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Scenarios concerning the possible consequences of the Iran war for euro area inflation

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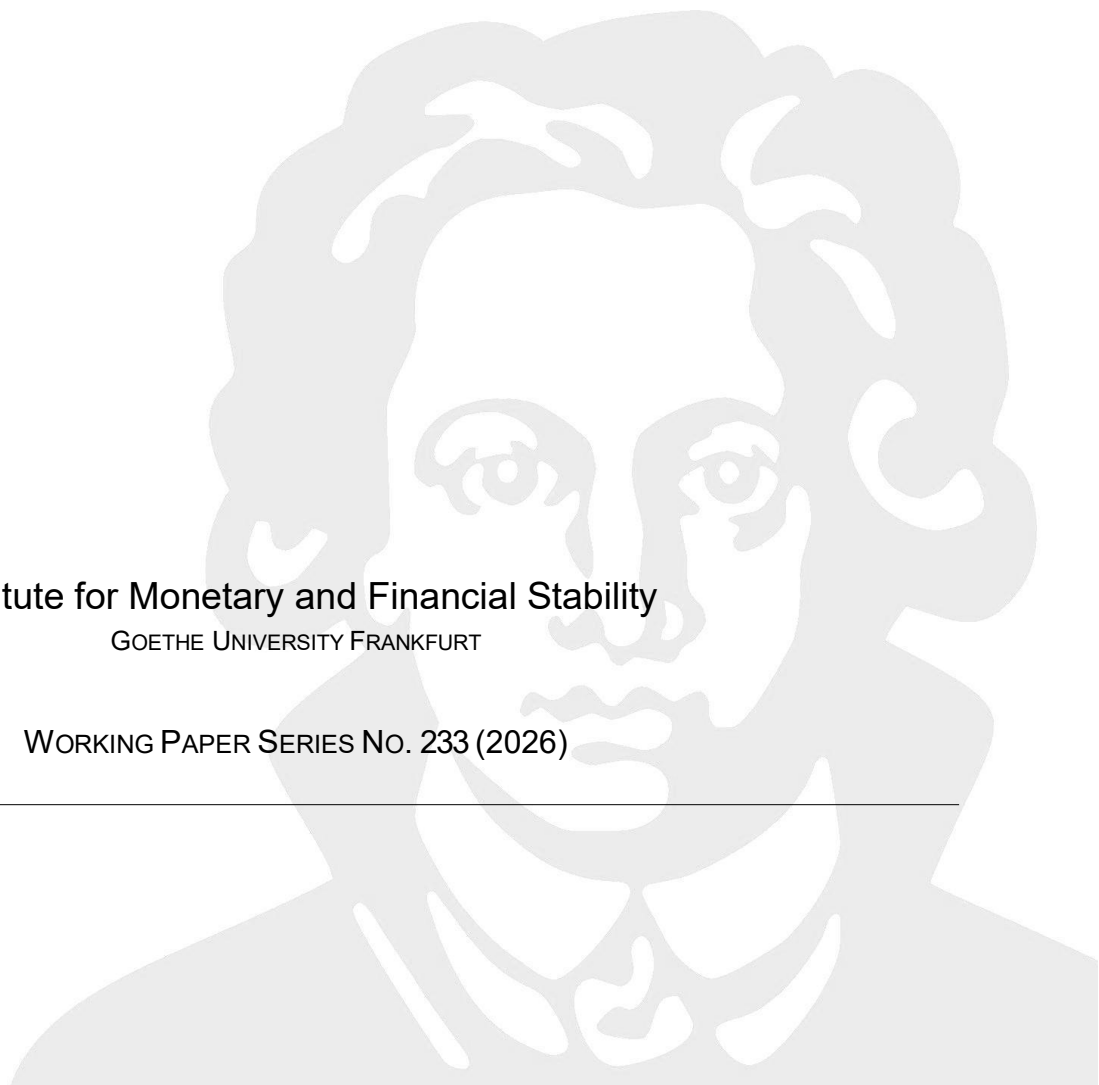
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GOETHE UNIVERSITY FRANKFURT

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Scenarios Concerning the Possible Consequences of the Iran War for Euro Area Inflation

Hendrik Hegemann* und Volker Wieland[†]

Abstract

In this note, we provide a brief first quantitative assessment of possible consequences of the energy price shock for euro area inflation. We consider different scenarios of more or less persistent increases of gasoline, diesel, natural gas, kerosine price increases on headline and core HICP inflation. The quantitative analysis is based on an estimated Bayesian Vector Autoregression model for the euro area. The model also accounts for transmission via electricity prices. The baseline scenario is based on the recent, average, price increases extending for two to three months, followed by a development determined endogenously within the BVAR. In this case, year-on-year inflation rises by about 1.5 percentage points by the first half of 2027. Core inflation rises by about 0.5 percentage points. If energy prices are assumed to return to February 2026 levels within a few months, the effects are much smaller and less persistent. Monetary policy should not respond directly to movements in energy prices and headline consumer price inflation. However, monetary policy would need to tighten in response to rising core HICP and domestic inflation.

