"Will It Hurt? Macroeconomic Effects of Fiscal Consolidation"

by Guajardo, Leigh and Pescatori

Discussion by Valerie Ramey

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What this paper does

- Systematic study of the consequences of fiscal consolidations in 17 countries over 30 years

- Instead of using the cyclically-adjusted primary budget balance (CAPB) from previous studies, this paper uses the narrative method to identify fiscal consolidations taken in response to deficit worries.

- Numerous robustness checks and in-depth analysis of effects of spending cuts vs. tax increases, interaction with exchange rate regimes, interaction with monetary policy

Strengths of this paper

- Makes a convincing case that the CAPB method does misidentify fiscal consolidations

  -11 data point comparison highlights limitations of the standard CAPB method

- Their use of the narrative method to create a new series, which both (1) allows the researchers to really understand their data points; and (2) potentially allows more systematic statistical analysis than the case study methods of this literature

- The further analysis of the importance of key details, such as the effects of government spending cuts versus tax increases, the role of monetary policy, etc. reveals important insights for policy makers.

Main Results of this Paper

- Fiscal consolidations do not stimulate the economy. After a consolidation, unemployment rises and output falls.

- A tax increase of 1% of GDP has a much larger contractionary effect than a spending cut of 1% of GDP.

- No evidence of non-Keynesian effects for large fiscal consolidations or for countries with higher than average sovereign default risk.

Outline of My Discussion

- Comparison to literature
- Policy implications of paper's results
- Potential problems with identification and econometrics
- Case study of a U.S. "exogenous" fiscal consolidation
- Conclusions

Previous Results from the Literature

- Giavazzi-Pagano (1990, 1996): Case studies of episodes in Ireland, Denmark, Sweden, as well as panel study of 19 OECD countries from 1970 – 1992.

  (1996): “The result that *sharp and/or persistent* fiscal impulses are likely to have non-Keynesian effects appears to be fairly robust to the presence of outliers and the endogeneity of income and of the fiscal variables. These non-Keynesian effects are not only associated to changes in government consumption, but to some extent also to changes in taxes and transfers.”

- Alesina and Ardagna (1998, 2009): Case studies and panel analysis of 21 countries from 1960 – 1994, 1970 to 2007

  Use changes in the cyclically adjusted primary balance to identify large fiscal adjustments.

  They conclude that (1) there are some cases in which fiscal consolidations are expansionary and (2) they are never expansionary when tax increases are involved.

Theory

- Blanchard's (1990) discussion of Giavazzi and Pagano sketches model in which fiscal consolidations can have non-Keynesian effects. The key ingredients
  - The marginal resource cost of taxation is increasing in the tax rate
  - The longer the government delays in dealing with a growing deficit, the higher the required tax rate when it does finally act
  - Thus, if policy makers take actions to reduce the deficit earlier than the public expected, there will be positive wealth effects
- Bertola and Drazen (1993), Sutherland (1997) develop models with similar mechanisms.
- Alesina and Perotti (1997) develop a model with supply-side effects, which involve unions, government, and changing labor market institutions.

How much disagreement is there?

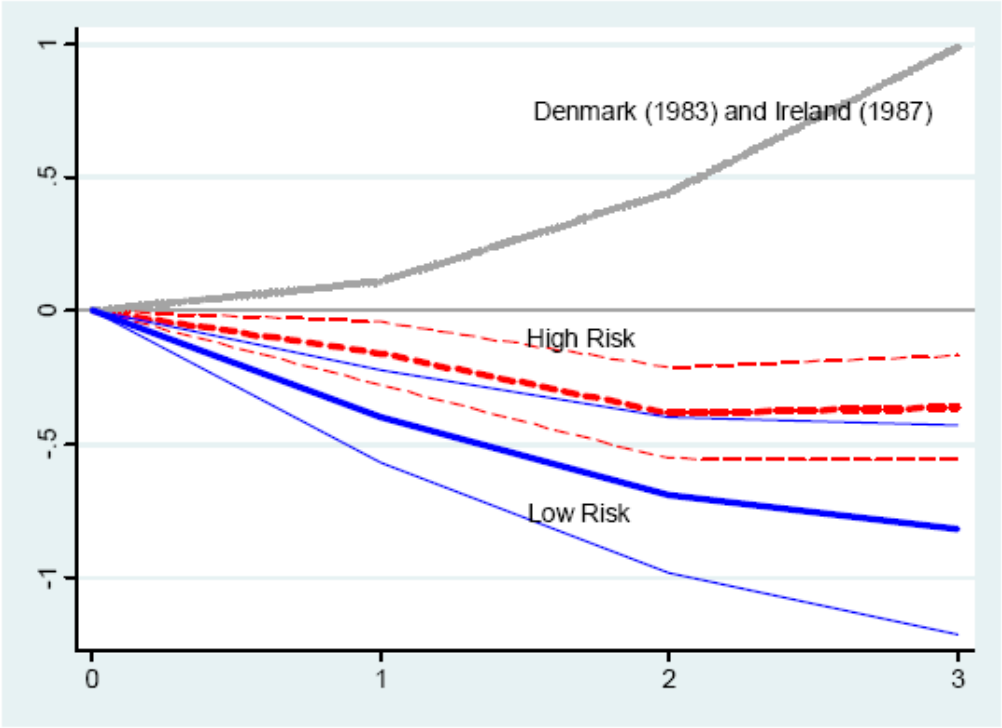
- The present paper argues that *on average* fiscal consolidations are not expansionary, (even if one focuses just on large ones).

