

Financial Stability Report

Spring 2022

DeNederlandscheBank

EUROSYSTEEM



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Summary



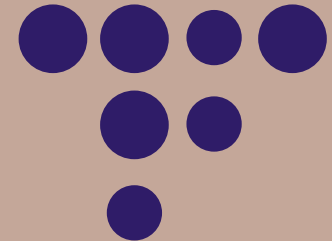
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Summary

After a strong recovery from the pandemic, the economic outlook has worsened due to the war in Ukraine and high inflation, and financial stability risks have increased. In addition to the enormous humanitarian consequences, the economic and financial impact of the war is being felt throughout the world. Prices in energy and commodity markets have risen to record levels since the Russian invasion. Disruptions to global trade and supply chains have also increased, partly as a result of COVID-19 policy in China in particular. This has raised production and logistics costs for businesses and reduced the purchasing power of households. After a long period characterised by very low interest rates and a search for yield, financial market interest rates have risen in response to high inflation. Over time, higher funding costs may put pressure on the debt sustainability of governments, businesses and households and result in increasing losses in the loan portfolios of financial institutions. In spite of this, the financial system has so far proved resilient once again. Although volatility and uncertainty have increased, and crypto assets in particular have posted large losses, financial markets have shown resilience. However, financial institutions are facing more operational challenges due to increased cyber risk and the implementation of sanctions against Russia.

General outline of risks

After a particularly strong recovery from the COVID-19 crisis, the macroeconomic outlook has deteriorated in recent months. Most countries have suffered only a limited direct trade impact from the war due to their relatively modest trade relationships with Russia and Ukraine, but the global economy is being hit by rising prices, supply constraints in energy and commodity markets and disrupted supply chains, also as a result of China's restrictive COVID-19 policy. Further price increases or supply restrictions, for

example as a result of a boycott of Russian energy, would further damage the economic recovery.

High inflation is also slowing the economy and creating risks. The sharp rise in prices reduces households' purchasing power. Moreover, the higher interest rates increase the pressure on the debt sustainability of governments, businesses and households at a time when debt positions have increased significantly during the pandemic and COVID-19 support measures have come to an end.

Volatility in financial markets has also increased, with a rapid tightening of financial conditions liable to trigger large corrections and losses. Low consumer confidence and an increase in corporate insolvencies pose a risk to the Dutch growth outlook.

The resilience of the financial system is being tested again, but the sector has so far weathered the successive shocks well. The financial sector has proved resilient to the economic impact of the COVID-19 crisis. The war in Ukraine is putting the financial system to the test once again. The Dutch financial sector's direct exposures to Russia and Ukraine are limited, but the ultimate impact will depend very much on the further course of the conflict and second-order effects through countries where the economy and financial sector have greater exposure to Russia and Ukraine. Losses in the corporate sector have so far been limited, but profitability may come under pressure due to high energy and commodity prices, supply chain problems, deferred tax liabilities and high debt levels. This may limit the ability of companies to meet their obligations, leading to increased defaults and losses for financial institutions. The tight labour market poses further challenges for the corporate sector. High inflation also erodes households' debt service capacity. Financial institutions face a number of new operational challenges due to increased cyber risk and the implementation of sanctions.

The higher interest rates may ultimately have a positive impact on the profitability of financial institutions.

The financial constraints faced by homeowners are growing as a result of risky borrowing behaviour, rising mortgage interest rates and higher energy costs. Dutch mortgage debt is high, with recent first-time buyers in particular borrowing large sums relative to their income and the value of their home. This makes households vulnerable to house price and income shocks. Furthermore, the proportion of interest-only loans is increasing in all age groups. Refinancing problems can arise when interest-only mortgages mature, particularly if lenders have limited information on the customers' financial position.

Policy

DNB has decided to increase the countercyclical capital buffer (CCyB) to 1%. When the systemic risk buffers for ABN AMRO, Rabobank and ING were lowered in March 2020, we also announced our intention to restore the buffers by raising the CCyB. The risk profile is currently dominated by uncertainty caused by the war in Ukraine, but at the same time the robust economic recovery following the COVID-19 pandemic provides grounds for a gradual build-up of the CCyB. Barring any sharp deterioration in the risk profile, the 1% buffer will come into force on 25 May 2023. The increase in the CCyB will promote the resilience of the banking sector, since this results in the holding

of capital that can be released in crisis situations. The importance of this has been clearly demonstrated during the COVID-19 pandemic. In the event of a sharp rise in financial stability risks during the build-up period, we will reconsider the increase in accordance with the CCyB framework.

Price stability is important for financial stability.

