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Did the 2013 Government Shutdown Severely Damage the U.S. Economy?

By Scott R. Baker and Constantine Yannelis

The 2013 government shutdown was a disaster for federal government employees—nearly 3 million employees lost their main income source during the shutdown, with 800,000 of these workers being furloughed and sent home during this period. We study this event and compare federal government workers to state government workers, who were unaffected by the shutdown. We find that workers whose pay was interrupted during the shutdown significantly cut spending in their households, and that this cut was even larger for furloughed workers who stayed home—suggesting that much of the drop in spending can be explained by changes in time allocation as well as a decline in income.

The 2013 government shutdown provides an ideal policy experiment to analyze the effects of changes in income on consumption. This question has a number of

policy implications, as many public programs, ranging from unemployment insurance to income taxes to social security, affect household income.

Following a dispute over funding for the Patient Protection and Affordable Care Act, on October 1, 2013, the federal government shut down, and remained so, for approximately two weeks. During this time, the politicians who arguably caused the shutdown were still paid. As Rep. Renee Elmers put it: *“I need my paycheck. That’s the bottom line.”*¹ However, most regular federal workers were affected, with nearly all federal government employees missing at

1 <http://politicalhumor.about.com/od/stupidquotes/a/Government-Shutdown-Quotes.htm> It is worthwhile to point out that many lawmakers voluntarily donated, refused, or held in escrow their pay during the shutdown.

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About The Author

Scott Ross Baker is an Assistant Professor of Finance and Donald P. Jacobs Scholar at Northwestern University. His research is concentrated in empirical finance and macroeconomics. He is currently engaged in a variety of research projects regarding household leverage, the effects of policy uncertainty on financial markets and growth, as well as the effects of unemployment benefits on job search intensity. Recent work examines the impact of household leverage and credit constraints in driving sensitivity to both income and asset shocks during the Great Recession. Scott joined the Finance Department at Northwestern’s Kellogg School of Management in July 2014.



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least one paycheck.² We study this period of interrupted pay in order to gain insights about how consumers respond to temporary changes in income.

The consumption response to income changes

The consumption effects of a change in income can vary depending on a number of factors, including whether the income change was anticipated, whether a household has sufficient access to credit markets or liquid savings, and whether the income change is permanent or merely temporary. The traditional permanent income model of Freidman (1957) predicts that households will borrow and save to smooth consumption in response to anticipated income shocks, and that unanticipated temporary income shocks should have small effects on consumption. Jappelli and Pistaferri (2010) provide an overview of the large body of empirical work showing excess sensitivity of consumption to changes in income. There are a number of possible explanations for this phenomenon.

One possible explanation is that households face credit constraints and are unable to borrow. In this situation, both unanticipated

increases and decreases in income can lead to large changes in consumption. However, credit constraints cannot explain why large drops in consumption are observed in response to predictable changes in income, such as at retirement. Another potential explanation for the excess sensitivity of consumption to changes in income is home production. Many situations involving a drop in income also involve an increase in available time. Individuals may, for example, choose to cook at home rather than eat at restaurants. An increase in leisure time may also affect consumption directly if leisure and consumption may substitute for one another.

The 2013 Federal Government Shutdown

“It’s very hard from a distance to figure out who has lost their minds. One party, the other party, all of us, [or] the president.”

— Senator Claire McCaskill³

The 2013 shutdown occurred due to the inability of the Republican House of Representatives to agree with the Democratic Senate and President Obama on funding for the Patient Protection and Affordable Care Act (ACA), colloquially referred to as “Obamacare.” On September 10, Congress passed H.J. Res. 59, which defunded the ACA. Nine days later, the White House issued a veto

threat, and the next day a filibuster was delivered on the Senate floor threatening a government shutdown driven by the non-passage of a new federal budget. In a fast moving process, a dispute about the ACA quickly grew to cause a stalemate between Congress and the White House and culminated with the shutdown. Table 1 shows events leading up to, and during, the shutdown.

Despite these early warning signs, very few news stories mentioned the shutdown until ten days before it began. Online prediction markets put the probability of a federal government shutdown as below 20 percent into the final week of September.