- However, the previous literature never made the sweeping claims that this paper accuses them of making.

- In fact, this paper presents new evidence that is consistent with previous literature:

GLP show a definite non-linearity with respect to sovereign default risk

Figure 18. Effect of a 1 Percent of GDP Fiscal Consolidation on GDP: By Sovereign Defau Risk (percent)



Note: Figure reports point estimates and one standard error bands. t=1 denotes the year of fiscal consolidation.

Furthermore, all studies agree on the relative effects of spending cuts versus tax increases

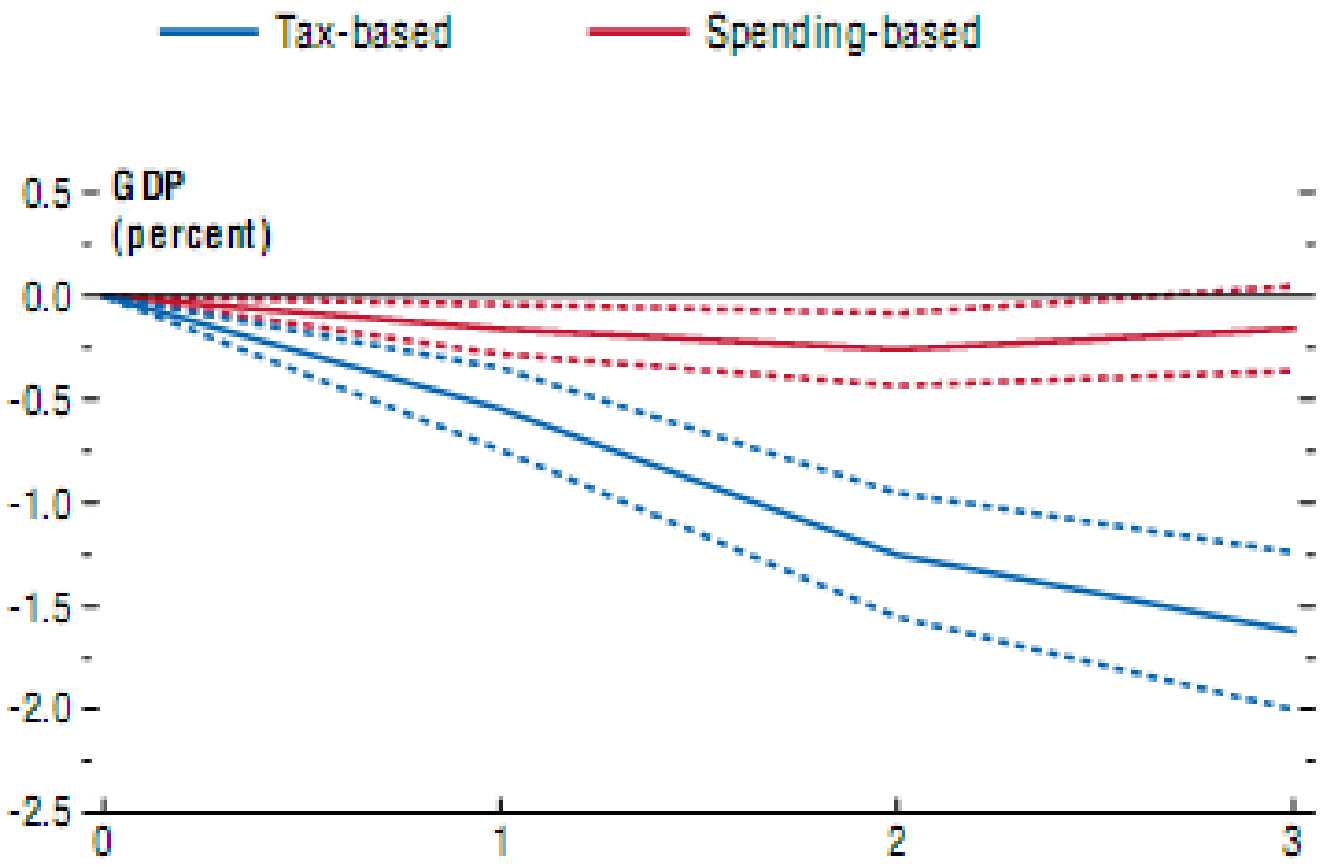
- Numerous papers estimating multipliers find that the effects of tax changes are greater than the effects of government spending changes

  Govt spending multiplier estimates are between 0.5 and 1.5

  Tax multiplier estimates are between -1 and -3.

- This paper as well as Alesina-Ardagna and others find larger effects of taxes.

GLP: Effect of a 1% of GDP Fiscal Consolidation



This result turns the old Keynesian balanced-budget multiplier on its head: an equal reduction in spending and taxes will stimulate the economy!

If you believe these results, the policy prescription for a government faced with high current unemployment but long-run structural deficit problems is obvious:

Slash government spending and cut taxes

Geez, we are sounding like Tea Party Candidates!

The Problem of Identification

The authors argue that:

- The cyclically-adjusted budget balance is an imperfect measure of actual policy actions.
- Measurement error in this variable is correlated with state of economy in a way that biases toward finding expansionary effects
- The Romer and Romer narrative method to identify "fiscal policy actions intended to reduce the budget deficit" is superior

Is the authors' identification scheme superior?

To answer the question in their title "Will It Hurt?,"

ideally we would run a randomized experiment

such as the following:

“Fast versus slow bandaid removal: a randomised trial.” Furyk JS, O'Kane CJ, Aitken PJ, Banks CJ, Kault DA. Med J Aust. 2009 Dec 7-21;191(11-12):682-3.

