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Fiscal support and monetary vigilance: economic policy implications of the Russia-Ukraine war for the European Union

Olivier Blanchard and Jean Pisani-Ferry

Executive summary

FOR EUROPE, THE WAR in Ukraine is a first-order economic shock. While the direct fiscal implications of taking care of refugees, increasing military spending and strengthening energy autonomy remain limited, the impact of elevated energy and food prices on national income and its distribution is potentially significant. This raises three macroeconomic challenges for policymakers:

- **HOW BEST TO** use sanctions to deter Russia while limiting adverse effects on the European Union economy: in this respect, it is important to distinguish between oil and gas. For oil, Russia can diversify away from the EU market and, despite sanctions, sell on the world market where it operates as a price taker. For gas, the European Union has substantial leverage because Russia depends on the pipeline infrastructure linking it to the European market. However, gas supply from other sources is relatively inelastic.
- **HOW TO DEAL** with cuts to real income because of the increase in the energy import bill: if governments want to protect buyers, they must decide on mechanisms and how to finance the extra spending. Fiscal support and thus some additional deficit finance may be needed, though debt should remain sustainable.
- **HOW TO DEAL** with the increase in inflation as a result of higher energy and food prices: there is a need to avoid a de-anchoring of inflation expectations, which is even more challenging than usual given that inflation had already substantially increased before the war. Preventing this risk would call for a tightening of monetary policy. However, the loss of real income is likely to lead to weaker aggregate demand, implying a need to loosen policy.

POLICYMAKERS MUST COPE with these conflicting objectives, ensuring that policy instruments complement each other. A combination of well- designed fiscal support to households and tripartite wage discussions may help soften the trade-off the central bank faces. However, the outcomes of the war in Ukraine are unpredictable, and policy must be able to respond quickly to changing circumstances.

OLIVIER J. BLANCHARD is the C. Fred Bergsten Senior Fellow at the Peterson Institute for International Economics

JEAN PISANI-FERRY (jean.pisani-ferry@bruegel.org) is a Senior Fellow at Bruegel, the Tommaso Padoa Schioppa chair at the European University Institute and a non-resident Senior Fellow at the Peterson Institute

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Introduction

The war's main impact on Europe is likely to be felt through energy prices and, to a lesser extent, food prices

Nobody can predict with much confidence how the war in Ukraine will evolve and what its geopolitical consequences will be over the next few months, let alone the next few years. Nevertheless, policymakers must think about the implications of the war and the appropriate responses, realising that they will need to be adapted as circumstances evolve. Moreover, policymakers must think coherently about the joint implications of their actions, from sanctions on Russia to subsidies and transfers to their own citizens, and avoid taking measures that contradict each other. This is what we try to do in this Policy Contribution, focusing on the macroeconomic aspects of relevance for Europe.

We start by exploring the implications of the war. We review the various channels through which it is affecting macroeconomic perspectives. The upshot is that although demand, financial and wealth channels all enter into play, and although the direct budgetary implications of the war matter – because of increased defence spending and the cost of protecting refugees – the war's main impact on Europe is likely to be felt through energy prices and, to a lesser extent, food prices.

We then discuss the factors likely to determine the evolution of energy prices. What happens depends both on Russian actions, even in the absence of sanctions, and on the effect of potential sanctions on Russia's behaviour. In this respect, one must distinguish between oil (and coal) on one hand, and gas on the other.

For oil and coal, Russia is a quasi-price taker in a competitive world market. It faces a very elastic demand curve. For gas, because trade relies on a specific infrastructure, the market is the EU market, the demand is rather inelastic, and Russia can be regarded as a quasi-monopolist. This has very different implications both for the likely behaviour of Russia in the absence of sanctions, and the effects of sanctions such as tariffs on prices and Russian exports. Given technical constraints, a full embargo on gas is not feasible. Tariffs, however, are feasible, they would be effective, and they should be considered, despite likely strong effects on consumer gas prices.

Our working hypothesis in the rest of this Policy Contribution is that energy prices are likely to increase relative to their pre-war levels, although there is considerable uncertainty about the size of the increase. So far, both sides have de facto sheltered oil and gas trade from the fallout from the conflict. The large variations in the oil market and even more so in the gas market are due to expectations of Russian actions and sanctions. But the 'balance of energy terror' is precarious and cannot be taken for granted.

We then examine the implications of the war for EU fiscal and monetary policy. Leaving aside the various sources of spending – from defence to refugees to the need to adapt the energy infrastructure to a changed supply of energy – the central fiscal policy issue is, to the extent that food and energy prices increase, whether and how to offset some of the loss in real income of households. Two main issues are involved. The first issue is how best to do it: through subsidies, transfers or price regulation. The main question here is how the combination of such measures interacts with embargos or tariffs in determining the total effects of sanctions, the prices of energy imports and the implications for inflation. The second issue is whether these measures, if taken, should be financed by taxes or by debt. While there is a strong political argument for levying an exceptional 'war' tax, the loss of real income due to the higher price of imports and the uncertainty associated with the war are likely to lead to weak aggregate demand; deficit spending may be needed to maintain or at least limit the decline in output. Debt, even if it ends up higher as a result, will remain sustainable.

Turning to monetary policy, the standard recipe in response to an increase in energy or food prices – namely, accommodation of first-round effects and tightening to limit further effects – must be re-examined. On one hand, the additional inflation comes on top of already high inflation, raising the risk of a de-anchoring of inflation expectations. On the other, despite fiscal support, aggregate demand is likely to be weak and put downward pressure

on inflation. The first effect suggests tightening, the second suggests loosening. For the time being, the two indeed roughly cancel each other out, which suggests that monetary policy could roughly remain for the moment on its intended pre-war track, but should be ready to adjust one way or the other.

There is, in the current context, an important, and unusual, interaction between fiscal and monetary policy. The more fiscal policy protects the real income of workers, the weaker the demand for wage increases is likely to be in further rounds. The more a decrease in inflation becomes credible, the less the European Central Bank (ECB) will have to tighten to achieve lower inflation. In effect, larger deficits can lead to a smaller output cost of fighting inflation.

A final and interesting question is whether this dampening role of fiscal support could be explicitly taken into account in wage negotiations. During the pandemic, government-financed furlough- and business-support schemes socialised income losses and proved a very potent and cost-effective way to minimise economic and social disruption. There is a case for a tripartite dialogue between governments, employers and employees and, ideally, for a *quid pro quo* of wage and price moderation in exchange for significant fiscal support.

We start in section 1 by looking at the channels through which the war will affect the EU economy. We review in section 2 the factors likely to determine the evolution of energy prices.

In section 3 we discuss the implications for both output and inflation in the European Union, and in section 4 the implications for EU fiscal and monetary policy. We draw conclusions in section 5.

1 The economic impact of the war

Nature of the shocks

Our working assumption is that the conflict, which began with Russia's invasion of Ukraine on 24 February 2022, will not be resolved in the short term. Over the next 12 months or so, we envision a stand-off, or a Russian occupation with Ukrainian resistance, or a ceasefire followed by acrimonious negotiations. We posit that reaching a permanent settlement will take longer.