Inflation developments and expectations will determine the further timing and shape of monetary policy. On the one hand, postponing normalisation of monetary policy unnecessarily could lead to financial stability risks. It is inevitable and desirable that the economy and the financial system adapt, after a long period of loose financial conditions and a search for yield. Moreover, inflation can become anchored in the economy, which can have a negative impact on financial stability. On the other hand, a sudden tightening of financial conditions could also have a negative impact on financial stability.

Finally, the overheated housing market calls for further measures. Tax breaks, loose borrowing rules and subsidies for first-time buyers ultimately lead to higher house prices and should therefore be phased out. We remain committed to limiting the risks associated with interest-only mortgages and aim to bring about a renewed decline in the amount of outstanding interest-only debt.

1 Macrofinancial environment

1.1 Macroeconomic developments

The economic outlook has worsened due to the war in Ukraine and high inflation. In recent months, the strong economic recovery from the COVID-19 pandemic has slowed down in many countries. The outlook is uncertain and dependent on the course of the war in Ukraine. Following a strong recovery in the global economy in 2021, with growth of 6.1%, the [IMF](#) downgraded its growth projections for 2022 by 0.8 percentage points in April. The world economy is expected to grow by 3.6% this year. Ukraine's own economy has been hit hardest by the war and is expected to contract by 35%: economic activity has stalled in large parts of the country, infrastructure and other capital has been damaged or destroyed and many residents have fled the country. The Russian economy will also shrink by an expected 8.5% this year, mainly as a result of the sanctions. For the euro area, the [ECB](#) and the IMF predict positive, but lower, growth. Countries in Eastern and Central Europe are being hit particularly hard by the war. In March we estimated that economic growth in the Netherlands will be around 0.2 percentage points lower, at 3.5% and 1.5% in 2022 and 2023 respectively. By mid-June we will publish new projections for the Dutch economy.

The economic consequences of the war will be transmitted particularly through energy and commodity markets, trade restrictions due to sanctions and possible fragmentation of the global economy.

Further supply disruptions could hamper economic recovery. Many countries have suffered only a limited direct trade impact from the war due to the relatively modest trade flows with Russia and Ukraine, but there are significant differences between countries. Supply constraints and bottlenecks in supply chains, which also disrupted production before the war, are also a significant factor in the economic outlook. Commodity prices were already high in 2021 due to a combination of strong economic recovery, supply disruptions and geopolitical tensions, but prices have risen to record levels since the start of the war in Ukraine. The prices of oil, gas, nickel and wheat in particular were especially volatile ([Figure 1](#)). Higher commodity prices and further supply constraints, e.g. due to a boycott of Russian energy or limited deliveries by Russia, or a resurgence of the COVID-19 pandemic may exacerbate the supply bottlenecks. This also applies to the "zero tolerance" COVID-19 policy in some Asian countries, including China. Moreover, higher energy and

commodity prices put a strain on households' disposable income and companies' investment capacity. A number of countries are compensating households and businesses for high energy prices, which will ease the economic impact but increase public spending and fiscal deficits.

Persistent high inflation may lead to higher risk-free interest rates, ultimately putting pressure on the sustainability of debt positions. Inflation was already rising in many countries before the war in Ukraine. A prolonged war, coupled with sanctions, could cause inflation to remain high for longer than is currently expected. The risk of higher inflation expectations and a wage-price spiral may require central banks to tighten monetary policy more quickly, causing interest rates to rise further (see also [Financial markets](#)). On the one hand, this may put pressure on the debt sustainability of governments, businesses and households over time. On the other hand, debts in the low-interest environment have been financed for much longer, which means interest rate increases do not have an immediate effect. The debts of governments, businesses and households rose sharply during the pandemic, making them more vulnerable to interest

rate increases. The interest rate sensitivity of risky assets has also increased over the past decade, so rising interest rates may result in bigger losses for investors.¹ The widening interest rate differentials in the euro area point to concerns about the sustainability of peripheral countries' debt once the accommodative monetary policy is further unwound.

Worldwide, the COVID-19 pandemic is not yet and low-income countries and emerging economies are particularly vulnerable to rising funding costs.

Low-income countries and emerging economies in particular are struggling with low vaccination coverage and sustained pressure on the health system, which are holding back economic recovery in these countries. Rising market interest rates resulting from monetary normalisation in Western countries are also increasing the funding costs for these countries amid continuing fiscal pressure from the pandemic. Rising interest rates in developed countries and a deterioration of the macroeconomic and financial situation in these countries may lead to capital outflows, further complicating the economic recovery. Low vaccination coverage in these countries also poses a downside risk, as there is a continued risk of new virus variants.

