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The Potential Impact of the War in Ukraine on the Irish Economy

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ABSTRACT

The war in Ukraine and the subsequent increase in energy and other commodity prices has dampened the economic outlook. There are increased downside risks to economic activity and there is also considerable uncertainty around any economic projections and how they may evolve in the future. This article uses the ESRI's macro-econometric model COSMO to generate a range of model-based estimates of the potential medium-term impact of the war in Ukraine on the Irish economy. The main shocks to the Irish economy include higher global commodity prices especially for energy and a slowdown in Ireland's main training partners. To capture the impact of the war, the scenario results are compared to a pre-war base. Mild and Severe scenarios are calibrated using commodity price projections from the European Central Bank's December 2022 and March 2023 staff projections. These assumptions regarding energy prices are fed into NIESR's global macroeconomic model, NiGEM, which in turn provides COSMO with projections of key external variables thereby simulating the indirect implications for the Irish economy. The results of our simulations suggest that the domestic economy, as measured by modified domestic demand (MDD), could fall between 1.3 per cent and 3 per cent below the pre-war baseline in the medium term.

1. INTRODUCTION

The Russian invasion of Ukraine, which began in February 2022 has led to the largest land war in Europe since World War II, sent shockwaves through the global economy and led to immeasurable human suffering and hardship. Commodities prices increased sharply in particular in energy and food markets where Ukraine and Russia are major international exporters. The higher commodity prices as well as the broader uncertainties and increases in geopolitical risk have weighed heavily on global economic growth (Liadze et al., 2022; IMF, 2022; Naisbitt, 2022). In addition, the war has led to an unprecedented humanitarian crisis and huge flows of refugees into Western Europe.

Within this context, and as a small and highly globalised economy, Ireland is not insulated from these international headwinds. Indeed, given our heavy reliance on imported intermediaries in trade and net importer status for fossil fuels, these effects are likely to weigh heavily on the Irish economy.

In an attempt to quantify the impact of the war in Ukraine on the Irish economy, this article uses the ESRI's macro-econometric model COSMO to generate a range of model-based estimates of the potential medium-term impacts. The main shocks to the Irish economy include higher global commodity prices especially for energy and a slowdown in Ireland's main trading partners. We use an updated version of COSMO that considers both oil and gas price shocks separately and also allows the construction sector to be impacted heterogeneously from the rest of the domestically non-traded sector. We draw on ECB research scenarios for oil and gas

prices and feed into COSMO both mild and serve scenarios based on December 2022 projections as well as assumptions from March 2023 projections. These assumptions regarding energy prices are fed into NIESR's global macroeconomic model, NiGEM, which in turn provides COSMO with projections of key external variables thereby simulating the indirect implications for the Irish economy.

Our research contributes to the existing literature in a number of ways. Our setting is a small open economy with highly globalised supply chains in the traded sectors. Furthermore, Ireland is highly reliant on intermediate inputs into the production process and imports nearly all its oil and gas. Using a full-economy structural econometric macroeconomic model of the Irish economy, we allow the common shocks to have heterogenous impacts across sectors: traded, non-traded, and the construction sector separately. As each sector has a different intensity of production to energy inputs but also a difference degree of exposure to international markets for intermediate inputs and final demand, understanding the relative impacts across sectors is critically important in determining the impacts on the economy. Our approach also allows a more granular analysis which can help policymakers to tailor responses and calibrate relieving instruments. Our setting, coupled with the sectoral disaggregation of our model, provides a lens into the heterogenous impact on a small open economy of a common global energy price shock from the war in Ukraine that has not been considered in the literature to date.

Across the three scenarios considered, a number of findings emerge. First, we find that, relative to a pre-war baseline, GDP is between 0.6 and 0.7 per cent lower in 2023 in the two mild energy price scenarios. The impacts increase with time and fall to -0.9 and -1.2 per cent by 2025. In the severe scenario, GDP falls by as much as 1 per cent in 2023 and is 1.6 per cent below the baseline by 2025. The simulations suggest that disposable income falls below the pre-war baseline between -1.8 and -2.7 per cent in the two mild scenarios and by as much as -4.7 per cent in the severe scenario by 2025. Finally, household expenditure is negatively impacted with falls (relative to a pre-war baseline) of between 2.2 and 3.3 per cent and 5.4 per cent by 2025 in the mild and severe scenarios.