In this context we assume the following:

- The breach of United Nations principles (which had been observed for three- quarters of a century on the European continent) will continue to cloud the horizon and affect confidence beyond the direct effects of the war.
- Most Ukrainian refugees will return to their hometowns, but only gradually as widespread destruction will prevent their relocation.
- The crisis will result in a lasting increase in European defence spending.
- Coming on the heels of the pandemic, this new shock will lead global firms to further reconsider their reliance on extended supply chains and just-in-time delivery schemes.
- The war will affect Ukrainian (and potentially Russian) agricultural crops and exports, reducing global supply and increasing world food prices.
- Beyond its immediate reaction to the war, the European Union will embark on an accelerated reduction and the eventual elimination of its reliance on Russian energy through alternative sourcing, and a faster transition to renewable energy.
- Sanctions will likely endure and escalate, leading to a substantial decrease in Russian exports of oil and gas, whether this is triggered by an EU decision or by a decision of the Russian government to restrict such exports. This is a major issue, both geopolitically and economically, and we investigate it in detail in the next section.

A major issue is whether the European Union will continue to respond in unified fashion to an unfolding crisis. While its initial common response was strong, divisions have emerged

within the EU on the appropriateness of sanctions, especially in the field of energy. Decisions on sanctions are part of foreign policy, where individual EU member states have veto power. Energy policy is largely a national prerogative and the EU does not have the legal means to settle differences by putting decisions to a qualified majority vote. Our working assumption is nevertheless that the crisis will eventually trigger common responses and strengthen solidarity among its members.

Table 1: Main assumptions on the implications of the Russia-Ukraine war for the EU

Item	Short term (1–2 years)	Long term (3–5 years)
Exports, foreign direct investment (FDI), and financial linkages	Large inflow Immediate fiscal cost Capital losses for European companies	Restructuring of trade and FDI linkages
Refugees	Large inflow Immediate fiscal cost	No lasting effect as most refugees are likely to return or integrate into the labour market Fiscal cost of reconstructing Ukraine
Defence	Support to Ukraine (weapons)	Lasting increases in defence budgets
Efficiency		Increased emphasis on resilience Deglobalisation
Confidence	Precautionary saving	Potential risk premium on Europe, but also potential drive toward closer policy integration within the EU
Food prices	Significantly higher prices Spillback from adverse developments in developing countries	No lasting effect
Energy	Significantly higher prices Supply disruptions Additional cost of alternative sourcing	Change of sourcing Integration at EU level Accelerated transition to renewables (implying additional investment)

Table 1 summarises our assumptions, distinguishing between short-term and longer-term effects. In this Policy Contribution we focus on short-term implications.

We intend to return to the long-term implications in another brief. Most of the assumptions are straightforward. Some hypotheses deserve deeper examination:

Exports, foreign direct investment, and financial linkages

Exports to Russia have dropped substantially and are likely to decrease further as a result of the combination of EU sanctions, restrictions imposed by the Russian government and delivery problems. Anecdotal evidence indicates that, even in the absence of legal restrictions, European firms are already reluctant to trade with Russia, fearing legal and payment problems.

According to EU trade statistics[1], exports of goods to Russia amounted to €89 billion in 2021; if they were to stop – a maximalist assumption – this would lead, other things being equal, to a decrease in aggregate demand for EU goods of 0.6 percent of 2019 GDP[2]. A 50 percent reduction in goods exports to Russia would cut 0.3 percent of GDP off aggregate demand.

The European Union also accounts for three-fourths of foreign direct investment (FDI) in Russia, for a total of more than €300 billion at end-2019[3]. Assuming half of the value of this investment will be lost, this would represent about 1 percent of EU GDP and less than 2 per-

1 See https://webgate.ec.europa.eu/isdb_results/factsheets/country/details_russia_en.pdf

2 Nominal GDP of the EU27 was €14,017 billion in 2019 (Source: Eurostat).

3 European Commission, Russia fact sheet; see https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/russia_en.

cent of its stock of outward FDI. Although significant for several banks and companies, such a loss cannot be considered to be of major macroeconomic relevance.

During the 2008 global financial crisis, links between financial institutions played a major role as default by one institution triggered default by some of its creditors. Although Russia has made visible efforts to meet its external commitments and stabilise the economy, a default of the Russian government remains a distinct possibility. The evidence suggests, however, that this is unlikely to lead to major problems for the EU financial system. Subsidiaries of Russian banks have already been closed and liquidated without putting the financial system in danger.

Non-energy and non-food imports from Russia and Ukraine are of minor economic significance. Their interruption may, however, add to the broader disruption of supply chains due to the pandemic.

Refugees

The flow of refugees from Ukraine has reached 4.6 million people (not counting 7.1 million displaced persons in Ukraine) at the time of writing, mostly women and children (UNHCR, 2022). The outflow continues (though at a slower pace), so that 5 million – and maybe more – is a plausible number. This is a human drama of gigantic proportions and poses major problems of organisation and allocation across countries. Yet the likely macroeconomic costs appear relatively limited.

Estimates of the annual fiscal cost of providing shelter, food, healthcare and education to refugees vary from €9,000 to €25,000 per person per year[4]. On the assumption of a cost of €10,000 per refugee (per year), the cost of financing 5 million refugees for one year is €50 billion, or 0.35 percent of EU GDP. Even this number overestimates the cost, because within a few months some refugees will return, some will find work, and some will emigrate from the European Union.

Food

Russia and Ukraine are major producers and, even more relevant, major exporters of food, wheat in particular[5]. According to the Food and Agriculture Organisation (FAO), Russian and Ukrainian exports of wheat accounted in 2019 for 23 percent of world exports and 7 percent of world production. In Ukraine, planting for the next harvest may be difficult. Distribution issues, given the fighting in the ports along the Black Sea, may further decrease exports. The market price of wheat has already increased nearly 50 percent from $7.70 a bushel before the war to $11, a level last seen for only a few days in 2008 (Macrotrends, 2022).

Because the European Union is a net exporter of agricultural products (in 2021 its trade surplus was close to €50 billion, according to Eurostat), the global price rise may well improve its terms of trade. Two important caveats are in order, though. The first is that the loss to EU consumers (as opposed to the European Union as a whole, ie producers and consumers taken together) may be large, an issue to which we return in section 3. The second is that elevated food prices are already having dramatic consequences for many emerging-market and developing countries, affecting their growth and macroeconomic stability, and potentially affecting the European Union in return.

4 See the recent survey by Darvas (2022). The upper estimates are based on Swedish data. Pisani-Ferry (2022) used a €10,000 estimate based on the cost of the 2015 wave of refugees to Germany. Costs are bound to be lower in Poland and other frontline countries than they were in Sweden. We, therefore, stick to the €10,000 estimate.

5 For more detail on the implications of the war for food prices, see FAO (2022). See also Ritchie (2022).

2 The energy conundrum

Much of the economic interdependence between Russia and the European Union results from the fact that Russia is Europe's main supplier of fossil fuels. So far, both sides have mostly refrained from using energy as a vehicle for pressuring the other. But on 8 April, the EU decided to ban imports of Russian coal, starting 22 August (Bown, 2022). Some EU countries have already gone further. On 30 March, for example, Poland announced its decision to stop importing any Russian energy by the end of 2022.

