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Fiscal multipliers in a small open economy

Comments to Capek, Cuaresma, Holler and Schuster (2019)

Rafael Doménech

FISK-Workshop: Fiscal multipliers and transfer payments
Austrian Fiscal Advisory Council
Oesterreichische Nationalbank, Vienna. October 29, 2019

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> *First assume that the multiplier was 1.0. In this case, the added public goods are essentially free to society, without requiring a cut in anyone's consumption or investment. If the multiplier is greater than 1.0 the process is even more wonderful*

Robert Barro (*WSJ*, 2009)

Main messages of Capek, Cuaresma, Holler and Schuster (2019)

- Following Capek and Cuaresma (2019), this paper explores **government spending and tax multipliers in Austria** for around 3000 specifications of SVAR and FAVAR models, which depend on data, variables, lags, identification and other econometric choices

- The mean **government** present-value spending multiplier in Austria is 0.68, whereas the mean peak multiplier is 0.85, in line with the survey by Ramey (2019), who concludes that government purchases multipliers are likely to be between 0.6 and 1.0

- The mean **tax** present-value spending multiplier is -1.12, whereas the mean peak multiplier is -0.54.

- This a very **useful, comprehensive and well-executed research paper** in an interesting topic in the economic research agenda, in which the paper provides valuable contributions **to avoid policymakers "flying blind"**

Modelling choices

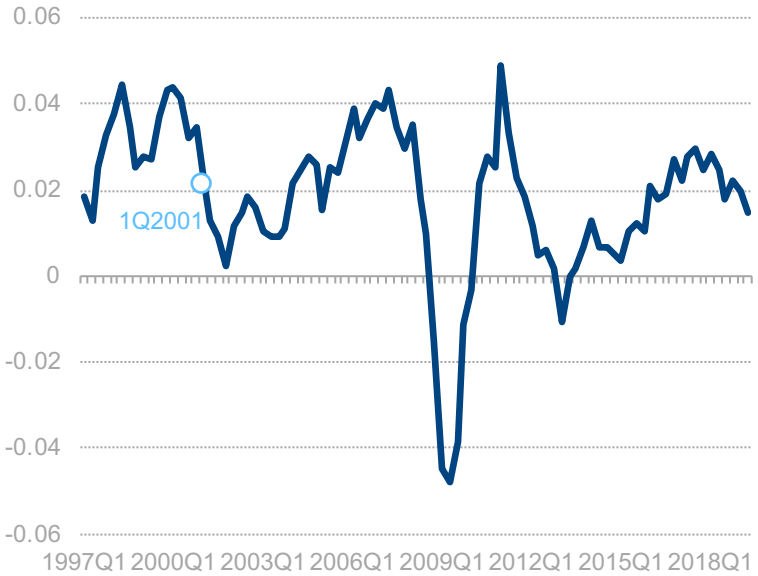
- Specifications differ on the data and variables, the model (SVAR and FAVAR) and other details (identification assumptions, data transformation, number of factors, etc.)

Dimension	Variants considered
Government data composition	9 variants, see Table 2; ESA2010 codes and time series in the Appendix
Deflating index	GDP deflator and HICP (not lagged and lagged by 4 quarters)
Model	VAR and FAVAR models with 3–5 vars. (factors ordered first or last)
Identification strategy	Cholesky ordering, Blanchard-Perotti, sign restrictions
Number of factors	1–2 (FAVARs only)
Deterministics and lags	Constant or linear trend, 1–4 lags

Source: Capek, Cuaresma, Holler and Schuster (2019)

The sample period avoids biased estimates of fiscal multipliers

GDP GROWTH, AUSTRIA 2001-2018 (q/q-4, sa)



- The sample period spans from 1Q2001 to 4Q2018 (72 quarterly observations)
- **Two/three economic cycles** to avoid the estimation of biased fiscal multipliers in good or bad times (Gechert and Rannenberg, 2018)
- Nevertheless, population growth have changed over the sample period, affecting GDP growth. An alternative specification is the use of **variables in working-age population terms**

