

Consequences of the war in Ukraine for the economy of the Netherlands

17 March 2022

Robert-Paul Berben, Thomas van den Berg, Wilko Bolt, Menno Broos, Jan Willem van den End, Kasper Goosen, Gerbert Hebbink, Minke van der Heijden, Íde Kearney, Dylan Pastoor, Marc Reinke, Ilona van Schaik and Guido Schotten

DeNederlandscheBank

EUROSYSTEEM

Consequences of the war in Ukraine for the economy of the Netherlands

© 2022 De Nederlandsche Bank N.V.

Authors: Robert-Paul Berben, Thomas van den Berg, Wilko Bolt, Menno Broos, Jan Willem van den End, Gerbert Hebbink, Kasper Goosen, Minke van der Heijden, Íde Kearney, Dylan Pastoor, Marc Reinke, Ilona van Schaik and Guido Schotten. We are grateful to colleagues at DNB, and in particular Peter van Els, Peter Keus and Olaf Sleijpen, for the useful exchange of views. Any errors that remain are our sole responsibility.

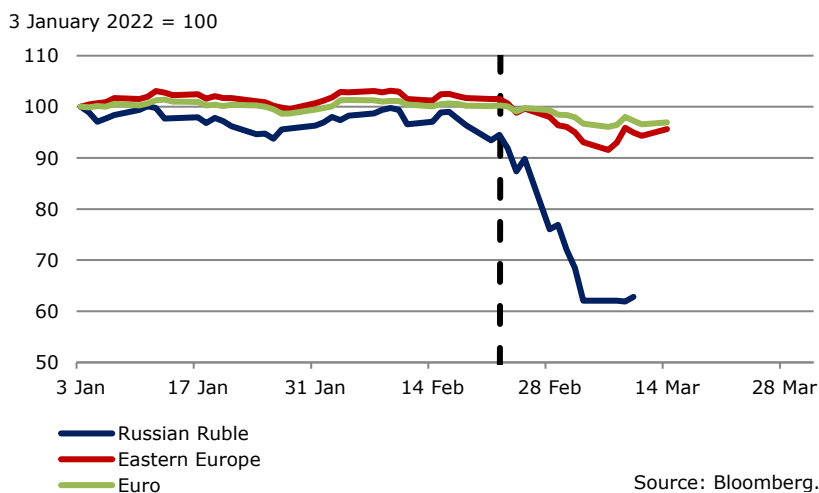
With the 'DNB Analysis' publication series, De Nederlandsche Bank aims to provide insight into the analyses of current policy issues it performs. Views expressed are those of the individual authors and do not necessarily reflect official positions of De Nederlandsche Bank. No part of this publication may be reproduced and/or disclosed by means of printing, photocopy, microfilm or any other means, nor stored in a retrieval system, without prior written permission of De Nederlandsche Bank.

De Nederlandsche Bank N.V.
PO Box 98, 1000 AB Amsterdam
Amsterdam
www.dnb.nl/en
info@dnb.nl

1 Introduction and main conclusions

The war in Ukraine is a tragedy causing tremendous human suffering and material damage. The Netherlands and many other Western countries responded with sanctions that have major consequences for the Russian economy, its financial system and its currency, the rouble (Figure 1). Many companies have also independently decided to end their relationship with, or activities in, Russia. Therefore, through many different channels, the war is also a financial and economic shock that has broad implications.

Figure 1 European exchange rates



Notes: Exchange rate against the US dollar. Eastern Europe refers to an unweighted average of the Polish, Czech, Hungarian and Romanian currencies. The dotted line refers to the day of the Russian invasion (24 February 2022).

The economic consequences for the Netherlands are most noticeable in the energy prices. The upward movement of energy prices in the course of 2021 was initially driven by a sharp rise in demand following the relaxation of COVID-19-related restrictions and lagging energy supplies. Rising geopolitical tensions and the military invasion of Ukraine are causing uncertainty concerning energy supply, resulting in steep additional price increases for oil and gas. In addition, the geopolitical situation also intensifies bottlenecks (as well as fear of such bottlenecks) in the supply and transportation of other raw materials and commodities, which have not yet recovered from the COVID-19-related restrictions. As a result, many products have continued to rise in price, which is reflected in high inflation. All in all, the economic picture has changed dramatically over a short time.

High inflation, slower world trade growth and increased uncertainty will act as a drag on the initially strong growth recovery after the COVID-19-induced recession. In the updated projections for the Netherlands, growth in gross domestic product (GDP) in 2022 and 2023 taken together amounts to about 0.2 percentage points less than was forecast in December.¹ In an alternative scenario, in which among other things high energy prices prevail for

¹ [Economic Developments and Outlook](#), December 2021, DNB.

a longer period of time, inflation will peak at 9.5% in 2022 and then decline to 3.4% in 2023. In this scenario, economic growth in the Netherlands slows by 1.1 percentage points per year on average in 2022 and 2023. High inflation affects households' real disposable incomes, which slows down spending. Companies are faced with further increases in the costs of energy and commodities, to which the manufacturing, transport and agricultural sectors are particularly sensitive. In this scenario, risk premiums for the financing of companies are also higher. These factors reduce investment opportunities and slow down GDP growth. It is important to note that this scenario involves many uncertainties, as at present it is completely unclear how the war in Ukraine will play out. This scenario mainly provides a frame of reference and, given all the uncertainties, it is not possible to assign a degree of probability to it.

The fall in share prices during the first few months of this year has accelerated since the Russian invasion. In particular, share prices of financial institutions have fallen relatively sharply (Figure 2). This is linked to uncertainty about exposures to Russia, but also to concerns about the broader economic impact and the decline of bond yields in early March, a factor to which the financial results of financial institutions are sensitive. As is usual in periods of great uncertainty, investors are looking for safe havens, such as Dutch sovereign bonds.

Figure 2 Share prices

1 January 2020 = 100



The direct exposures of the Dutch financial sector to Russia are limited and, in the fourth quarter of 2021, ranged from an average of 0.05% of insurers' total exposures to just under 0.4% of those of pension funds. Although some individual banks have relatively larger exposures, the adequately capitalised Dutch banking sector is expected to be able to absorb any setbacks well. In addition to direct exposures, contagion effects may occur through broader financial instability risks, macroeconomic risks and cyber risks, while the enforcement of sanctions has operational implications for financial institutions. Although Dutch financial institutions are expected to be able to cope with the effects of these as well, there is more uncertainty concerning this expectation. Supervisors closely are monitoring individual institutions and take any necessary measures together with them where appropriate.