The resurgence of the pandemic and financial vulnerabilities in China pose a risk to the global economy. New waves of infection and strict containment measures are slowing economic growth in China: industrial production fell in April for the first time in two years by 2.9% (y-o-y) and Chinese consumers seem to be more cautious. Retail sales fell for the second consecutive month by 11.1% and 3.5% in April and March respectively (y-o-y). Chinese share prices have fallen on deteriorating investor sentiment. Persistent problems in the real estate sector are also depressing economic growth, as evidenced among other things by falling house prices, high debt levels and fewer transactions. The growth estimates for the years ahead, at around 5%, are significantly below the long-term average. The slowdown is increasing the vulnerabilities, particularly for emerging markets with close economic and financial ties to China, but also poses a risk to the global economy. Supply chains have been further disrupted by the downturn in activity in the Chinese economy, exacerbating shortages for producers worldwide. China is also a major supplier and customer in the energy and commodity markets.

The war in Ukraine may accelerate the energy transition, but it also increases the risk of a disorderly transition. European countries aim to

reduce their dependence on Russian gas and are therefore committed to accelerating the transition to sustainable energy sources. At the same time, countries seem to be resorting to more polluting fossil fuels in the short term, potentially slowing the energy transition and increasing the need for stricter climate policies in the future. Both an unexpected acceleration and a slowdown may lead to a more intermittent energy transition, potentially leading to revaluations of investments in the fossil sector and mounting losses for financial institutions. The recent [report](#) of the Intergovernmental Panel on Climate Change (IPCC), the UN climate panel, also shows that countries' existing climate commitments are far from sufficient to meet the goals of the Paris Climate Agreement. The current climate policy will at best stabilise emissions by 2030. The war in Ukraine is also leading to greater political fragmentation around the world at a time when a major international policy effort is needed to deal with the consequences of climate change.

Low consumer confidence and vulnerabilities among businesses pose a major risk to the growth outlook in the Netherlands. The Dutch economy staged a particularly strong recovery from the COVID-19 crisis last year, characterised by high household consumption, growth in most business sectors and a tight labour

¹ ECB (2021). Financial Stability Review.

market. Consumer confidence has been falling since October, however, due to high inflation and consequent purchasing power effects and has been further undermined by Russia's invasion of Ukraine (Figure 2). At the same time, producer sentiment is relatively positive due to the strong economic recovery and the continued high level of spending. As the post-pandemic economic recovery is largely underpinned by private consumption, falling consumer confidence poses a downside risk. In addition, tighter lending conditions, higher energy prices and persistent supply chain problems may put pressure on businesses' profitability. Businesses that built up arrears and high debts during the pandemic as well as operators in energy-intensive sectors are particularly vulnerable.

Public finances have come through the COVID-19 crisis in surprisingly good shape, but recent developments pose new challenges. As a result of the economic impact of the COVID-19 pandemic and the extensive support measures, the deficits in the Dutch public finances increased in 2020 and 2021. The support measures were possible because Dutch public finances were in good shape before the start of the pandemic, with a relatively low debt-to-GDP ratio of 48.5% in 2019. Ultimately, the fiscal impact of the COVID-19 crisis was not as bad as expected, with government debt reaching 52.1% of GDP in 2021. A number of

additional fiscal challenges have arisen, however, since the new cabinet took office – in addition to the ambitious plans set out in the coalition agreement. The Supreme Court's ruling on wealth tax, for example, requires the government repays a large sum to citizens who overpaid tax in Box 3. Furthermore, in response to the war in Ukraine, the cabinet has decided on additional compensation for high energy prices and increased defence spending. To cover these additional expenses, the cabinet will take measures such as increasing corporate tax, Box 2 taxes and transfer tax. It also intends to incidentally reduce the National Growth Fund, Climate Fund and Transition Fund budgets. The government has placed the costs directly related to Ukraine (such as the reception of refugees) outside the expenditure ceiling, thereby deviating from the budgetary rules.

1.2 Financial markets

The Russian invasion of Ukraine and the subsequent Western sanctions have led to high volatility in financial markets. The invasion initially triggered heavy price losses in equity markets, with corrections of around 10-15% and tech shares and cyclical sectors such as European banks (-30% in one month) hit particularly hard. At the same time, most markets have shown resilience by continuing to perform well, thus preventing the stress from spreading further through

the financial system for the time being. The biggest impact of the Russian invasion can be seen in commodity markets, where concerns about supply shortages have driven up prices and volatility (see Box 1). Increased commodity prices are a strong contributor to rising inflation and inflation expectations in financial markets. Euro area inflation is expected to remain above 2% in the short and medium term and a scenario of persistent high inflation is considered more likely. Option prices, for example, show that investors believe there is a 30% chance that average inflation will exceed 4% over the next five years. At the beginning of this year they only saw a 2% chance.

