



Where is the EU economy headed? The international dimension[☆]

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Abstract

Since 2020, the EU economy has been hit by a number of external shocks that have had a major impact on growth, employment and inflation. As the outlook for the world remains highly uncertain, international conditions are likely to continue to affect the EU's economic performance until a more stable equilibrium is reached. The question is in which direction and by how much? This article presents three possible scenarios (baseline, adverse, and benign), which provide some impact quantification through the use of the European Commission's Global Multicountry model, and considers the potential implications of these scenarios on where the EU economy is headed. The final part of the article discusses how the EU, by better reconciling its domestic and foreign agenda, can play a more proactive role in determining international conditions, leading to more favourable equilibria.

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1. Introduction

In 2019, the global economy was sailing at its cruise speed, and the EU economy was growing slightly above its potential. In its Autumn forecast, the European Commission anticipated a GDP growth for the EU close to it for 2020 and 2021. A few months later, efforts to

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contain the spread of the Covid-19 pandemic led to widespread lockdowns. Advanced economies and some emerging market economies entered a short but extremely deep recession, and their governments took extraordinary measures to mitigate the impact of the pandemic on economic activity and the income of its citizens. As a result of these developments, EU GDP contracted significantly in 2020 before rebounding strongly in 2021.

By the end of 2021, despite inflationary pressures due to supply chain disruptions and a rise in commodity prices fuelled by the global recovery, the pandemic shock was gradually fading, and the impact of external factors on the EU economy was receding. The outlook for the EU economy was for a prolonged and robust expansion. Russia's aggression of Ukraine radically changed this outlook.

By exerting further upward pressures on commodity prices, renewing supply disruptions and increasing uncertainty, the war exacerbated pre-existing headwinds to global growth, which were previously set to subside. The EU and its Member States were first in line to take the hit, given their geographical proximity and strong ties with both Ukraine and Russia, as well as their strong dependency on energy from Russia – especially gas. Russia began squeezing supplies to Europe in 2021 and eventually slashed its exports after its full-scale invasion of Ukraine last February. As a result, European wholesale gas prices peaked at more than 1500% of their pre-pandemic level.

The EU economy, nevertheless, proved more resilient than initially expected and continued to grow strongly in the first half of 2022, propelled by reopening effects, large savings buffers, and residual policy support. However, these fading tailwinds could not insulate the EU from the huge terms of trade shock unleashed by the war in Ukraine: in the last quarter of 2022, growth almost stalled, and this slowdown is expected to continue for part of 2023.

Since the beginning of the pandemic, the EU's economic performance has depended heavily on global economic and political developments and its policy response to them. Looking forward, the evolution of the international environment will continue to affect significantly the EU's economic performance in the coming years. This is not because the European economy is not resilient or its policies are inadequate. On the contrary, we will argue that the measures in place (*in primis* Next Generation EU, hereafter NGEU) have increased the resilience of the EU economy.

Yet, the current international equilibrium is highly unstable. It combines dangerous hot spots with heightened geopolitical and geo-economic tensions (and even war) with areas where business as usual continues with modalities not very different from those prevailing during the pre-pandemic period. Disruptions in global financial markets, for instance, have been limited in light of the size of the shocks, global trade has slowed but not declined, and cooperation in international institutions and fora like the G20 has become more difficult but not broken down entirely. The war in Ukraine has further destabilised an international order that was already in a fragile state before its start. It is difficult to predict the duration and intensity of any war. However, it seems almost unthinkable that the war in Ukraine will continue forever in its current form and that geopolitical tensions will not bifurcate at a certain moment. Moreover, it is difficult to conceive that if economic rivalries among great powers continue to escalate, complex global supply chains can survive unscathed in their current configuration. Against this background, this article will discuss three scenarios: (i) baseline; (ii) adverse; and (iii) benign, and it will look at the ways they could affect the EU's economic performance, as well as possible actions the EU can take to increase its resilience and become better equipped to face an increasingly challenging international environment.

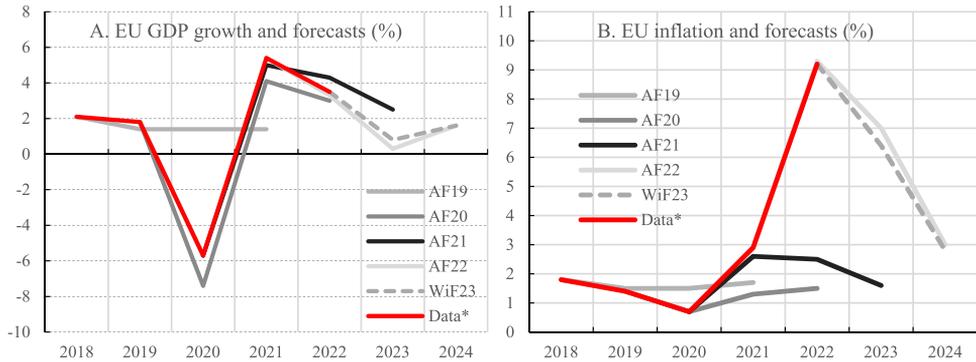


Fig. 1. EU GDP and inflation forecasts. *Notes:* Data (red) for 2022 refers to information as of cut-off date of the Winter Interim Forecast 2023 (European Commission, 2023b). “AF” refers to Autumn Forecast vintages. Inflation is measured as the harmonised index of consumer prices (percentage change on preceding year). Vintages refer to European Commission (2019, AF19), European Commission (2020c, AF20), European Commission (2021b, AF21), European Commission (2022c, AF22), and European Commission (2023b, WiF23).