Source: BBVA Research based on Eurostat

Fiscal multipliers

- CCHS focus on two fiscal multipliers:

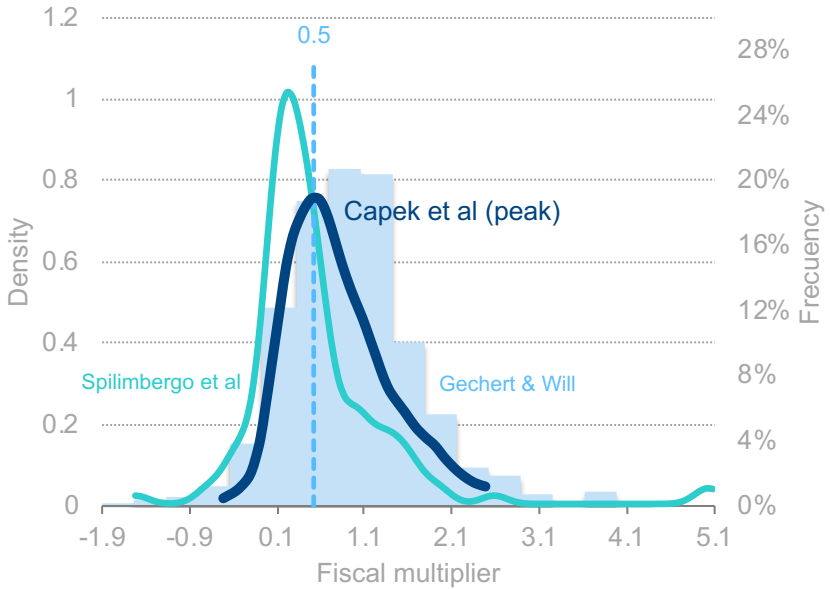
$$\text{Present-value fiscal multiplier} = \frac{\sum_{t=0}^{T}(1+i)^{-t}y_t}{\sum_{t=0}^{T}(1+i)^{-t}g_t} \times \frac{1}{g/y}$$

$$\text{Peak fiscal multiplier} = \frac{\max_{t=0,\ldots,H}\{y_t\}}{\max_{t=0,\ldots,H}\{g_t\}} \times \frac{1}{g/y}$$

where *g* is the fiscal variable (government expenditures or taxes) and *y* is GDP

Spending fiscal multipliers estimates in line with more frequent previous results

FISCAL SPENDING MULTIPLIERS



Source: BBVA Research based on Andrés and Doménech (2013), Gechert and Will (2012), Spilimbergo, Symansky and Schindler (2009), and Capek, Cuaresma, Holler and Schuster (2019)

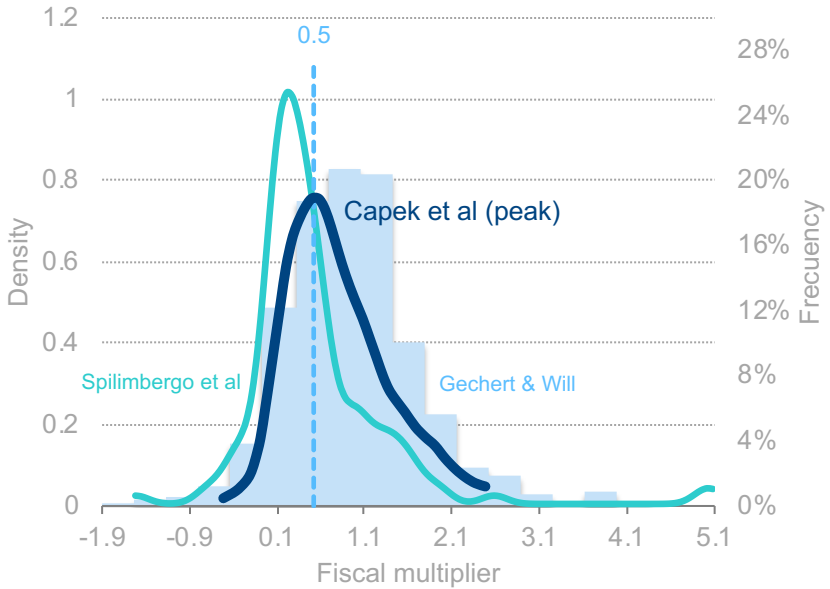
- Spending **multipliers estimates in line with more frequent previous results**
- **Peak spending multipliers** slightly greater than those summarized by Spilimbergo et al (IMF, 2009) …

