides evidence that a tax rebate works: according to the micro-data study the 2008 rebate, like the 2001 rebate, had a positive impact of considerable magnitude on consumption spending relative to what it would have been without the rebate.

Fiscal Stimulus Advocates Should Support Keeping Debt Low in Prosperity

Ever since early Keynesians prescribed fiscal stimulus for a recession, others have objected because of concerns about its impact on the national debt. That concern is as strong as ever today. In Congress and among the citizenry, concern about the national debt is perhaps the major obstacle to enacting sufficient fiscal stimulus to combat a severe recession. This concern was an important reason why Congress kept the fiscal stimulus package of February 2009 under \$800 billion despite estimates from Keynesian macro-econometric models that a much larger fiscal stimulus would be needed to bring unemployment down to normal by the end of 2010. Concern about debt has kept Congress from enacting another substantial fiscal stimulus package.

The reaction of traditional Keynesians since the 1940s has been to dismiss the concern about national debt as uninformed, a vestige of old-fashioned classical economics that Keynesian analysis has rendered obsolete, and based on false analogies between households and business firms on the one hand, and the national government on the other. Perhaps the earliest and most articulate Keynesian exponent of this view was Abba Lerner who contrasted Keynesian “functional finance” to “sound finance” and argued that we owe most of the national debt to ourselves.

The Great Recession has taught us, however, that despite the efforts of Keynesians for seven decades, concern about the national debt is as strong as ever. A majority in Congress, the public, and the business and financial community continue to worry about the impact of fiscal stimulus on the national debt. As Keynes said in other contexts, the actual opinions and psychology of the public, whether ill or well informed, must always be taken into account in designing effective public policies.

Suppose it is true that American consumers, business managers, and financial investors around the world worry about a rising U.S. government debt as a percent of GDP. Then this

worry must be taken into account in designing economic policy. Traditional Keynesians have always emphasized that a realistic view of how people actually think and behave is crucial to getting policy right—this insistence on realism has been at the core of the Keynesian critique of the new classical economics with its unrealistic assumption that everyone holds “rational” expectations and that workers promptly accept wages cuts needed to “clear” labor markets.

Keynesians, therefore, should recognize that the widespread fear of high and rising government debt—whether valid or not—might cause a plunge in aggregate demand generating a severe recession. If all financial investors, consumers, and business managers thought like Lerner, this wouldn't happen. But many don't think like Lerner, and Keynesians must design policy accordingly. It is just as mistaken to assume everyone in the economy actually thinks like Lerner as it is to assume that everyone in the economy actually thinks like Lucas or Barro. Keynesians should therefore advocate keeping federal debt as a percent of GDP low during prosperity.

One way to keep this percentage low would be to have Congress enact a NUBAR (normal unemployment balanced budget rule) statute (Seidman 2003, 2010). Under a NUBAR statute, every year (starting with the budget that Congress plans during 2013 for the fiscal year 2014) Congress would be required to enact a planned federal budget that the Congressional Budget Office (CBO) estimates would be balanced next year if the economy's unemployment rate is “normal” next year. “Normal” would be defined as the actual average over the preceding decade. There would therefore be a small automatic change every year in the numerical value of the normal unemployment rate as the ten-year average is recomputed. Here 6% will be used for numerical illustrations.

Any fiscal stimulus package should contain a *terminator* that phases down the stimulus as the unemployment rate declines towards 6%. For each tax cut and spending component of the fiscal stimulus package, Congress should enact a terminator clause that reads: "The amount specified for this program is authorized if the unemployment rate (U) exceeds 9%; if U is between 8% and 9%, the amount authorized is cut 25%; if U is between 7% and 8%, the amount authorized is cut 50%; if U is between 6% and 7%, the amount authorized is cut 75%; and if U is below 6%, the amount authorized is cut 100%."

