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# Breaking Free of Russia's Energy Grip: How Much Will It Cost Belarus?

The competitiveness of the Belarusian economy is largely determined by its access to cheap Russian energy resources. The country's total dependence on Russia for oil and natural gas supplies poses a major vulnerability for the Belarusian economy should its citizens strategically choose to integrate with the EU. A severe energy shock – a sharp increase in gas and oil prices – is highly likely to follow if political relations between Belarus and Russia worsen. This study assesses the sectoral and macroeconomic consequences of such a shock for Belarus using a computable general equilibrium model.

The simulation results show that primary raw material processing industries, as well as manufacturing sectors heavily dependent on cheap energy resources, could face significant output losses. In turn, export-oriented, higher-value-added sectors (mechanical engineering, communications, pharmaceuticals, and light industry) have the potential to increase production and exports through the inflow of labor and capital. Should the EU choose to provide carefully designed support – focused on targeted energy subsidies, support for Belarusian firm integration into European production chains, and productivity-oriented financial assistance – the negative short-term consequences of an energy shock could be largely mitigated.

## The need for strategic choice

For Belarus, one of the most important strategic choices concerns its future orientation between continued reliance on Russia and deeper integration with the European Union (EU).

At present, the Belarusian economy is strongly integrated with Russia (Kruk, 2024). More than 60% of foreign trade is linked to the Russian market; the country benefits from heavily subsidized energy imports. About 4–5% of general budget revenues come from Russia as transfers; furthermore, Belarus has the possibility to refinance its public debt due to political agreements. Structural dependence makes Belarus highly sensitive to political and institutional changes in relations with Russia, limits opportunities for productivity gains, and undermines household welfare through lower income growth relative to EU countries.

Closer integration with the EU offers a different path. It has opportunities and risks: opportunities in terms of access to larger markets, advanced technologies, and investment, and risks in terms of adjustment costs for sectors reliant on cheap Russian energy resources, and social challenges.

One of the main challenges for Belarus if the country moves toward EU integration will be an energy shock caused by dependence on Russia. Russia is currently Belarus's sole supplier of natural gas and oil. Prices for these supplies are preferential and politically determined.

Since 2018, Belarus has been importing natural gas from Russia at a contractual price close to \$130 per thousand cubic meters. For comparison, according to the World Bank, the average price of natural gas

in Europe was more than \$400 per thousand cubic meters in 2024–2025 (about \$290 in 2010–2019).

Belarus also imports oil from Russia at a price based on Urals crude. Due to the widening discount of Urals relative to the Brent benchmark since 2022, Belarus has received an additional benefit estimated at about \$5.5 bn for 2022–2025.

Low energy prices support the competitiveness of entire sectors of the Belarusian economy, at the same time making them extremely vulnerable to sustained energy price hikes. As a result, Belarus's shift away from Russia and toward the EU could lead to significant (even if transitory) losses in output and household welfare. This study aims to estimate these losses.

## CGE model for Belarus

To assess the consequences of the energy shock, a computable general equilibrium model (CGE) was developed (BELECONOMY, 2025). CGE offers a consistent framework that links sectoral interactions, resource allocation, and household welfare in a general equilibrium setting.

A CGE includes exogenous and endogenous variables, as well as market-clearing constraints. All the equations in the model are solved simultaneously to find an economy-wide equilibrium in which, at a set of prices, the quantities supplied and demanded are equalized in every market (Burfisher, 2021). To conduct an experiment, one or more exogenous model parameters are changed, and the model is then solved to determine the new values for the endogenous variables. Such a simulation shows how the economy's sectoral structure changes and



what the new steady state looks like after an economic shock.

The Belarusian case is a clear example where such modeling is highly useful. The economy's dependence on Russia creates vulnerabilities that cannot be understood through partial-equilibrium or sectoral analysis alone. A sharp and sustainable increase in energy prices affects not only the directly exposed sectors but also wider economy through changes in costs, relative prices, and resource allocation. A CGE framework is therefore indispensable for capturing these linkages and providing a comprehensive view of outcomes.

