

Econometric game 2022: inflation through the roof

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UNIVERSITY OF AMSTERDAM
Economics & Business



VSAE



**ECONOMETRIC
GAME**

**Casemakers of the Econometrics Game 2022:
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Wifi: EG2022

Password: Zuiderkerk

Introduction

In this case you analyze empirically the dynamics and the drivers of consumer price inflation in the euro area. The European Central Bank's (ECB) main objective is price stability, defined as HICP inflation around 2% per year in the medium term. The ECB does not directly control the price level, but it has policy instruments to influence prices indirectly, like the interest rates it charges to commercial banks and more recently asset purchases. These central bank's operations are what we call monetary policy. Until recently the prices of products and services have been rising less than the target value for years. Many economists have explained the low inflation by structural causes such as globalization and digitalization, which are outside the ECB's sphere of influence (see Bonam et al., 2019).

Recently inflation is on the rise, however. High energy prices and supply chain disruptions are possible explanations for this (see Galati and Hoerberichts, 2021). The obvious question arises to what extent this is a temporary phenomenon or if structural trends have been reversed. In this econometric game you provide an empirical analysis of the drivers of the inflation process using macroeconomic time series and standard time series models. Available are quarterly data on HICP inflation and related macroeconomic indicators for the euro area in the period 1999Q1-2021Q4.

Part 2: demand versus supply shocks

There is a wide consensus in the economic literature that the dynamics of inflation and unemployment have been influenced by both demand and supply shocks to the economy. Examples are monetary policy surprises and unexpected changes in oil prices respectively. There is less agreement, however, about the relative importance of those shocks for inflation. In this second part you are going to quantify this for inflation in the euro area.

You are asked to report empirical results from estimating a system of demand and supply equations. You can build partly upon what you did yesterday because the Phillips curve is typically assimilated with the aggregate supply curve. You therefore need to supplement it with your estimate of aggregate demand, which can be based on your preferred measure of economic slack. Possibly you want to amend the model with a third equation describing the Taylor rule of monetary policy.

It is your job to come up with a credible empirical specification of demand and supply shocks. There are many ways to proceed and it is again entirely up to you how to make use of the data. However, the VAR model has proved to be a natural candidate for this task as it provides a decomposition in predicted and surprise changes in the endogenous variables (see Stock and Watson, 2001). Impulse response functions then quantify the impact of shocks on the endogenous variables. Regarding identification of demand and supply shocks you can e.g. use a Choleski decomposition, a structural VAR exploiting long-run restrictions or sign restrictions, a Bayesian VAR or something else. Be aware though that the same empirical issues of yesterday may still play a role.

You must produce a brief report including:

1. a clear and concise statement of your substantive findings;
2. a discussion and motivation of the steps towards your final specification;
3. an assessment of the relative persistence of demand and supply shocks for euro area inflation.
4. a concluding section in which you discuss the implications of your findings for monetary policy.

The deadline for submitting your report is today at 6pm. Send your file to juryeg@vsae.nl.
Call your file 'EG_[your university]'

References

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