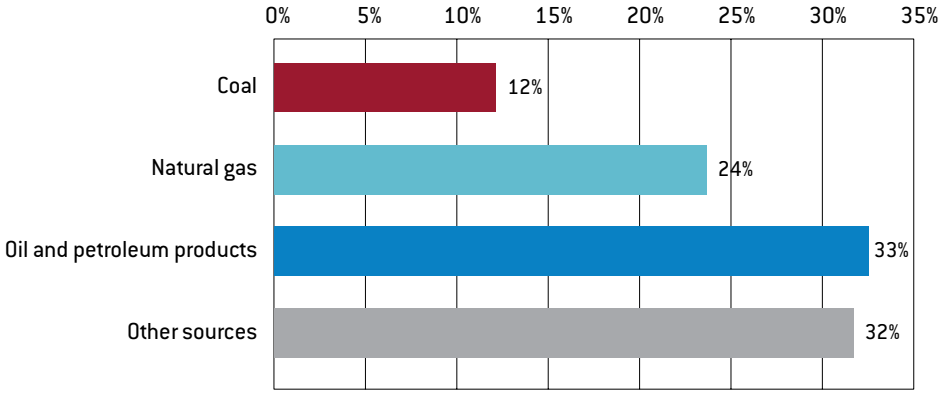
On 27 April, Russia discontinued gas shipments to Poland and Bulgaria, arguing that these two countries had failed to comply with the requirement that gas be paid for in rubles. This move triggered an immediate increase in the price for LNG.

In thinking about what may happen to energy prices, as a function of both Russian decisions and potential sanctions, it is important to distinguish between oil (and coal) and gas.

Oil and gas

Energy data are easily confusing because of the heterogeneity of measurement units, so a short summary of the situation is a useful starting point. The supply of energy in the EU27 (excluding the United Kingdom) essentially relies on oil (33 percent, virtually all imported), gas (24 percent, primarily imported) and coal (12 percent, primarily imported) (Figure 1). Other sources include renewables (domestic), nuclear (essentially domestic, as the fuel itself is a small part of the total cost) and imported electricity. Russia is a major supplier of oil, gas, and coal.

Figure 1: Primary energy sources, EU27, 2019



Source: Authors' calculation based on Eurostat energy balances. Proportions are based on the energy content (Terajoules) of the various sources.

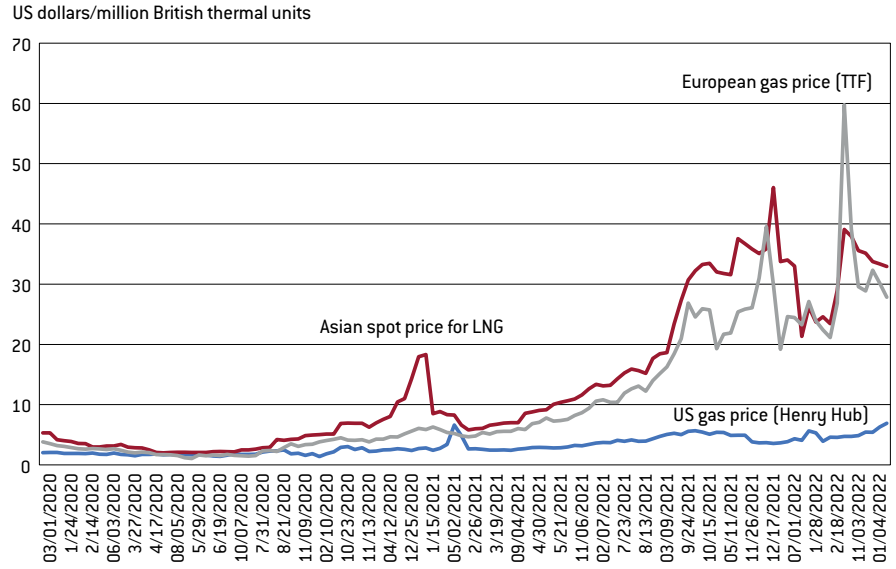
Before the war, Russia's export price closely followed the global market price for Brent, an indication of high substitutability. Because Russia is one among many suppliers of oil to the European Union, we assume that lower EU imports from Russia can be replaced by imports from elsewhere. And lower Russian exports to the West can be partly offset by purchases by India and China.

Unlike oil, the market for gas is regional. There are, broadly speaking, three markets globally: Europe, North America and Asia. Prices on these markets are related, as liquefied natural gas (LNG) can be shipped to any of them, but they can differ significantly. Starting in 2021, high demand in Asia led to a major divergence between the North American gas price and the prices in Asia and Europe (Figure 2).

The relevant market for discussing the impact of an EU sanction is therefore the European market, not the world market. Gas is used in electricity generation (1/3), by industry and services (1/3), and by households (a smaller third). It is very substitutable in some of its uses

(gas-generated electricity can be replaced by electricity generated from other sources), much less so for some others (a gas-powered heating system cannot burn oil or coal). On average, Russian gas accounts for 8.4 percent of primary energy supply in the European Union, but there are wide variations across member states. For example, Portugal does not import any gas from Russia, but in Hungary, Russian gas accounts for 28.5 percent of the supply of primary energy (Pisani-Ferry 2022). Although not entirely interconnected (Spain and Portugal, for example, have limited pipeline connections to Northern Europe), price differences in the European Union can be largely arbitraged away through internal transactions on imports from the rest of the world, provided – which is not a given – there is political agreement to do it[6]. In what follows, we treat the EU market as one.

Figure 2: Gas prices in Europe, Asia and the United States, January 2020 to April 2022



Source: Bloomberg. Note: TTF = Dutch TTF natural gas hub price. Henry Hub refers to pricing of natural gas futures on the New York Mercantile Exchange.

Thinking about the determination of energy prices

Even in the absence of sanctions, Russia may want to behave strategically in determining its oil and gas export policy.

In the case of oil, it may want to increase revenues to finance the additional spending associated with the war. This would lead to an increase in the world supply of oil and thus a decrease in the world price. Russia, however, faces a series of constraints. Additional supply is currently limited by the difficulty of placing cargoes on the international market (which is reflected in the discount between the prices of Ural and Brent oil). Moreover, Russia is part of the OPEC+ coalition, which constrains its capacity to increase exports.

In the case of gas, a more subtle effect is relevant. The EU is scrambling to reduce its dependence on Russian natural gas, but its commitment to lowering imports by two-thirds by the end of 2022 is optimistic[7]. On the supply side, some Russian gas can be replaced by gas from Norway, Algeria and Azerbaijan, but these countries have limited capacity. The rest must be delivered by ships as LNG, but in the short run the number of LNG ships is fixed and additional supply can come only from diverting shipments destined to Asia. On the demand side, the abil-

6 For example, LNG imports from the rest of the world can be directed to countries where excess demand is the highest.

7 See the European Commission (2022) communication of 8 March 2022.

ity to replace gas by alternative sources of energy is also constrained by existing equipment.

Recent research (IEA, 2022a; McWilliams *et al*, 2022) concludes that the European Union cannot, over this year and next, fully replace imports of Russian natural gas[8]. In the short run, then, the EU demand for gas is relatively inelastic and, under plausible assumptions, the price elasticity of EU demand for Russian gas (total demand less imports from the rest of the world) may well be less than one.