The model for the Belarusian economy is based on the basic postulates of the CGE modeling. The factor market supplies factors of production (such as labor and capital) to activities. Activities produce goods and services and are introduced by sectors. The commodities market distributes goods and services produced by sectors. Domestic output enters the commodities market, a part of which is exported, and the imported goods, together with the domestic output consumed domestically, create domestic demand. Commodities are purchased as intermediate consumption by activities, as final consumption by households and government, and for capital formation.

The Belarusian CGE model is implemented in two specifications. Baseline specification includes 17 production sectors, and the external sector is introduced by 4 counterparties – trade partners: Russia, the EU, China, and the rest of the world. In the alternative specification, the activities are disaggregated to 22 production sectors. and the external sector is assumed to be a single

counterparty, without explicitly modeling different regions.

The key input used in the model is the 2019 Input–Output table data published by the Belarusian National Statistical Committee. The base year of 2019 is chosen since that year was the last one with complete data and without significant external shocks.

## Simulation design

The developed CGE model has been used to simulate a sharp increase in the prices of natural gas and oil imported by Belarus.

Specifically, if Belarus moves closer to the EU and exits the EAEU, the country's gas import price is highly likely to approach the European level, regardless of the source of supply. This would mean a powerful shock, roughly equivalent to a threefold increase in the import price of gas.

Regarding oil import prices, the scenario assumes a 10% increase. This roughly corresponds to a long-run effective discount of Urals to Brent that Belarus enjoyed prior to the current sanctions. Accounting for the volumes of oil and natural gas imports, the overall price increase for the product group “oil & gas, petroleum products” will amount to 60%. A shock of this size is incorporated into the simulation scenario.

The scenario also assumes the elimination of inter-budgetary transfers between Belarus and Russia. These transfers are largely linked to obligations within the EAEU, as well as to inflows into the Belarusian budget from reverse excise taxes on oil products from the Russian budget. These transfers are likely to be eliminated if Belarus moves closer to the EU.

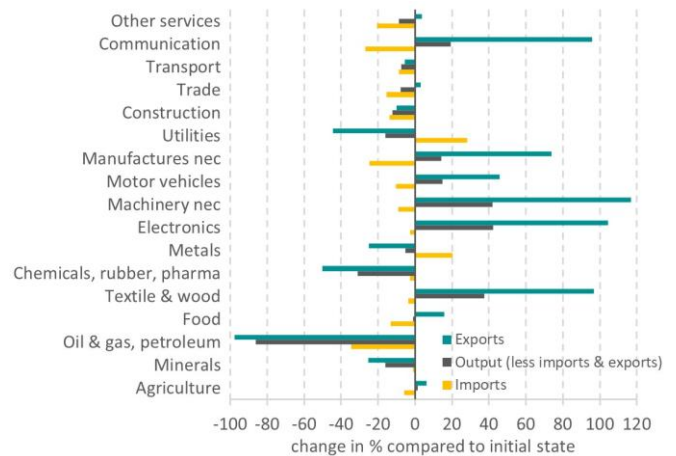
## Simulation results

If prices for imported energy resources increase by an average of 60%, domestic production of petroleum products practically ceases. The country's fuel demand is met exclusively through imports (Figure 1). The near-elimination of domestic petroleum product production under such a severe price shock confirms that the viability of this sector in Belarus was primarily sustained by the redistribution of oil rents from Russia to Belarus through subsidized prices.

A significant increase in energy prices will have a strongly negative impact on industries related to the primary processing of raw materials. The chemical industry, the production of plastics and rubber products, metallurgy, the manufacture of other non-metallic products (primarily construction materials), as well as electricity generation and water supply (utilities), will experience losses in output and exports. Due to intersectoral effects from the oil refining industry, output in wholesale trade, transportation, and other services will also decline. The decrease in construction materials output is also linked to a downturn in construction (Figure 1).