RESULTS: 65 participants were included in the study. The overall mean pain score for fast bandaid removal was 0.92 and for slow bandaid removal was 1.58. This represents a highly significant difference of 0.66 ($P < 0.001$).

CONCLUSION: In young healthy volunteers, fast bandaid removal caused less pain than slow bandaid removal.

If the IMF Could Conduct a Randomized Trial

- They would randomly endow each country with a certain level of deficit that would continue to grow if no action were taken

- They would then randomize over policy makers according to who could undertake fiscal consolidation

- To make this a good experiment, it would be key that (1) the level of deficit be uncorrelated with the future growth path of the economy; and (2) the probability and size of the policy-makers' reactions be uncorrelated with the future growth path of the economy.

How GLP attempt to reproduce a randomized trial

Treatment Group - country-year observations where governments decided to undertake a fiscal consolidation in response to a pre-existing high deficit.

Control Group – all other country-year observations

Additional controls:

- baseline: lagged GDP growth, year and country fixed effects

- robustness: lags of government debt/GDP, sovereign default risk, sovereign bond yield

Why this application might not survive an applied microeconomic seminar

- High deficits are not randomly assigned to countries and years.
- Politicians do not randomly respond to current deficits.
- Controlling for recent output, debt-gdp ratios, etc. does not necessarily randomize this experiment.
  - Politicians are more likely to undertake a fiscal consolidation in response to the deficit if they are worried about the long-term deficit outlook.
  - The same factors that lead to a gloomy deficit outlook may also lead to slower economic growth.

Think about identification in a less subtle setting: Measuring the Effect of Going to the Hospital

- Question: What is the effect of going to the hospital on the probability of dying in the next 6 months?
- Method: narrative approach that isolates instances in which individuals show up at the emergency room to treat a pre-existing health condition.
- Controls: lagged values of body temperature, blood pressure, and pulse rate
- Comparison: death rate of “treatment group” vs “control group” (those who didn’t go to the hospital).
- Result: People who went to the hospital were more likely to die than those who didn’t go to the hospital
- Would you refuse to go to the hospital because of this study?

Consider another analogy in a macro context

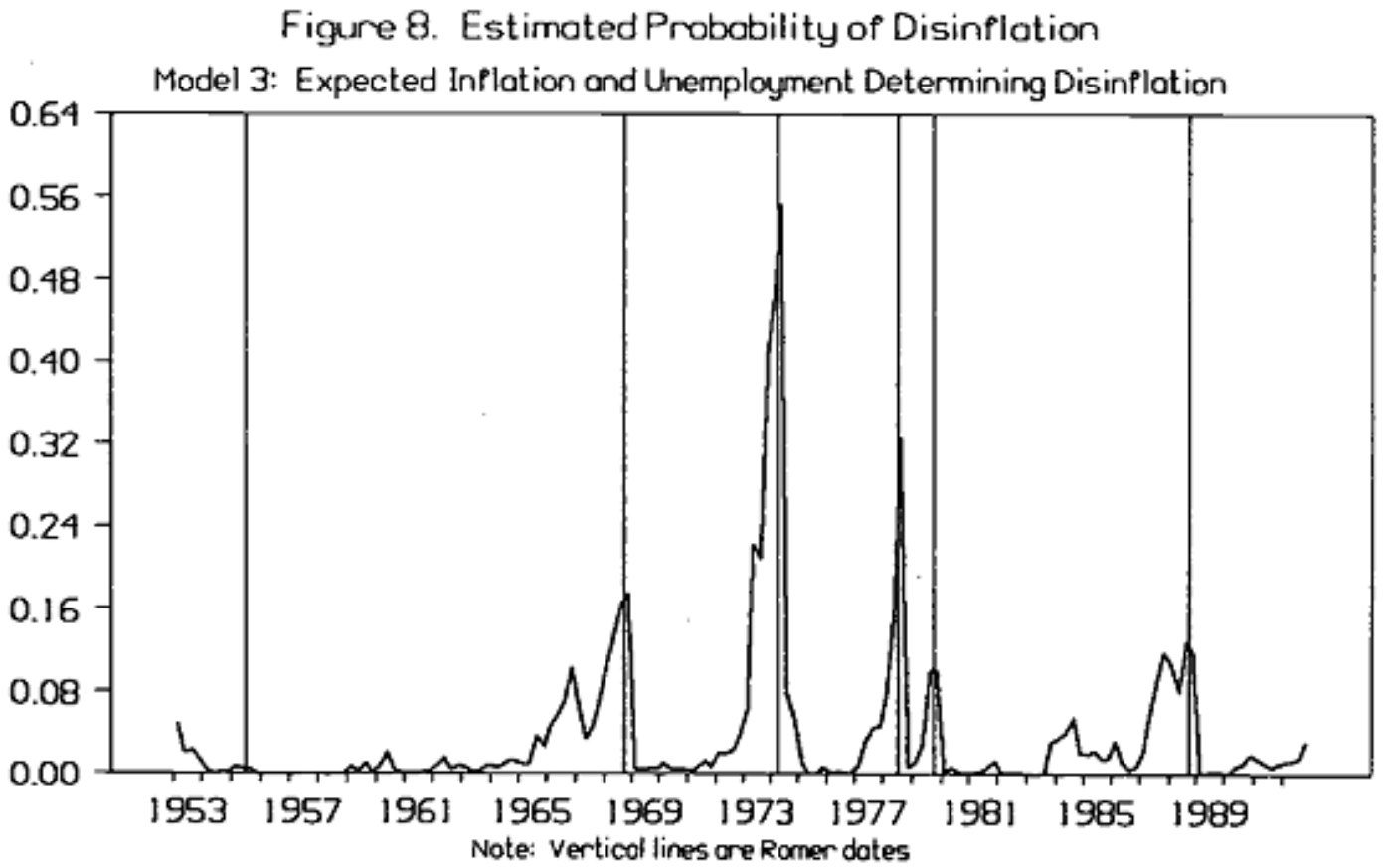
- Romer and Romer (1989) used the narrative approach to identify dates at which Fed decided to reduce inflation.
- They took this as an exogenous shock to policy and then studied the effects.
- We now know that they were estimating the reaction part of policy, not an exogenous shock.