Under standard monopoly assumptions, such a low elasticity would lead Russia to set a very high price, even in the absence of war[9]. The reason Russia did not do so in the past is that the long-run elasticity is surely greater than one, and so it faces an intertemporal trade-off: a very high price raises revenues in the short run but decreases them in the long run. The war, however, has two effects on this computation. The first is an even greater need for higher revenues today, leading to an increase in the price. The second is that the anticipation of future sanctions, and the clear decision of the European Union to wean itself off Russian gas exports, reduces the effects of an increase in the price on future revenues, again leading Russia to increase the price while the demand is still there.

In short, ignoring sanctions, Russia may want to increase energy export revenues. But while for oil this would imply increasing the volume of exports (given the world price), for gas it would imply increasing prices (and therefore decreasing export volumes). True, long-term gas contracts normally preclude such behaviour, as they specify the indexation of prices on the TTF (Title Transfer Facility) market price. But Russia has some flexibility to shift part of its supply from deliveries within the framework of existing contracts to over-the-counter sales. More fundamentally, contracts can, after all, be revised or broken.

Turning to sanctions, whether embargos or tariffs, the market structure is again fundamental, and one must discuss separately the effects on oil and gas exports.

Sanctions: oil

To sanction Russia, the European Union could emulate the United States and United Kingdom and declare an embargo on Russian oil. This would be the most straightforward approach as a European embargo would strengthen the prevailing reluctance on the part of energy companies, shipowners, banks and insurers to take part in Russian exports. Such a measure would not prevent Russia from exporting altogether – it would find alternative buyers, such as China, India or others, as it already does – but an embargo would certainly increase the discount on Russian oil, as already seen with the Ural price discount relative to the Brent price, at close to 35 percent at the time of writing. In other words, the Western strategy would be (it largely is already) to keep Russian oil on the market, while finding ways to push its price down. If, on net, Russian exports decreased, the world price would go up, unless the drop in Russian exports was offset by the decisions of other producers, from Saudi Arabia to Iran to Venezuela, to increase production.

The rise in the world price would depend, in the end, on Russia's ability to find other buyers and on other countries' decisions to sell more. To get a sense of how the price impact would depend on the decrease in world supply, it is worth looking at history.

The 1973 OPEC embargo decreased global supply by 7 percent and led to an increase in the price of 51 percent. The 1978 Iranian revolution decreased global supply by 4 percent and led to a price increase of 57 percent. The 1980 Iran-Iraq war decreased global supply by 4 percent and led to a price increase of 45 percent. The 1990 Gulf War decreased global supply

8 For more discussion of the underlying elasticity of substitution between gas and other sources of energy, and its implications for GDP if there were a full embargo on gas, see Bachmann *et al* (2022), Baqaee and Moll (2022), and Moll (2022).

9 We think of Russia as a monopolist facing a large number of buyers. In the presence of a tariff, and coordination among buyers, it may then become more appropriate to think of the European Union as a monopsonist. In this case, the right conceptual frame is to treat the outcome as the outcome of a game between the two players. Because European coordination is still lacking, we have not explored the implications of this alternative way of thinking about the market.

by 6 percent and led to a price increase of 93 percent (Hamilton, 2022). Russia accounted in 2019 for about 13 percent of world production and its exports for a similar proportion of world trade, so a large decrease in Russian supply, not offset by an increase in supply elsewhere, would have dramatic effects on the price (BP 2021)[10].

History may not, however, be a reliable guide. The effects of lower supply depend on the elasticity of both non-Russian oil supply and world demand for oil. And both are different from what they were in the 1970s or even 1990s.

The price elasticity of supply has increased since the episodes cited above, especially as the United States has started exploiting shale oil. But it takes time before new drills start adding to output.

The price elasticity of demand may have declined as oil is increasingly used where substitutes are lacking, however (for example, for fuelling motor vehicles and airplanes). And government measures to partly protect buyers, be they firms or consumers, from the price increases may further decrease the demand elasticity. As discussed in section 4, in late 2021 and again since the start of the Russia-Ukraine war, several governments have introduced energy- related transfers and subsidies. To the extent that they affect the price signal, such measures reduce the demand response. This is of no importance if a small country subsidises in isolation: the effect on world demand is too small. But if many do – and this would be the case if the European Union joined the United States and the United Kingdom in offering subsidies – the result is bound to be a larger increase in the global market price.

Sanctions: gas

The market structure for gas can be viewed as consisting of a monopolist Russia facing a large number of EU buyers who can purchase gas from other sources but only at a sharply increasing cost. As we have seen, even in the absence of sanctions, Russia might want to increase its price and reduce supply. The question here is what would happen if the European Union decided to use sanctions, most likely through a tariff on Russian exports[11]. It would be a strong signal that EU member states stand ready to jointly confront Russia. A common tariff would preserve the freedom of private contracts and be legally implementable, as the European Union (as well as the United States and other countries of the coalition supporting Ukraine) has revoked Russia's most favoured nation status. We assume that, in response, private contracts would be either broken or renegotiated.

In that context, the effect of the tariff depends on the elasticity of the net demand for Russian oil (the demand for Russian gas minus the supply of non- Russian gas to the European Union). In general, a tariff will increase consumer prices, but less than one for one; equivalently, it will decrease the pre-tariff price, but less than one for one.

In the special case when the elasticity of EU demand is constant, theory predicts that Russia should keep its (pre-tariff) price unchanged, leading to a one-for-one increase in consumer prices and a decrease in demand. Russian revenues will decrease as demand decreases. In the case of linear demand, the effect of the tariff on the consumer price will be less than one for one – Russia will decrease its pre-tariff price, but less than one for one. Demand will decrease less than in the constant elasticity case. Russian revenues will decrease because of lower demand and lower pre-tariff prices.

Interestingly, a small tariff can actually increase EU welfare: While consumers pay more, the revenues from the tariffs exceed the extra spending, and so, properly redistributed, buyers can be better off. The point is nicely made by John Sturm (2022), who showed the relationship

10 Here and elsewhere, unless specified otherwise, we are using 2019 data as a benchmark, because 2020 data were affected by the COVID-19 shock and 2021 data are not always available.

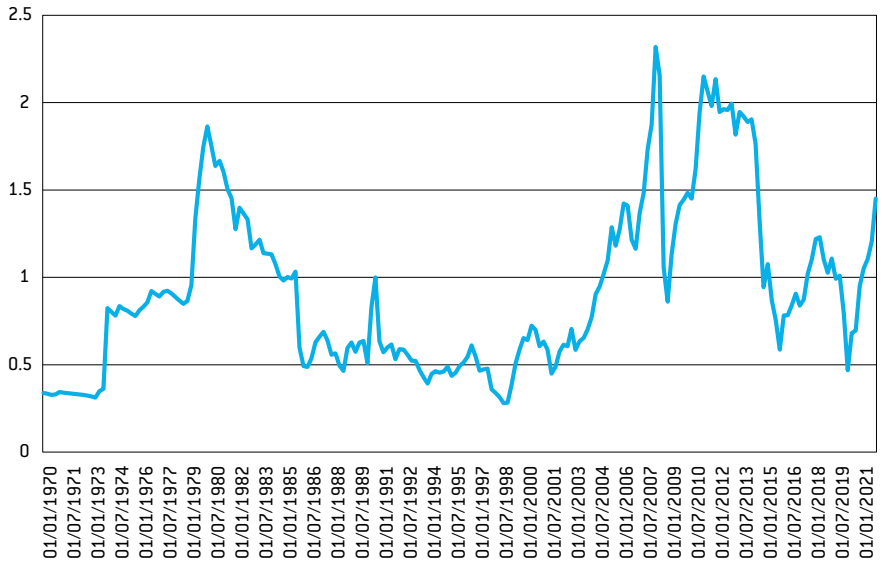
11 There is a legal debate as to whether such an action would require unanimity within the European Union. Sanctions are decided by unanimity on the basis of Article 29 of the Treaty on the European Union, but implemented by a qualified majority. Trade policy decisions are taken by a qualified majority. And in the field of energy, each member state has the right to determine "*the general structure of its energy supply*" (Article 194 of the Treaty on the Functioning of the EU).