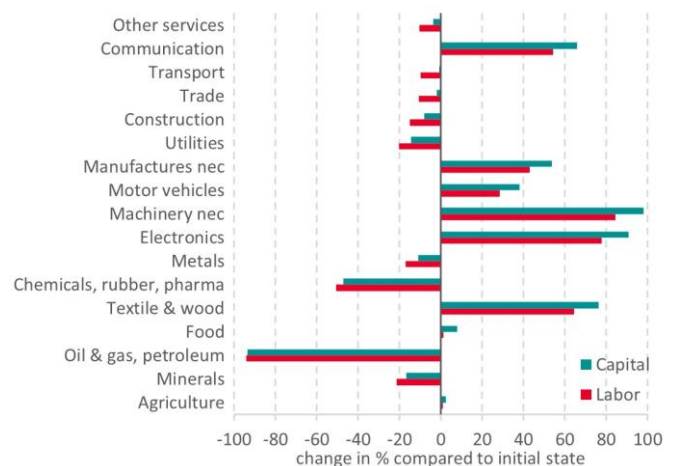
Productive resources from the "losing" industries will be reallocated to sectors with higher export potential (Figure 2). Output and exports will increase in mechanical engineering (electronic, electrical, and optical devices, machinery and equipment), transportation vehicles, light industry, and woodworking, as well as in communication and computer services (ICT).

Figure 1. Exports, imports, and domestic production: results of scenario simulation



Source: Author's calculations based on CGE.

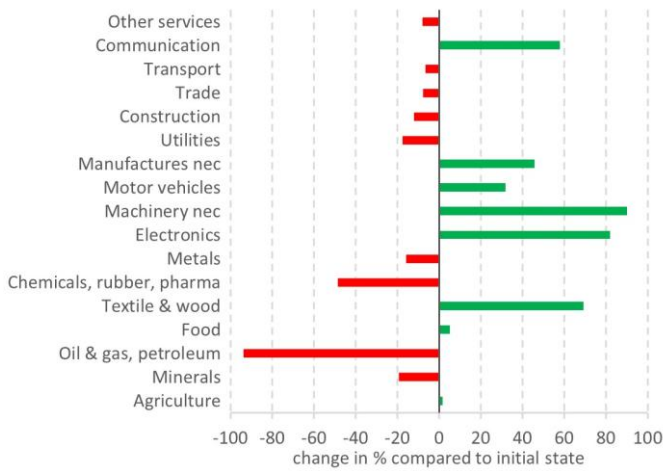
Figure 2. Factors of production: results of scenario simulation



Source: Author's calculations based on CGE.

As a result, under a severe energy shock, two groups of industries can be distinguished. The industries that generally produce low- or medium-technology products will suffer substantial losses in value added (Figure 3). In turn, technologically advanced sectors, such as mechanical engineering and information and communications, have the potential to increase value added thanks to their export potential, lower dependence on oil and gas, and the reallocation of labor and capital. (Figure 3).

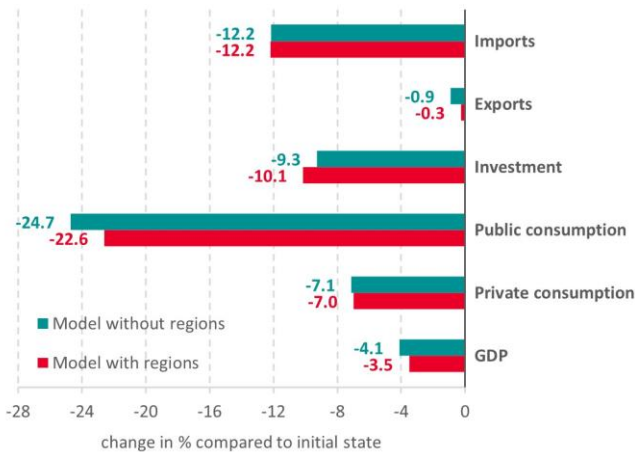
Figure 3. Sectoral value added: results of scenario simulation



Source: Author's calculations based on CGE.

The macroeconomic effects of implementing the energy shock scenario will manifest as declines in both public and private consumption, as well as in investment. The resulting GDP losses are estimated at 3.5% of the initial period's real volume (Figure 4).

Figure 4. GDP and components: models' comparison of scenario simulation



Source: Author's calculations based on CGE.

The macroeconomic and sectoral consequences of simulating the energy shock scenario using the alternative model (22 sectors, without separate trading partners) are generally close to those of the baseline model (Figure 4). The greater sectoral

disaggregation of the alternative model makes it possible to identify two more industries with potential for output growth: the production of fabricated metal products and pharmaceuticals. This result highlights that, with a significant increase in energy costs, labor and capital resources shift toward more sophisticated sectors with higher value added.