$$i_t = .04 + 1.5(\pi_t - .02) + 0.5(y_t - ybar_t)$$

- In fact, Shapiro (1994) showed that the dates were predictable from expectations about future unemployment and inflation:

From Shapiro (1994)

"Federal Reserve Policy: Cause and Effect"



Thus, these dates can't be used to answer the question: What is the independent effect of the Federal Reserve raising interest rates?

Back to fiscal consolidation context

- Expectations about the future are key to determining when and how policy makers act.

- Consider the following factors that affect both the probability of fiscal consolidation action and long-run growth:

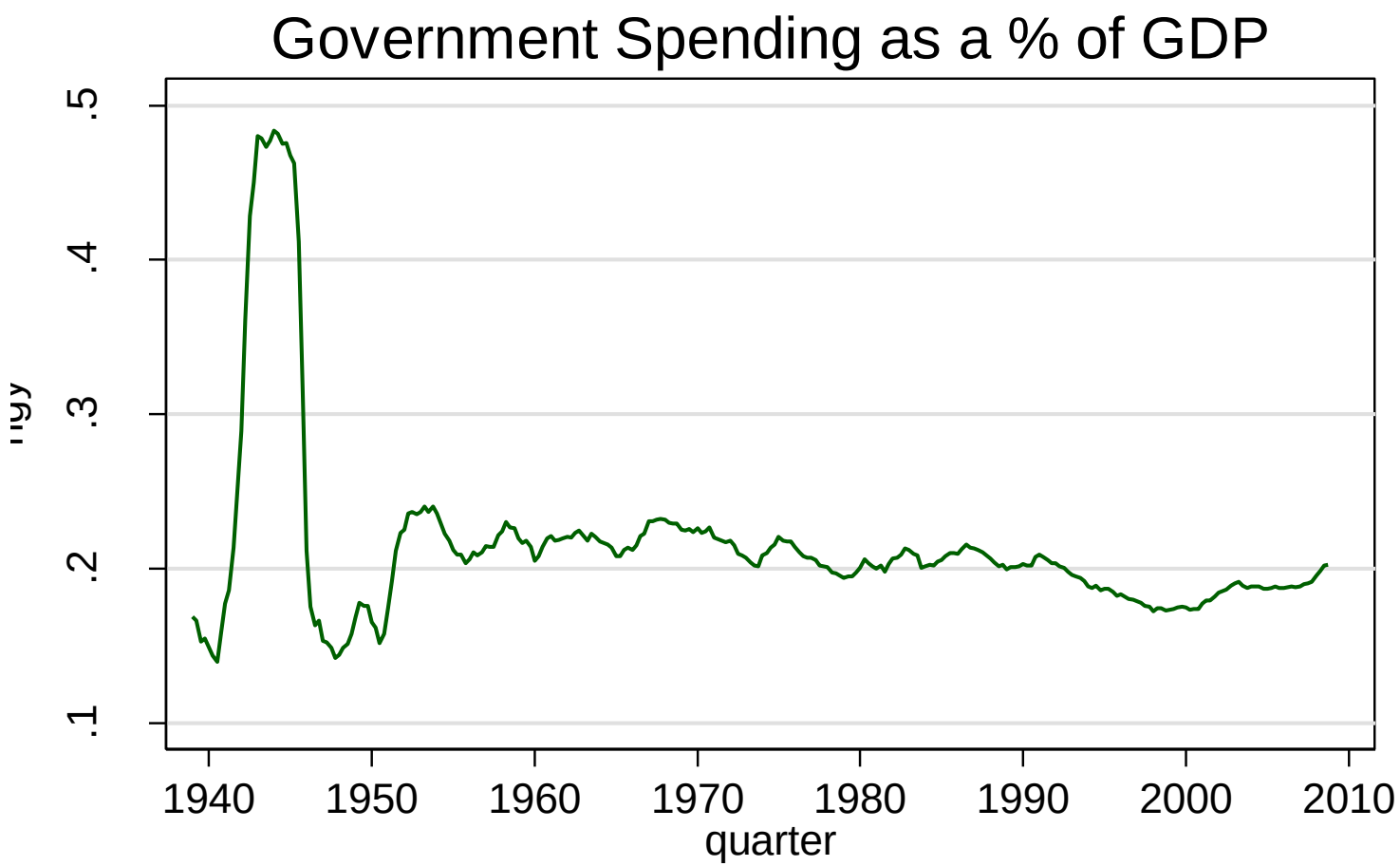
- Demographics: An increase in the fraction of the population that is older (1) decreases labor supply growth, and hence output growth; (2) increases transfer payments and decreases tax revenues; (3) causes resources to shift to one of the most distorted and inefficient sectors of the economy (health care).