to the welfare-improving tariff argument that is standard in international trade. Larger tariffs will have an adverse effect on Russian revenues, but also on EU welfare. Assuming linear demand, Daniel Gros (2022) found that a 30 percent tariff on Russian gas would actually maximise EU welfare. Beyond this rate, the tariff would decrease EU welfare but could substantially reduce Russian revenues. Gros found that a 60 percent tariff would reduce Russia's gas export revenues by three-fourths, but at some welfare cost to the European Union.

3 Commodity price increases, inflation and real income

The previous discussion has made clear that, depending on many factors, both those affecting Russian decisions and those affecting the choice and intensity of sanctions, there is substantial uncertainty about the future evolution of oil and gas prices. We are less pessimistic than the latest joint forecast of the five main German institutes for economic research (BMWK, 2022), which, in its central scenario, has the price of Brent reaching $135 per barrel and the price of gas in Europe roughly doubling to €200 per MWh. In the rest of this Policy Contribution we assume – while realising the very large uncertainty associated with this assumption – that Russian decisions and more stringent sanctions will lead to an increase in both oil and gas prices of 25 percent relative to pre-war levels.

Figure 3: Real price of oil, 1970Q1–2022Q1, index (1990Q4 = 1)



Source: Authors based on OECD and US Bureau of Labor Statistics via Macrobond. World Brent price deflated by US consumer price index (CPI).

Commodity prices have increased many times in the past. To take just oil prices: the Brent price went from $10.27 a barrel in February 1999 to $133 in July 2008, and then went from $40 in December 2008 to $123 in April 2011. It remained above $100 until August 2014. Given inflation since 2014, $100 then would correspond to $120 today, so the current real price of oil has not yet reached historical records (Figure 3). As a result, economists have a decent understanding of the effects of commodity price increases on the economy.

Inflation

The immediate and most visible effect is indeed the effect on inflation. The effect can be quite large. Electricity, heating fuels, and transportation fuels accounted in 2021 for 9.6 percent of personal consumption expenditures in the euro area, and food on average represented 15.7 percent of the consumer basket (as per European Central Bank HICP weights for 2021). In total, the share of consumption that is vulnerable to the direct impact of price rises is high.

Empirical estimates generally indicate that the pass-through of commodity price rises onto consumer prices is partial but quick. A 2010 detailed Eurosystem study (ECB 2010) found, for an oil price around $100 per barrel, an elasticity of the energy component of the HICP (harmonised index of consumer prices) to the oil price of 0.4 (largely because of price-insensitive excise taxes), 90 percent of which was effective within a month. These estimates are somewhat outdated, however, because they assume an indexation of the gas price on the oil price (which has been discontinued) and rigidity of the electricity price (which does not hold anymore) (ECB, 2010, table 9).

Let us then take 10 percent for the share of energy in private consumption and assume a 50 percent pass-through. The direct impact of the assumed 25 percent rise in prices is thus 25 percent × 0.1 × 0.5 = 1.25 percent. For food, let us assume a 15 percent share, a 10 percent increase, and also a 0.5 pass-through. The impact is 10 percent × 0.15 × 0.5 = 0.75 percent. This implies a 2 percent initial increase in the cost of a consumption basket.

These first-round effects can hardly be avoided, but they are just the beginning. Subsequent rounds reflect the responses by firms and workers. Producers of goods that use energy or agricultural products as an input increase their prices to re-establish their markups. Workers whose wages lagged consumer prices in the first round ask for nominal wage increases to re-establish their real wage. These lead to further increases in prices and wages. The strength of these further rounds depends on how hard firms try to re-establish markups, and how hard workers try to maintain their real wage. Eventually, if commodity prices remain high, the pressure on inflation stops only when either the firms that use these commodities accept lower markups and/or workers accept lower real wages. As we shall see, what happens to inflation and activity over time then depends on both monetary and fiscal policy, as we discuss later.

Real income

These inflation dynamics are present whether or not an economy produces or imports these commodities. But whether the economy is a net importer or not makes a significant difference to what happens to aggregate real income. Take the case of the United States, which roughly covers its energy needs domestically. An increase in the price of energy is reflected in a decrease in the real income of energy users (consumers and firms) and an increase in the real income of energy producers (and their shareholders). The effect on the US real income as a whole is roughly equal to zero. The effect on aggregate demand depends on both energy users' and producers' marginal propensity to spend, and so may go up or down. The European Union, however, imports nearly all the gas and oil it consumes, so an increase in prices leads to a decrease in the real income of energy users and an increase in the real income of foreign producers, who are unlikely to spend much on EU goods. Thus a price increase in these commodities is likely to have a large adverse effect on domestic demand. In both cases, energy users, especially consumers, may be worse off. But the effect on aggregate demand depends on whether the country is a net importer or not.

It is useful to think about the implications of both oil and gas price increases for the EU real income and get a sense of magnitudes.

Start with oil. Oil markets appear to assume that the reduction in global supply will be limited. The Brent price was $99 per barrel the day before the war started, up from $78 at the start of 2022; it went up briefly to $133 but, at the time of writing (mid-April 2022), was down to $110. Assume an increase in the price from $78 to $100, roughly 25 percent. Imports of oil (from Russia and elsewhere) by the EU27 were equal to 5,900 million barrels in 2021. Such an

increase in price would imply a decrease in real income for the European Union of 5,900 × 22 / 1.1 (for the dollar-euro exchange rate), thus €118 billion, or 0.84 percent of 2019 GDP (oil import data from Eurostat).

Gas markets have also retreated from the elevated prices of February, but they remain high. Assume that the percentage increase in the average price of gas for the European Union is the same as for oil, about 25 percent. Imports of gas (from Russia and elsewhere) were equal to €170 billion in 2021. This implies a decrease in real income for the European Union of 170 × 0.25 » €42 billion, or 0.3 percent of 2019 GDP.

Under these fairly moderate assumptions, the war-induced increase in oil and gas prices would take a little more than 1 percent of GDP off the real income of the European Union. But this would come on top of the effect of previous price hikes since 2019. Overall – and disregarding the lockdown period in 2020 during which prices and quantities collapsed – EU imports of energy, which amounted to 2.6 percent of GDP in 2019, would have exceeded 5 percent of GDP had prices remained at their early 2022 level, and would increase to more than 6 percent based on our assumptions.