While the general findings are interesting from an Irish economy perspective, the main contribution of our research to the general literature is to consider the heterogenous impact of a common energy price shock across sectors. The production impact on the domestic sectors (non-traded and construction) is larger in the mild scenario in 2023 than the traded sectors. This is likely due to the high reliance of Irish domestic sectors on imported commodities and the specific structure of the Irish traded sector which has a heavy reliance on service exports.

The rest of this paper is structured as follows: section 2 considers the existing evidence. Section 3 presents the simulations and the methodology. Section 4 presents the results while section 5 concludes.

2. EXISTING EVIDENCE

A large number of studies have considered the impact of the Russian invasion of Ukraine, the transmission channels, and the economic impacts of the war. These can be characterised as either a) economic impact studies which have attempted to assess the direct impact on GDP and inflation or other aggregates such as investment or consumption expenditures or b) indicator or market specific research such as an analysis of stock market reactions or the impact on uncertainty.

The main channels through which a majority of studies test the impact of the war on Ukraine is through higher prices and scarcer commodities which feed directly into inflationary pressures (in particular in energy and food markets where Ukraine and Russia are especially important). Higher inflationary effects dampen spending and thus put downward pressure on real consumption expenditure and final demand in the economy. As cost inputs are also increasing in line with the inflation effects of the war, the return-on-investment expenditure is changing for firms as profit margins are being squeezed; this channel can also dampen investment expenditure. An early study on the impact on the global economy was Liadze et al. (2022a) which used the NiGEM global econometric model to consider the impact on global growth of the commodity market distribution of the war. They find that global GDP was likely to be 1 per cent lower in 2023 and inflation could be 3 percentage points higher. However, this paper was based on simulated commodity market impacts only as it was very early in the conflict and relied on few post-conflict data points. An updated paper Liadze et al. (2022b) finds similar effects while the thematic impact of the war on economic activity as well as the general global economic conditions are presented in Naisbitt et al. (2022). Ruta (2022) tests the impact of five trade and investment channels (commodities, supply chains, FDI, logistics) and find the impact of the war will be a 1 per cent drop in world trade, a fall of global GDP of 0.7 and a 1 per cent drop in low-income country GDP. In addition to the specific research studies considered, all major international forecasting and commentary publications by international financial institutions and Central Banks have factored in the impact of war including the IMF (2022), OECD (2022) and the World Bank (2022). While the magnitudes differ across the assessment contexts, the general theme shared across all studies is for lower growth and higher inflation.

While many of the aforementioned studies consider global growth or consider multiple country contexts, there have been a number of single country studies that have assessed the impact of the war which are worth noting in the context of our research. One of the early studies of the channels through which this mechanism occurs is Bachmann et al. (2022) who explore the economic impacts on Germany of the reliance on Russian energy and what might occur if this supply is removed. They find that, depending on the realignment of production structures, the cost of a 30 per cent reduction in gas supplies would be in the range of 0.5 per cent to 3 per cent of GDP. Lan et al. (2022) test the impacts on the German economy of a

complete and permanent shutoff of the remaining natural gas supplies from Russia. They find this could lead to gas shortages of 9 percent of national consumption in the second half of 2022, 10 percent in 2023 and 4 percent in 2024. This would equate to an impact on GDP of 1.5 percent in 2022, 2.7 percent in 2023 and 0.4 percent in 2024. Inflation would also rise by approximate 2 percentage points in both 2022 and 2023.

In an Irish context, Conefrey et al. (2022) undertake an analysis of the ECB downside scenario for Ireland of the energy shocks using the COSMO model. They estimate the impacts on modified domestic demand and inflation. They find that MDD would be 1.4 percentage points lower in 2022 and 2.6 percentage points lower in 2023 under this downside energy scenario. Inflation would also be notably higher. Our research differs from theirs as we directly include gas prices into the energy demand equations in COSMO as well as consider the differential impact across sectors to explore the heterogenous impacts.

A number of other papers consider the impact on the Russian economy of the sanctions and changing demand for their fossil fuels. More directly, sanctions that have been put in place can directly affect investment activities as companies have to adjust their production to the new regulatory situation. Ongena et al. (2022) use a VAR model to explore the impact on the Russian economy and find that double digit declines are expected in consumption, investment and industrial production. Mamonov and Pestova (2021) consider the previous round of financial sanctions on the Russian economy. Numerous other studies consider the issues around European energy security and the reliance on Russian fossil fuels (Erosy, 2022; Gunnella et al., 2022; Ockenfels et al., 2022; Di Bella et al., 2022; Pescatori et al., 2022).