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The ongoing war in Iran and the associated disruption of shipping through the Strait of Hormuz have led to a sharp increase in global oil and gas prices. Given the central role of energy in consumer price inflation, such developments may have significant consequences for the euro area.

In the following, we provide a first quantitative assessment with scenarios for the impact of the recent energy price shock on inflation in the euro area. Based on recent developments in the prices of gasoline, diesel, natural gas, and jet fuel for final consumers in Europe, we estimate the potential consequences for euro area consumer price inflation under different assumptions how long the higher prices last.

Empirical Approach

For this purpose, we use a Bayesian vector autoregression (VAR) model developed in Hege-
mann (2026), which was constructed in the context of a broader research project by the authors on analyzing the macroeconomic consequences of energy shocks and developing and comparing structural macro-energy models.

The model is estimated using monthly data for the euro area and includes several energy price variables (gasoline, diesel, jet fuel, natural gas, and electricity) as well as headline and core inflation measured by the Harmonised Index of Consumer Prices (HICP). An important advantage of this approach is that it uses prices of energy products that are relevant for final consumers. Refined products such as gasoline and diesel are therefore included rather than crude oil prices. These prices are closer to actual consumer price developments and therefore allow a more direct analysis of the inflationary effects.

The scenario analysis developed in this note is based on the BVAR model estimated with data from the euro area for the period of January 2005 to December 2025. A conditional forecast is computed in which the path of energy prices is imposed for the first months of the simulation, while the remaining variables evolve according to the historical relationships estimated in the model. The focus is not on forecasting inflation, but rather on illustrating how different assumptions regarding the evolution of energy prices could affect headline and core inflation¹. The figures therefore show the estimated additional effect of the energy price shock on inflation relative to a counterfactual path without the energy price shock.

Assumptions on Energy Price Developments

The scenario analysis is based on the following assumptions regarding price changes (each relative to the average level in February):

- Gasoline: +9.7% (based on German data, average 1-10 March 2026)

¹ Core inflation is defined as HICP excluding energy, food, alcohol, and tobacco.

- Diesel: +17.0% (based on German data, average 1-10 March 2026)
- Jet fuel: +78.8% (based on European data from LSEG, average 1-10 March 2026)
- Natural gas: +10.7% (the EGIX THE index increased by around +52.5% on average between 1-10 March 2026; for producer prices we assume one fifth of this increase, in line with historical relationships)

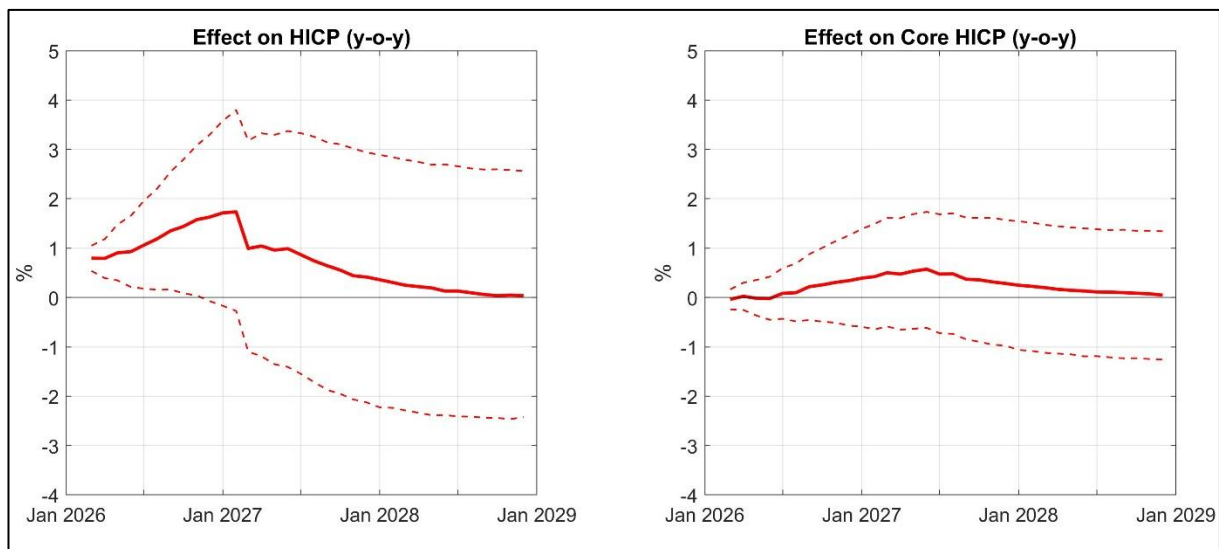
For the timing of these price changes, we consider the following scenarios:

- Baseline scenario: prices increase in March and remain elevated in April
- Alternative scenario 1: prices remain elevated from March to May
- Alternative scenario 2: prices remain elevated from March to May and fall back to the February level in June

Baseline Scenario

In the baseline scenario shown in **Figure 1**, energy prices increase in March as described above and remain at this elevated level in April. In the months thereafter, their development is determined by the estimated coefficients of the model.