Distribution effects

Beyond the aggregate loss of real income for consumers, distribution effects are important. Consumption of gas, utilities, and food (as a share of total consumption) is higher for low-income than for high-income households – although there are clear differences across countries: based on Eurostat data, the difference is small in Scandinavian countries, for example, 26 percent for the bottom income quintile versus 25 percent for the top quintile in Denmark. It is larger for France and Germany, 25 percent versus 21 percent in France, 26 percent versus 21 percent in Germany. It is even larger for poorer countries, for example, 31 percent versus 23 percent in Spain, and 50 percent versus 37 percent for Bulgaria[12, 13].

Moreover, the consumption patterns of lower-income households are often more rigid, as a larger part of their income is pre-allocated to rents and other monthly payments they cannot easily modify. Thus, apart from the aggregate effects on output and inflation, one must take into account that poor households suffer more than richer ones from an increase in commodity prices. This has clear implications for fiscal policy.

12 These numbers are constructed as the ratio of food consumption (CP01) plus electricity, gas, and other fuels (CP045) plus operation of personal transportation (CP072) to total consumption, for each quintile. Numbers are from Eurostat-data.xlsx.

13 Some of the numbers that have been published appear much higher. For example, BLS data for the United States for 2020 give a ratio of consumption of food, transport, and utilities to disposable income of 74 percent for the bottom quintile versus 20 percent for the top quintile. But this reflects, partly, different definitions of what is included in the smaller consumption basket and, mostly, the fact that the analysis looks at the ratio of consumption of gas, utilities and food to disposable income rather than to consumption. In the lower quintile are many individuals and households who are dissaving and for whom disposable income is small relative to consumption.

4 Implications for policy

We finally turn to the fiscal and monetary policy responses. In the short run, the main issue, and the source of potentially large spending, is whether and how to protect consumers from the commodity price increases.

Tax and transfer measures

Under our moderate price increase assumptions, the median increase in the price of the consumption basket, given wages, is about 2 percent[14]. But the decrease in real income for the lowest income quintile in the most affected countries (eg Slovakia) is twice as high, 4 percent. This is a very large number, knowing that the dispersion of income effects among households even within an income bracket can be very large, depending on living conditions, and recognizing that the increases in commodity prices may be larger than in our assumptions[15].

The question, then, is how much and how best to protect households. Since energy prices started to ratchet up in late 2021, EU member states have been busy introducing a series of schemes intended to soften the shock. These schemes can be grouped under three headings[16].

Temporarily lower energy taxes

A first possibility is direct across-the-board subsidies, for example, in the form of cuts or rebates on energy taxes, which are high in most EU countries. France, for instance, introduced in February a 1-year cut in electricity taxes (at a cost of €8 billion or 0.3 percent of GDP) and on April 1 a reduction of gasoline taxes of 15 cents per liter for a period of 4 months, at an estimated cost of €2.2 billion, about 0.1 percent of GDP[17]. This subsidy is presented as an emergency stopgap until a more targeted system is introduced in early summer. It is highly visible, a political advantage. Similar temporary cuts to excise taxes have been introduced elsewhere, notably in Germany where, on 23 March 2022, the gasoline tax was lowered by 30 cents per litre[18].

Lump-sum transfers

An alternative approach is to provide transfers that are independent of the consumption of food, oil, and gas. Germany, for example, introduced on 23 March 2022 a universal lump-sum transfer (*Energiepreis-Pauschale*) of €300 per person plus supplements for children. France introduced last year an *indemnité inflation* of €100, given automatically to people with an income no higher than €2,000 a month, at a cost of €3.8 billion, or about 0.2 percent of GDP[19]. Such measures are unlikely to affect market prices for food, oil, and gas substantially (only to the extent that the additional income is spent on these goods), and thus have the effect that the transfers go mostly to consumers rather than commodity producers.

There may be feasible schemes to target transfers more accurately to better protect those

14 Building on the previous discussion of inflation, to the extent that final goods producers do not fully reflect the increase in commodity prices and accept a decrease in their markup, the effect in the initial round will be smaller than the number in the text. But, if they re-establish markups over time, the number in the text is the relevant one.

15 In the French case, Douenne (2019) provided evidence of the vertical and horizontal dispersions of the effects of a carbon tax.

16 In October 2021 the European Commission introduced a toolbox of measures to tackle the energy situation, as feasible options for member states to consider. See https://ec.europa.eu/commission/presscorner/detail/en/IP_21_5204.

17 For details about the French measures, called bouclier tarifaire, see Gouvernement français (2022).

18 See the 23 March German government measures (see https://www.bundesfinanzministerium.de/Content/DE/Downloads/2022-03-23-massnahmenpaket-bund-hohe-energiekosten.pdf). Another set of measures in support of affected business was introduced 8 April (see https://www.bundesfinanzministerium.de/Content/DE/Downloads/schutzschild-fuer-vom-krieg-betroffene-Unternehmen-massnahmenueberblick.pdf).

19 This payment was introduced in 2021, thus before the Russia-Ukraine war, to offset the already large increase in many commodity prices in 2021.

who both have a low income and spend more of it on food, oil, and gas. For example, in the case of electricity, one might make transfers proportional to a recent utility bill and, combining it with household income information, limit it to those with income below some threshold. Or gasoline cheques – a given amount of money to be spent only on energy or gasoline – might be issued; indeed, an energy cheque exists in France and a gasoline cheque is being discussed in the United States. To the extent that the cheque is less than what the recipient spends on energy, this measure does not affect the marginal price s/he faces and thus does not affect incentives to reduce energy consumption. Its political acceptability may however be lower than for across-the-board subsidies.

Price regulations

Yet another approach is to decouple some prices, such as the electricity price, from their marginal cost. The issue has become particularly salient in the face of extremely large fluctuations in the market price of natural gas – which is the relevant marginal cost in the production of electricity. Spain especially has been vocal in criticising the inflationary effect of electricity pricing, and in March it obtained EU authorisation to temporarily disconnect the Iberian Peninsula from the EU electricity market. France has asked the country's main electricity company to limit the price increase to 4 percent for 2022 and to satisfy demand at that price, thus asking the company to absorb a large part of the cost, leading to a large anticipated decrease in cash flows and a large decrease in market value. This entails an inefficiency, as the price is less than marginal cost, but allows for a potentially large increase in consumer surplus – at the cost of a larger decrease in producer surplus. From a welfare viewpoint, the gain in real income of consumers may well dominate the loss in efficiency[20].

Potential perverse effects of subsidies

Two main objections can be raised against subsidies. The first is that they increase the demand for energy, thus contributing to keeping energy prices high[21]. The issue is familiar from the standard discussion of tax incidence. Consider subsidies to the various uses of oil. The effect on consumer prices depends on what happens to the market price of oil. If only one country uses such subsidies and it is small relative to the world market, the world market price will not change and thus the subsidy will be reflected one-for-one in a lower consumer price. If, however, all EU countries, and possibly other countries such as the United States, introduce such subsidies, then the relevant supply curve is the world supply curve, which is inelastic in the short run. In the extreme, if the supply curve is fully inelastic, the effect will be to increase the market price one for one and leave the consumer price unaffected[22]. In other words, the subsidies will go to the oil producers, including Russia. In practice, the outcome is likely to be less than a one-for-one effect of subsidies on market prices, but it is still unappealing.

