



The Investment Effect of Fiscal Consolidation

(Silvia Albrizio and Stefan Lamp)

discussion by Antonello D'Agostino

(European Stability Mechanism)

16th Banca D'Italia Public Finance Workshop - "Public Finance Today: Lessons Learned and Challenges Ahead"

Perugia 3-5 April 2014

The paper

- Quantify the impact of tax changes on:
 - Realised investments
 - Planned investments

- Datasets
 - Investments: micro level data from IFO investment survey and from the Economic and Business Dataset Center.
 - Tax shocks: narrative evidence derived from German tax legislation documents, (Romer and Romer (2010) approach).

- Mains results
 - Planned investments decrease by around 5.5% after a tax increase of 1%
 - Realized investments decline by around 4%.
 - Firms react both to current law changes and tax laws under discussion.

- General Remarks
- Specific Remarks
- Additional points

Two General Comments

- R^2 statistic in all regressions is zero
 - the regressors do not explain any percentage of the variance of the dependent variable

Two General Comments

- R^2 statistics in all regressions is zero
 - the regressors do not explain any percentage of the variance of the dependent variable.

- Main focus: tax shock should be related to corporate and business tax. In some cases the impact is not clear:
 - Ex. Consumption tax via VAT increase \Rightarrow consumption increases \Rightarrow sales increases \Rightarrow investment increases.

Specific comments: Tax shock timing

- Exact information timing about:
 - Introduction of initial draft to the Parliament
 - Publication of tax law
 - Implementation
- The Authors focus on exogenous tax shocks that are “announced and implemented” within the same time period.

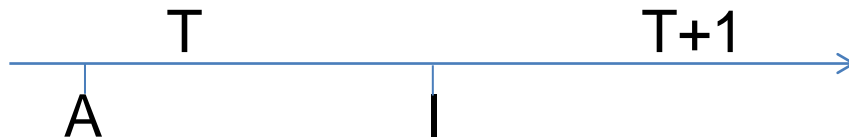


Essentially it is an “unanticipated” tax shock

Specific comments: anticipated tax shock

■ Question!

- What about including also anticipated tax shocks?



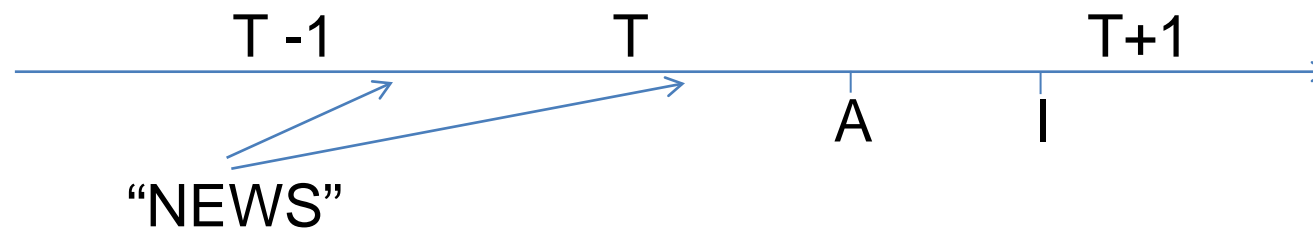
The analysis could suffer of an omitted variable bias!

Specific comments: anticipation effect

- Firms may perceive well before future tax changes, so they may adjust in advance their investment plans to future tax shocks.

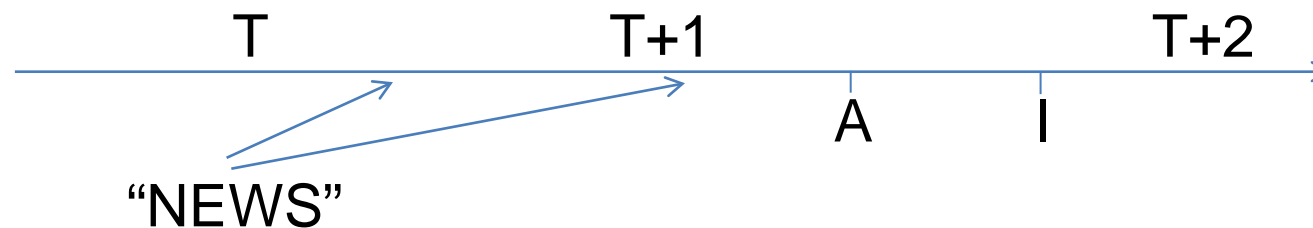
Specific comments: anticipation effect

- Firms may perceive well before future tax changes, so they may adjust in advance their investments to future tax shocks.
- According to the Authors, the publication date is on average:
 - 5 months after the first parliamentary draft
 - up to 1 year after the first discussion of the law



Specific comments: anticipation effect

- Firms may perceive well before future tax changes, so they may adjust in advance their investment to future tax shocks.
- According to the Authors, the publication date is on average:
 - 5 months after the first parliamentary draft
 - up to 1 year after the first discussion of the law



- Testing strategy: regress investments at time t on shocks at time t+1
- Tax shocks at time t+1 are function of the information set at time t
 $\tau_{t+1} = f(I_t, I_{t+1})$

Specific comments: Anticipation Effect

■ Proposed testing strategy:

- Identify the exact timing of the first discussion of the law (which may take place in the previous period or current year) - “news shock”.
- Control for the potential impact of anticipated tax shock at time t .
- Run a regression using: anticipated shocks, unanticipated shocks and the series of “news shocks”.