During the shutdown, federal employees skipped at least one paycheck and were repaid the missed income at a later date. Additionally, many federal workers were furloughed, meaning that they were sent home without pay. The federal government reopened on October 16, following a bipartisan deal negotiated by Senate members. Federal workers began receiving back pay at the end of October, but there were significant delays at some agencies. The 2013 federal government shutdown is different from other studied episodes as it is truly a transitory income shock—workers skipped a payday, but knew that they would be repaid at a later date and so permanent income was unaffected.

² Some federal government agencies such as the State Department and federal courts are self-funded or funded through special appropriations. These agencies were not affected by the shutdown. Additionally, active duty military personnel were paid during the shutdown through a bill passed in the days preceding the shutdown, HR3210.

³ <http://swampland.time.com/2013/10/01/12-quotes-about-the-government-shutdown/>

How did federal employees react to the shutdown?

In Baker and Yannelis (2014), we study the effect of the shutdown on federal employees, with the aim of examining how transitory changes in income affect consumption. We use data from a large online personal finance website, comparing federal government workers who were affected by the shutdown to state government workers who were unaffected by the shutdown. Households are matched to their employing agencies using direct

deposit paycheck information. We also match state employees to act as a control group, as these workers have similar employment patterns and were unaffected by the federal shutdown. The data contains information on income, expenses, assets, and consumer spending. We match 154,459 state and federal workers, ensuring a large and comprehensive sample.

Figure 1 shows that the income effects of the shutdown can be observed in the data. During the shutdown period, we see a sharp

decline in income for federal government workers. Following the shutdown, we see a rebound in income over several months as federal workers are gradually repaid for missed income. No such drop or rebound is observed for state government workers. The two series also track each other very closely before the shutdown, and a similar pattern is observed for spending. The data support the use of state government workers as a valid control group for federal government workers.

Figure 2 illustrates that the shutdown also affected spending, though with a smaller differential effect on spending than on income. This is a violation of the canonical permanent income theory—households should not respond to unanticipated transitory shocks in income. In this particular case, there is no effect on permanent income, as the income is simply delayed by a matter of weeks rather than entirely foregone. We explore the nature of the shutdown to examine particular explanations for excess sensitivity.

Was it due to income or increased available time/home production?

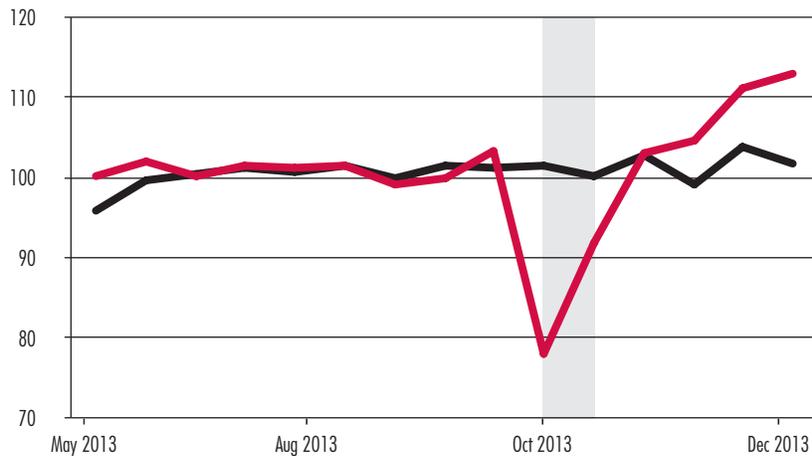
During the shutdown, unpaid federal workers were divided into two categories. Approximately 800,000 workers were furloughed, and sent home without pay. The rest of the more than 3 million federal workers were exempted, required

Table 1
Timeline of the 2013 Shutdown

Date	Federal Government Shutdown Event
SEPT. 20	Congress passes H.J. Res. 59, defunding the Patient Protection and Affordable Care Act (ACA)
SEPT. 27	Senate removes provision defunding the ACA
SEPT. 30	The House sends another amended bill, delaying the individual mandate and requiring members of Congress and staff to end employer health contributions. The Senate rejects the amendments. The Senate passes a bill paying the military in the event of a shutdown. The White House signs the bill into law.
OCT. 1	The shutdown begins with the new fiscal year. Approximately 800,000 workers are furloughed. Almost 3 million federal workers face delayed paychecks.
OCT. 5	Congress passes bill to give back pay to workers following the conclusion of the shutdown.
OCT. 11-17	Federal government workers miss scheduled paychecks.
OCT. 14	Senate leaders announce a bipartisan deal to end the shutdown and raise the debt ceiling.
OCT. 17	The President signs the bill ending the shutdown into law.
OCT. 25-28	Federal workers begin to receive back pay that was owed during the shutdown.