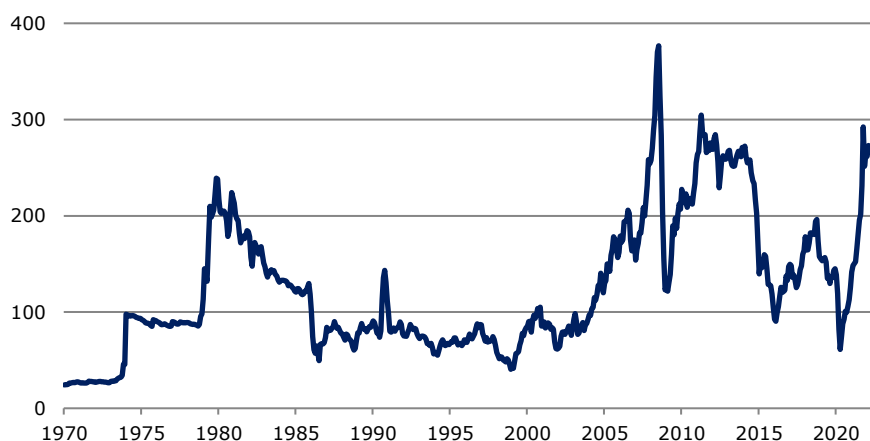
2 Shocks in the external environment

2.1 Dutch economy hit by sharp rise in energy prices

Since the Russian invasion of Ukraine, gas and coal prices have more than doubled and oil prices have also risen sharply (Figure 3). This energy price hike comes on top of the already substantial price increases seen over the past year. Until recently, this was mainly due to the rapid recovery of demand after the COVID-19 crisis, to which supply did not sufficiently respond. Since the beginning of this year, the rising tensions in Ukraine have been the main cause of these price hikes. Buyers of Russian oil and gas have become more cautious, oil majors are withdrawing from Russia, the commissioning of a major pipeline (Nord Stream 2) has been suspended and the financing of Russian investments and goods has become more difficult. In addition, there is a threat of Russian rationing of supplies and a Western boycott of oil and gas imports, which the United States and the United Kingdom have already decided to implement.

Figure 3 Real price levels of energy and commodities (weighted average)

Monthly figures; HWWI index 2020 = 100; deflated by inflation in the Netherlands



Source: DNB.

The European Union (EU) imported roughly 90% of its gas consumption in 2021, with Russia accounting for around 45% of those imports.² Although Dutch gas imports rely less on Russia (estimated at 15-20%), here too prices are rising sharply, because the Netherlands is part of the north-western European gas market. In 2020, 39% of the Dutch energy mix consisted of gas; a considerably higher share than the EU average of 24.5%.³ About a quarter of the oil imports of both the EU and the Netherlands comes from Russia. The price of oil is determined on the world market. Oil has a relatively large share in the Dutch energy mix, at 45% compared to 34% in the EU. Because gas and oil make up a relatively large part of the Dutch energy mix, the Dutch economy may suffer relatively large losses resulting from high energy prices.

The higher energy prices affect both households and companies. Both have few options for significantly reducing their consumption of oil and gas in the short term. Regarding the generation of electricity, coal-fired power plants can increase their output to a limited extent (although as per this year output has been capped at 35%), but coal

² Figures from: European Commission (2022), [REPowerEU: Joint European Action for more affordable, secure and sustainable energy](#). COM(2022) 108 final, Strasbourg.

³ The figures for gas and oil shares in the energy mix are from: British Petroleum (2021), [Statistical Review of World Energy 2021](#). 70th Edition, London.

prices have also risen sharply (by more than 60%) since the Russian invasion of Ukraine. As a result, the price of electricity is rising almost in sync with gas and oil prices. High energy prices also lead to higher prices for other products, especially in manufacturing, transport and agriculture, which are relatively energy-intensive sectors.

The macroeconomic pass-through effect of higher energy prices on domestic inflation is significant. In February 2022, the inflation rate in the Netherlands was 7.3%, of which 4.3 percentage points was due to energy prices.⁴ The increased cost of energy is reflected in, among other things, higher food prices. This is in addition to the direct inflationary effects of supply disruptions in food production. Section 3.2 discusses the outcomes of a scenario in which energy prices remain at a high level worldwide.

Natural gas supplies to the Netherlands have as yet not been rationed. The European Commission has announced that current gas stocks in the EU are sufficient to last through this winter, even if gas supplies from Russia were to come to a complete standstill.⁵ However, should there be a risk of a physical shortage in the future, mandatory reductions in gas consumption may be necessary. Initially, the supply of gas is guaranteed for households and certain institutions, such as hospitals. If necessary, restrictive measures can be taken, with large industrial consumers reducing their consumption and ultimately even potentially being cut off from the supply of natural gas.

2.2 International trade and value chains

2.2.1. Direct trade flows

The direct trade flows between the Netherlands and Ukraine and Russia are relatively small.⁶ Only 1.1% of gross Dutch exports goes to Russia and 0.2% to Ukraine.⁷ Over 38% of gross exports to Russia consists of re-exports, i.e. goods leaving the Netherlands without any significant processing and from which the Netherlands earns relatively little. The import side is slightly more significant: about 3.5% of gross Dutch imports comes from Russia and 0.4% from Ukraine. Although these direct trade flows are small in relation to the Dutch economy, for certain commodities the Netherlands depends for a relatively large part of its supplies on Ukraine (e.g. corn and vegetable fine oils) and in particular on Russia (e.g. oil, natural gas, nickel, and copper). For example, a quarter of the total Dutch nickel imports comes from Russia. This means that companies and consumers who use these commodities may well experience problems due to a disruption in trade flows with Russia and Ukraine.

2.2.2. Direct investment

The total value of Dutch investment positions in Russia is also limited and amounted to EUR 60.2 billion in the third quarter of 2021.⁸ This amounts to some 1.0% of the total outstanding direct investment made by Dutch banks. Direct investment by Russian companies in the Netherlands amounted to almost EUR 25 billion in the third quarter of 2021, which is 0.5% of the total direct investment in the Netherlands. Direct investment from the

⁴ This figure is an overestimation of the actual perceived rate of inflation, as Statistics Netherlands bases its calculation of energy prices on the prices of newly concluded energy contracts, whereas multi-year contracts currently have lower prices on average. Source: CBS (2022), CBS onderzoekt verfijning methode voor berekening energieprijzen.