Figure 1: Baseline Scenario – Effects on Consumer Price Inflation



Note: Dashed lines show 68 percent credible bands around the median response.

In this scenario, HICP inflation increases strongly, by well above one percentage point relative to the starting point. The HICP inflation remains elevated throughout 2027. Core inflation rises much less strongly, but second-round effects nevertheless lead to a more persistent increase of around 0.5 percentage points. Overall, the inflation effects in this scenario can be considered relatively strong. At the same time, the wide credible bands in the simulation indicate considerable uncertainty surrounding these estimates.

HICP inflation reacts strongly to energy prices because fuels for mobility and heating are directly included in the consumer price index. In addition, there are indirect effects, for example through higher electricity prices resulting from higher natural gas prices. In the case of core inflation, which excludes energy and food prices, these direct effects are excluded. Core inflation mainly includes prices for more persistent consumption categories such as clothing, vehicles, electrical equipment, rents, and services. In this component, second-round effects of an energy price increase become visible. Energy represents an important cost factor in the production of many consumer goods. At the same time, higher energy prices raise households' cost of living, which may gradually lead to higher service prices and wage costs.

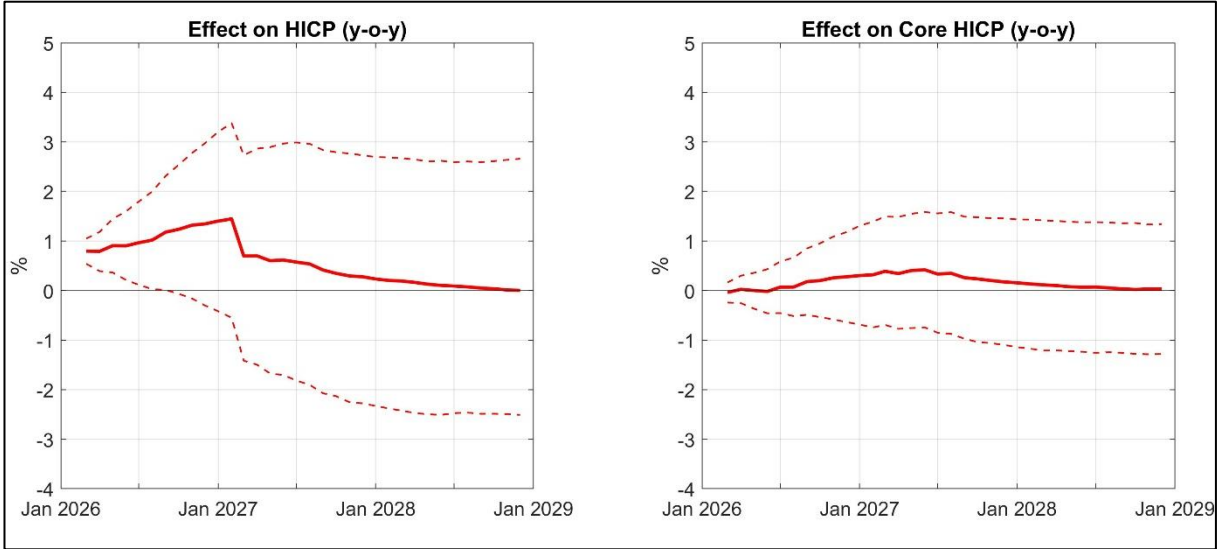
Alternative Scenarios

The results of the scenario analysis are sensitive to the assumed path of energy prices. For this reason, we consider two additional variants alongside the baseline scenario.

Alternative Scenario 1: Three Months of Elevated Prices

In this alternative scenario, energy prices remain at the elevated level from March to May. After that, no further price path is imposed, and the development of energy prices is determined endogenously by the model dynamics.