2. Exogenous policy shocks and endogenous policy response

2.1. The Covid-19 pandemic

In the autumn of 2019, the EU economy was expected to grow at a 1.4% pace for the following two years (Figure 1, Panel A). The pandemic changed the picture dramatically, triggering a short but extremely deep recession. In 2020, economic activity in the EU declined by 5.7%, with Italy and Spain contracting by more than 9%. In the absence of an immediate, appropriate response at the European level, the asymmetric capacity of Member States to respond to an essentially symmetric shock risked ushering in a repetition of the fragmentation dynamics experienced during the Euro Sovereign Debt crisis.

By the autumn of 2020, the EU economic outlook had somewhat brightened (Figure 1). The strong rebound was in large part due to the expectation that effective monetary and fiscal policy response at the EU/euro area (EA) level would prevent excessive dislocations and allow for a swift resumption of economic activity once the vaccine campaign would be efficiently rolled-out (European Commission 2020a; 2021a; Bankowski et al. 2022; Checherita-Westphal et al. 2022). In particular, the strong income support measures activated by EU Member States in the context of the temporary suspension of EU fiscal rules allowed to stabilise employment and income during the most acute phase of the pandemic.

The swift deployment of the European instrument for temporary Support to mitigate Unemployment Risks in an Emergency (SURE) allowed Member States to access loans on favourable terms from the EU without having to tap into the financial markets in a moment of distress.

With its main policy rate already in negative territory, in March 2020, the ECB launched its Pandemic Emergency Purchase Programme (PEPP). This aggressive monetary policy easing was based on a temporary asset purchase programme of private and public sector securities with an initial envelope of €750 billion, further expanded by €600 billion on 4 June 2020 and by €500 billion on 10 December.

The approval in July 2020 of NextGenerationEU (a 750 billion euro recovery package (in 2018 prices) of up to 390 billion euros in grants and 360 billion euros in loans) provided a further strong signal of the EU's resolution to not leave any Member State alone in tackling the economic consequences of the crisis, with countries with less fiscal space benefiting the most. Though spending under NGEU would only materialise later, the resolve to tackle the challenges jointly and in a spirit of solidarity boosted confidence and prevented the largely self-fulfilling fragmentation dynamics that were so detrimental during the Euro Debt Crisis. All this helped shorten the recession significantly and set the stage for a robust economic recovery.

At the time, inflation was not a problem. If anything, the EA and other EU Member States had struggled with almost a decade of sub-target inflation. The Covid-19 recession initially produced additional downward pressure on prices: inflation undershot in 2020 and remained subdued at the beginning of 2021, despite the strong economic recovery underway. The European Commission forecast in the autumn of 2020 expected inflation to stay below 2% in 2022 (Fig. 1, Panel B). However, under the surface, major changes were taking place. The pandemic led to a decrease in demand for contact-intensive services, whose prices remained stable or decreased. Households re-directed part of the forced savings towards goods, whose prices increased. This shift towards tradables, coupled with pandemic-induced disruptions in supply chains and transports, triggered significant shortages of key components that translated into major price spikes for certain products. As the economy re-opened, the prices of many contact-intensive services bounced back under the pressure of strong demand and important labour shortages. In addition, energy prices started creeping up again. When the pandemic spread, prices fell by around 60% on recession fears. By early 2021, however, Brent was already above its pre-war level and increased steadily to more than 60% over 2021. Gas price benchmarks in the major trading hubs also started to move up as economic activity recovered. Yet, in Europe, the price of gas was mainly driven by supply factors. As Russia began squeezing supplies to Europe in late 2021, prices started moving up sharply, eventually peaking in the summer of 2022 at 1500% above the pre-pandemic price.

Still, in the autumn of 2021, the shocks pushing inflation above 2% in 2021 were still considered largely transitory, and, by 2023, inflation was expected to move back towards target. In the meantime, the EU economy would continue to recover robustly (see Fig. 1). Commission forecasts - and those produced by international financial institutions and the private sector - were quite optimistic about both the economic outlook and the inflation dynamics.

2.2. Russia's war of aggression against Ukraine

Month after month, however, inflation appeared more entrenched, and in March 2022, the Federal Reserve reversed the course of its monetary policy. In Europe, inflation had been relatively lower and initially confined to non-core components. The Russian invasion of Ukraine triggered a sharp increase in oil, gas and food prices. The shockwaves affected primarily the EU and its immediate neighbouring countries, as well as emerging markets strongly dependent on oil and food staples. The surge in energy and food commodity prices eventually passed through to core components, lifting inflation well above the central banks' comfort zone. Inflation in the EU accelerated above US levels,¹ forcing the ECB into its sharpest tightening cycle since the introduction of the single currency.

¹ In 2021, US inflation was higher than in the EU as the massive fiscal stimulus introduced by the newly elected Biden Administration contributed to the increase of inflationary pressures in the US economy.

In July 2022, the ECB started to raise interest rates and, from March 2023, has reduced its asset purchases programme, implying a moderate quantitative tightening. However, aware of the economic fragmentation risks that a tighter monetary policy could trigger, it also introduced a Transmission Protection Instrument intended to ensure that the monetary policy stance is transmitted smoothly across all EA countries.

Economic growth remained strong despite the impact of the war. The economic re-opening and large employment gains boosted consumption throughout the first half of the year, while NGEU supported investment. However, as the terms-of-trade shock made its way through the EU economy, companies' production costs started to rise, and households' disposable income shrank, leading to the stagflationary dynamics that characterised the end of 2022. The tightening of financial conditions and the continuation of the war in Ukraine, with its inevitable negative impact on investors' and consumers' confidence, determined a sharp slowdown of the European economy in the second half of 2022. In the autumn of 2022, a mild recession was even anticipated (Figure 1, Panel A).

Still, the EU economy showed again a stronger-than-expected resilience, and thanks to the strong adaptive capacity of the private sector and a new round of fiscal support measures to shelter households and energy-intensive firms from high energy costs, it was able to narrowly escape a broadly anticipated recession.