Due to the persistently high inflation, financial markets expect a further normalisation of monetary policy, causing interest rates to rise. The Fed, for example, has already raised federal funds rates by 75 basis points this year and the market expects around 200 basis points of further rate hikes over the rest of this year. The market is thus expecting a very rapid cycle of interest rate rises, so risk-free interest rates have risen rapidly. The US 10-year government bond yield, for example, has risen from 1.5% to around 3% since the beginning of this year. The market outlook for the ECB is more mixed at this stage, with an increase in the key policy rate of around 100 basis points expected this year. Figure 3 shows that the European 10-year

swap rate has increased by more than 100 basis points since the start of the year. This is the highest level since 2014. Inflation concerns and the expected response of central banks have increased volatility in the bond markets (see [Figure 4](#)). The increase in the nominal interest rate was largely driven by inflation expectations. Real interest rates thus remain low, so financial conditions remain relatively accommodative. Financial conditions have recently been tightened somewhat, however, due to rising nominal interest rates, higher credit risk premiums and lower equity prices.

The rise in (real) interest rates and concerns about the economic outlook are putting the valuations of (risky) assets under pressure. Real interest rates in the euro area remain negative, so there are still incentives to invest in risky assets. A further rise in real interest rates could put pressure on equity valuations. European equities have fallen more than 10% since the start of the year and spreads on risky corporate bonds are widening. The risk of a sharp market correction will increase if investors continue to over-rely on the assumption that governments and central banks will adopt accommodative policies in the event of further downward shocks.

Moreover, lower liquidity in bond markets may increase volatility. The liquidity of both German and US government bonds has been declining since the end of 2021. In March this year, the market depth – an indicator of liquidity – reached a level comparable to that seen during the market stress in March 2020. The Russian invasion and the resulting risk aversion have also reinforced the trend that began in late 2021. Liquidity providers appear to be reducing the supply of liquidity in anticipation of a central bank withdrawal from the bond markets. Lower market liquidity may cause wider movements in asset prices. A possible market correction caused by the further rise in real interest rates or higher inflation expectations could therefore have a stronger impact on the financial system.

Box 1 Russian invasion of Ukraine causes volatile oil price

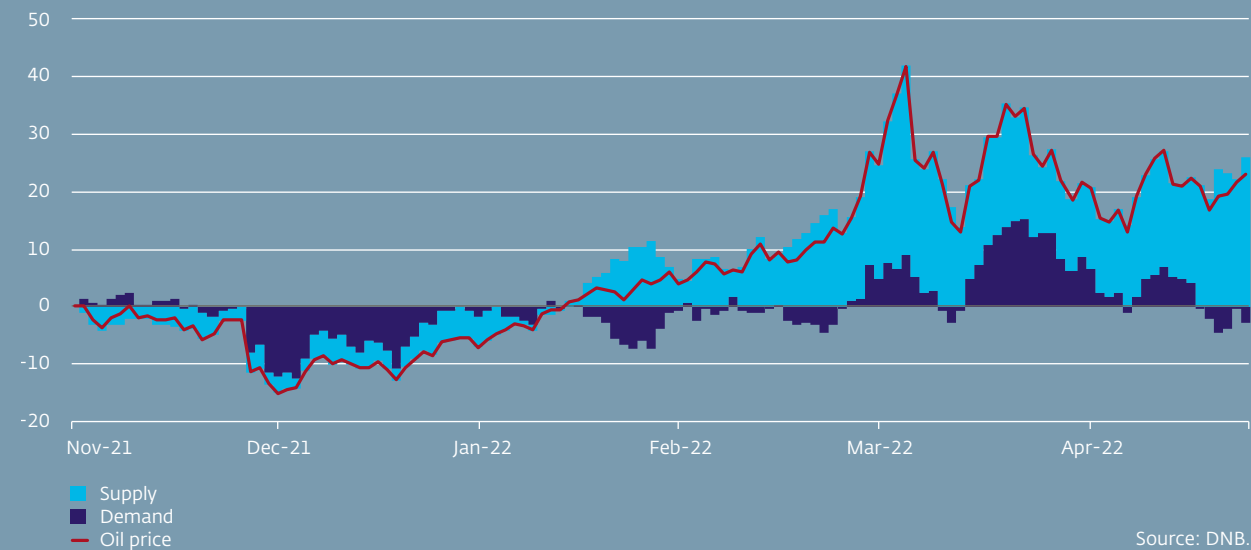
Meilina Hoogland and Romain Meuwissen

Since Russia's invasion of Ukraine, the volatility of oil prices – like that of many other commodities – has increased significantly. For example, the (Brent) oil price rose in the first quarter by more than \$40 a barrel to \$128 before falling back again afterwards. Oil price movements are caused by demand and supply effects, such as changes in the daily volume of oil production (supply) or changes in the economic outlook (demand).