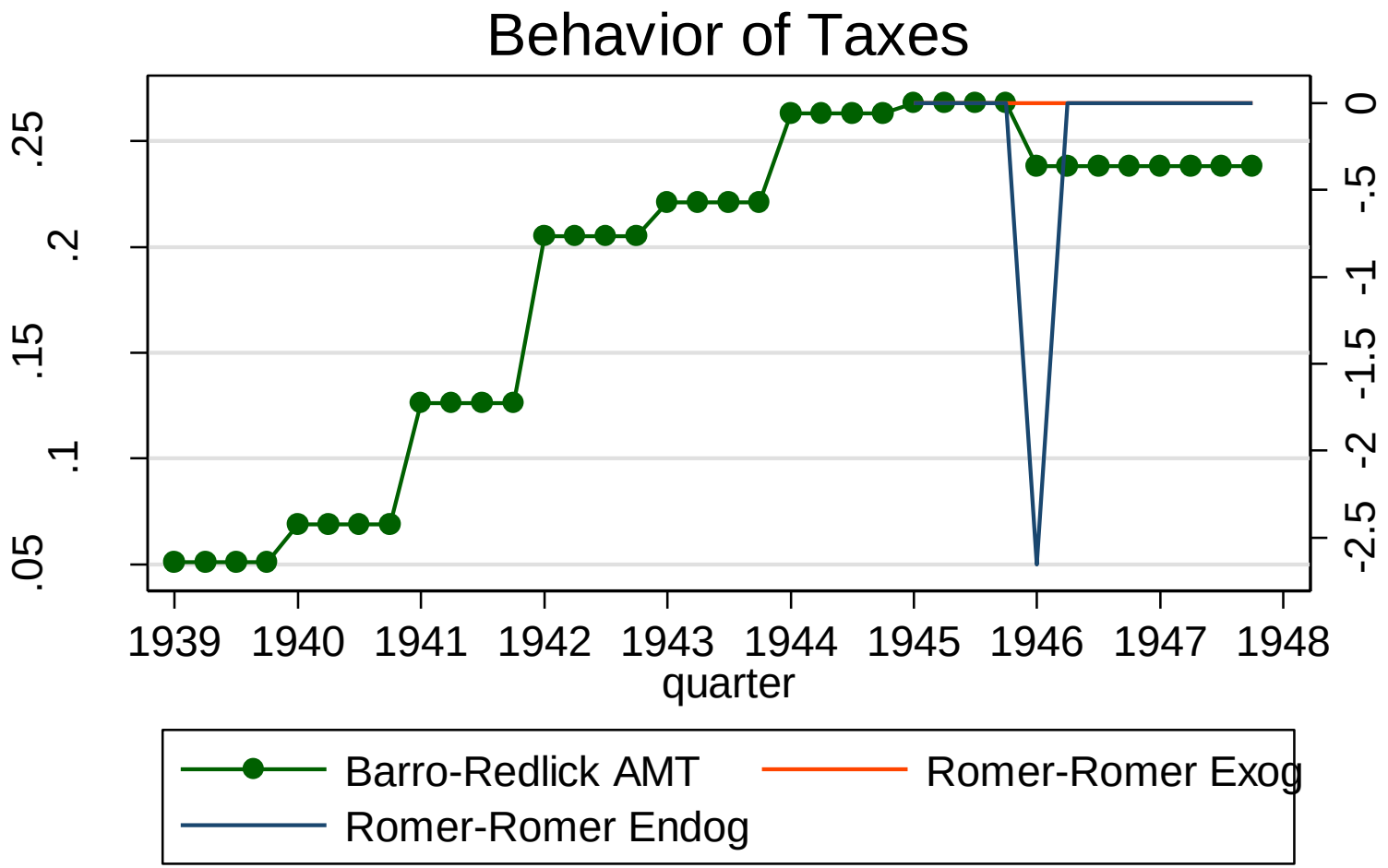
- Growth Slowdown: Government tax and transfer programs may have been set up assuming high growth. It takes awhile for politicians to realize the growth slowdown is not temporary. In the meantime, the deficit increases.