As NGEU progressively switched into higher gears, the EU boosted investments into the twin transition, i.e. in the green and digital transitions, whilst particularly benefiting Member States where the fiscal space was most constrained (Bankowski et al., 2022; European Commission, 2022b; Pfeiffer et al., 2022). Transfers from the EU budget are, moreover, conditional on the delivery of a largely supply-side reform agenda agreed upon by the EU and its Member States. The focus on green transition proved providential. By the time Russia started slashing gas supply, and prices of European gas skyrocketed, Member States were ready to launch substantial public investment projects and deploy incentives to private investment to foster energy efficiency and speed up the transition away from fossil fuels. On top of this, Member States have mobilised substantial fiscal resources to shelter households and vulnerable firms from rising energy costs.² Such short-term measures have not distracted from the longer-term objective of responding to the challenges of diversifying supply sources and reducing its dependence on Russia while further pursuing the climate objectives (European Commission, 2022a). Demand restraint and efficiency gains, coupled with a mild winter, allowed the EU to cut its end-of-year gas consumption by 25% below the average for the same months over the past five years. Stepped-up efforts to diversify supply sources have also borne fruit. In the first five weeks of 2023, pipeline gas from Russia accounted for around 7.5% of total EU imports of gas, down from 37% on average in 2021.

While it was no longer possible to achieve the more than 4% GDP growth expected back in the autumn of 2021 forecasts, GDP in 2022 still expanded by a solid 3.5% amidst a strong labour market. Output growth is expected to remain weak in 2023 and regain some traction only in 2024.³ This outlook suggests that not only was the EU economy on more solid ground in this

² EU Member States have implemented different measures to address the adverse effects of high energy prices. Overall, targeted income support appears to be the most promising approach for mitigating the impact of high energy prices while also addressing social and climate goals. Bethuynne et al. (2022) argue that targeted income support should be preferred over measures affecting energy prices directly. See also the discussion in European Commission (2022c).

³ See European Commission (2023b) and International Monetary Fund (2023).

decade than in the previous one, but also that the economic policies put in place were appropriate and helped to keep the economy resilient despite the heavy shocks it was exposed to (Buti, 2021a; Blanchard, 2022). As a result, despite having a war at its doorstep, in 2022, this helped the EU to grow faster than both the US and China. Still, risks to the outlook remain considerable and strongly dependent on international economic and geopolitical developments (European Commission, 2023b).

The EU's economic policy response to the Russian invasion of Ukraine was not kept within its borders only. Since the Russian aggression, the EU and its Member States have put in place sizeable measures to, directly and indirectly, support Ukraine in withstanding Russia's aggression. This support covers a wide range of areas, where e.g. the financial aid provided through macro-financing assistance (MFA) was essential to ensure continued macroeconomic stability in the country,⁴ while the so-called 'solidarity lanes' secured that grain could be exported, which proved vital not only to Ukraine's economy but also to dampen the risks to food security in the neighbourhood. Moreover, Member States have, together with the US and the other G7 countries, provided critical military support to counter the invasion. The EU's leaders have repeatedly expressed their strong support and promised to continue to 'stand with Ukraine' for as long as it takes. This will entail significant economic and financial measures for the reconstruction of the country in a way that fosters its 'European path' following the application for EU membership in 2022.⁵ This may, in time, have limited but positive spillovers on the EU Member States bordering Ukraine.

In addition, to adapt to the rise of geopolitical rivalries around the globe, the EU is also taking measures to reduce its strategic dependencies as well as secure and strengthen the resilience of its supply chains (European Commission, 2022a). In parallel, it intervenes (*in primis* through the Green Deal Industrial Plan) to support its green industry and counter protectionist measures taken by other major international players (e.g., the US with the Inflation Reduction Act or China with its massive subsidies to environment-related) productions - European Commission, 2023a.

Other reforms are in the pipeline. The reform of the European economic governance (European Commission (2022d), currently under discussion, aims at providing a solid framework to reduce over time the high public debt cumulated in the last fifteen years while avoiding past policy mistakes (Bertoldi and Orsini, 2020; Buti, 2021a; Blanchard et al., 2022).

3. Where is the EU economy headed?

As we pointed out in the introduction, we consider that, in the next few years, the EU economic performance will continue to be heavily affected by the evolution of international conditions, as the current global equilibrium is fundamentally unstable, where war, growing geopolitical and geo-economic tensions, increased rivalries coexist with international cooperation on some global challenges, global financial integration, and a large network of global supply chains. While the outlook for international conditions is highly uncertain, domestic conditions look more stable. Moreover, major policy actions have either already

⁴ The EU provided three MFA operations in 2022, in which a total of EUR 7.2 billion were provided in very favourable loans. For 2023, the MFA+ is set to provide EUR 18 billion, corresponding to close to half of the country's financing needs as estimated by the IMF in Dec. 2022.

⁵ The European Council granted Ukraine 'candidate country' status on 23 June 2022.

been undertaken (NGEU, Fit-for-55, REPowerEU, Green Deal Industrial Plan, and Critical Raw Material) or are in the pipeline (economic governance reform), setting the stage for the environmental and digital transition that will transform the structure of the European economy over the long-term.

Engaging in an economic foresight exercise in a context in which the development of the EU economy is set to depend on the evolution of largely exogenous and highly uncertain international conditions necessarily require to rest on scenario analysis.