The purpose of this box is to distinguish the role of demand and supply effects on the oil price. We do this on the basis of share price movements in a *Bayesian Vector Autoregression* (BVAR) model. In the event of a positive demand shock resulting from an improved economic growth outlook, both oil and share prices rise. A positive supply shock, on the other hand, leads to lower oil prices and higher share prices, as lower energy costs positively impact corporate profitability.

Figure 5 Decomposition of oil price movements by supply and demand

Cumulative price difference compared to 1 November 2021, US dollars per barrel



Our analysis shows that the oil price increase in the first quarter of this year was mainly driven by supply effects. Figure 5 shows the cumulative changes in the oil price. For example, the supply of oil had not yet recovered sufficiently from the production disruptions caused by the pandemic, while investments in oil production have structurally decreased due to the transition to sustainable energy sources. This tightness in the oil market increased further in February due to concerns about the supply of Russian oil following the invasion of Ukraine and subsequent Western sanctions. The tightness in the oil market eased in March, however, resulting in a fall in the oil price. This decrease is mainly driven by lower demand, partly as a result of an (expected) slowdown in growth in China. Another factor is the increase in supply following the decision by the United States and other International Energy Agency members to release part of their strategic oil reserves to the market. Since the end of April, the oil price has been rising again, partly driven by the prospect of a European embargo on Russian oil.

The high volatility of the oil price has (temporarily) undermined the functioning of the oil market. When volatility is higher, for example, it is more expensive for investors to trade oil futures because of the daily netting of price differences of open positions. This increases the risk of margin calls, whereby traders have to deposit money in order to hold their position. At the same time, the high volatility means that closing out new positions requires more capital (initial margin). Central counterparties (CCPs) thus reduce the counterparty risk by preventing the default of one commodity trader causing problems for others. The margins demanded by CCPs rose so sharply, however, that traders had difficulty meeting them in the short term. As a result, investors are reluctant to take on new positions and existing positions are unwound, reducing liquidity in the oil market. Traders are also resorting to bilateral settlement of positions, outside CCPs, which also increases risks in these markets. In the wake of the financial crisis, the focus has been on central clearing to enhance financial stability. Given the ongoing nature of the Russian invasion and the lack of any recovery in liquidity, the oil price is expected to remain volatile in the period ahead.

Cryptocurrency markets recently posted large losses after a period of very rapid growth. The Bitcoin price, for example, fell by 37% between the end of March and mid-May. The losses in cryptocurrency markets have been driven partly by rising interest rates and concerns about economic growth. Higher interest rates thus make investments in relatively low-risk assets a more attractive alternative. The collapse of Terra, the third-largest stablecoin, has also dented confidence in crypto-assets, although the losses in the cryptocurrency market follow a period of exceptional growth. The market capitalisation of cryptocurrencies in early May was around €1.6 trillion, a tenfold increase since 2020 (Figure 6). This growth was driven by a search for yield in a low-interest environment and a wider range of ways to invest in cryptocurrencies. Various (exchange traded) funds that invest directly or indirectly in cryptocurrencies (including through futures) have seen a significant uplift in assets under management since the beginning of last year (from €18 billion at the beginning of 2021 to €45 billion in early May 2022). In addition, because of the way they are designed – with 24/7 global access and no need to use a central service provider – cryptocurrencies are an attractive alternative for consumers and investors. Investors can also enter and exit these markets relatively easily. Many currencies also operate on the basis of pseudo-anonymity.

Cryptocurrency markets pose a potential risk to financial stability in the long run. The wider embrace of crypto-assets by the financial system also increases the interconnectedness with traditional assets and sectors. The correlation between Bitcoin and stock indices has increased, for example, since the COVID-19 crisis, and the [IMF](#) points to increasing spillovers between crypto-assets and traditional financial markets. Their growing role in the financial system means that cryptocurrency markets could also reach a point where they become systemically important. At present, however, the cryptocurrency market currently remains small relative to the total assets of the global financial sector. The investor base also seems to consist mainly of speculative investors, including hedge funds and retail investors, whereas banks, insurers and pension funds have limited direct exposures to crypto-assets. If the trend seen before the recent market turmoil continues, instability and a crisis of confidence in cryptocurrency markets may well spread to traditional financial markets and economic sectors.² In the summer, we will publish an Occasional Study on cryptos and stablecoins and the need for further regulation of this sector.