⁵ European Commission (2022), [REPowerEU: Joint European Action for more affordable, secure and sustainable energy](#). COM(2022) 108 final, Strasbourg.

⁶ The figures in this section are from Statistics Netherlands.

⁷ Gross exports refers to all goods delivered from the Netherlands to foreign countries. Exports also include re-exports, i.e. imported products leaving the Netherlands again without being processed. Gross imports refers to all goods brought into the Netherlands from abroad.

⁸ The figures mentioned in this section are from DNB.

Netherlands in Ukraine amounts to considerably less than the investments in Russia: only EUR 13.8 billion (almost 0.25% of total outstanding investment of Dutch companies). Direct investment from Ukraine in the Netherlands amounts to just over one-tenth of investment from Russia.

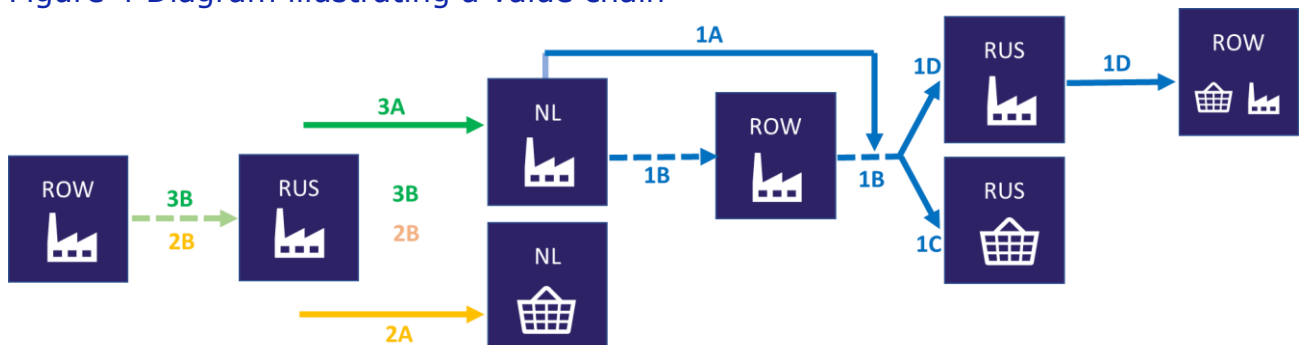
2.2.3. Global value chains

In addition to direct trade, Dutch trade can be affected indirectly through disruptions in global value chains.⁹ This depends on, among other things, the interconnectedness of Dutch companies with global value chains of which Russian companies are part.¹⁰ Dutch exports depend on Russia in two ways. On the one hand, Russia is a direct as well as indirect sales market for Dutch added value. On the other, Dutch companies depend on foreign materials and services that are directly and indirectly imported via Russia to the Netherlands and used for the production of Dutch export goods. In addition, the Netherlands also imports materials and services from Russia that are used by Dutch companies for consumption in the Netherlands.

To clarify this, Figure 4 shows a diagram illustrating a chain that contains the three most prominent flows that could be affected by the conflict:

1. **Export of Dutch added value to Russia:** this is the Dutch added value that is either directly (1A) or indirectly (1B) exported to Russia and consumed there (1C) or used to produce export products (1D).
2. **Imports for consumption, dependent on Russia:** this is the import of Russian added value into the Netherlands (2A) and foreign added value that flows via Russia into the Netherlands (2B) which is consumed in the Netherlands, possibly after processing in the Netherlands. This also concerns intermediate use by companies for Dutch consumers.
3. **Imports for export, dependent on Russia:** this is the import of Russian added value into the Netherlands (3A) and foreign added value that flows via Russia into the Netherlands (3B) for the benefit of Dutch exports.

Figure 4 Diagram illustrating a value chain



Explanation: ROW = Rest of world.

⁹ In a global value chain, the production process is divided internationally into different parts. Say, for example, that a Dutch tyre factory imports rubber from Thailand to produce tyres which are then exported to Germany. As a result, gross Dutch exports not only consist of Dutch added value, but also of Thai added value in this example. The same applies on the import side: rubber imported from Thailand does not only represent Thai value, as the production of rubber also requires foreign commodities. Because of this, traditional gross trade figures present a distorted picture of international trade dependencies. Therefore, in this analysis we use value-added figures to identify dependencies within global value chains. These figures do not include re-exports.

¹⁰ No input-output table is available for Ukraine.

Calculations based on input-output tables (for 2019) of the Asian Development Bank show that the above three flows are relatively small for the Netherlands.¹¹ Of the total amount of exported Dutch added value, 1.9% is dependent on Russia (flow 1). On the import side, the Netherlands is somewhat more dependent on Russia, but percentages are still low. Of the total foreign added value imported by the Netherlands for domestic consumption, 1.3% is dependent on Russia (flow 2). The share imported by the Netherlands for the benefit of export is somewhat larger, namely 2.4% (flow 3). Compared to other countries, the Netherlands is relatively less dependent on Russia, as shown in Figure 5. It is mainly Eastern European countries that are relatively closely interconnected with Russia in global value chains, though percentages are also higher in countries such as Germany and Italy.

