## Box I.3.1: Potential economic repercussions of wider tensions in the Middle East: A stylised model-based scenario

The conflict in the Middle East following the brutal terrorist attacks on Israel by Hamas add **a significant downside risk to the EU's** economic outlook. In addition to its devastating toll on human lives, the conflict has significant potential ramifications for the global economy, mainly through energy markets. While, so far, the impact on oil prices has been modest (see Section 1.2), the region is home to major oil producers and crucial shipping routes for oil and liquefied natural gas through the Gulf of Suez. An extension of the conflict or its political ramifications to the wider region that would cause disruptions to these energy supplies would have a powerful impact on energy prices, global output and the overall price level.

The model-based scenario presented in this box sheds light on the potential implications of an escalation of the conflict in the Middle East. The analysis employs the Global Multi-Country (GM) model, a structural macroeconomic model of the euro area. <sup>(1)</sup> The model setup includes imported energy commodities for production and consumption. It also features shocks to consumer savings decisions and financial market risk premia. This framework thus allows building a stylised scenario for an escalation of the conflict affecting these channels and quantifying its impact on the economy of the euro area.

Building on the forecast baseline, a series of shocks translate the risks into modelling assumptions. Specifically:

- i. *Commodity prices*: The scenario assumes that Brent oil prices increase by 30 USD relative to the forecast baseline (around 30% above the baseline<sup>(2)</sup> for four quarters and decline gradually after that. As a stylised assumption, an equivalent percentage increase is applied to natural gas prices. <sup>(3)</sup> Quantitatively, these shocks imply large disruptions in global commodity markets. Prices, however, are assumed to stay below those seen in historical episodes of major oil price shocks. <sup>(4)</sup>
- ii. Uncertainty and confidence: The scenario also assumes a persistent increase in the investment risk premium by 50 basis points and a one standard deviation shock to households' saving (+0.3 pp.). <sup>(5)</sup> These assumptions are purely illustrative, though they are informed by model estimations on historical data.

The scenario does not include discretionary fiscal or monetary policy action <sup>(6)</sup>.

The scenario results in a significant decline in economic activity and increased inflation. Graph 1 shows that, taking all channels together, euro area GDP growth in 2024 could be 0.7 pp. lower than in the baseline forecast, according to the model simulations. The economic fallout of the

- <sup>(3)</sup> The symmetric treatment of oil and gas partly reflects a similar growing exposure of the EU to global energy markets competition, including for supply of Liquified Natural Gas (LNG), following the shift away from Russian pipeline gas supply. Furthermore, the correlation between oil and gas prices is likely to be stronger at times of higher volatility (Halser, Ch., Paraschiv, F., & M. Russo, 2023, Oil-gas price relationships on three continents: Disruptions and equilibria, Journal of Commodity Markets, 31, <a href="https://doi.org/10.1016/ij.jcomm.2023.100347">https://doi.org/10.1016/ij.jcomm.2023.100347</a>).
- (4) This assumption is broadly in line with the price increase in the medium disruption scenario discussed by the World Bank in its <u>Commodity Markets Outlook -- October 2023 (worldbank.org</u>).
- In the model, an increase in the risk premium, due to higher uncertainty, pushes up the cost of borrowing for consumers and firms. Similarly, weaker consumer confidence pushes up households' precautionary savings.
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- <sup>(6)</sup> As a technical assumption, all shocks are assumed to start by the end of 2023.

<sup>&</sup>lt;sup>(1)</sup> For more information, see <u>https://economy-finance.ec.europa.eu/economic-research-and-databases/economic-research/macroeconomic-models/global-multi-country-gm-model\_en</u>

<sup>&</sup>lt;sup>(2)</sup> The corresponding annual average oil price levels (in USD) assumed in the simulations are 92, 114, and 106 USD per barrel in 2023, 2024 and 2025, respectively. The baseline forecast assumptions are reported in Box I.5.1.



## Box (continued)

simulated shocks is persistent and will continue to drag on growth in 2025, though with decreasing vigour. Thus, GDP growth in 2025 would be 0.1 pp. lower than in the baseline forecast. <sup>(7)</sup>

The oil and gas price shock is the primary driver of the growth impact. According to model estimates, higher prices for energy commodities substantially drag on economic activity, with oil and gas price shocks decreasing 2024 GDP growth by 0.4 pp. Heightened uncertainty, reflected in higher household savings and elevated investment risk premia, add a negative GDP impact of 0.3pp (see Graph 1a).

Higher oil and gas prices are a key risk to the outlook of gradually easing inflation. As shown in Graph 1.b, the model simulation suggests inflation rates of 1.2pp and 0.2pp above baseline in 2024 and 2025, respectively. The supply-side disruptions associated with commodity prices are the central driver behind the spike in inflation, while the demand-side slowdown caused by elevated uncertainty is slightly disinflationary. A tightening of monetary policy, as implied by the model's estimated policy rule, helps to contain the surge in inflation in the simulations.

Some important caveats need to be made. The situation in the Middle East remains highly volatile, and its development could give rise to a range of additional risks. The possible economic impact would depend inter alia on the degree of disruption of production and transport of oil and gas. Therefore, any scenario analysis is subject to exceptional uncertainty, and quantification remains illustrative. Moreover, the modelling does not account for nonlinear effects, which could potentially alter the outcomes and implications of the evolution of the situation.

<sup>&</sup>lt;sup>(7)</sup> The estimated impact depends on the assumed persistence of the oil price increase. The model-based estimate is broadly in line with the panel VAR evidence that suggests that 10% increase in oil prices reduces EA GDP by 0.16%. See, De Michelis, A., Ferreira, T., & Iacoviello, M. (2020). Oil Prices and Consumption across Countries and U.S. States. International Journal of Central Banking, 16(2), 3-43.