Planned Investments

- Regression based on biannual time series built up with the Autumn and Spring survey

- $\Delta \ln(PI_{2010,1}) = \ln(PI_{2010,S}^{2010}) - \ln(PI_{2009,A}^{2010})$ Spring 2010
- $\Delta \ln(PI_{2010,2}) = \ln(PI_{2010,A}^{2010}) - \ln(PI_{2010,S}^{2010})$ Autumn 2010

Planned Investments

■ Regression based on biannual time series built up with the Autumn and Spring survey

- $\Delta \ln(PI_{2010,1}) = \ln(PI_{2010,S}^{2010}) - \ln(PI_{2009,A}^{2010})$ Spring 2010

- $\Delta \ln(PI_{2010,2}) = \ln(PI_{2010,A}^{2010}) - \ln(PI_{2010,S}^{2010})$ Autumn 2010

- $\ln(PI_{2010,S}^{2010}) = pi_{2010,1} + pi_{2010,2} + pi_{2010,3} + pi_{2010,4}^f + \dots + pi_{2010,12}^f$

Planned Investments

■ Regression based on biannual time series built up with the Autumn and Spring survey

- $\Delta \ln(PI_{2010,1}) = \ln(PI_{2010,S}^{2010}) - \ln(PI_{2009,A}^{2010})$ Spring 2010

- $\Delta \ln(PI_{2010,2}) = \ln(PI_{2010,A}^{2010}) - \ln(PI_{2010,S}^{2010})$ Autumn 2010

- $\ln(PI_{2010,S}^{2010}) = pi_{2010,1} + pi_{2010,2} + pi_{2010,3} + pi_{2010,4}^f + \dots + pi_{2010,12}^f$

- $\ln(PI_{2009,A}^{2010}) = pi_{2010,1}^f + pi_{2010,2}^f + pi_{2010,3}^f + pi_{2010,4}^f + \dots + pi_{2010,12}^f$

Planned Investments

- Regression based on biannual time series built up with the Autumn and Spring survey

- $\Delta \ln(PI_{2010,1}) = \ln(PI_{2010,S}^{2010}) - \ln(PI_{2009,A}^{2010})$ Spring 2010

- $\Delta \ln(PI_{2010,2}) = \ln(PI_{2010,A}^{2010}) - \ln(PI_{2010,S}^{2010})$ Autumn 2010

- $\ln(PI_{2010,S}^{2010}) = pi_{2010,1} + pi_{2010,2} + pi_{2010,3} + pi_{2010,4}^f + \dots + pi_{2010,12}^f$

- $\ln(PI_{2009,A}^{2010}) = pi_{2010,1}^f + pi_{2010,2}^f + pi_{2010,3}^f + pi_{2010,4}^f + \dots + pi_{2010,12}^f$

- $\ln(PI_{2010,S}^{2010}) - \ln(PI_{2009,A}^{2010}) =$
 $fe_1^4 + fe_2^5 + fe_3^6 + re_4^6 + re_5^6 + re_6^6 + re_7^6 + re_8^6 + re_9^6 + re_{10}^6 + re_{11}^6 + re_{12}^6$

Planned Investments

- $\ln(PI_{2010,A}^{2010}) = pi_{2010,1} + \dots + pi_{2010,9} + pi_{2010,10}^f + pi_{2010,11}^f + pi_{2010,12}^f$
- $\ln(PI_{2010,S}^{2010}) = pi_{2010,1} + pi_{2010,2} + pi_{2010,3} + pi_{2010,4}^f + \dots + pi_{2010,12}^f$
- $\ln(PI_{2010,A}^{2010}) - \ln(PI_{2010,S}^{2010}) =$
 $= fe_4^1 + fe_5^2 + fe_6^3 + fe_7^4 + fe_8^5 + fe_9^6 + re_{10}^6 + re_{11}^6 + re_{12}^6$

Planned Investments

- $\ln(PI_{2010,A}^{2010}) = pi_{2010,1} + \dots + pi_{2010,9} + pi_{2010,10}^f + pi_{2010,11}^f + pi_{2010,12}^f$
- $\ln(PI_{2010,S}^{2010}) = pi_{2010,1} + pi_{2010,2} + pi_{2010,3} + pi_{2010,4}^f + \dots + pi_{2010,12}^f$
- $\ln(PI_{2010,A}^{2010}) - \ln(PI_{2010,S}^{2010}) =$
 $= fe_4^1 + fe_5^2 + fe_6^3 + fe_7^4 + fe_8^5 + fe_9^6 + re_{10}^6 + re_{11}^6 + re_{12}^6$

- The autumn component is less volatile than the spring one.
- The biannual time series mix two different stochastic processes.
- This introduces a seasonal component.

- Suggestion: run two separate regressions.

Additional Points

- Threshold on the size of the shock

- First difference of investments

- Possible endogeneity bias
 - HP filtered GDP
 - Sale growth at time t

- Control variables
 - Liquidity constraints

Thank You!