The second specific channel through which the existing research has explored is lower investment expenditures through rising risk premia and global uncertainty. This dampens investors' ability to measure risk and increases risk aversion. The effect is a moderation in investment activities. Financing conditions also tighten in terms of credit access and the cost of financing can rise. Uncertainty also works on the consumer side by increasing precautionary savings and lowering expenditure. Anayi et al. (2022) consider the direct impact of the War on Ukraine on uncertainty using both aggregate and firm level forward looking measures. They find that indicators measuring daily uncertainty have increased, but by less than during the pandemic. Firm level measures have also increased with over half of UK firms indicating an increase in uncertainty. Their concerns surrounded energy use, trade, demand, and ownership issues. Caldara et al. (2022) estimate the impact of geopolitical risk on global GDP textual measures in newspapers and transcripts of firms' earnings calls. They find that relative to a no-war counterfactual the model depicts global GDP as declining by 1.5 per cent and inflation rising by 1.3 per cent. The transmission channels through which geopolitical risk impacts growth is through consumer sentiment, commodities prices and financial conditions. Mogliani et al. (2022) present a mixed-frequency quantile regression model to

quantify the macroeconomic risks associated with the war. They find the effects were much greater (approximately 3 times) for the European Union as compared to the US.

Other research focuses on financial or stock market impacts of the geo-political conflict. Federle et al. (2022) document the increase in disaster risk and its impact on stock prices. They estimate the impact based on a firms' proximity to Ukraine and find that the closer countries and, even within countries, firms are located to Ukraine the larger the impact on their equity returns. Boungou and Yatie (2022) also consider the impact of the War on stock returns using daily data for the early period of the war, they find a negative relationship between the conflict and world stock returns. Deng et al. (2022) also test the impact on energy transition and the war in Ukraine on stock prices.

3. SCENARIOS

3.1 Approach

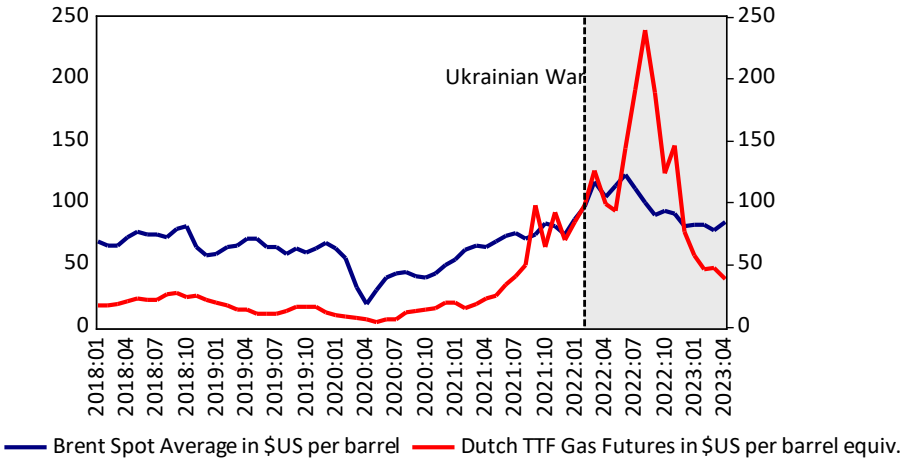
The article applies the ESRI's macroeconomic model, the COre Structural MOdel of the Irish Economy, COSMO (Bergin et. al 2017) to assess the macroeconomic impact of the Ukrainian war on the Irish economy. COSMO has been applied in a similar manner to assess the potential economic impact of Brexit (Bergin et. al 2019) and COVID-19 (see Garcia-Rodriguez et. al 2021). COSMO has also undergone a number of modifications recently including the inclusion of a construction sector (Egan and Bergin, 2022) and an updated financial block (see Egan, McQuinn & O'Toole 2022). As discussed in Bergin et. al (2017), COSMO incorporates projections of key international variables from NIESR's global econometric model (NiGEM). These international variables include interest rates, effective exchange rates, oil prices, competitor prices and trade-weighted world demand. This paper generates model-based estimates of the medium-term economic impact of the war on the Irish economy using both NiGEM and COSMO. Commodity price scenarios are passed both through COSMO itself to estimate the direct impact on the Irish economy of an energy price shock as well as through NiGEM, which in turn provides COSMO with projections of key external variables thereby simulating the indirect implications for the Irish economy. The model first estimates a counterfactual pre-war baseline against which any simulated scenarios can be compared.