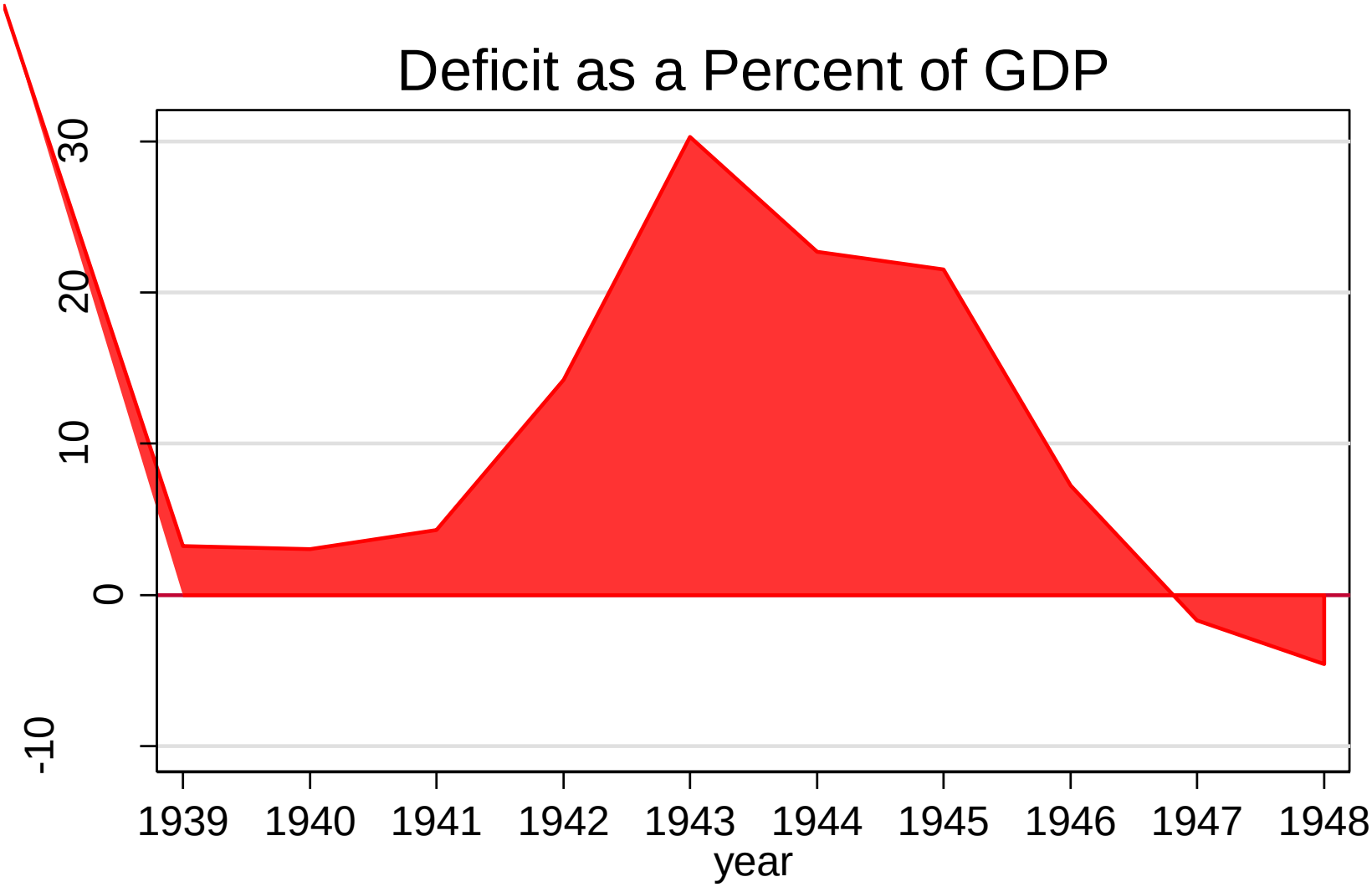
- Corrupt leadership: Corrupt leaders pass legislation that lines the pockets of their cronies, distorts economic incentives, raises the deficit, and leads to decreased productivity