² [FSB](#) (2022). Assessment of risks to financial stability from crypto-assets.

1.3 Housing market

House prices in the Netherlands have risen to record highs in recent years, driven by both demand and supply factors. In June 2013, house prices reached a low point after five years of negative growth. Since then, the average price nationwide has more than doubled. The strong price growth is explained by both demand and supply factors. Dutch households can borrow relatively large amounts to buy a home – with attractive tax breaks. Their borrowing capacity grows closely in line with rising house prices due to the LTV limit of 100%. The borrowing capacity under the income test has also increased in recent years due to low interest rates and pay increases. Mortgage rates have been rising again for several months, however, reducing households' financing capacity and potentially slowing the growth of house prices. Demand is also being driven by the relatively lower cost of living in an owner-occupied home: for first-time buyers, the cost of living in an owner-occupied home is on average lower than that of a comparable rental home in the private sector, despite the strong price rises ([DNB](#)). Furthermore, by making regular, voluntary repayments, buyers can build up (almost) untaxed capital in their home. The strong price rises have also been supported by the persistent tightness of supply.

The risks to financial stability stem mainly from the high mortgage debts of Dutch households. At 100% of GDP (2021), Dutch households have the second-highest debt position in Europe after Danish households (104%). The steep price rises make households, and particularly young first-time buyers, more likely to take maximum advantage of their financing capacity. In addition, due to the high price level, fewer households are taking out mortgages with a National Mortgage Guarantee (NHG). In the fourth quarter of 2021, 28% of all outstanding mortgage contracts were covered by NHG, whereas this was only the case for 18% of newly issued mortgages. The maximum (or near-maximum) use of the financing capacity and the decrease in NHG coverage makes recent buyers relatively vulnerable to a fall in house prices or income, which may also have financial consequences for lenders. Compared to the 2008-2013 housing market crisis, however, households are less likely to go into negative equity. Loan-to-value ratios have fallen as a result of the strong rise in house prices and repayments by households. Homeowners who have recently bought their first home and stretched the borrowing limits are at greater risk of falling into negative equity if house prices fall, however.

A striking feature of borrowing behaviour is that the popularity of interest-only mortgages has continued to increase in all age groups. Generally speaking, interest-only mortgages are still taken out mainly by older homeowners (Figure 7), as they are still entitled to mortgage interest relief when refinancing their mortgage or moving up the housing ladder if their old interest-only mortgage was taken out before 2013. But their popularity is also rising among younger buyers, possibly encouraged by the lower monthly costs of a partly interest-only loan. 24% of households under the age of 36 took out a partly interest-only mortgage contract in the fourth quarter of 2021 compared to 14% in the first quarter of 2020, often combining an interest-only loan with an annuity loan.

This has halted the decrease in the proportion of interest-only mortgages in the total outstanding mortgage debt. The share of interest-only loans stagnated at 44% in the fourth quarter of 2021. The share of interest-only mortgages in total mortgage debt could rise again if the trend continues. DNB has repeatedly called on mortgage lenders to inform customers about the risks of interest-only loans, and to strengthen their risk management. The sector should encourage households to limit the interest-only

portion of their mortgage. In November 2021 the Financial Stability Committee again called on banks to take further steps to reduce the risks of interest-only mortgages.

Interest-only mortgages pose a financial risk to households and financial institutions. The lower monthly cost of an interest-only loan may prompt households to borrow closer to the maximum amount so as to have more spending capacity in the tight, expensive market. Households do not make regular mortgage repayments during the term and at maturity the entire mortgage amount may remain outstanding for refinancing or repayment. At that time, due to higher interest rates or lower income, households may no longer be able to afford the mortgage payments and may be forced to sell the home. Moreover, the lender often lacks sufficient information to properly monitor the customer's creditworthiness during the term of the loan. The customer only provides information on income or assets when the mortgage is taken out. The lender therefore relies heavily on the value of the collateral to repay or refinance the loan at the end of the term. Moreover, a large proportion of interest-only mortgages are set to mature at the same time. Between 2034 and 2039 and 2047 and 2051, 29% and

36% respectively of the interest-only debt will mature (Figure 8). Financial institutions have not had experience of large-scale maturity of interest-only mortgages and hence have hardly any data on the credit and refinancing risk. We are concerned that institutions have not sufficiently factored in the risks of potential losses in their risk management.