3.2 Scenario Calibration and Assumptions

Before applying the commodity price scenarios, some adjustments to the estimated equations and relationships within COSMO itself need to be made. In previous versions of COSMO, the price of energy, poe_t , was proxied by the price of international oil represented by Brent spot average prices in USD/barrel. Oil prices, which is an exogenous variable fed in from NiGEM, in turn is an input in the

production function of all four sectors of the economy – domestic, traded, construction and government. The import price deflator in COSMO, mtd_t, is also a function of the international oil price. While the war in Ukraine has had a significant impact on the price of international oil (see Figure 1) it has also led to severe disruption to natural gas supplies. This has resulted in a sharp increase in gas and electricity prices as well as increased uncertainty regarding the future of gas prices (see Figure 1). With this in mind, we replace the price of energy variable in COSMO, poe_t, with a new variable $poex_t$ which is a composite of both oil and gas prices. We believe that this adjustment will provide a more realistic description as to the uncertainty related to the energy price paths across our scenarios.

FIGURE 1: CRUDE OIL: PRICES – BRENT SPOT AVERAGE IN $US PER BARREL, LEFT HAND SIDE AND DUTCH TITLE TRANSFER FACILITY (DUTCH TTF) GAS FUTURES IN $US PER BARREL EQUIVALENT



Source: Refinitiv

To calibrate the shock to both oil and gas prices, the scenario is informed by recent iterations of European's Central Bank's staff projections published in December 2022 and March 2023. We examine both sets of scenarios of projections as there has been volatility in the prices and judgements and forecast have been updated regularly as the war continues.

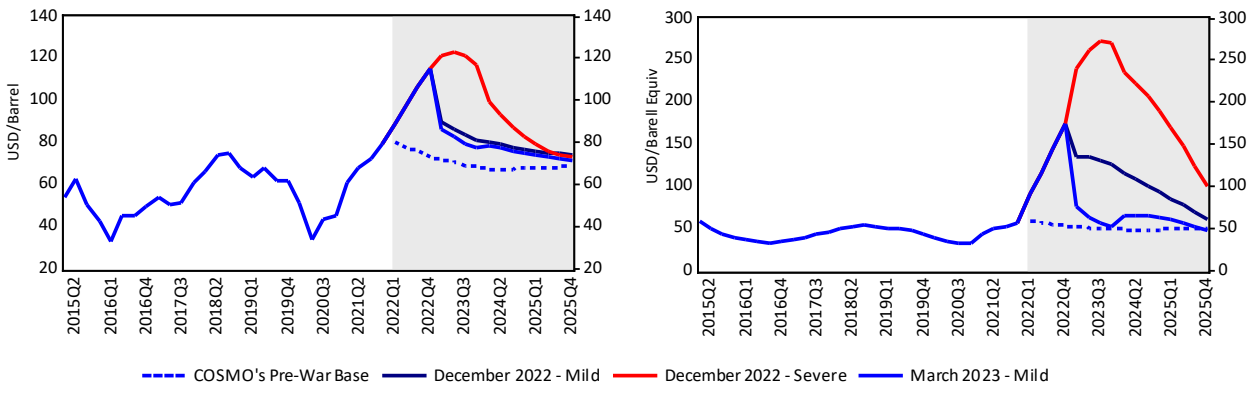
In the December 2022 projections, the ECB provide both a baseline (hereafter we referred to as a mild scenario to avoid confusion with COSMO's pre-war baseline,) and adverse scenario to reflect the uncertainty in the energy market at the time of publishing. In the mild scenario, the ECB assume that future oil prices will peak at 86.4 USD/barrel in 2023 before falling to 76.0 by 2025. Gas prices are also set to peak in 2023 at 124 EUR/MWh before falling to 69 EUR/MWh by 2025. It should be pointed out that this represents a sharp downward revision to gas prices compared with the technical assumptions of the ECB's September 2022 base projections (by 47 per cent for 2023 and 41 per cent for 2024).

The ECB's March 2023 projections only provide energy price assumptions in a mild scenario. The oil price assumptions in the March 2023 projections are very similar to those in the December 2022 with an oil price of 82.6, 77.8 and 73.9 USD/barrel in 2023, 2024 and 2025 respectively.1 There has once again been a very sharp downward revision in the gas price assumptions compared to the December 2022 projections. The ECB now predicts gas prices to fall to 58, 61 and 51 EUR/MWh in 2023, 2024 and 2025 compared to the 124, 98 and 69 predicted in the December 2022 projections.

