

Does Fiscal Stimulus Work When Recessions Are Caused by Too Much Private Debt?

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We argue that fiscal stimulus funded by public debt is effective for increasing economic activity and employment even in recessions that are caused by overborrowing in the private sector. We analyze the impact of government spending on local economies between 2007 and 2009 and find evidence that the fiscal multiplier is higher in geographical areas characterized by higher individual household debt. The higher multiplier in those areas might be attributed to a direct increase in both household consumption and local economic slack.

A number of research studies have shown that excessive household debt contributed to the 2007 financial crisis and slowed the economic recovery from the Great Recession. A hotly debated topic among economists and policymakers now is whether a stimulatory fiscal policy is helpful in such a recession.

In a typical recession—one that doesn't involve consumer overborrowing—most economists maintain that fiscal stimulus is desirable. They argue that each dollar of additional government spending increases gross domestic product (GDP) by more than a dollar, a phenomenon known as the fiscal multiplier. In part, a fiscal multiplier above one is attributed to consumers spending the additional income generated by government spending. But the stimulus might not generate the desired multiplier effect if consumers use money from the fiscal stimulus to repay their existing debt rather than consume additional goods and services.

In this *Economic Commentary* we argue that even in recessions caused by consumer overborrowing, fiscal stimulus is effective for increasing economic activity and employment. We analyze the impact of government spending on employment, income, GDP, consumer debt, and consumer spending from 2007 to 2009 and find evidence that the fiscal multiplier is higher in geographical areas characterized by higher individual household debt.

We investigate the channel through which the economic recovery is impacted and conclude that areas with higher consumer debt also tend to suffer higher levels of unemployment. In such an environment, fiscal stimulus is more effective because government spending increases employment without crowding out the private sector. Higher employment then stimulates GDP growth and helps consumers to pay off the old debt.

Estimating the Fiscal Multiplier in Core-Based Statistical Areas

Determining whether GDP growth was achieved as a result of a fiscal stimulus is tricky because it is difficult to disentangle the direction of causality: Fiscal stimulus affects GDP, yet fiscal stimulus can also be triggered by a decline in GDP or local employment. Politicians from more recession-prone or deeper-recession geographical areas might lobby for larger government spending for their constituencies. As such, the distribution of total government spending into local geographical areas could be determined by political influence, which in turn could contribute to the uncertainty of the causality direction. To isolate the effect of fiscal stimulus on employment or GDP we use the instrumental variable statistical technique proposed in Nakamura and Steinsson (2014).¹

In addition, instead of looking at total fiscal stimulus spending across the country as a whole, we use data on another type of government spending, Department of Defense (DOD) spending. DOD spending in the United States is the third-largest government expense after Medicare and Social Security, and it constitutes more than 50 percent of the government's discretionary spending. Furthermore, DOD spending is driven mostly by geopolitical events (such as the Vietnam War or 9/11) and not the business cycle, which mitigates concern about reverse causality.²

We exploit local geographic variation in DOD spending to estimate the magnitude of the fiscal multiplier. Specifically, we explore DOD spending at the core-based statistical area (CBSA) level to statistically analyze how different rates of growth in government spending at different locations affected economic growth in the local economy during the Great Recession. In our statistical model, we control for other factors that influence economic growth in addition to the growth of DOD spending (Demyanyk, Loutskina, and Murphy, 2016). Then we evaluate whether the post-crisis fiscal multipliers vary with local pre-recession consumer indebtedness.

Our results suggest that the government spending multiplier is higher in CBSAs (cities) with higher pre-recession consumer debt (figure 1). In fact, the fiscal multiplier almost doubles as we move from cities in the bottom quartile of consumer indebtedness to those in the top quartile. These results suggest that expansionary fiscal stimulus can mitigate the adverse effects of consumer debt overhang on economic growth.

The Multiplier Mechanism

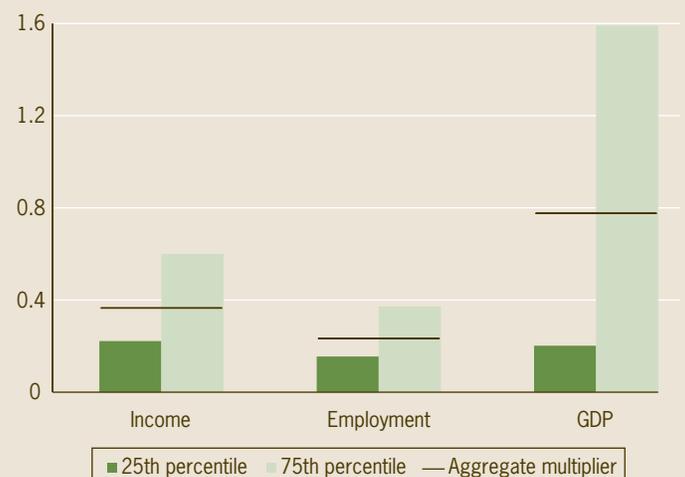
Economic theory suggests three possible channels through which government spending could lead to larger multipliers in areas with more debt. We analyze our data to look for evidence of any of these channels.