## EU financial support: potential effects

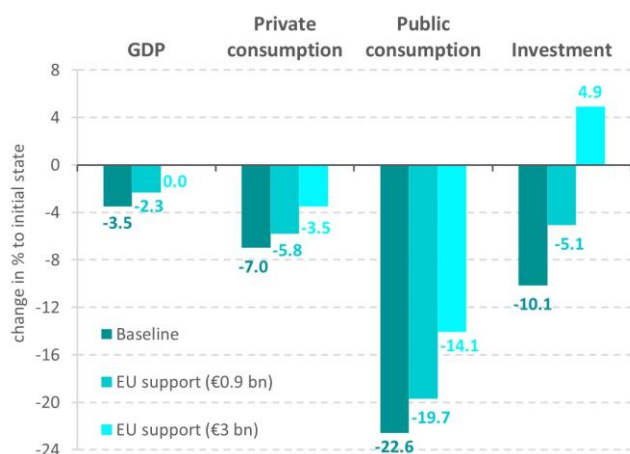
The above economic effects apply over the long term as the economy adapts to new conditions. In the short term, costs will be much higher, and a collapse of energy-intensive sectors cannot be ruled out.

The impact of such a transition on the Belarusian economy can be mitigated with external help. We conducted additional simulations, assuming the use of the EU's currently frozen financial support package for the five areas outlined by the EU Commission in 2021, at the amount specified for these five areas – €870 million (EU Commission, 2021).

The results of simulating the energy shock scenario with EU financial support show that €870 million in EU assistance can offset about 1.2 p.p. of Belarus's GDP decline (Figure 5). This is achieved mainly due to a smaller reduction in household consumption and investment.

If we include the entire declared potential volume of EU financial support for Belarus (€3 bn) in the simulation, then GDP losses may be avoided. Household consumption would remain below the initial level, but the gap would be significantly smaller than in the baseline scenario (Figure 5).

Figure 5. Macroeconomic effects of EU financial support



Source: Author's calculations based on CGE.

It should be noted that the simulated effects of EU financial support depend on its composition and timing. Therefore, the results of these simulations are largely illustrative and should be seen as an assessment of the scale of assistance needed to mitigate the economic losses from the energy shock in Belarus.

## Conclusion

The simulations demonstrate that a powerful energy shock would have a large-scale negative impact on output and consumption. At the same time, it would not cause a full collapse of the Belarusian economy. Without EU support, long-term GDP losses are estimated at 3–4%. The most significant losses would be concentrated in industries linked to the primary processing of raw materials – oil refining, metallurgy, production of building materials, chemical industry, and electric power supply. Nevertheless, other sectors, such as mechanical engineering, light industry, pharmaceuticals, and ICT, may benefit from the reallocation of production resources. This suggests that the economy possesses a degree of structural

resilience, with certain sectors able to absorb resources and adapt to changed conditions. In the long term, this reallocation may partially mitigate the overall economic losses, although the transition period would be socially and politically challenging.

The simulation results also shed light on how EU engagement could shape adjustment outcomes, should it choose to act.

First, targeted energy subsidies from the European Union or preferential financing for energy imports during the initial adjustment period could play a crucial role in cushioning the immediate impact of higher oil and gas prices. Such subsidies would prevent an abrupt collapse of energy-intensive industries and allow time for structural adjustment.

Second, efforts to remove barriers to the participation of Belarusian firms in European value chains could significantly ease the negative short-term consequences of deteriorating trade relations with Russia. By facilitating access to new markets, technologies, and standards, integration into European supply chains could not only soften the transition but also enhance long-term competitiveness.

Third, direct financial support from the EU would have the potential to offset a substantial part of GDP and welfare losses. However, to achieve lasting results, such support would need to be targeted toward raising factor productivity through investments in human capital, digitalization, and modern infrastructure.

Fourth, social safeguards are essential. The significant energy shock will unavoidably bring sectoral declines and job displacements. EU

support could therefore extend to retraining programs, measures that promote labor mobility, and social protection systems, ensuring that the short-term adjustment costs do not lead to lasting social and political instability.

## Acknowledgments

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