But suppose the planned 2014 budget as of September 1, 2013 shows a NUBAR deficit? NUBAR would then prescribe an automatic X percent across-the-board adjustment in all planned spending programs and all taxes to achieve a planned balanced budget. If the planned budget as of September 1 is estimated by CBO to have a NUBAR deficit, then on October 1 all planned spending programs would be reduced by X percent and all taxes would be increased by X percent. CBO would be instructed to calculate the numerical value of X that would achieve a planned balanced budget.

A NUBAR statute enforced by the across-the-board X percent adjustment would keep federal debt as a percentage of GDP relatively low. If the economy is hit with a severe recession, this low debt percentage would enable Congress to enact a large fiscal stimulus without alarming financial markets or the general public. Moreover, a crucial feature of NUBAR is that it would permit as large a fiscal stimulus as necessary to fully combat a severe recession as long as the fiscal stimulus package contains a terminator. When CBO makes its NUBAR evaluation of the planned budget, any fiscal stimulus package with a terminator would be ignored because it would have no effect on next year's budget if next year's unemployment rate is normal.

Conclusions

What have we learned from the Great Recession about fiscal stimulus? This article contained five sections that developed five points.

First, there is confusion about what constitutes fiscal stimulus. Keynesian fiscal stimulus is the use of temporary tax cuts or temporary increases in government spending (transfers or purchases) to increase aggregate demand (“C+I+G”) during a recession when aggregate demand is too weak to generate normal production and employment.

Second, economists are deeply divided about fiscal stimulus. New classical economists oppose fiscal stimulus because they believe fluctuations in output and employment are optimal. Non-classical economists oppose fiscal stimulus because they believe monetary policy alone can combat recession.

Third, a fundamental error has been committed by an influential economist in estimating the recession magnitude of the Keynesian multiplier. This economist estimates the value of multiplier in the middle of World War II when the economy was at full employment and incorrectly assumes that the value of the multiplier during a recession would be the same.

Fourth, a fundamental error has been committed by two influential economists in measuring the impact of the 2008 tax rebate. They asserted that actual data before and after the 2008 rebate prove that the rebate didn’t work. Their error is a failure to recognize that actual data must be compared to a counterfactual—what would have happened had there been no tax rebate. By contrast, a study using cross-section micro-data of individual consumption spending in response to the 2008 tax rebate finds that the tax rebate had a positive impact of considerable magnitude on consumption spending relative to what it would have been without the rebate.

Fifth, advocates of fiscal stimulus in recession should support keeping debt as a percent of GDP low in prosperity so that the public, Congress, and President feel comfortable enacting a large fiscal stimulus (which requires substantial borrowing and therefore a large rise in debt) during a severe recession.

TABLE 1 2008 REBATE

2008.2	April	\$1.9 billion	
	May	\$48.1 billion	\$77.9 billion
	June	\$27.9 billion	
2008.3	July	\$13.7 billion	
	Aug	\$1.0 billion	\$14.7 billion
	Sep	\$0.0 billion	
Total			\$92.6 billion

Source: Bureau of Economic Analysis News Release of September 29, 2008, "Personal Income and Outlays: August 2008"

TABLE 2 ACTUAL QUARTERLY AMOUNTS (\$ BILLIONS)

	2007.4	2008.1	2008.2
Disposable Income	\$2,587.9	\$2,610.0	\$2,708.4
(Change)		(\$22.1)	(\$98.4)
[Change in the Change]			[\$76.3]
Personal Outlays	\$2,577.3	\$2,601.2	\$2,637.1
(Change)		(\$23.9)	(\$35.9)
[Change in the Change]			[\$12.0]

Source: Bureau of Economic Analysis News Release of August 4, 2008, "Personal Income and Outlays: June 2008"

Figure 1
Personal Outlays (Billions of Dollars)