Rising mortgage interest rates also pose a threat to households. At the end of last year, the weighted average mortgage interest rate for new mortgage contracts reached a low of 1.65%, down almost four percentage points from the peak of 5.61% in October 2008. In recent months, most interest rates offered for the various fixed-interest periods have risen by more than 1 percentage point. The fixed-interest period on 23% of the total outstanding mortgage debt is due to expire in the next five years; on 57% it is due to expire in the next 10 years (Figure 9). The average interest rate on mortgages where the fixed-interest period expires in the next ten years is low, at between 1.8% and 3.2%. Due to rising mortgage interest rates, many households with a variable rate contract – representing only about 4% of Dutch mortgage debt – or an expiring fixed-interest period will probably face higher interest rates and possibly also higher monthly costs.

Households that have taken out or refinanced their mortgages in recent years are generally less vulnerable to interest rate rises: 60% of new mortgages have a fixed-interest period of more than 10 years.

Energy prices have risen at an unprecedented rate in recent months, and that also has financial consequences for Dutch homeowners. The average variable consumer tariffs for gas and electricity had more than doubled by March 2022 compared to the end of 2021 and increased more than sixfold compared to a year earlier (based on preliminary figures for March 2022 from [Statistics Netherlands](#)).³ The gas price has stabilised somewhat at pre-Ukraine war levels in recent months, but the future trend in consumer prices remains very uncertain and will depend on the course of the war and possible new sanctions. In March 2022, in response to the economic impact of the war, we released [updated projections and simulations](#), with a negative scenario in which energy prices rise by almost 60% in 2022 compared to the average price level in

2021. Higher energy prices will increase homeowners' energy costs, leaving them with less disposable income to meet other expenses such as mortgage payments. An energy price rise of 60% results in an average of €900 of extra energy costs per year per homeowner.^{4,5} These additional costs are equivalent to 2.1% of Dutch homeowners' average net disposable income. However, the actual impact of higher energy prices per individual household depends greatly on the energy contract and whether a fixed contract has expired recently or is due to expire soon.⁶ Since, on average, the bulk of energy costs are spent on gas consumption to heat the home, the energy label and the heating method used in a home are also key determinants of the financial impact on households.

The financial impact of the higher energy prices is greatest for homeowners with relatively low incomes. Figure 10 shows the additional energy costs in 2022 with an energy price increase of 60% for different income groups. The poorest 20% of households have

the lowest absolute rise in energy costs (€800), but this rise represents a larger share of their disposable income (3.8%). For the 20% of Dutch households with the highest incomes, the energy costs would rise by €1,000 per year, equivalent to 1.4% of their disposable income. The difference in impact on disposable income between income groups increases as energy prices rise. If energy prices were to rise by 85% in 2022 compared to the average price level in 2021, this would absorb 6.9% and 2.2% respectively of the disposable income of the lowest and highest income groups.

The higher energy costs also affect the credit risk of banks' mortgage portfolios. The higher energy costs mean that households have less income left to meet their mortgage obligations. Figure 11 shows the relationship between rising energy costs, households' debt service capacity (expressed in the debt-service-to-income or DSTO ratio) and the likelihood of payment arrears, based on a number of stress scenarios. These scenarios assume a decrease in Dutch households'

3 The gas and electricity costs are subdivided into fixed transmission and delivery costs that are set annually and variable rates for delivery, storage of sustainable energy and taxes (see [Statistics Netherlands, 2022](#)). The stated price increases of the average variable consumer gas and electricity tariffs relate only to the variable delivery tariff.

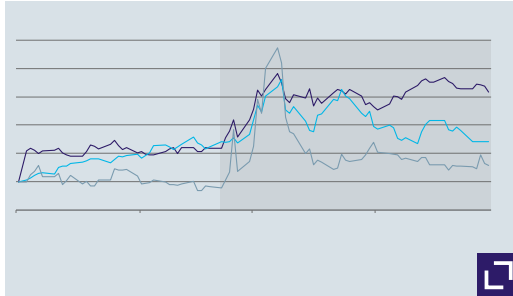
4 The calculations only include households in owner-occupied homes (4.3 million households). Tenants are not included in this analysis, which focuses on the impact of higher energy prices on the capacity to repay mortgage debts. The calculations assume that household energy consumption has remained unchanged despite the price increases, in accordance with the low short-term elasticity of household energy demand ([CE Delft, 2021](#)).

5 The government is temporarily compensating households for additional energy costs in part by reducing the tax on electricity and refunding the energy tax. These compensatory measures (an average of €400 per household) have been included in the calculations of the additional energy costs. Households with an income that is low or just above the social minimum will receive a one-off energy allowance in 2022 to cover rising energy costs. We have not included this because only 1% of homeowners are eligible for it.