Case Study in the U.S.: 1945 to 1947

Gov’t purchases fell from 46% of GDP in 1945:II
to 16% of GDP in 1946:II

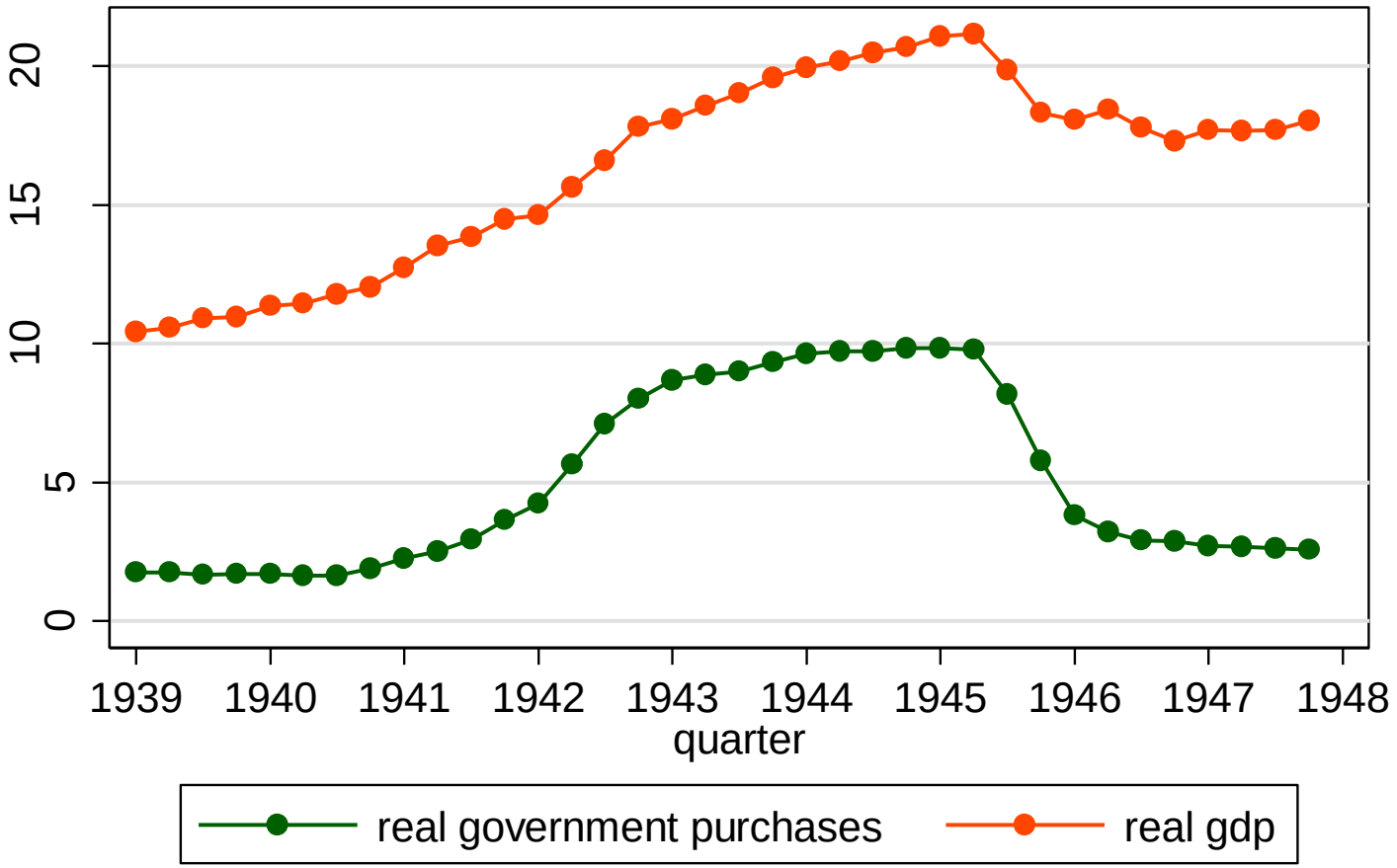



Behavior of Taxes
.05
.1
.15
.2
.25
0
-.5
-1
-1.5
-2
-2.5
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
quarter
Barro-Redlick AMT
Romer-Romer Exog
Romer-Romer Endog


Deficit as a Percent of GDP
30
20
10
0
-10
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
year

Real GDP fell 18% from 1945:II to 1946:III

Did unemployment show the equivalent increase?



Labor Force and Unemployment

In mid 1945:

military employment = 12 million

civilian labor force = 55 million

By mid 1946:

military employment = 3 million

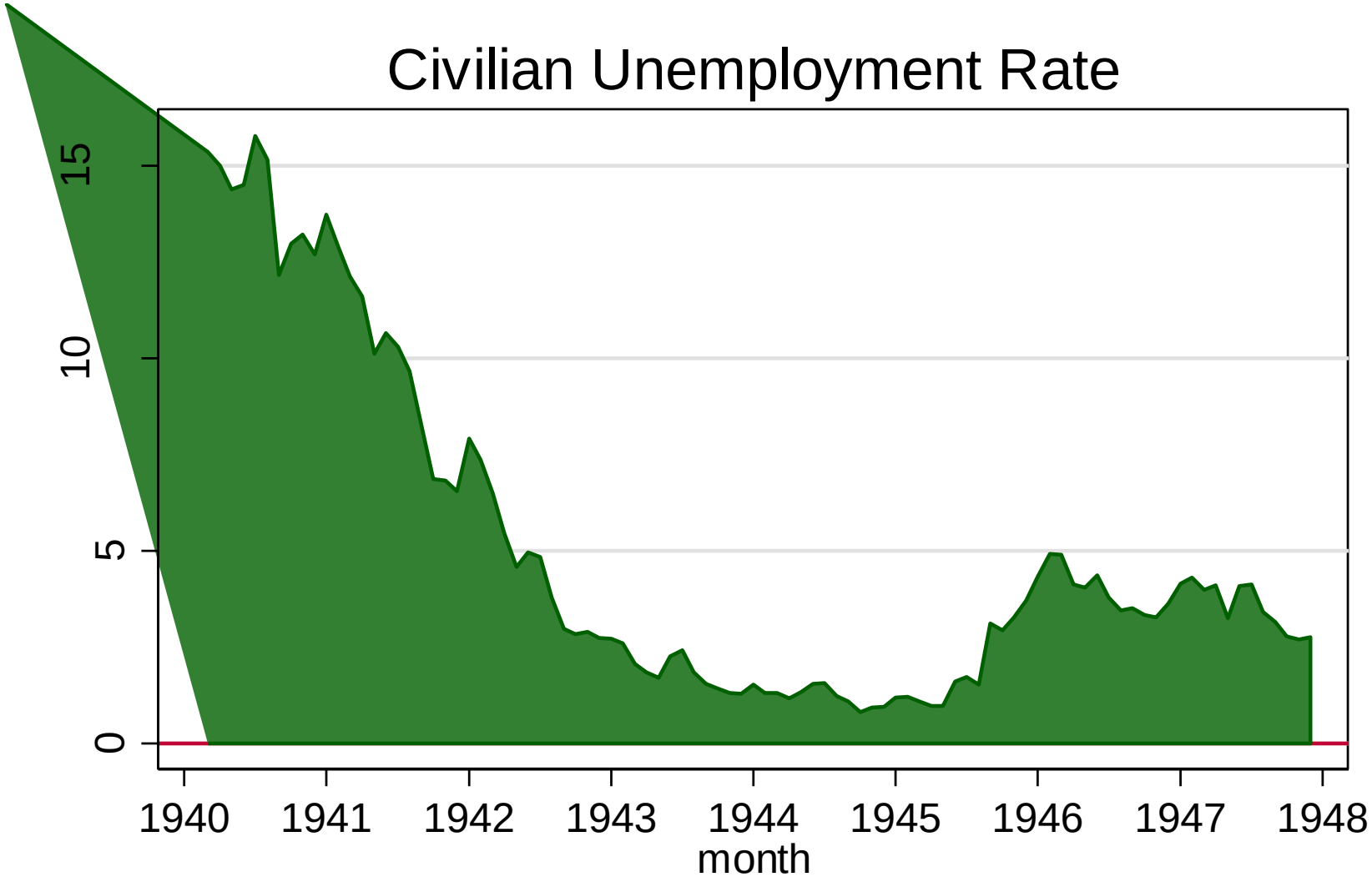
civilian labor force = 60 million

So total labor force shrunk by 6%.