In a baseline scenario, we assume that, however unstable, the current status of international conditions will remain frozen throughout the horizon of this foresight exercise. It is, however, unlikely that the next few years will reproduce the current geopolitical and economic patterns followed by a return to “the world of yesterday” (Stephan Zweig) from 2025 on. Most likely, things will get either better or worse, affecting the EU’s economic performance and the economic transformation underway. While most risks are on the downside, there are also some upside risks. In our view, excluding new catastrophic events such as a new pandemic or a large-scale conflict in East Asia, five international variables can significantly affect (positively or negatively, depending on the scenario) the direction where the EU/EA is heading:

1. The scope and duration of Russia’s war of aggression in Ukraine;
2. Geopolitical tensions and the possible return to a political, military and economic bloc logic;
3. The rearrangement of the supply chains;
4. Global economic developments and the related tightening/easing of financial conditions and confidence effects; and
5. The evolution of the cooperation (and ability to deliver) in international institutions and fora.

These five variables can turn for the better or the worse. If they turn for the worse, an adverse scenario could materialise. If, instead, international conditions improve, a benign scenario could see the light of day.

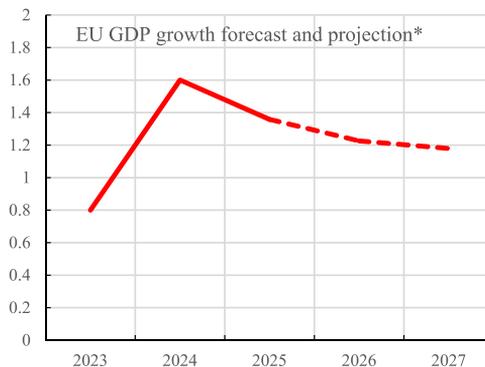


Fig. 2. Baseline scenario - Current EU growth forecasts and growth projections. *Notes:* Forecast data (until 2024) refers to [European Commission \(2023b\)](#), while growth projection (2025–2027, in dashed lines) are calculated using medium-term potential growth estimates and output gaps (available at <https://circabc.europa.eu/ui/group/671d465b-0752-4a2e-906c-a3effd2340ba/library/b9482682-d5a0-47a1-9281-bc7d8a214629>).

4. The baseline scenario

The baseline scenario is built upon the European Commission Winter Forecasts for 2023 and 2024. In these forecasts, the current international conditions are projected into 2023–2024. After 2024, actual growth is projected to move close to its potential (Figure 2).

The baseline scenario is the least affected by the evolution of international conditions and may have a slight upward bias, as it projects the current international conditions only until the end of 2024 and then, following standard technical assumptions about projections going beyond the forecast horizon, supposes that the economy will revert to its potential growth. Importantly, this forecast already incorporates government spending financed by NGEU.

The European Commission forecasts that the EU economy is set to grow by 0.8% in 2023 and 1.6% in 2024, and the last forecast (Winter Interim Forecast 2023) does not extend beyond 2024. Estimates for potential growth and output gaps are updated at every (major) forecast round for up to ten years. For 2025–2027, average potential growth is estimated at around 1.1%. As the output gap gradually closes, actual growth projections remain close to potential growth for those years (averaging 1.3%).

In projecting EU and EA growth over the medium term, the European Commission forecast already incorporates the impact of some of the policies mentioned above (for instance, NGEU).

While headline growth figures in the baseline scenario may not appear impressive, they are still relatively good if one takes into account the sluggish European population dynamics and the weakness of total factor productivity growth in advanced economies. Moreover, these GDP growth figures mask the deep economic transformations the European economy is set to undergo in the current decade. The digital and environmental transition will make the European economy more resilient. Over time, higher investment in the digital economy positively impacts productivity and helps ensure that the European economy does not fall behind in the climbing of the technological ladder. EU efforts to adapt the economy and the society to the climate change challenges – to date the strongest planned financial effort in the current decade – will have short-term costs (amplified by the energy spillovers of the Russian war of aggression against Ukraine). Nevertheless, they also represent a major opportunity to innovate in an expanding market for goods and services (Tagliapietra et al., 2022; European Commission, 2020b; European Commission, 2023a). NGEU investments in both the digital and climate transition will contribute to making the EU economy more resilient to external shocks and more able to address global challenges.

The economic support provided to Ukraine should help ensure its macroeconomic stability as a necessary (but not sufficient) step towards ending the war. Moreover, it should also mitigate the economic spillovers of the war, which have a disproportionate impact on the immediate neighbouring countries, in particular those with the largest trade and/or energy exposures. The impact of the support to Ukraine on financial markets and confidence should be more significant, and it should have a positive impact on the countries in (and outside) the EU with the highest risk premia.

Supply-side policies aimed at strengthening the resilience of supply chains and avoiding strategic dependencies may not translate into higher productivity and efficiency but should avoid the repetition of shocks similar to those experienced because of the reliance on Russian oil and gas.

5. The adverse scenario

In the adverse scenario, the war, while remaining inside Ukraine’s borders, continues well into 2024 and possibly beyond, while global geopolitical tensions escalate further, affecting various regions of the planet and creating new political and economic blocs. This would lead to a new “cold war”. As a result, the bloc logic has the upper hand. Global supply chains are permanently disrupted, and global economic fragmentation accelerates. The tightening of financial conditions due to widespread uncertainty and instability triggers an increase in risk premia. Even with the policy measures already mentioned, EU growth will inevitably be lower, and unemployment will rise. Sluggish growth would continue in 2024 and maybe in 2025 before gradually returning toward potential growth once the international situation stabilises. However, this potential growth rate would be lower than in the baseline as the demand and supply shocks related to the disruption of both international trade and supply chains, as well as tighter financial conditions, would negatively impact investment and TFP growth (Posen, 2022; Rajan, 2023).