The assumptions discussed allow us to simulate distinct scenarios with regard to the magnitude of shocks to energy prices as result of the Ukrainian conflict over the period 2022-2025. First, we apply the actual outturn of energy prices for 2022 as a comparison against COSMO's counterfactual pre-war baseline to examine the estimated loss to the economy owing to developments in 2022. Secondly, we apply the various ECB energy price assumptions from the staff projections mentioned above for the period 2023-2025. This provides us with three distinct scenarios overall which are outlined below. The paths of both oil and gas prices across the three scenarios can also be seen in Figure 2.

- **December 2022 Mild Scenario:** In this scenario, we apply the actual oil and gas prices for 2022 and then apply the ECB's mild assumptions from the December 2022 staff projections for 2023-2025.
- **December 2022 Severe Scenario:** In this scenario, we apply the actual oil and gas prices for 2022 and then apply the ECB's adverse assumptions from the December 2022 staff projections for 2023-2025.
- **March 2023 Mild Scenario:** Finally, this scenario applies the actual oil and gas prices for 2022 and then apply the ECB's mild assumptions from the March 2023 staff projections for 2023-2025

FIGURE 2: SCENARIO PATHS FOR OIL & GAS PRICES



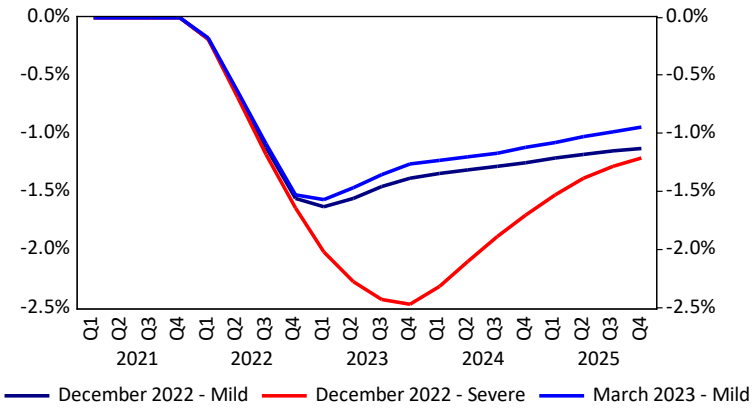
Source: ECB, NiGEM and author's calculations

[1] This is compared with a projection of 86.4, 79.7 and 76.0 from the December 2022 projections.

As mentioned in Section 3.1, the energy price shocks illustrated in Figure 2 are fed directly into COSMO and impact the Irish economy through the production sectors and import prices. These shocks are also fed into the NiGEM global model with results relating to trade and international economic and financial market movements feeding back into a number of COSMO's exogenous variables. This includes monetary policy rates as well as economic indicators for the US, UK and the Eurozone. One of the key exogenous variables that feeds into COSMO from NiGEM in this manner is the trade weighted world demand for Irish exports. This variable will simulate the impact to the domestic economy of a slowdown in Ireland's main trading partners. Figure 3 plots the path of this world demand variable across our three scenarios. In both the December 2022 and March 2023 mild scenarios, world demand for Irish exports falls as low as 1.5 per cent below the pre-war baseline towards the beginning of 2023. The December severe scenario on the other hand shows a stronger fall in the level of world demand for Irish goods with the deviation from the pre-war base reaching as low as -2.5 per cent towards the end of 2023.

Finally, to assess the full impact of the shocks we hold a number of variables constant. This includes variables such as government spending and effective tax rates. In other words, we assume no direct government response to the deterioration in the domestic economy to fully isolate the impacts of the external shocks.

FIGURE 3: SCENARIO PATHS FOR WORLD DEMAND FOR IRISH EXPORTS



Source: NiGEM and author's calculations

4. SIMULATION RESULTS

The simulation results vis a vis the pre-war baseline for the three scenarios are presented graphically in Figure 4 and in tabular form in Table 1. The results are intended to capture the potential impact of higher energy prices and a weaker external environment compared to a situation where a more typical path is followed. The variables selected represent the key macroeconomic indicators which are likely to be impacted by uncertainty in energy markets are a result of continued conflict in the Ukraine.