  … slightly lower than those in Gechert and Will (2012)

  … and well below the estimated (1.6) by Blanchard and Leigh (2013) for European countries during the crisis

Fiscal multipliers depend upon many factors in a nonlinear way, which may be analyzed by alternative models

FISCAL SPENDING MULTIPLIERS

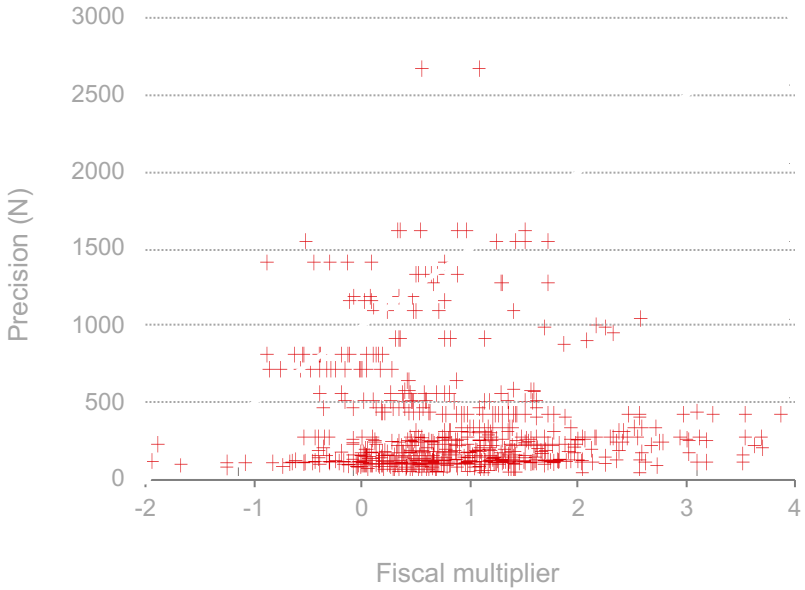


Source: BBVA Research based on Andrés and Doménech (2013), Gechert and Will (2012), Spilimbergo, Symansky and Schindler (2009), and Capek, Cuaresma, Holler and Schuster (2019)

- **Good** (expansions) and **bad times** (recessions), and **monetary policy reaction**
- **Fiscal space and public debt levels**
- **Openness** of the economy
- **Composition** of the fiscal policy
- Permanent or **temporary** (+)
- **Efficiency** in the implementation
- **Cost-benefit** analysis or **narrative estimates** (Ramey, 2011) may produce different results than the **ex-ante** estimated effects

