

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:
Maurice Bun and Marco Hoeberichts**

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.

Before you continue please note the following. Each team has been given one *wildcard*, i.e. you may add 1 time series of your own choice to the data set. However, this cannot be the outcome variable in your analysis as this must be HICP inflation. Good luck!

Part 1: estimating a Phillips curve

You are asked to report empirical results from estimating a so-called Phillips curve. In its original form the Phillips curve describes the short-run relationship between inflation and unemployment. Apart from economic slack (output gap or unemployment gap), there may be an important role for inflation expectations (Hazell et al, 2022). Furthermore, energy prices have a direct impact on euro area inflation, but may also indirectly affect prices as firms pass on increased energy costs to consumers. Nowadays the economic literature is full of extensions, improvements and also critiques, see e.g. Gordon (2013) and Banbura and Bobeica (2020) for recent assessments.

It is your job to come up with a credible empirical specification relating euro area HICP inflation to its core determinants. It is entirely up to you how to make use of the available data, but here is a (non-exhaustive) list of relevant empirical issues: (1) expectations can be forward looking or backward looking; (2) the stability of the Phillips curve over time has been questioned; (3) you will need some sort of trend-cycle decomposition of the data to purge out long-term trends; (4) part of euro area inflation is imported; (5) inflation can be persistent over time; (6) the Global Financial Crisis and the Covid crisis may deserve special attention.

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 importance of the determinants in your preferred empirical model for euro area inflation;
4. a concluding section in which you discuss the implications of your findings for monetary policy.

You have until 6 pm. to work on the case both today and tomorrow.

The deadline for submitting your report is 21st of April at 6pm. Send your file to juryeg@vsae.nl

Call your file 'EG_[your university]'

References

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Galati, G. and M. Hoeberichts (2021). Euro area inflation and the pandemic. *DNB Analysis November 2021*, De Nederlandsche Bank.

Gordon, R.J. (2013), The Phillips curve is alive and well: Inflation and the NAIRU during the slow recovery. Working Paper 19390, *National Bureau of Economic Research*.

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