Examining Figure 4 from top down and left to right we can see that the increase in oil and gas prices first hits the economy through COSMO's import price equation. This results in an increase in the price of imports in 2023 of 3.2 per cent, 6.5 per cent and 11.7 per cent in the March 2023 mild, December 2022 mild and December 2022 severe scenario respectively. This in turn feeds into the overall price level of the economy, causing prices in 2023 to be 2 per cent, 3.8 per cent and 6.4 per cent higher than the pre-war baseline in the three scenarios respectively. As wages in COSMO are determined in a bargaining model and influenced by the factors that affect the supply and demand for labour such as the price level, nominal wages rise above the pre-war baseline. This results in nominal wages in 2023 being 0.8 per cent higher in the March 2023 mild scenario vis a vis the counterfactual no war base and as high as 1.3 per cent and 2.1 per cent in the December 2022 mild and severe. This increase in nominal wages is completely outstripped by the increase in the level of prices, however. Therefore, real wages fall by -1.3 per cent in the March 2023 mild scenario, and by as much as -2.2 per cent and -4.1 per cent in the December 2022 mild and severe scenarios. A fall in real wages leads to a subsequent fall in both real disposable income and the level of consumption. The deviation from the pre-war baseline of both of these variables is similar with a fall of around 2 per cent in the March 2023 mild scenario.

The assumptions regarding energy prices are fed into NIESR's global macroeconomic model, NiGEM, which in turn provides COSMO with projections of key external variables thereby simulating the indirect implications for the Irish economy. This includes the trade weighted demand for Irish exports. As output in the traded sector is driven by this variable, the impact of the Ukrainian war and the subsequent higher energy prices on the world economy is initially transmitted to the Irish economy through this sector. Figure 4 shows that slowdown in Ireland's main training partners and subsequent decline in the demand for Irish exports causes production in the traded sector to fall from the pre-war baseline by -0.9 per cent, -1.1 per cent and -1.4 per cent in the March 2023 mild, December 2022 mild and severe scenarios respectively by the end of the simulation period in 2025.

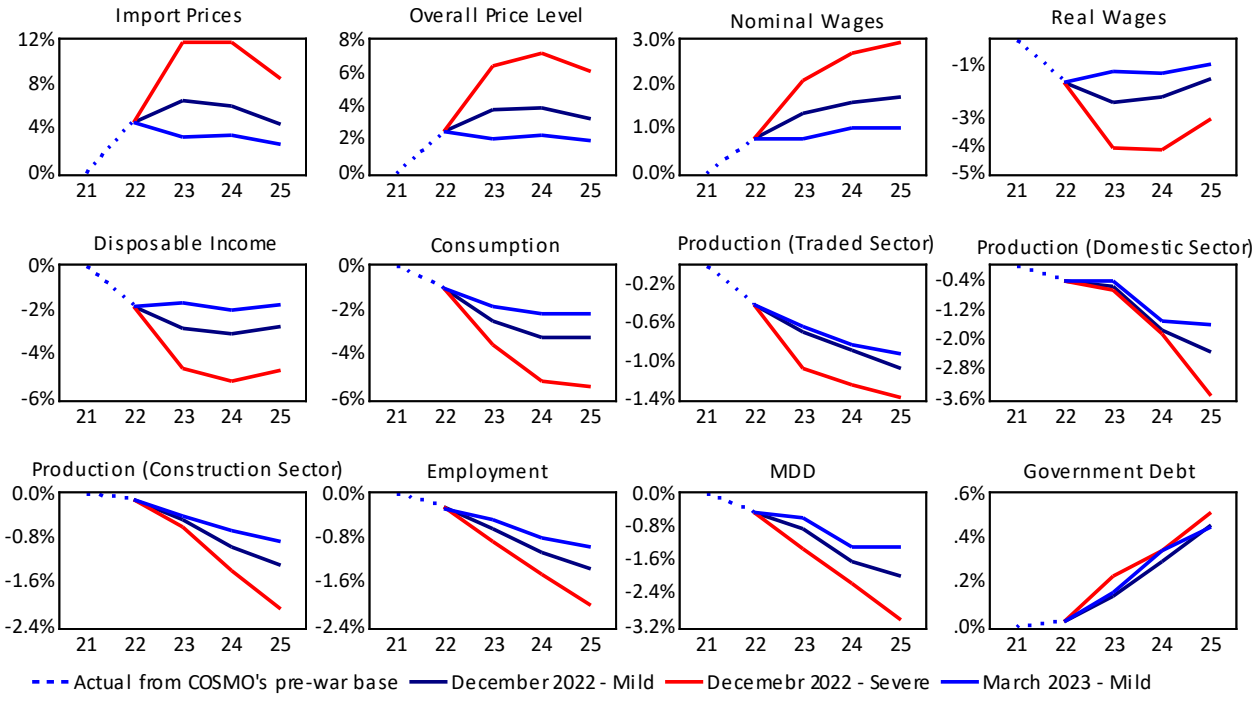
The disruption to the domestic economy, such as lower real wages, lower disposable income, and lower consumption, also causes a significant fall in domestic production across all scenarios with a deviation of -1.6 per cent, -2.4 per cent and -3.5 per cent from the pre-war baseline in the March 2023 mild, December

2022 mild and severe scenarios respectively by the end of the simulation period in 2025. The construction sector also sees significant deviations from the baseline across all three scenarios due to the slowdown in the domestic economy.