Fiscal multipliers: the precision of the estimates

Funnel graph of empirical fiscal multiplier estimates

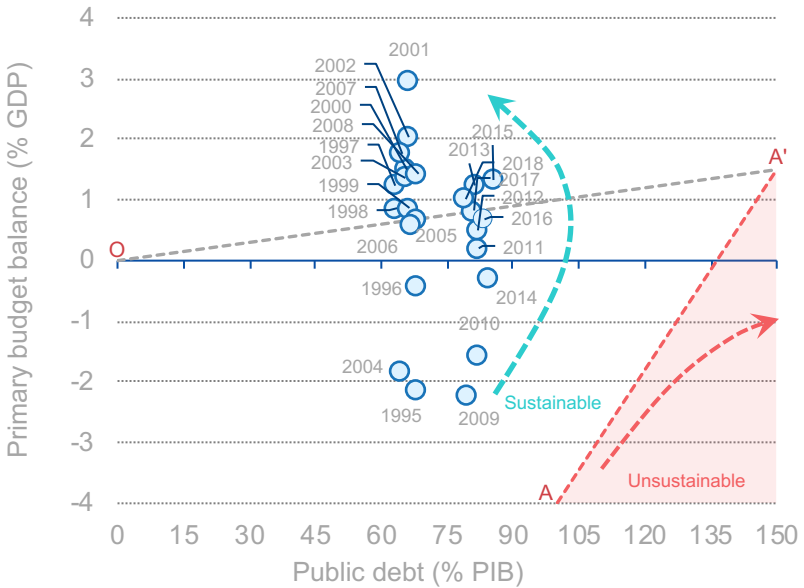


- **Density functions** of fiscal multipliers are very informative and they can be complemented by other analysis
- Given the large number of fiscal multipliers estimated, a convenient way of summarizing the results is by means of a **funnel graph**
- The funnel graph represent the **precision of the estimates** (e.g., their standard deviation or GDP predictive ability of the models) against the value of the fiscal multiplier

Source: BBVA Research based on Gechert (2015)

The fiscal space and public debt levels matter

FISCAL SPACE AND PUBLIC DEBT

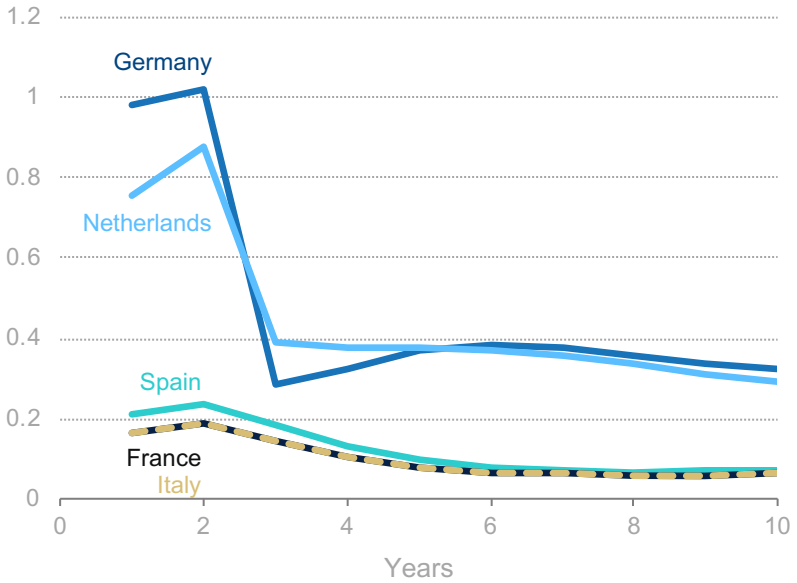


Source: BBVA Research based on AMECO, Blanchard (1984) and Doménech and González-Páramo (2017)

- As shown by Perotti (1999), fiscal multipliers are higher the lower the level of **public debt** and the greater the **fiscal space** (e.g., current differences between Italy vs Portugal)
- Distance to the **unsustainability region** was smaller in 2009 and 2010, and greater in 2001
- Compared to other countries in Europe, **public debt sustainability is not a concern in Austria**, despite the increase of public debt over GDP (around 20 pp)

Fiscal multipliers in a small open economy

Effects of differentiated fiscal expansion: Germany and the Netherlands



- Fiscal expansions have **smaller effects in small open economies** the greater their openness (e.g., Netherlands vs Germany)
- Part of the fiscal expansion may **reduce exports and increase imports**
- In Austria ***X/GDP*** have increased from 44.6 in 2001 to 54.5% in 2018

Source: BBVA Research based on Boone and Buti (2019) and In't Veld (2016)

Suggestions for further research

- Estimate the different specifications using **GDP over working-age population** and take into account the precision of the fiscal multipliers estimates by means of a **funnel graph**
- **Public debt** and other measures of the **fiscal space** are important in estimating fiscal multipliers
- Take into account changes in the level of **openness**. This may be particularly important in the case of a **small open economy**
- Given the estimated values of the spending fiscal multipliers (in most cases lower than the inverse of taxes revenues over GDP, 41.9%, 2000-17), **expansionary fiscal policies do not self-finance** in the most likely scenarios
- Catching up to the current policy discussions by focusing on the effects of **investment in new infrastructures, the digital economy and the new green deal**

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