Against this background, asymmetric shocks could rock the EU/EA, widening its fault lines and possibly creating political backlash in a number of Member States. Should this be the case, the EU actions already undertaken or in the pipeline, while still extremely useful, could prove insufficient to keep the economy growing close to its *ex-ante* potential and may need to be complemented by additional measures aimed at adapting the structure of the economy to the current and new challenges and support the economy. While the worsening of the international environment could provide momentum to further political and economic integration (“Europe will be forged in crises”, according to the famous Jean Monnet’s quote), it remains to be seen whether, there would be sufficient political capital to move in this direction. Moreover, the timing and nature of the digital and climate transitions would risk being significantly disrupted.

6. The benign scenario

In the current uncertain international environment, better-than-expected developments are also possible. If these upside risks materialise, they could produce better and more stable outcomes than those presented in the baseline scenario. In the benign scenario, the war could end already in 2023 or early in 2024, and a peace agreement or at least an armistice could be reached. The de-escalation of international tensions would avoid further fragmentation of the global economy. Some supply chains would be rearranged, but the costs to be paid for this would be relatively small. The acceleration of the global recovery could create some upward inflationary pressure, but this development would be transitory, as the disruption in global supply chains (partly due to the now abandoned China’s zero-Covid policy) is already gradually fading. As the EU has been among the economies hit the most from the war in Ukraine and the disruption in supply chains, in the benign scenario it is plausible to expect stronger growth in the 2023–2025 period (boosted by the return of confidence, the reduction of geopolitical tensions, the easing of financial conditions, and the spillovers related to the reconstruction of Ukraine) than in the baseline scenario, and then a gradual reversal to potential growth. Potential growth in such a scenario may become slightly higher than in the baseline scenario because higher investments and a more efficient allocation of resources would have a small but positive impact on it. In the benign scenario, by implementing the policy actions mentioned above, the EU would find itself in a good position in the environmental and digital transitions and benefiting more than its major partners from the openness of its economy. Moreover, it would have

Table 1

Overview of scenario specifications, relative to baseline.

Channel	Model and targets	Adverse	Benign
Global economic activity and foreign demand	<i>Foreign demand</i>	Significant disruptions to global economic activity, foreign demand falls by 2.5%	Increased global economic activity, foreign demand up by 1%
Global supply chains	<i>EU import prices (rest of the world export prices) TFP trend</i>	Disruption and economic fragmentation increase import prices by 3% Permanent drop in the level of trend TFP (−0.25%)	Restored supply chains reduced import prices (−1.5%) More efficient resource allocation increases the level of trend TFP (+0.1%)
Financial conditions	<i>Investment risk premia</i>	Tighter conditions in bank lending, risk premia up by 100 bps	Easier financial market conditions, risk premia fall by 50 bps
Confidence	<i>Savings rate</i>	Higher precautionary savings and risk aversion increase the savings rate by up to 0.75 pp	Return of confidence decreases the savings rate by up to 0.4 pp
Economic policy		No explicit policy responses beyond automatic stabilisers and the monetary policy reaction.	Idem.

Notes: This table expresses all simulation targets as peak effects relative to baseline.

in place a sound fiscal framework designed to interact more effectively with ECB monetary policy and produce a better macroeconomic policy-mix. Against this background, economic fragmentation risks would be reduced. Such developments would put the economy on a sustainable and sound growth path over the medium to long term.

7. A scenario analysis using the European Commission's Global Multi-country model

This section employs the Commission's Global Multi-country (GM) model to quantify the balance of risks included in our scenarios. In addition, the model simulations spell out the macroeconomic transmission mechanisms.

Here, we outline the main assumptions and transmission channels in [Table 1](#), with additional simulation details provided in the Online Appendix.⁶ All scenarios are specified relative to the baseline growth assumptions outlined in [Section 4](#).

Building on the narratives developed in [Sections 5 and 6](#) above, the simulations incorporate assumptions on global economic activity, foreign demand, and international trade. Additionally, we consider spillovers from disruptions in the international environment that affect the domestic economy through productivity dynamics, confidence effects, and investment financing conditions. The model's added value is to integrate and quantify these factors in a coherent framework. We discipline our assumptions using historical and projected economic indicators and risk analyses from international organisations (e.g., ECB, European Commission). The model

⁶ The GM model is a structural macroeconomic model in the New-Keynesian tradition. It is regularly used to contribute to the European Commission's economic forecasts. The analysis outlined here considers a two-region model version covering the EU and the rest of the world (RoW). The model estimation with Bayesian techniques identifies key parameters, characterising the structural features of the European and global economies. For details on the model, see, for example, [Albonico et al. \(2019\)](#) and [Cardani et al. \(2022\)](#).

estimation also identifies the main driving forces (“shocks”) that have shaped European macroeconomic dynamics in the past, and we can use this information in the scenario design.⁷

It is important to note that the scenarios presented in this analysis focus exclusively on exogenous demand and supply shocks (as summarised in [Table 1](#)) and do not take into account explicit discretionary policy assumptions. As a result, the model simulations do not capture all the factors discussed in the scenario narratives developed in [Sections 5 and 6](#). While we acknowledge the significant impact of policy decisions on the economic outlook of the EU, we have chosen not to include them in our quantitative analysis due to the high level of uncertainty involved and the need for a large number of specific assumptions.

The adverse scenario assumes a sustained decline in global economic activity relative to the baseline, triggering a persistent reduction in European foreign demand by about 2.5%. This assumption broadly aligns with the downside scenario in the ECB’s December 2022 projections ([European Central Bank, 2022](#)). The scenario also incorporates protracted supply chain disruptions, capturing bottlenecks and costly trade reconfiguration. To capture these channels in a stylised fashion, we assume a 3%-increase in import prices and a permanent adverse shock to total factor productivity. We further assume that the deterioration in the international environment affects European households and investors’ confidence and risk-taking through higher risk premia (100 bps above baseline) and increased savings (a 0.75pp increase in the saving rate), as shown in [Table 1](#).