Figure 2: Alternative Scenario 1 – Effects on Consumer Price Inflation



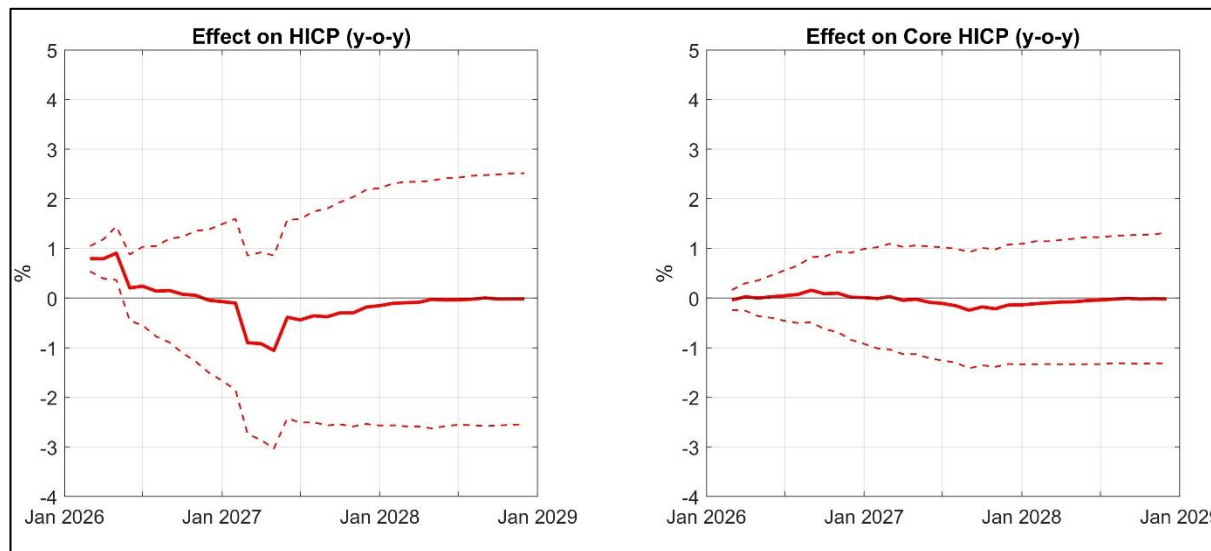
Note: Dashed lines show 68 percent credible bands around the median response.

In **Figure 2** the increase in HICP inflation is smaller than in the baseline scenario. This mainly reflects the behavior of gas and electricity prices, which continue to rise endogenously in the baseline scenario after the first two months. This applies in particular to final consumer gas and electricity prices, which typically adjust only gradually to changes in spot prices on exchanges. By assuming constant prices for three months, this additional increase is dampened in the model.

Alternative Scenario 2: Temporary Price Shock with Subsequent Normalization

In a second alternative scenario, energy prices again increase from March to May. In June, however, they return to the February level and remain constant thereafter until the end of 2026.

Figure 3: Alternative Scenario 2 – Effects on Consumer Price Inflation



Note: Dashed lines show 68 percent credible bands around the median response.

The results shown in **Figure 3** indicate that the inflationary effects are substantially smaller in this case. The increase in HICP inflation is largely confined to the months from March to May 2026 and declines almost immediately once energy prices return to their assumed February level, bringing inflation close to the level that would prevail in the absence of the shock.

If energy prices return to their previous level after only a few months, inflationary effects remain largely limited to the direct energy components of the consumer price index. Second-round effects on other prices are therefore very limited. Accordingly, there is almost no effect on core inflation in this scenario.

The return of energy prices to the February level in the month of June constitutes a negative price shock from the perspective of the BVAR model, because the endogenous development of energy prices would be more persistent. For this reason, the resulting path of headline inflation exhibits a downward movement. When considering the implications on the year-on-year rate, that is the average of monthly inflation rates over 12 months, this implies a negative effect early in 2027.

Implications for Monetary Policy

The scenario analysis illustrates that energy price shocks can significantly increase inflation, particularly if they persist for several months. For monetary policy, such developments present a challenge. Rising energy and transportation costs may trigger second-round effects. In principle, monetary policy can respond to the inflationary consequences. However, effectively

limiting inflationary pressures may require higher policy interest rates in an environment in which economic activity and employment may also be under pressure. This requires careful consideration.

It is important to prevent a sustained increase in inflation that becomes entrenched and leads to persistently higher inflation expectations. In this context, the experience from the years 2021 to 2023 is particularly relevant. At that time, the ECB reacted too late to the surge in inflation that began after the COVID-19 crisis in 2021 and accelerated rapidly with the sharp increase in energy prices in 2022. Such a delayed reaction should be avoided in the current situation. However, this does not imply that the ECB should respond immediately to increases in energy prices or to the rise in headline consumer price inflation that they generate.

Instead, monetary policy tightening would be warranted once a significant increase in core inflation becomes visible. Likewise, it would be an important signal if second-round effects lead to a significant rise in domestic inflation, for example measured by the GDP deflator, which also includes investment goods and government services. An increase in policy interest rates should be sufficiently strong to raise real interest rates and thereby limit the rise in inflation, in line with the Taylor principle (see, among others, Tatar and Wieland 2025; Hegemann and Wieland 2026). Importantly, the ECB should not rely too much on medium- to long-term forecasts, which contain little information. When core inflation or domestic inflation rises significantly, policy should be adjusted.

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