Figure 5 Trade interconnectedness with Russia through global value chains

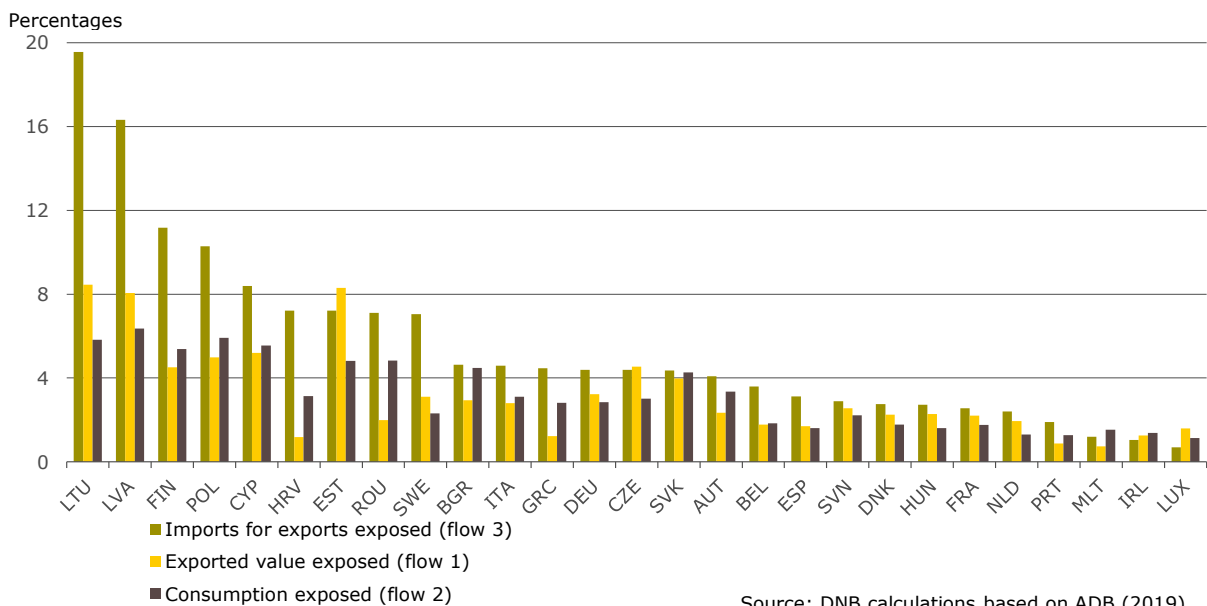


Figure 6 shows that the Netherlands' dependence on Russia is significantly smaller than its dependence on large economies such as Germany and the United States. The Netherlands may be hit harder by the consequences of the war in Ukraine if negative spillover effects impact Eastern European countries, causing trade distortions originating from those countries, which could then reverberate in the Netherlands through value chain trade. This could happen, for example, if transportation to neighbouring countries is hampered, or if companies in those countries run into problems due to the negative effects of the war. The data show that the Netherlands is much more dependent on (Central) Eastern Europe than on Russia.¹²

¹¹ Calculations based on: Belotti, F., Borin, A., and Mancini, M. 2021. *icio – Economic Analysis with InterCountry Input-Output tables*, The Stata Journal, 2021 (21) 3, and Asian Development Bank MRIOT Database, mrio.adbx.online.

¹² Central Eastern Europe here includes: Bulgaria, the Czech Republic, Hungary, Poland, Romania, and Slovakia.

Figure 6 The Netherlands' trade dependence on other economies

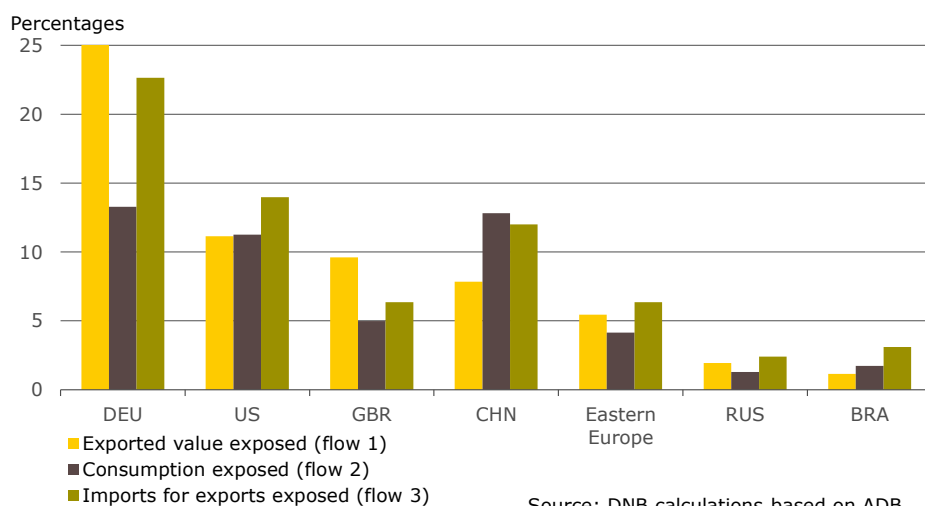
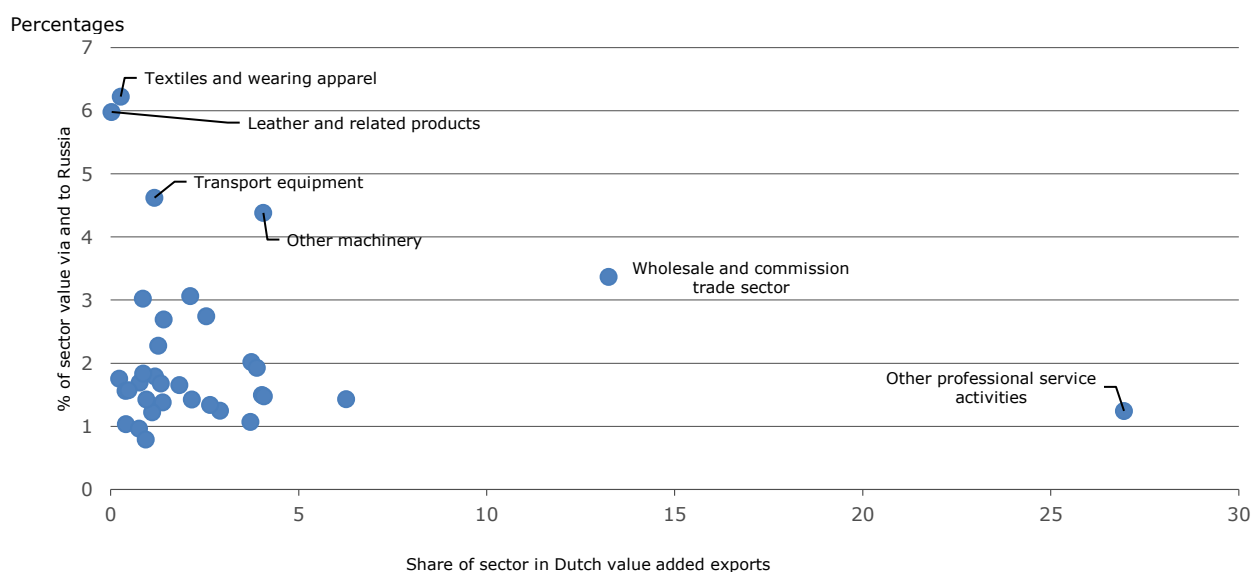


Figure 7 shows the exported Dutch added value that is dependent on Russia by sector. The impact of disruptions in sectoral trade with Russia on the Dutch economy depends on two variables: i) the share of the sector's total exported added value to Russia, and ii) the share of the sector in the total amount of Dutch exported added value. Most sectors have both a small share in the Netherlands' total exported added value and a low dependence on Russia. The sector that stands out the most is the wholesale and commission trade sector. However, the percentages involved are still small.