Relaxation of the Credit Constraint

The first channel through which additional government spending might generate more of an impact is by relaxing credit constraints, allowing consumers to borrow, and thus spend more. Economic theory suggests that households typically try to borrow during recessions so that they can maintain the same level of spending. However, during the Great Recession, this strategy could not be employed, because banks drastically curtailed their lending, and households could not borrow (that is, households were *credit-constrained*). In such an environment, additional income (from the government) could lead to a relaxation of consumers' credit constraint, and more so for highly indebted individuals or households, leading to higher consumption, which in turn could stimulate the local economy.

If this explanation is valid, we would expect to find that consumer-debt balances increase in response to the government stimulus, more so for highly indebted consumers. To evaluate this theory, we examine the total debt balances of individual consumers, using data from two major credit bureaus in the United States, Equifax and TransUnion.³ Our results do not support this explanation of the debt-dependent fiscal multiplier: They show that individuals with higher pre-recession debt-to-income ratios actually reduce their debt by more than those with lower debt-to-income ratios. The relative deleveraging effect is observed across all individual income quintiles and credit score categories.

Figure 1. Government Spending Multiplier at Different CBSA Debt-to-Income Ratios



Source: Authors' calculations.

Marginal Propensity to Consume

The second reason the fiscal multiplier might be higher in more indebted areas is that households that are credit-constrained tend to consume a larger fraction of their incomes (Galí et al., 2007, Eggertsson and Krugman, 2012), a phenomenon called a larger *marginal propensity to consume*. For individuals who must dedicate a larger part of their monthly income to repaying their debt, every additional dollar of income is likely to be dedicated to additional consumption. In contrast, consumers who do not face a budget constraint are unlikely to change their consumption behavior even with the additional income.

To evaluate this explanation, we look at two measures of household consumption: individual consumer credit card balances, which serve as a measure of general spending, and auto loans and title issuance, which serve as a measure of durable goods purchases.

After isolating subsets of consumers who are more likely to channel most of their consumption through their credit card accounts, we conduct a number of tests to evaluate the marginal-propensity-to-consume hypothesis. Our evidence suggests that households with more pre-recession debt increase their credit card balances during the recession period. We also find evidence of an increase in durable consumption (auto purchases), and the economic magnitude of the effect can partially explain the sizable differences in fiscal multipliers across cities with relatively high and relatively low household debt levels.

Overall, our evidence offers some support for debt-dependent multipliers being driven by a higher marginal propensity to consume of debt-constrained households.

Economic Slack

The third channel through which fiscal stimulus could lead to a greater multiplier in more indebted areas is economic slack. Economic theory suggests that in areas of high unemployment, government spending should have a larger multiplier effect because new government jobs created with the spending aren't filled at the expense of private jobs. If public sector employment comes at the expense of employment by private companies, the impact of government spending on overall employment and economic output is diminished (a *crowding-out effect*). It is well documented that areas with high consumer debt before the housing crisis experienced a greater decline in employment during the recession (Mian and Sufi, 2015). The fiscal stimulus, therefore, might have a larger impact on areas with pre-recession consumer debt, because they were the areas with higher unemployment and economic slack during the recession.

To evaluate this explanation, we focus on a sector of the economy for which two conditions are true: The output of firms in the industry is not affected by local-area GDP or household consumption, but employment at firms is affected by local-area economic slack. The national security industry

is a good example of such an industry. Firms in this industry do not benefit from additional dollars coming from consumers' pockets, as they do not produce consumer goods and services. But these firms do benefit from slack in the labor market, as it allows them to hire more people with ease and at lower wages.

When we look at national security spending across different geographical areas during the recession, we find that the fiscal multiplier increases with local consumer debt-to-income ratios. That is, in areas where households had higher debt, additional defense spending in the area led to higher local-area GDP growth than it did in areas with lower debt. The increase in the multiplier in these areas can be explained only by the economic slack channel. Higher government spending allowed national security firms to hire workers who would have been unemployed otherwise, and those workers could earn a paycheck and generate more local-area consumption.

Conclusion

Overall, our results suggest that fiscal stimulus is effective even during recessions induced by consumer-debt overhang. An increase in government spending is associated with a fiscal multiplier above one, and the multiplier is higher in consumer-debt-ridden geographical areas. The higher multiplier in those areas might be attributed to a direct increase in household consumption and local economic slack. Our results imply that the ills of private debt can be cured by government spending that is financed by public debt. At least in the short term (two years are considered in this study), public debt is effective in stimulating income and employment even in areas of high consumer indebtedness.

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Footnotes

1. Specifically, the instrument is the predicted change in government spending based on a location's pre-recession share of national DOD spending and the total change in national DOD spending.



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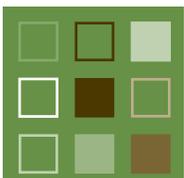
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2. The DOD data are available from USAspending.gov. This official government website contains detailed information on DOD contracts signed since 2000. The data are based on DD-350 and DD-1057 military procurement forms. We use information about government spending, contract by contract, from \$25 disbursements to almost \$32 billion military procurements. We observe the start and end dates of the contracts, the primary contractor locations, and the ZIP codes in which the majority of the work is performed.

3. Equifax data were made available to us for this research through the Federal Reserve Bank of New York, Consumer Credit Panel. TransUnion data were made available to us through the Federal Reserve Bank of Cleveland.



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