In contrast, the benign scenario assumes increased global economic activity, particularly in Ukraine and other close trading partners. Restored supply chains positively affect trend productivity (+0.1%) and reduce import prices (−1.5%). These positive developments spur confidence and domestic investment, albeit somewhat less than in the adverse scenario (in absolute terms).

[Table 2](#) reports that the adverse scenario implies a significantly lower level of real GDP than in the baseline. The growth slowdown in the rest of the world leads to a reduction in European exports (in percent deviation), while supply chain disruptions and higher rest-of-the-world export prices further depress economic activity. The simulation results show that these factors significantly reduce EU GDP in the medium run. The adverse productivity effects also imply lasting damage to the economic fabric. On the demand side, precautionary savings (confidence) and higher financial market risk premia lower domestic consumption and investment, reducing employment and real wages. Combining all channels, the adverse scenario implies an EU GDP level of 2.2% below the baseline (in 2027). Given our assumptions on the different supply and demand shocks, the inflation effects are more balanced: Slowing domestic demand and net export counterbalance the inflationary effects of supply chain disruptions.

Instead, the model simulations of the upside scenario show an increase in EU and world GDP. Lower import prices and enhanced supply chains improve the European terms of trade. Higher external demand, positive confidence effects, and improved investment conditions in the EU further improve the economic outlook. As a result, private consumption and business investment in the benign scenario rise above the baseline. In sum, the EU’s 2027 GDP level is 1.1% above the baseline.

Although stylised, the scenarios quantitatively illustrate the critical role of international conditions in determining the EU’s economic outlook. The scenarios show that the risks

⁷ We also need to specify a time path for each shock assumption. For simplicity, we specify the shock processes such that their peak effect materialise around 2026–2027.

Table 2

Simulation results, EU GDP level (%).

Channel	Adverse	Benign
Global economic activity and foreign demand	-0.5	+ 0.3
Global supply chains (import prices and productivity)	-0.7	+ 0.3
Financial conditions	-0.4	+ 0.2
Confidence	-0.5	+ 0.3
Total (sum of all channels)	-2.2	+ 1.1

Notes: This table reports the EU's real GDP level in 2027 in percent deviation to the baseline.

included in the adverse scenario have a markedly more significant impact on the GDP trajectory compared to the benign scenario. However, some caveats need to be considered when interpreting the results. First, to enhance clarity, the model simulations exclude some scenario elements, such as explicit economic policy responses beyond automatic stabilisers and the monetary policy reaction (“Taylor rule”). Secondly, we do not include assumptions on global energy commodities.⁸ Lastly, we run the scenarios for the EU as a whole, while the risks outlined affect European countries differently.

8. A graphical non-linear presentation of the three equilibria

In addition to the model simulations, the three scenario narratives can be represented in a phase diagram. This illustrative dynamic representation (Fig. 3) leads to two stable equilibria and one “unstable” equilibrium. In the graph, international conditions (IC)⁹ are the independent variable (on the horizontal axis), while the rate of growth of the EU economy (\dot{y}) is the dependent variable (on the vertical axis). Each level of international conditions corresponds to a growth rate (black line). If international conditions are good (have a high value) and uncertainty is low, the economy grows close to its potential. By contrast, weaker levels of international cooperation and higher levels of tensions (both political and economic) reduce the growth rate. The reaction function to a change in international conditions is non-linear and s-shaped (sigmoid function): ($\dot{y} = f(IC)$), leading to multiple equilibria (see Fig. 3).

In this highly stylised phase diagram, the non-linearity of the relation between international conditions and growth is due to the fact that, in a highly uncertain international environment, international trade and investment, financial markets, and confidence react in a non-linear way to unforeseen (positive or negative) developments (which can be both economic and political). Changes in the international order generate large spillovers that amplify the initial idiosyncratic shock. Moreover, worsening international conditions generate policy responses (e.g., protectionist measures) that further exacerbate the downturn. These self-reinforcing mechanisms

⁸ The implications of the international environment on energy prices are, per se, ambiguous. On the one hand, political disruptions in oil-exporting countries and Russia's war of aggression against Ukraine risk renewed price increases. On the other hand, a slowdown in global economic activity or tensions in other regions (e.g. East Asia) reduces the demand for energy commodities and, hence, their prices.

⁹ “International conditions” here include a number of factors, such as the evolution of geopolitical and geoeconomic tensions, climate change, the presence of military conflicts, the degree of international political and economic cooperation, the international trade dynamics, and the stability of global financial markets. This concept is wider than those used to create global conditions indexes, which are based exclusively on economic variables (see Cuba-Borda et al. (2018)).

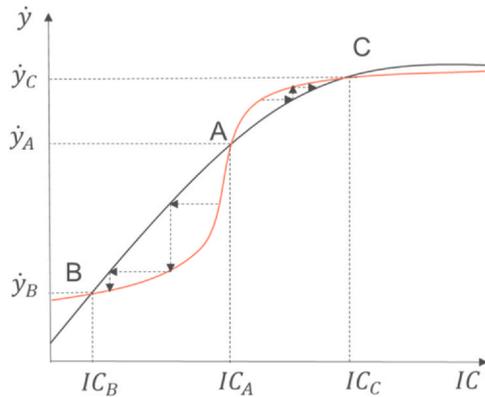


Fig. 3. International conditions can lead to multiple growth equilibria. Notably, the graph builds on the assumption that growth gains in the benign scenario are more limited than the losses the EU economy would incur in worsening international conditions (e.g. postulating less room for positive supply-side factors). However, it is essential to consider the broader picture beyond the simple illustrative graph (which also only shows economic growth). This includes considering the potential positive externalities associated with the digital and climate transition, which can contribute to a sustainable growth trajectory for the EU.

imply non-linearities in the way international conditions affect economic growth (the same applies in reverse in the case of an improvement in the global environment).¹⁰ Against this background, a significant worsening (or improvement) in international conditions can move growth away from the unstable equilibrium, leading it to new, more stable equilibria.