Figure 7 Dutch added value exported through and to Russia by sector



It would seem, therefore, that Dutch trade, both direct trade and trade through value chains, is sensitive only to a limited degree to disruptions in trade flows with Russia. The Dutch economy could also be affected by disruptions in trade flows with Ukraine, but a lack of data makes it difficult to say to what extent.

Moreover, the analysis of value chains is based on the concept of added value, while the activities of a company or sector may depend on intermediate goods with little added value. In other words, a specific component required to add value may be essential to the entire production, and its absence could potentially shut down an entire production line. An example would be a bicycle whose production in the Netherlands is dependent on valves from Russia. Despite the relatively low value of the valve, it is impossible for the Dutch bicycle manufacturer to sell the bicycle without valves, so, in this example, the entire production of bicycles is vulnerable to this shock.

The ultimate impact also depends on the resilience of companies to such shocks. Resilience is greater if companies can opt for other input materials or have built up sufficient stocks to absorb a shock (at least temporarily). In many industries, value chains have been under pressure since the start of the COVID-19 crisis, and individual companies have been looking for alternative suppliers.

3. Macroeconomic effects

3.1 Updated projection for the Dutch economy

The war in Ukraine has drastically worsened the international economic environment. The projection for the Dutch economy in the period 2022-2023, as updated here, uses the international assumptions of the recent ECB staff macroeconomic projections forecast for the euro area.¹³ This new projection is based on information available on 28 February 2022.

Important changes in the international assumptions compared to the previous projection (December 2021) are higher energy and commodity prices, lower growth in world trade relevant to the Netherlands and higher interest rates. Energy prices have risen sharply since the outbreak of the war (Section 2.1). For the rest of this year and next year, we base our assumptions for interest rates and energy prices on market expectations (futures)¹⁴. The oil price is estimated at USD 92.6 and USD 82.3 per barrel in 2022 and 2023 (Table 1), which is USD 15.1 and USD 10.0, respectively, higher than in December. The war and the announced sanctions have led to a sharp decline in economic growth and imports by Russia and other countries. This has a downward effect on world trade relevant to the Netherlands, through direct trade flows, disruptions in value chains and spillover effects.

This update of the projection contains the latest realisation figures for the Dutch economy available on 28 February 2022. Compared to the December projection, this means we adjusted economic growth in the last quarter of 2021 to a value significantly higher than expected at the time. This alone significantly increases the updated estimate of GDP growth in 2022. What is known as carry-over from 2021 is unusually high at 2.6 percentage points; which means that a stagnant economy in 2022 would still result in growth of 2.6% compared to 2021.

We also included the budgetary policy of the coalition agreement. As a result, for example, growth in government spending is substantially higher than in our December projection. As inflation has risen, government bond yields, and in their wake mortgage rates, have also risen recently. Both short-term and long-term interest rates are higher than in the December projection.

The most striking change in the projection is the high level of inflation. HICP inflation in the Netherlands rose to 7.6% in January before receding slightly to 7.2% in February. The high inflation rate is mainly driven by the energy component, but price increases in food and industrial goods are also accelerating. HICP inflation is expected to average 6.7% in 2022 and decline to 2.8% in 2023 (Table 1). This decrease is related to the assumption that oil and gas prices will not increase further. The upward price effect of disruptions in value chains is also expected to subdue. A scenario described in Section 3.2 outlines the possible consequences of prolonged high energy prices.

¹³ [ECB, ECB staff macroeconomic projections, March 2022](#)

¹⁴ In this projection, the information from futures is the average for the date of conclusion and two preceding business days, instead of the usual nine business days, in order to keep the assumptions as up-to-date as possible.

Higher consumer prices translate into lower real disposable household income than in the December projection, which in turn puts pressure on private consumption. Whereas some households will be able to pay the higher energy bill from the savings accumulated during the periods of pandemic containment measures¹⁵, those with fewer financial buffers may be forced to adjust their spending patterns. Private consumption is expected to increase by 3.4% in 2022, virtually unchanged from 2021. Again, there is a considerable statistical carry-over effect: the figure for 2022 is mainly due to the recovery of consumption during 2021. During 2022, consumption growth is expected to slow down slightly.

Projected GDP growth in 2022 and 2023 combined is now projected to be a mere 0.2 percentage point lower than in the December projection. There are two factors that explain this. Firstly, it now appears that GDP grew more strongly in 2021 than we knew in December, mainly due to more favourable than anticipated growth in business investment and imports. Secondly, the coalition agreement was announced after the December projection, which is why we have now adjusted government spending for 2022 and 2023 upwards. These two factors largely offset the negative impact on economic growth of higher energy prices and lower world trade growth. Unemployment is expected to reach 4.3% in 2022, rising further to 4.6% in 2023.

Table 1 Updated projection and scenario analysis with long lasting disturbance in the commodity market (The Netherlands)
Annual percentage changes, unless otherwise stated

	BASELINE		SCENARIO	
	2022	2023	2022	2023
Volume expenditure and production				
Gross domestic product	3.5	1.5	2.4	0.5
Private consumption	3.4	0.7	2.1	-0.8
Government expenditure	4.9	2.9	4.9	2.9
Gross fixed business capital formation	1.3	3.9	0.0	1.7
Investment in dwellings	0.8	-0.4	-0.4	-2.8
Exports of goods and services	4.5	3.8	2.2	1.5
Imports of goods and services	4.5	4.4	2.3	1.9
Prices				
HICP	6.7	2.8	9.5	3.4
HICP energy	41.3	7.1	59.9	8.5
Labour market				
Employment (persons, growth)	1.1	-0.1	0.9	-1.0
Labour supply (persons, growth)	1.2	0.3	1.2	0.1
Unemployment (% labour force)	4.3	4.6	4.4	5.4
General government sector				
EMU balance (% GDP)	-2.9	-2.6	-3.1	-3.3
International environment				
Relevant world trade	4.5	4.8	1.5	2.2
Short-term interest rate, euro area (%)	-0.4	0.3	-0.2	0.7
Long-term interest rate, Netherlands (%)	0.4	0.5	0.5	0.7
Euro exchange rate (USD)	1.12	1.12	1.11	1.11
Oil price (UK Brent in USD per barrel)	92.6	82.3	117.7	107.8

Sources: DNB and ECB.