The second, more specific but highly relevant objection, is whether subsidies may go against a possible future tariff and actually strengthen Russia's hand in its confrontation with the European Union. As discussed in the previous section, a tariff on gas would lower both the price and the volume of Russian exports, while the corresponding revenues could be used to soften the impact on consumers.

The question, however, is how this subsidy should be designed. A direct domestic gas price subsidy, such as a lowering of indirect gas taxes, would increase the demand for gas and the price charged by Russia, countering the effects of tariffs. Governments should not use the revenue from a tariff on Russian gas to subsidise energy consumption in a way that lowers the

20 For more on the measures taken by EU members, including subsidies, transfers, and price regulations, see Sgaravatti *et al* (2022).

21 They also go against the need to decarbonise the energy system.

22 The slope of the supply curve was the subject of a Twitter discussion between Paul Krugman and Jason Furman (https://twitter.com/jasonfurman/status/1496483717027618826?s=20&t=Q1 d9GIf5i7J1c9T9XaI0UA).

marginal price of gas on the European market. They should rather rely on transfer schemes that do not affect the marginal price.

Taxes versus debt finance

The next question is by how much fiscal measures should be financed through additional taxes versus debt finance. Tariff revenues may help, but, as we discussed earlier, tariffs are unlikely to yield much revenue for oil; they are likely to yield more in the case of gas.

Immediate discretionary fiscal spending essentially consists of defence procurements (including for the provision of weaponry to Ukraine), assistance to refugees, measures in support of households, and emergency investments to adapt the energy system. Under our price assumptions, fiscal costs range from small to manageable: In 2022 they should not exceed one-sixth of a percentage point of EU GDP for defence, one-third for assistance to refugees, and, depending on the decisions of different member states, between half and a full percentage point for measures in support of households[23]. A more challenging question is how much emergency energy investments may cost. We do not have a good estimate but assume that it should not exceed half a percentage point. Altogether, therefore, the discretionary fiscal cost of the war should remain within 1.5 to 2.0 percent of GDP. This would be less than half the fiscal cost of the pandemic support measures, which in Europe typically amounted to 4 percent of GDP in 2020.

Should this additional spending be financed through taxes or debt?

On traditional public finance grounds, there are good arguments for relying partly on debt finance. Part of the increase in spending is likely to be temporary, thus justifying tax smoothing.

On political economy grounds, the notion of a war tax – a "*Putin tax*," as President Biden has called it in the United States, although he was referring to the decrease in real income rather than an explicit tax – may be less unpopular than in other circumstances and underscore the point that contrary to current perceptions in Western Europe a war, even an economic war, is not free.

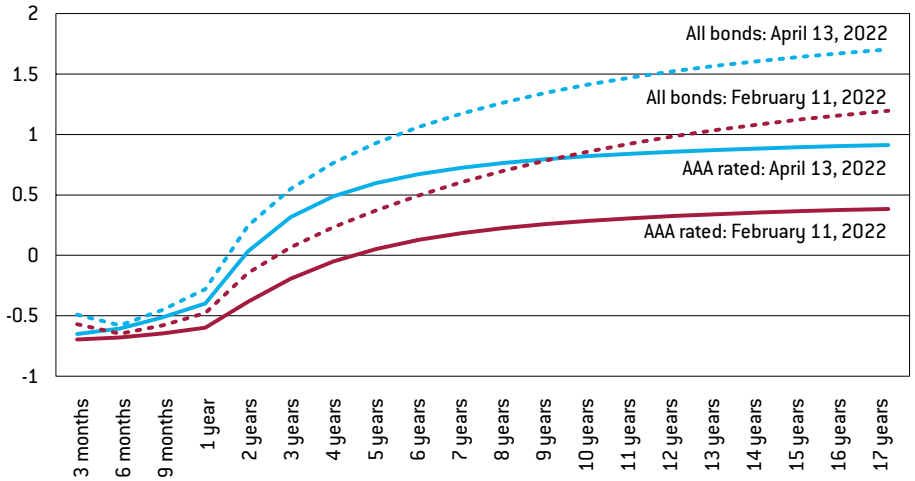
On macroeconomic stabilisation grounds, the case for relying largely on debt finance is strong. The decrease in real income for the European Union is large and is likely to lead to lower consumption. Export demand from Russia is likely to be drastically lower. Higher uncertainty, which played a large role in reducing consumption and investment during the COVID-19 crisis, may play a substantial role again. Fiscal support and reliance on debt finance rather than on a tax increase to offset the higher spending are likely to be needed[24].

This raises the standard question about debt sustainability (a question one of the authors has addressed at length in other writings; Blanchard, 2023). While it may well be that slowing inflation will require temporarily higher real interest rates, the factors behind low neutral real rates have not changed, and – provided inflation remains under control, so that the inflation risk does not start being priced in real bond rates – the neutral rate should, after a bump, remain low in the medium run. The evidence so far is that 10-year benchmark bond rates have increased by 50 basis points only since the start of the war, a limited upward adjustment in view of the magnitude of the geopolitical and economic shock (Figure 4).

23 The German support programme consists of two packages of about €15 billion each.

24 It is interesting in this respect that Germany decided to combine both approaches by financing a defence fund through debt at 3 percent of GDP, while committing to finance the permanent increase in military spending through taxes.

Figure 4: Euro-area yield curves, 11 February and 13 April 2022



Source: European Central Bank, https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/euro_area_yield_curves/html/index.en.html. Note: The solid lines show the yield curve for AAA-rated sovereign bonds only. The dotted lines show the same for all euro area sovereign bonds.

In the short run, debt dynamics are likely to remain extremely favourable. ECB (2022a) March forecasts of euro area real GDP growth, nominal policy rates, and inflation for 2022 are 3.7 percent, 0.8 percent (for the 10-year yield), and 5.1 percent. This implies a value for (r – g) of (0.8 percent – 5.1 percent – 3.7 percent) = –8 percent[25]. Combined with a debt ratio of 98 percent, this would allow EU governments as a whole to run primary deficits of 8 percent while keeping debt ratios constant. Thus, there is substantial room to run temporary larger deficits if needed.

Monetary policy

The typical advice to a central bank hit with an increase in commodity prices is to accommodate first-round effects (it cannot do much about those anyway) and limit subsequent-round effects, if necessary through lower output and higher unemployment, until inflation is back to target (Blanchard and Galí, 2007).

One can expect firms to eventually re-establish their markup. Thus, how much the central bank needs to lean in and slow activity depends very much on the behavior of wages. Having suffered a decrease in their real wage in the first round, workers will want to catch up and will ask for a nominal wage increase.

And if they expect inflation to remain high, they will ask for higher nominal wage growth in addition. The strength of this first effect, workers' desire to catch up, depends, among other factors, on how much of a decrease in real income they suffer in the first round and how strong they are in bargaining, thus on the tightness of the labour market. The strength of the second effect, expected inflation, depends on the credibility of the central bank strategy and its commitment to return inflation to its target.