Point A in the diagram represents the current equilibrium, where war, heightened geopolitical and economic tensions, global economic and financial interdependencies, and variable geometry cooperation co-exist uneasily. This stalemate situation has not changed significantly in the last year, creating a “strange” equilibrium.

Starting from this point, changing international conditions can make the economy bifurcate. If international conditions get worse, the impact on international trade and investment, financial markets, and confidence will lead to lower growth, which in turn gives rise to more protectionism and less international cooperation. This triggers a further worsening of international conditions that produce a further slowdown in growth, and so on, until a low equilibrium point (point B) is reached.

If, instead, international conditions improve (e.g., the war in Ukraine ends or geopolitical tensions in East Asia abate), the rise in financial valuations and confidence will boost growth and investment. These developments will support an increase in international trade and provide incentives for international economic and political cooperation. International conditions will improve further, and the economy will gradually move to a higher equilibrium. As the economic situation improves, increasing investment and more efficient use of resources can lift growth potential, which would rise moderately during the improvement phase (point C).

¹⁰ An illustration of such non-linearities can be seen in how the stress in a number of small banks in the US in March 2023 affected confidence at the global level that, in turn, exposed the short comings of a systemic bank in Europe (i.e. Credit Suisse). While the banking sector is deemed as resilient in the EA, with strong capital and liquidity positions (ECB), our economies are interconnected in today’s world and confidence effects are genuinely difficult to predict.

9. Can the EU affect international conditions?

The EU economy is the most open of all major economies and, as such, particularly susceptible to global developments. The first part of this article has shown how international conditions have affected the economic performance of the EU in this decade and pointed out that, also thanks in part to effective policy responses, the European economy has shown remarkable resilience in the face of huge shocks.

In the second part of the article, we have argued that the international situation remains highly uncertain and unstable. Based on the analysis of quantitative scenarios and feedback effects, we have concluded that, in the coming years, the evolution of international conditions will be critical in determining where the EU is headed and whether it will take a (relatively) high or low growth path. If international conditions improve, the EU should be able to take the high path. However, if international conditions continue to deteriorate substantially, the current policies, such as Green Deal Industrial Plan or the Critical Raw Material, might not be sufficient to fully counteract the adverse external environment. Depending on which scenario the reality comes closer to, additional actions will be necessary to increase the European economy's resilience and sustainability.

Looking ahead, a crucial question for the EU's outlook is whether it can assume a more proactive role in the international arena and (positively) influence the key issues identified in [Section 4](#), such as Russia's war of aggression on Ukraine, geopolitical tensions, supply chains, global economic developments and successful cooperation within international institutions.

The size of its internal market theoretically positions the EU well as an actor on the international scene. However, to help steer the international environment towards the benign scenario, the EU needs to better reconcile its domestic and foreign agendas ([Buti and Messori, 2021b](#), [Pisani-Ferry, \(2023\)](#)). Strengthening domestic governance can increase resilience to external shocks while keeping the commitment to openness. Reducing domestic vulnerability not only benefits the EU internally but also allows for promoting its cooperative strategy externally. Ongoing initiatives such as NGEU and Fit for 55 represent a step in this direction.

On the external side, new, more inclusive forms of multilateralism can enable the EU to exert a stronger influence on the international scene, bringing other players in the advanced and emerging world together for economic cooperation through international organisations (e.g. the IMF and the World Bank) and fora (e.g., the G20). In particular, finding ways to rearrange effectively global supply chains will be central to preserving and enhancing the benefits of globalisation. At the same time, the EU has assumed more responsibility to promote security in its neighbourhood, and continuing to do so will increase its attractiveness as a global partner. The EU can also leverage its strong points on the international scene, in particular its ambition to combine public goods like inclusiveness and climate transition in a sustainable growth model.¹¹ This alternative approach to protectionism and confrontation can serve as an "attractor" for other economies, including in emerging markets.¹²

Finally, even a post-pandemic and post-Ukraine war world will feature "pervasive interdependence between transnational markets and a strong convenience of using international value chains, albeit restructured and reformed" ([Buti and Messori, 2021b](#)). The need for international economic cooperation remains therefore elevated in a world where geopolitical

¹¹ See [Altomonte and Villafranca \(2023\)](#) and [Felbermayr and Wolff \(2023\)](#).

¹² In particular for the economic sphere, as discussed by [Buti and Messori \(2022\)](#).

tensions run high. A more “geopolitical Europe” should keep its commitments to multilateralism and economic openness while acting on a realistic assessment of the international system.

10. Conclusions

“The uncertainties policymakers face are myriad and deep – not only about the course of interest rates, but also about possible global macroeconomic shocks, rapid changes in the geopolitical environment, and climate change. We cannot even ascertain the probabilities of such events” (Orszag, Rubin and Stiglitz, 2021).

Global uncertainty and instability have increased dramatically in the last couple of years. In this article, on the basis of a scenario analysis, we have argued that they are going to affect significantly where the EU is headed. Whether over the medium term, the economy will take a relatively high or low growth path strongly depends on international political and economic developments and on the EU’s ability to affect some of them. Therefore, the EU must equip itself not only to counter future external negative shocks that would arise if the adverse scenario materialises but also to play a more proactive role on the global scene. For instance, if the EU is successful in its climate and digital transitions, carrying them out without increasing inequalities or drifting toward protectionism, it can become an attractive example for other areas of the world. Such developments would help the EU have a stronger voice in international organisations and fora and enhance its ability to affect international conditions, possibly leading to more favourable equilibria both for itself and the global economy.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.jpolmod.2023.07.005](https://doi.org/10.1016/j.jpolmod.2023.07.005).