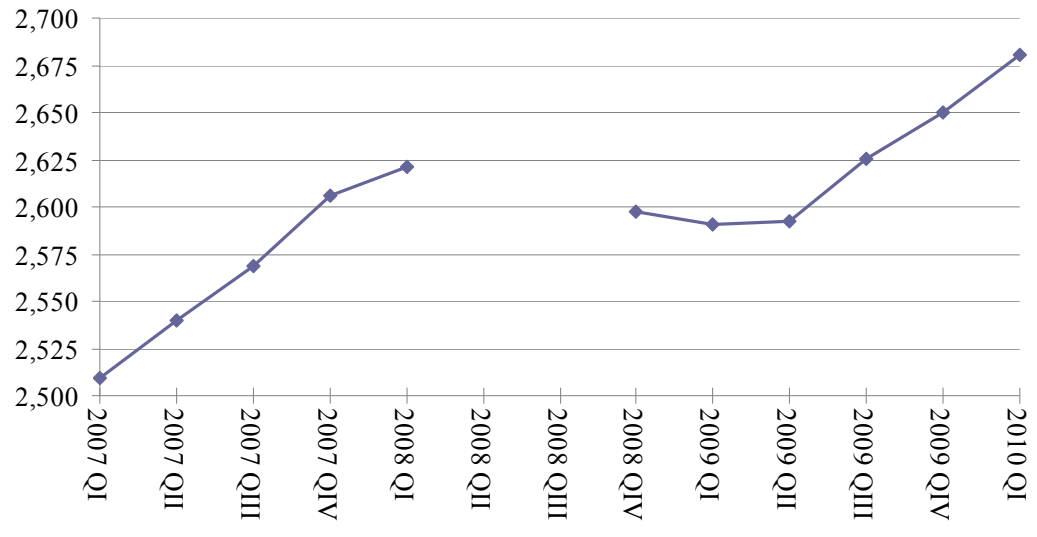


Figure 2
Personal Outlays (Billions of Dollars)

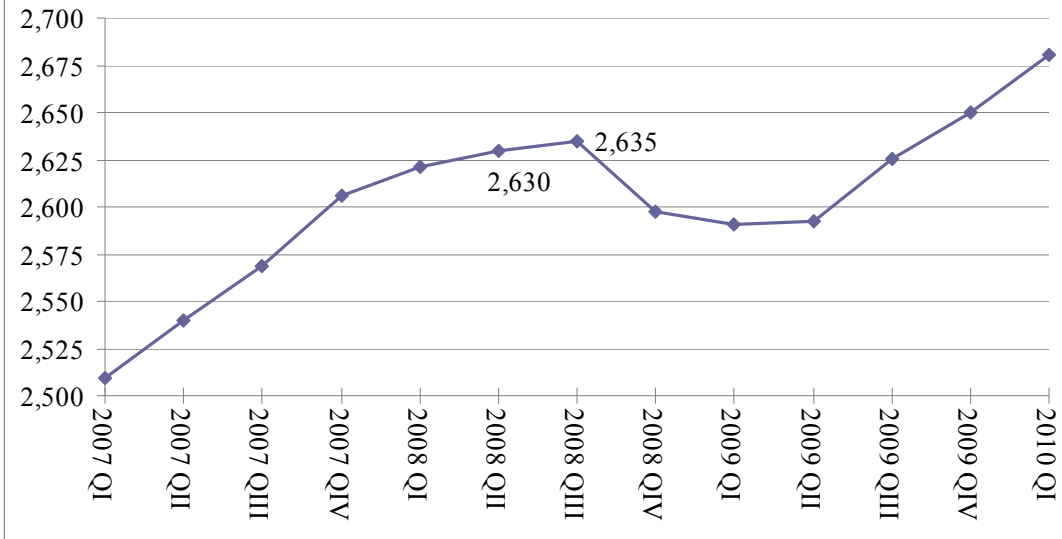


Figure 3
Personal Outlays (Billions of Dollars)