There is in this context an important interaction between fiscal and monetary policy. To go back to the various protection measures governments may use, price subsidies – to the extent that they mechanically reduce the increase in consumer prices – or price ceilings (as in the case of the delinking of the electricity price from its marginal cost) decrease first-round inflation and thus limit the initial decrease in the real wage. This in turn decreases wage pressure in subsequent rounds, making it easier for the ECB to reduce inflation over time. Transfers do not affect first-round inflation, but they limit the initial decrease in real income, thus potentially reducing wage pressure in second and subsequent rounds. To put it strongly, more protection and higher

25 The ECB also gives two other scenarios, one adverse and one severe. In the severe scenario, growth is 2.3 percent, the 10-year yield is 0.8 percent, and inflation is 7.1 percent, implying a value for (r – g) of –8.6 percent.

deficits reduce the need to tighten monetary policy to return inflation to its target.

There is therefore a clear trade-off: from an efficiency perspective as well as to ensure the effectiveness of sanctions, governments should avoid income support measures that weaken the price signal and may in fact benefit Russia.

But from an inflation control perspective, they should rely on measures that have a direct, measurable impact on consumer prices. Some measures qualify on both accounts (as indicated, this is the case of transfers based on past energy consumption, if the lower average price paid by consumers is reflected in the construction of the CPI, which in principle it is). But many of the measures introduced so far do not pass the test.

Tripartite wage discussions

One can go a step further and make the case for tripartite discussions, if not negotiations, between firms, workers, and the state. So long as commodity prices remain higher, real wages and/or markups must be lower. As we have discussed, the state can limit the decrease in the real income of workers through subsidies, transfers, and price regulations, financed by a mix of taxes on the better off, or debt finance, shifting some of the burden to future taxpayers.

Inflation is an extremely inefficient way of reaching an outcome, relying on either workers or firms to give up and accept lower real wages or lower markups. A negotiation in which workers, firms, and the state agree on a better outcome and, by implication, smaller second and subsequent rounds of inflation is clearly desirable.

Is it achievable? The role of such social negotiations has long been debated, and the usual answer is that it requires an unrealistic degree of coordination across firms and across unions. This time may be different, and tripartite negotiations, or at least discussions, should be an option that governments consider.

Any success in reducing the size of second-round effects allows for a more relaxed monetary policy. Two other factors are relevant here, although they move desirable monetary policy in opposite directions.

Potential de-anchoring of expectations

Inflation due to the commodity shock comes on top of an inflation rate substantially higher than what was forecast for 2021. Even before the war, this had led to concern about a de-anchoring of inflation expectations, which would make the job of the ECB more difficult.

Based on the ECB Survey of Professional Forecasters (ECB, 2022b), long- run expectations of inflation have started to increase, with the average forecast going from 1.8 percent at the start of 2021 to 2.1 percent in April 2022 (Lane, 2022)[26]. This was initially a welcome development after years during which inflation was expected to undershoot the target, but the worry now is that the additional first-round inflation due to the war will lead to outright de-anchoring. As recently pointed out by Isabel Schnabel (2022) of the ECB Board, this argues for a tougher monetary policy stance in subsequent rounds than would be the case in the absence of higher previous inflation.

Potential weakness of private demand

The other relevant factor is the effect of the war-related shocks on aggregate demand. The reduction in real income even partly compensated by subsidies and transfers, diminished exports, investment losses, and a dent in overall confidence are good reasons to think that, even with fiscal support, aggregate demand will be weaker, apart from any monetary tightening. This suggests less need for tighter monetary policy than was the case before the war and, other things equal, argues for looser monetary policy.

Which of these factors will dominate and whether ECB monetary policy will have to be tighter or looser than was intended before the war is difficult to assess at this point. The size of the shocks, the strength of second-round effects, the anchoring of inflation expectations,

26 The increase from 1.8 to 2 percent was desirable; the issue is whether it would stop there.

and the weakness of aggregate demand are all uncertain. Markets have a hard time assessing what the net effect should be on monetary policy: The euro yield curve went sharply down as the war started, but is now a bit higher than before the war (see Figure 4)[27]. The current ECB stance of no major adjustments due to the war appears to be the right one at this point[28]. But the ECB will have to adjust its stance and be unusually nimble to avoid either lasting inflation or a recession.

5 Conclusion

The war in Ukraine is a first-order economic shock that raises three macroeconomic challenges for policymakers

For Europe, the war in Ukraine is a first-order economic shock. While the direct fiscal implications of taking care of refugees, increasing military spending, and strengthening energy autonomy remain limited, the impact of elevated energy and food prices on national income and its distribution is potentially large. It would get larger if future European sanctions affect the global oil market or the supply of gas to the EU market. This raises three macroeconomic challenges for policymakers.

The first is how best to use sanctions to deter Russia while limiting adverse effects on the EU economy. In this respect, it is important to distinguish between oil and gas. For oil, Russia can diversify away from the EU market and, despite sanctions, sell on the world market where it operates as a price taker.

The implications are that the spillback from EU sanctions is global and that a European embargo or tariffs on oil may have limited effects on consumer oil prices. For gas, the European Union has substantial leverage because Russia is almost completely dependent on the pipeline infrastructure linking it to the European market. But because supply from other sources is relatively inelastic, Russia faces a sharply downward sloping demand curve and enjoys significant market power. Given technical constraints, and this strategic game, an embargo on gas is not feasible. Tariffs, however, are feasible; they would be effective, and they should be considered, despite likely strong effects on consumer gas prices.

The second challenge is how to deal with the decrease in real income due to the increase in the energy import bill. Here, two issues require policy clarity. First, if governments want to partly protect buyers – consumers and firms – from the increase, they have choices among measures, from direct subsidies to targeted transfers, regulations, and price caps. For gas and to a lesser extent oil, subsidies – especially across-the-board tax cuts – may partly offset the effect of sanctions and as such are undesirable. Lump-sum transfers that do not affect the marginal price, and consequently do not diminish incentives to reduce demand, are preferable, especially if directed to low-income and other most affected households. Second, governments must decide how to finance the extra spending. Because some of the spending is temporary and because of uncertainty, the loss of real income, and lower exports to Russia, all leading to weak aggregate demand, fiscal support and thus some additional deficit finance may be needed. Even if deficits are larger, given high inflation and the still low nominal rates, debt ratios are likely to decrease over the next one or two years, and debt will remain sustainable.

The third macroeconomic challenge is how to deal with the increase in inflation as a result of higher energy and food prices. Two forces are at work. The first is the need to avoid a de-anchoring of inflation expectations, more of a challenge than usual given that inflation had already substantially increased before the war. Preventing this risk would call for a tightening of monetary policy. The second factor is that the loss of real income is likely to lead, even with

27 See, for example, the ECB's yield curves for 23 February, 3 March and 17 March (https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/euro_area_yield_curves/html/index.en.html).

28 We thus largely agree with the analysis and conclusions of Isabel Schnabel (2022) in her 2 April speech.

some fiscal offset, to weaker aggregate demand, implying a need to loosen policy.

The challenge for policymakers is to cope with these conflicting objectives. In this context, policy instruments complement each other. A combination of well- designed fiscal support to households and tripartite wage discussions may help to soften the trade-off that the central bank is facing.

In each of these three dimensions, there is considerable uncertainty as to the outcome. Energy prices may increase much more than they have so far, or instead return to pre-war levels. By implication, the loss in real income and the inflationary pressure may be much larger, or instead be less of an issue than currently forecast. This leads to our last conclusion. Fiscal and monetary policy should be nimble, consisting of measures easy to adjust as the

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