¹⁵ [DNBulletin](#), "Households expect not to spend the vast majority of savings accumulated during the pandemic period on consumption".

3.2 Long-term disruption of the commodity market: an alternative scenario

The updated estimate for the Netherlands is surrounded by great uncertainties.¹⁶ The wider economic impact of the war in Ukraine is the main one. We have based our forecast on the expectation that the sharply risen energy and commodity prices will return to more normal levels in the coming period. However, it cannot be ruled out that the markets for energy and commodities have been disrupted to such an extent that prices will remain high for a longer period of time worldwide, with a dampening effect on international economic activity. In addition, a further escalating and protracted conflict could be accompanied by increasing financial uncertainty and declining confidence.¹⁷

For example, the negative impact on the Dutch economy of the Russia-Ukraine conflict may increase if sanctions and countersanctions create negative economic dynamics. In this scenario, sanctions and uncertainty about the availability of oil and gas from Russia cause global energy prices to rise further. Decreased supplies of Russian gas increasingly force customers in Europe and the United States to tap into alternative but more expensive supply channels of oil and natural gas. In this alternative scenario, it is assumed that oil prices during 2022 and 2023 are \$25 per barrel higher than in the projection; for natural gas, an additional 100% price increase is assumed.¹⁸

Since Ukraine and Russia are major commodity producers, it is likely that other commodity prices (such as agricultural goods and metals) will also be at higher levels for a long time. We assumed a 10% higher price level during 2022 and 2023.¹⁹ In addition, it is not inconceivable that the conflict's further escalation causes more turbulence in financial markets. We therefore assumed that risk premiums in Europe and the United States will increase by 100 basis points and those in Russia by 400 basis points.²⁰ This is accompanied by further falls in equity prices and declining producer and consumer confidence.²¹ We assume that the monetary authorities in the United States and Europe will respond to the rising consumer prices by raising interest rates according to a standard response function, the so-called Taylor rule.²²

Given the high dependence on Russian energy products, the European economy suffers greatly from reduced energy imports. Energy and commodities become far more expensive on the world markets, causing import and export prices to rise worldwide. Higher domestic prices, and rising production and capital costs depress spending by households and businesses, and hence global economic growth. As a result, world trade growth relevant to the Netherlands declines in 2022 and 2023. In this scenario, it is on average 2.8 percentage points below the baseline projection (Table 1).

¹⁶ While the economic impact of the COVID-19 pandemic and associated social distancing measures has been greatly reduced, there remains a risk that new variants hamper recovery.

¹⁷ The CPB Netherlands Bureau for Economic Policy Analysis has also published the economic effects of such a scenario (CPB, Verdieping Centraal Economisch Plan 2022).

¹⁸ Since the cut-off date of 28 February 2022 and the time of writing this Analysis on 8 March 2022, oil prices (Brent crude) have increased from USD 102 to USD 128 per barrel and gas prices (natural gas) from USD 105 to USD 216 per MWh.

¹⁹ The Bloomberg commodity index rose from 70 on 28 February 2022 to 77 on 8 March 2022.

²⁰ Viewed from a historical perspective, these sharply rising risk premiums are not unusual. Events such as 9/11 in 2001, the Gulf War in 2003 and the financial crisis in 2008 also resulted in wide fluctuations.

²¹ In this scenario, Russian real GDP growth in 2022-2023 ends up 2 percentage points lower on average, compared with the updated projection.

²² The scenario was simulated using the NiGEM global model and DNB's macroeconomic DELFI model. It has been assumed that economic agents form their expectations in a rational (forward-looking) manner and that the budget policy has an accommodative effect on the basis of a fiscal solvency policy rule. For the euro area, key policy rates are assumed to remain unchanged in the first and second quarters of 2022.

This slowdown in relevant world trade growth sends export volume growth of Dutch goods and services lower. Higher energy and commodity prices push up domestic prices, causing inflation to peak at 9.5% in 2022, before moderating to 3.4% for full 2023. The rise in consumer prices is partly curbed by higher interest rates. Sluggish demand, mounting capital costs, higher interest rates and falling confidence depress business investment. Economic growth in the Netherlands falls back by an average of 1.1 percentage points per annum for 2022-2023, resulting in an unemployment rate of 5.4% in 2023, which is 0.8 percentage points higher than in the projection.²³ Lower real disposable incomes, negative wealth effects and higher unemployment depress consumer spending, leading to an 0.8% contraction in consumption in 2023. The adverse effect on the public finances is still limited in 2022, partly because unemployment does not yet rise steeply in 2022 and nominal tax revenues initially hold up due to higher prices. In 2023, however, public finances clearly deteriorate in this scenario, partly due to rising unemployment, as the government deficit increases to 3.3% of GDP.

²³ On average, about 50% of the GDP effect is attributable to the oil and gas price shock, 35% to the commodity price shock and 15% to the increase in the risk premium. Oil and gas price increases contribute 65% to inflation, while commodities account for 35%; risk premiums do not play any significant role in this respect.

4. Implications for the financial sector

4.1 Overview of sanctions as per 9 March 2022

In response to Russia's invasion of Ukraine, the European Union (EU) has adopted a number of sanctions packages.²⁴ DNB communicates these measures to the financial sector and supervises institutions' adequate implementation of the sanctions within their operational management²⁵. Together with the Dutch Authority for the Financial Markets (AFM), DNB is responsible for supervising compliance with the sanctions regulations relating to financial transactions. Supervised financial institutions must have procedures and measures in place that enable them to comply with the sanctions legislation. As a supervisor, DNB assesses and enforces the effectiveness of these procedures and measures in a risk-based manner. It does not supervise direct compliance with the sanctions.

The sanctions packages include political, economic and financial measures, mainly targeting the Russian elite, the Russian state and state-owned enterprises, the military-industrial complex and high-tech sectors. Along the EU Member States, other countries, including the United States, Canada, the United Kingdom and Japan, have also introduced sanctions. Besides Russia, the sanctions packages also target Belarus and the self-proclaimed Ukrainian People's Republics of Donetsk and Luhansk. In response to Western sanctions, Russia is trying to prevent a shortage of foreign currency in the country by, among other things, imposing restrictions on the movement of currency.