References

- Albonico, A., Calais, L., Cardani, R., Croitorov, O., Ferroni, F., Giovannini, M., Hohberger, S., Pataracchia, B., Pericoli, F., Pfeiffer, P., Raciborski, R., Ratto, M., Roeger, W., & Vogel, L. (2019). The global multi-country model (GM): An estimated DSGE model for euro area countries. *European Economy Discussion Papers*(102).
- Altomonte, C., & Villafranca, A. (2023). *EU Economy: Fit for the Future?* Policy Paper. Istituto per gli Studi di Politica Internazionale.
- Bankowski, K., Bouabdallah, O., Domingues Semeano, J., Dorrucchi, E., Freier, M., Jacquinet, P., Modery, W., Rodriguez-Vives, M., Valenta, V., & Zorell, N. (2022). The economic impact of Next Generation EU: A euro area perspective. *ECB Occasional Paper Series, N 291, April*.
- Bertoldi, M., & Orsini, K. (2020). US and euro area growth performances: Are they so different? *Journal of Policy Modeling, 42*(4), 860–877.
- Bethuynne, G., Cima, A., Döhring, B., Lindén, Å.J., Kasdorp, R., & Varga, J. (2022). Targeted income support is the most social and climate-friendly measure for mitigating the impact of high energy prices. *VoxEU*. <https://cepr.org/voxeu/columns/targeted-income-support-most-social-and-climate-friendly-measure-mitigating-impact-0> (Accessed 08 March 2023).
- Blanchard, O. (2022). *Fiscal Policy Under Low Interest Rates*. Boston: MIT Press.
- Blanchard, O., Sapir, A., & Zettelmeyer, J. (2022). The European Commission’s fiscal rules proposal: A bold plan, with flaws that can be fixed. *PIIE Realtime Economics* 30 November.
- Buti, M. (2021a). *The Man Inside. A European Journey through Two Crises*. Milan: Bocconi University Press.
- Buti, M., & Messori, M. (2021b). Towards a new international economic governance: The possible role of Europe. *EUI School of Transnational Governance Policy Paper, N 20*.
- Buti, M., & Messori, M. (2022). L’integrazione europea dopo la guerra: Come riprendere il cammino. *Astrid Rassegna*(n. 16).

- Cardani, R., Croitorov, O., Giovannini, M., Pfeiffer, P., Ratto, M., & Vogel, L. (2022). The Euro Area's pandemic recession: A DSGE-based interpretation. *Journal of Economic Dynamics and Control*, 143, Article 104512.
- Checherita-Westphal, C., Freier, M., & Muggenthaler, Ph (2022). Euro area fiscal response to the war in Ukraine and its macroeconomic impact. *ECB Economic Bulletin*, 5.
- Cuba-Borda, P., Mechanick, A., & Raffo, A. (2018). Monitoring the world economy: A global condition index. *IFDP Notes. Board of Governor of the Federal Reserve Bank* 15 June.
- European Central Bank (2022), Eurosystem staff macroeconomic projections for the euro area. Box 3, December 2022, available at https://www.ecb.europa.eu/pub/projections/html/ecb.projections202212_eurosystemstaff-6c1855c75b.en.html#toc5 (Accessed 6 March 2023).
- European Commission (2019). *European Economic Forecasts – Autumn*. Brussels: European Commission.
- European Commission (2020a). *European Economic Forecasts – Spring*. Brussels: European Commission.
- European Commission (2020b). *Stepping up Europe's 2030 climate ambition*. Brussels: European Commission.
- European Commission (2020c). *European Economic Forecasts – Autumn*. Brussels: European Commission.
- European Commission (2021a). *'Fit for 55': Delivering the EU's 2030 climate target on the way to climate neutrality*. Brussels: European Commission.
- European Commission (2021b). *European Economic Forecasts – Autumn*. Brussels: European Commission.
- European Commission (2022a). *EU strategic dependencies and capacities: second stage of in-depth reviews*. Brussels: European Commission.
- European Commission (2022b). *The EU as an issuer: the NextGenerationEU transformation*. Brussels: European Commission.
- European Commission (2022c). *European Economic Forecasts – Autumn*. Brussels: European Commission.
- European Commission (2022d). *Communication on orientations for a reform of the EU governance framework*. Brussels: European Commission.
- European Commission (2023a). *A Green Deal Industrial Plan for the Net-Zero Age*. Brussels: European Commission.
- European Commission (2023b). *European Economic Forecasts – Winter (Interim)*. Brussels: European Commission.
- Felbermayr, G. & Wolff, G. (2023), How Europe Can Shape Changes in the World Economy. *Internationale Politiek Quarterly*.
- International Monetary Fund (2023). *World Economic Outlook Update*. Washington D.C: International Monetary Fund.
- Orszag, R., Rubin, R., & Stiglitz, J. (2021). Fiscal resiliency in a deeply uncertain. *World: The Role of Semiautonomous Discretion PIIE Policy Briefing*, 21–22.
- Pfeiffer, P., Varga, J., & in 't Veld, J. (2022). Quantifying spillovers of coordinated investment stimulus in the EU. *Macroeconomic Dynamics*, 1–23.
- Pisani-Ferry, J. (2023). Reinventing the European Union. *Project Syndicate* 27 February.
- Posen, A. (2022), The End of Globalization? *Foreign Affairs*, March/April.
- Rajan, R. (2023). The ghost of deglobalization. *Foreign Affairs* January/February, 155-162.
- Tagliapietra, S., Wolff, G., & Zachmann, G. (Eds.). (2022). *Greening Europe's Post-Covid Recovery*. Brussels: Bruegel.