But in 1 year the civilian labor force surged by 5 million, an increase of 9 percent.

Current theories of macro labor markets with search and matching frictions would predict a significant increase in unemployment.

What actually happened?



How did the U.S. private sector absorb so many workers so quickly?

A Potential Econometric Problem with the VARs

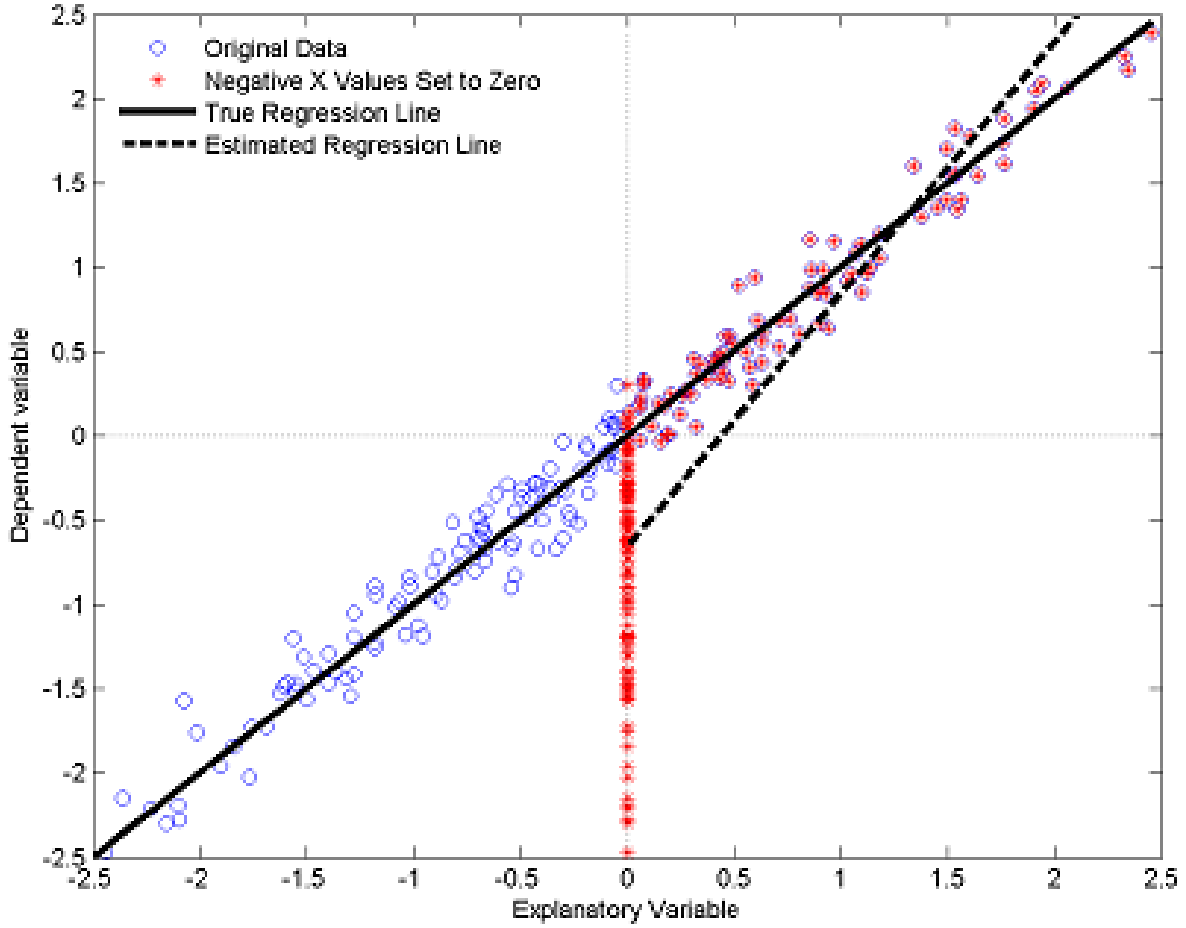
- Leigh et al study only fiscal consolidations, not fiscal expansions

- By including only fiscal consolidations in the VAR and not fiscal expansions, they are implicitly assuming expansions have no effect.

- Kilian and Vigfusson (2009) “Pitfalls in Estimating Asymmetric Effects of Energy Price Increases” show the econometric problems that occur when there is no such asymmetry.

- Consider the Kilian-Vigfusson graph on the next page:

Figure 1: The Effect of Censoring Negative Values of the Explanatory Variable



Kilian-Vigfusson (2009)

This graph shows that setting one side of the distribution to 0 leads to econometric estimates of effects that are greater than the true effects – i.e. it makes the slope of the regression line steeper than it really is.

Conclusions

- The paper identifies numerous interesting patterns in the data
- I am not convinced that the authors have adequately extracted causality from correlation.
- However, given the similar results that numerous studies using different methods obtain, it would be reasonable to draw two tentative conclusions:
  - Raising taxes is much more contractionary than cutting spending
  - Fiscal consolidations probably only lead to expansions under very special circumstances.