Several sanctions are aimed at reducing the financial flows between Russia and the EU. For example, the Russian central bank's foreign managed reserves have been frozen and some Russian and Belarusian banks have been excluded from common international financial means of communication, including SWIFT (see the box in Section 4.2). Furthermore, it is forbidden to transport European banknotes to Russia or to provide financing to the Russian government or selected state-owned enterprises. Crypto asset financing has recently been added explicitly to this prohibition. Russian companies are also banned from European stock markets, European Central Security Depositories (CSDs) are no longer allowed to provide services to Russian counterparties, and securities issued in euros may not be sold to Russian nationals or legal entities based in Russia. In addition, financial institutions may no longer accept deposits from Russian customers exceeding a total of EUR 100,000.²⁶

In addition to financial sanctions, a number of high-ranking Russians have been banned from entering countries because of their direct or indirect support of the Russian authorities and as such the invasion of Ukraine. Their assets in the EU were also frozen. Furthermore, exports to a number of Russian sectors, such as the defence and aviation industries, are prohibited, as is export financing.

²⁴ In response to the annexation of Crimea and Russia's support of separatist movements in Luhansk and Donetsk, some political sanctions had already been imposed on Russia. Click [here](#) for a complete overview of the sanctions.

²⁵ [Sanctions against Russia \(status 4 March\)](#)

²⁶ Exceptions apply to Russians with a European residence permit.

4.1.1 Impact of the sanctions on the Netherlands

The sanctions packages also have financial and economic consequences for the countries that imposed them. The Dutch economy could be affected through a number of channels. The effects occur through the trade channel, financial relationships and prices of commodities, as described in Section 4.2. The direct financial and economic impact of the sanctions has so far been limited. This is due to the fact that Russia plays a relatively small role in the Dutch economy and financial sector. Moreover, commodities, food and energy, which are important to the Netherlands and Europe, have so far been largely exempted from trade sanctions. However, banks must be careful not to violate any of the financial sanctions when these goods are paid for. In addition, the Netherlands could be directly or indirectly affected by Russian countersanctions or countermeasures, such as a cyberattack. However, such countermeasures have so far largely failed to materialise.

4.2 Impact on the financial sector

The Dutch financial sector may be affected by the consequences of the war in Ukraine through various channels: through direct exposure to Russia and the wider region, through deteriorating macroeconomic conditions and broader financial instability, and through cyber risks. In addition, the enforcement of sanctions has operational consequences for financial institutions.

4.2.1 Direct exposures

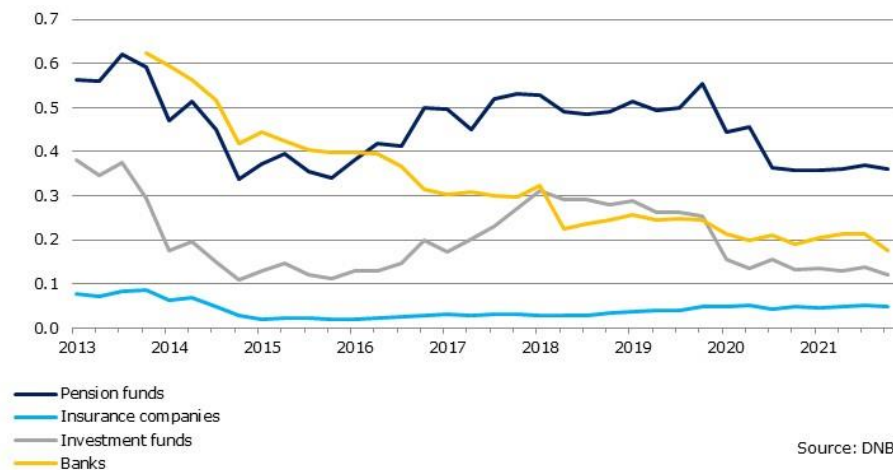
The total direct exposure of the Dutch financial sector (banks, pension funds, insurers, and investment funds) to Russia is limited (Figure 8).²⁷ Exposure to Russia of all sectors has decreased since the annexation of Crimea in 2014. This is most noticeable for banks, which had a low exposure of around 0.2% of total bank exposures in the fourth quarter of 2021. The direct risk to the Dutch financial sector as a whole is therefore manageable, although there are differences at the individual bank level. Financial institutions could also be affected through their exposures to neighbouring countries if further escalation of the war leads to spillover effects beyond the conflict area. However, the aggregate exposures of the Dutch financial sector to Central and Eastern European countries are also limited. Together, the direct exposures of the Dutch banks, pension funds, insurers and investment funds to Ukraine and countries bordering Ukraine make up less than 2% of the total exposures.²⁸

²⁷ Direct exposures are not adjusted for guarantees, collateral or the like.

²⁸ This includes the following countries: Russia, Ukraine, Belarus, Romania, Poland, Hungary, Slovenia, and Moldova.

Figure 8 Exposures of Dutch financial institutions to Russia

Percentages of total sector exposures; quarterly figures



Note: for banks, direct exposures include all claims on Russia (such as loans, deposits, debt instruments, shares, investment fund units and working capital) except derivatives, as the counterparty there is not necessarily the ultimate counterparty. For the same reason, for other financial institutions several other instruments besides derivatives are excluded, namely foreign investment funds, money market funds, equity interests (which can be intermediate holding companies) and securitisation vehicles (SPVs). Source: DNB.

4.2.2. Financial stability risks

If the war should lead to wider financial instability, this will potentially have greater consequences for financial institutions. This may manifest itself, for example, in a further decline in asset prices, poor functioning of certain financial market segments or losses suffered by counterparties not connected (or not directly connected) to Russia, Ukraine or surrounding regions. Such second-order effects potentially have a greater impact on financial institutions than the direct and indirect exposures, which are limited. At the same time, the extent that these would have is difficult to predict. So far, financial markets are still functioning properly, despite high volatility and significant price declines.