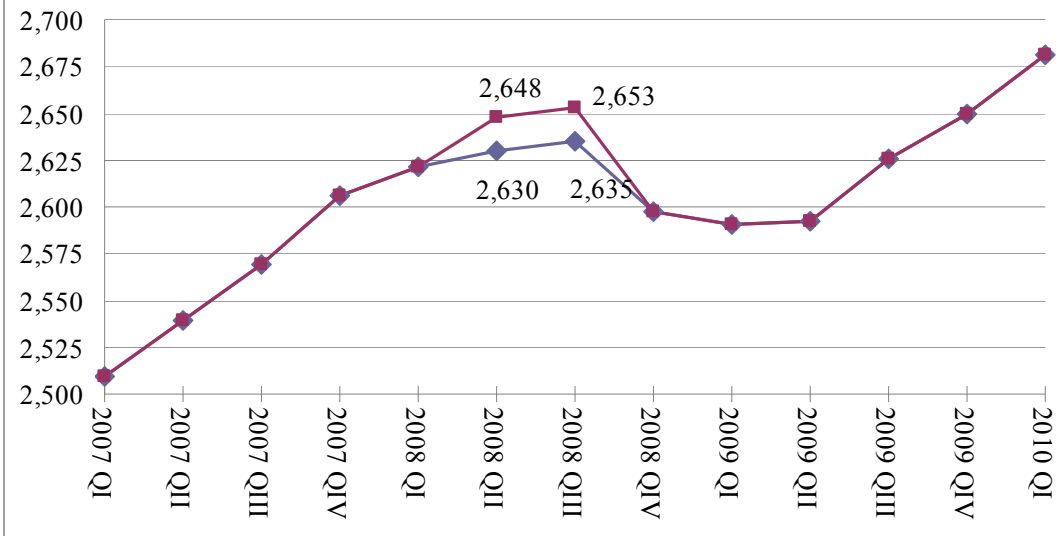


CHART 1

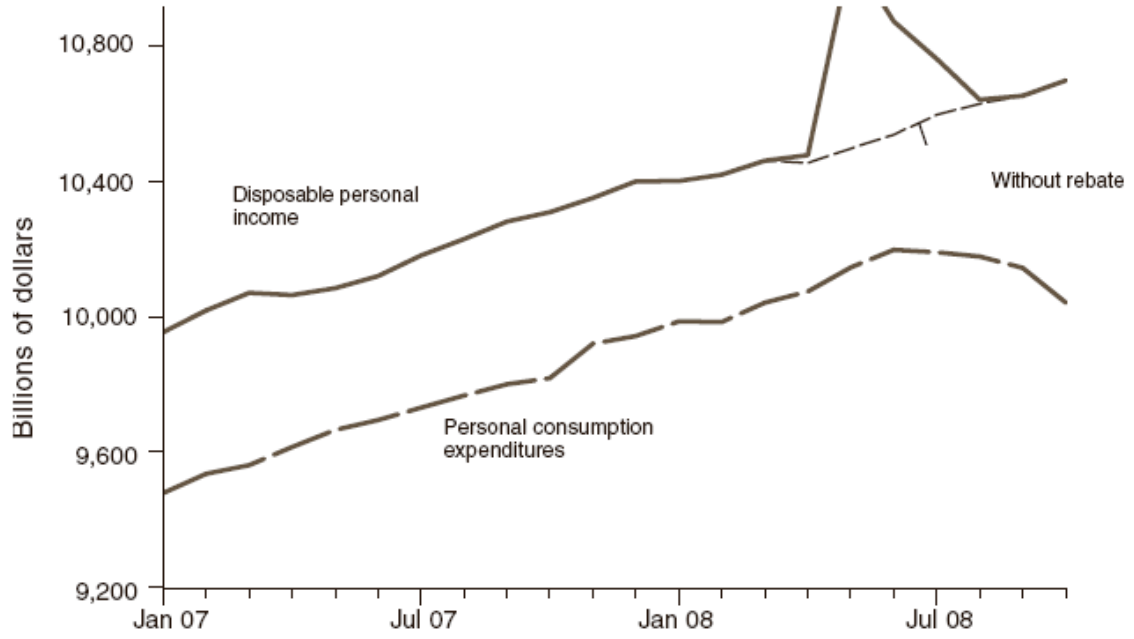


FIGURE 1. INCOME, CONSUMPTION, AND THE 2008 REBATE PAYMENTS

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