Interestingly, there are differences in the magnitude of the response to the shocks across the traded and domestic sector. By 2025, production in the domestic sector is -1.3, -0.7 and -2.1 per cent lower in the December 2022 mild, March 2023 mild and December 2022 severe respectively. This indicates that the domestic sector is more sensitive to this external shock than the traded sector in the medium term. The decrease in production across all the economy's key sectors (including domestic, traded, construction) ultimately leads to a fall in the level of overall employment, with a deviation from the baseline of between -1 per cent and -2 per cent across three scenarios after three years in 2025. This ultimately leads to an increase in government debt across all scenarios also.

Finally, the domestic economy, represented by modified domestic demand (MDD), experiences a substantial decline over the entire simulation period relative to a counterfactual pre-war baseline. Over the medium-term (by 2025), the deviation in MDD relative to the pre-war baseline is between -1.3 per cent and -3 per cent. The simulations suggest that cumulatively the domestic economy has fallen by -3.7 per cent, 5 per cent and 7 per cent in the March 2023 mild, December 2022 mild and severe scenarios respectively between 2022 and 2025.

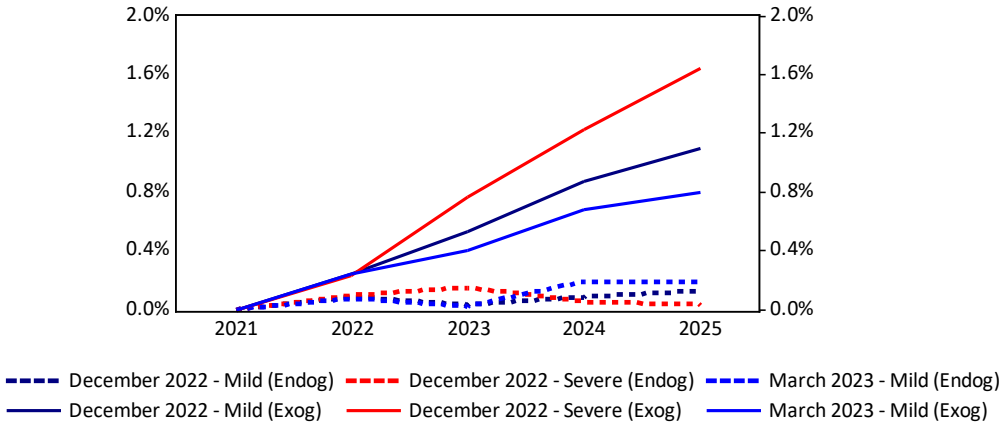
FIGURE 4: DEVIAITONS FROM COSMO'S PRE-WAR BASELINE



Source: Author's calculations

While the results outlined in Figure 4 and Table 1 include the reaction of the level of employment across scenarios, providing a simulation of the deviation in the unemployment rate is complicated by the manner in which it is determined in our econometric framework. Within COSMO, the unemployment rate, urx_t, is calculated in the standard way as $unemployment = \frac{1-employed\ people}{labour\ force}$. Figure 4 illustrated that across all three scenarios, there was a significant fall in the overall level of employment. All else being equal, this would lead to the unemployment rate rising above the baseline. However, the labour force, lfn_t, in COSMO is determined by the level of participation which is in turn demined by real wages. As discussed, the shock to the price level in the economy causes a significant fall in real wages. Within COSMO, this serves to reduce the level of labour force participation causing a fall in the number of people in the labour force. This fall in the labour force offsets the fall in the level of employment leading only to a marginal change in the unemployment rate. Therefore, with regard to the unemployment rate we present two separate iterations across the three scenarios. One, in which the unemployment rate is determined by an endogenous (determined by COSMO) labour force and a second where we the labour force is exogenously determined. Figure 5 presents the deviation of unemployment from the baseline across these separate versions across the three scenarios.

FIGURE 5: DEVIATION OF UNEMPOYMENT RATE WITH ENDOGENOUS AND EXOGNEOUS LABOUR FORCE



Source: Author's calculations

The dotted lines represent the deviation from the baseline when the labour force is determined by COSMO (i.e., labour force is endogenous). In this case, the fall in employment is offset by a decreasing labour force due to the fall in real wages. Therefore, there is muted shock to unemployment. The solid line is the deviation when the labour force is held constant in COSMO (i.e., labour force is exogenous). In this case, the strong fall in employment is not offset by any changes in the labour force and unemployment reaction is strong. Therefore, the deviations of the

unemployment rate from the pre-war baseline illustrated in Figure 5 can be considered as an upper (exogenous labour force) and lower bound (endogenous labour force).