Price volatility is particularly high on commodities markets and affects underlying derivatives transactions. Derivatives, such as futures contracts, are used by commodities traders and energy suppliers to hedge against price risks. Unexpected sharp price movements can be amplified if they have to adjust their derivatives position or must meet substantial margin requirements. This was a contributing factor to the recent high volatility of metal prices, for example. This may eventually affect financial institutions either through direct exposures to the market or as counterparties in derivatives, especially when traders are no longer able to meet margin requirements. Financial supervisors and other authorities are alert to the possible consequences of high volatility and can take measures if necessary to ensure that the market continues to function properly.

Other second-order effects that may have a major impact on financial institutions relate to increased oil and gas prices, disruptions in international trade and capital flows, and declining consumer confidence. These factors could affect the financial sector in several ways. For example, credit quality partially depends on these factors in the economic environment. If they deteriorate further, the repayment capacity of companies and households will

come under pressure, especially if debt levels are already elevated. This would increase the credit risk to which the financial sector is exposed. Lastly, the risk of default by both the Russian government and companies (including state-owned enterprises) is also increasing. If Russian counterparties should be unable to meet their payment obligations, this would lead to losses for creditors such as bondholders. Although Russia's role in the international bond market is limited, a failure of the Russian government could have broader negative effects, for example through increased risk aversion on financial markets and rising risk premiums on debt instrument issued by other emerging markets.

4.2.3. Cyber risks and operational impact

Two other channels through which the financial sector could be affected are cyberattacks and sanctions enforcement. Russia is capable of carrying out advanced cyber operations and indeed has done so in the past. Examples include the 2017 NotPetya²⁹ and an attempt to hack Dutch ministries in 2018.³⁰ In addition, several security and cyber security companies and national and international government bodies, including the FCA³¹, the ECB³² and the US intelligence services,³³ have indicated that direct repercussions on Western financial institutions are a possibility. Furthermore, the financial sector may be indirectly or unintentionally affected if supporting customers or parties within the chain are attacked. So far, the increased threat has had no implications for the financial sector. Financial institutions and their chain partners maintain close consultation, taking all possible measures to mitigate possible attacks and their consequences.

In addition, the sanctions have substantial operational impact on financial institutions. Most Dutch institutions indicate that they can implement the sanctions without much difficulty. Based on our initial stocktaking, the operational consequences for institutions seem limited and Dutch banks are as yet not greatly affected by the sanctions. However, questions about implementation from institutions are increasing and being dealt with by the European Banking Authority (EBA) and the European Commission. Lastly, institutions will have to be extra vigilant in their 'know your customer' (KYC) procedures, as there is a risk that Russian companies will try to circumvent the sanctions through other constructions. From a macroprudential point of view, this could lead to a trend towards overcompliance. Any resulting broader risk aversion with respect to direct or indirect Russian counterparties may increase the sanctions' economic and financial impact.

²⁹ [The Cost of a Malware Infection? For Maersk, \\$300 Million.](#)

³⁰ [Russen faalden bij hackpogingen ambtenaren op Nederlandse ministeries | De Volkskrant.](#)

³¹ [FCA warns banks of Russian cyber attacks as Ukraine tensions ripple through European finance.](#)

³² [European, U.S. regulators tell banks to prepare for Russian cyberattack threat.](#)

³³ [Russia-backed hackers behind powerful new malware, UK and US say.](#)

Exclusion from SWIFT is an unusual sanction

Western countries have decided to exclude seven Russian banks and three Belarusian banks from SWIFT as a sanction measure to further isolate the Russian financial system. SWIFT is a messaging system that plays an important role in international payments. More than 11,000 parties worldwide are connected to SWIFT. Excluding a country from SWIFT is a fairly unique measure: in the past, only Iranian banks have been denied access to SWIFT as a result of a sanction.

At year-end 2021, Russia had a total of 314 SWIFT users (for comparison: the Netherlands had 192), accounting for 143 million messages sent per year. The exact amounts of the transactions involved are not known. Until recently, Dutch banks made hundreds of payments per day to and from Russia.

Russia's exclusion from SWIFT is in addition to the above-mentioned sanction measures taken against a number of Russian banks (including the central bank), including asset freezes. These measures prohibit certain transactions for EU parties. Exclusion from SWIFT has a wider impact and makes Russian payments to and from the rest of the world more difficult, including to and from countries that have not themselves taken any sanction measures. The ten excluded banks will have to fall back on the Russian alternative to SWIFT developed by the Bank of Russia, SPFS, which is expected to be able to be used almost exclusively for domestic payments.

Those banks that no longer have access to SWIFT are in practice cut off from the global financial system. Since the various sanctions do not apply to the entire Russian banking sector, it remains possible to make payments to Russia, but that requires more specific action, as EU banks must strictly adhere to the sanctions. For the time being, however, it is still possible to make payments for the supply of oil or gas as well as other potentially urgent payments.

5. Conclusion and policy implications

Following on the heels of the COVID-19 pandemic, the war in Ukraine is yet another shock to the economy. Such concatenation of shocks is unprecedented both in nature and magnitude, making it difficult to predict its economic impact. As a result, the updated projections are subject to considerable uncertainty, and alternative scenarios must be taken into account. Moreover, a new reality is emerging, marked by increased geopolitical uncertainty and energy prices that are both high and volatile. Households and companies will have to adapt to this. This also applies to financial institutions, which are facing volatile market conditions as well as new financial and operational risks.

Central banks and governments are faced with new challenges. Monetary policy has been accommodating for a long time. The normalisation of such policy must be tuned to the high inflation (both expected and current) and downward growth risks. For the Dutch government, the war in Ukraine could be a reason for additional spending, e.g. on defence. However, it is important that this is done within the fiscal rules. This also applies to measures to compensate the high energy costs of households, such as the reduction in taxes on energy and petrol recently announced by the government, and the additional allowance for low-income households. When compensating for high energy costs, it is important that the incentive for climate sustainability is distorted as little as possible, which is more the case when lowering the excise duty on energy, for example, than when compensating through lower taxes (including income taxes).

Western countries are seeking ways to reduce their dependence on Russian oil and gas as quickly as possible. This can be achieved by purchasing energy from other countries, maintaining larger reserves, and accelerating the energy transition. The European Commission, too, underlines the importance of these measures in its recently published energy plan.³⁴ By implementing these measures at the European level, the energy supply will become less sensitive to geopolitical risks. The transition to sustainable energy is the most future-proof alternative in this regard.

³⁴ European Commission (2022), [REPowerEU: Joint European Action for more affordable, secure and sustainable energy](#). COM(2022) 108 final, Strasbourg.