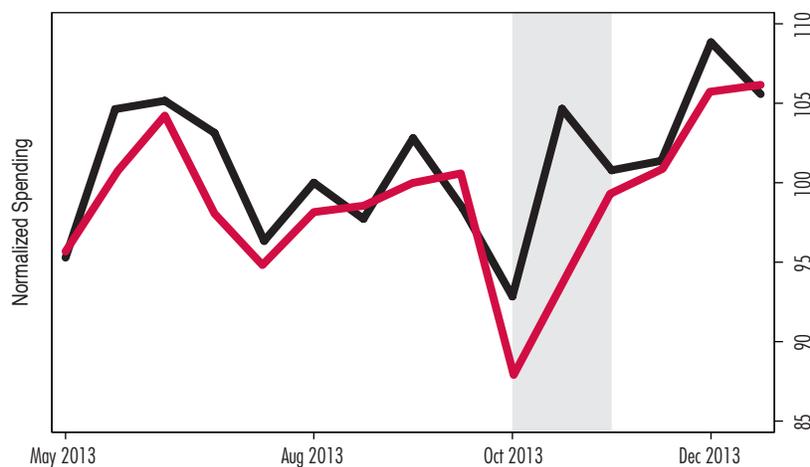
Notes: The events described in the table above are compiled by the authors, primarily from media coverage of the shutdown and various government documents.

Figure 1
Income During the 2013 Shutdown



Notes: The figure shows mean income for federal and state government workers in 2013. The red line shows income for federal government workers. The black line shows income for state government workers. The shaded area depicts October 2013, when the federal government shutdown occurred. All data comes from a large online personal finance website. Income data is derived from direct deposit transfers into checking accounts.

Figure 2
Spending During the 2013 Shutdown



Notes: The figure shows mean spending for federal and state government workers in 2013. The red line shows spending for federal government workers. The black line shows spending for state government workers. The shaded area depicts October 2013, when the federal government shutdown occurred. All data comes from a large online personal finance website. Transaction spending data is derived from bank, debit, and credit card transactions. Spending does not include durables and ongoing expenditures such as rent and education spending.

to work without pay, as their jobs were deemed important to national security or public safety. At agencies such as NASA, HUD, the SEC, and the EPA, over 90 percent of workers were furloughed. At other agencies such as the Department of Homeland Security, the Department of Justice, and the Department of Veterans Affairs, fewer than 15 percent of workers were furloughed.

Traditional explanations for the excess sensitivity of consumption to income tend to focus on (i) credit constraints, (ii) home production and (iii) increased leisure. Those expected to work without pay are only affected by the first explanation, credit constraints, while furloughed workers are affected by credit constraints as well as home production and increased leisure. The difference between the drop in spending between the two groups would be a function of an increase in available time through home production and leisure.

We find a larger drop in spending for furloughed workers, consistent with home production and leisure. Moreover, we find category specific differential drops in consumption consistent with both home production and increased leisure. Consistent with home production, furloughed workers spend less on groceries, restaurants, babysitting, and lawn and garden items. Consistent with increased leisure, they also spend less on

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entertainment and more on coffee shops and movies. In future work, we plan to use data on assets and cash on hand to determine the extent to which credit constraints can help to explain the rest of the observed drop in spending.

In Summary

How household consumption responds to changes in income is an important economic question and one that is highly relevant to government policies that affect household income, such as assistance to needy families and taxation. The 2013 government shutdown provides a particularly relevant, if unintentional, experiment that allows economists to study the effects

of income changes on changes in consumption.

We used data from a large online personal finance website to study how the drop in income resulting from the shutdown affected consumption. Comparing federal workers affected by the shutdown to state workers who were unaffected by the shutdown, we find excess sensitivity of consumption to a transitory income drop. The observed drop in income is inconsistent with the permanent income model and can be explained by credit constraints, home production, or the substitution of leisure for consumption. Comparing furloughed federal workers who were sent home without pay to exempted workers, who were made

to work without pay during the shutdown, we find evidence that consumption patterns respond to both a credit constraints and increased home production and leisure activity.

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