5. SUMMARY AND CONCLUSIONS

This article uses the ESRI's macro-econometric model COSMO to generate a range of model-based estimates of the potential medium-term impacts of the Ukrainian war on a small-open economy. A number of modifications are made to COMSO to reflect the global economic environment caused by the conflict. This includes incorporating both oil and gas prices in the production sectors of COSMO in an attempt to provide a more realistic description as to the uncertainty related to the energy price path as a result of the ongoing conflict. The simulations presented in this paper are informed using recent iterations of the ECB's staff projections.

This research contributes to the existing literature on the macroeconomic impact of the Ukrainian war by allowing the common energy shocks to have heterogenous impacts across sectors: traded, non-traded, and the construction sectors. Understanding the relative impacts across sectors is crucial in evaluating the effects on the overall economy since each sector has a different intensity of production to energy inputs as well as a varying degree of exposure to international markets for intermediate inputs and final demand.

Overall, the results indicate a significant impact to the Irish macroeconomy as a whole. The simulations across the three scenarios considered suggest that that, relative to a pre-war baseline, GDP will fall between 0.6 and 0.7 per cent lower in 2023 in the two mild energy price scenarios. The impacts rise with time and increase to -0.9 and -1.2 per cent by 2025. In the severe scenario, GDP falls by as much as 1 per cent in 2023 and is 1.6 per cent below the baseline by 2025. Interestingly, there are differences in the magnitude of the response to the shocks across sectors of the economy with production in domestic sector -1.3, -0.7 and -2.1 per cent lower that that of the traded sector by the end of the simulation period in the December 2022 mild, March 2023 mild and December 2022 severe scenarios respectively. This result is likely due to the high reliance of Irish domestic sectors on imported commodities and the specific structure of the Irish traded sector which has a heavy reliance on service exports.

There are both upside and downside risks to the scenario estimates. On the upside, to the extent that businesses and consumers can adjust their energy mix away from oil and gas, it may help offset some of the negative impact. On the downside, there is the possibility of a further deterioration of the conflict contributing to more volatility and uncertainty in energy prices and ultimately a more negative macroeconomic impact.

TABLE 1 IMPACT OF UKRAINIA WAR ON IRELAND, CHANGE FROM BASELINE

	After 1 Year (2023)				After 2 Years (2024)				After 3 Years (2025)		
	Dec 22 Mild	Dec 22 Severe	Mar 23 Mild		Dec 22 Mild	Dec 22 Severe	Mar 23 Mild		Dec 22 Mild	Dec 22 Severe	Mar 23 Mild
Per cent deviation from Baseline Level:*											
MDD	-0.9	-1.3	-0.6		-1.7	-2.2	-1.3		-2.0	-3.0	-1.3
GDP	-0.7	-1.0	-0.6		-1.0	-1.3	-0.8		-1.2	-1.6	-0.9
Production	-0.6	-0.9	-0.5		-0.9	-1.2	-0.8		-1.1	-1.4	-0.9
Production, Traded sector	-0.7	-1.1	-0.6		-0.9	-1.3	-0.8		-1.1	-1.4	-0.9
Production, Domestic sector	-0.5	-0.7	-0.4		-1.7	-1.8	-1.5		-2.4	-3.5	-1.6
Production, Construction sector	-0.5	-0.6	-0.4		-1.0	-1.4	-0.7		-1.3	-2.1	-0.9
Real personal disposable income	-2.8	-4.6	-1.7		-3.1	-5.2	-2.0		-2.7	-4.7	-1.8
Employment	-0.6	-0.9	-0.5		-1.1	-1.5	-0.8		-1.4	-2.0	-1.0
Average wages, nominal	1.3	2.1	0.8		1.6	2.7	1.0		1.7	3.0	1.0
Average wages, real	-2.4	-4.1	-1.2		-2.2	-4.2	-1.3		-1.5	-3.0	-0.9
Personal consumption deflator, level	3.8	6.4	2.0		3.9	7.1	2.3		3.2	6.1	1.9
Consumption	-2.5	-3.6	-1.9		-3.2	-5.2	-2.2		-3.3	-5.4	-2.2

Note: * all impacts are in constant prices/real terms unless otherwise stated.

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