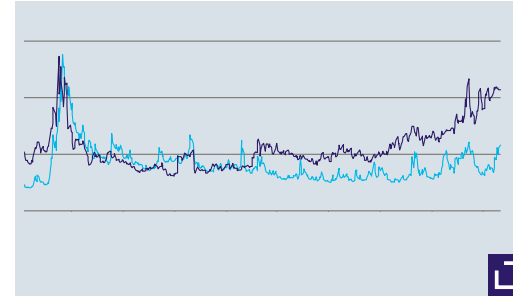
6 As an illustration: in April 2021, 61% of Dutch households had an energy contract in which prices were fixed for up to one year ([ACM, 2021](#)).

average net disposable income of 0.7%, 2% and 4% respectively as a result of energy price rises of 35%, 60% and 85% respectively. Depending on the energy price rise, the number of households whose monthly mortgage costs exceed a quarter of disposable income increases by between 2.7% and 4.8%. These households fall behind with their financial commitments relatively quickly and have limited room to absorb financial shocks. The increase in defaults due to higher energy costs remains limited (rise of between 0.04% and 0.27%), which is also consistent with previous analyses showing that Dutch households continue to meet their mortgage obligations even in times of crisis. In combination with other negative developments however, such as an increase in unemployment, income failing to keep pace with inflation or higher mortgage costs due to rising interest rates, the proportion of non-performing mortgages may increase further.

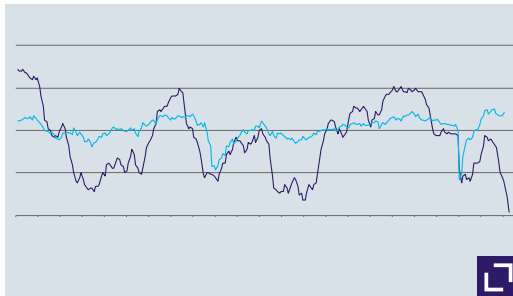
Figures



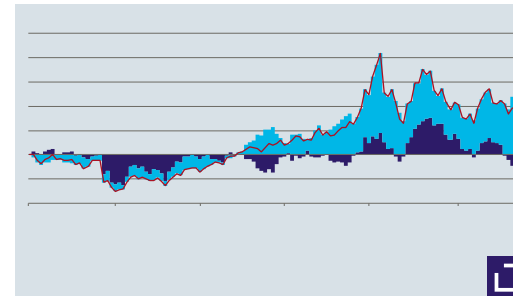
Development of commodity prices
[See figure 1 →](#)



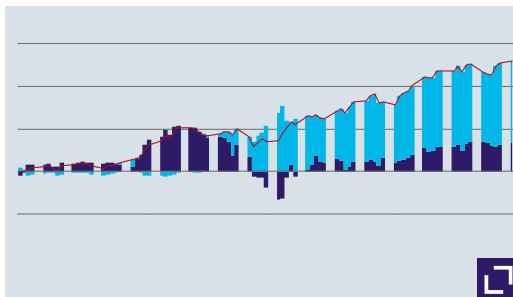
Much greater volatility in bond markets than in equity markets
[See figure 4 →](#)



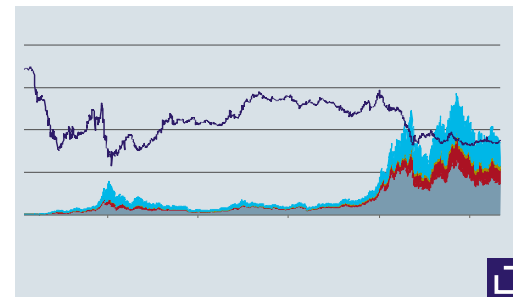
Consumer and producer confidence in the Netherlands
[See figure 2 →](#)



Breakdown of oil price movements by supply and demand
[See figure 5 →](#)

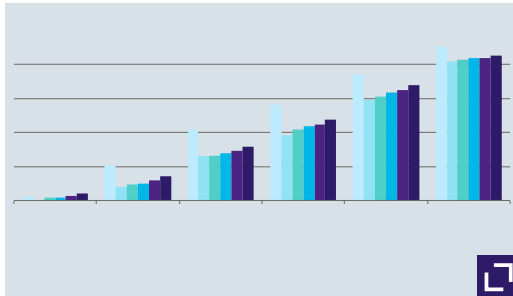


Higher interest rates mainly driven by inflation expectations
[See figure 3 →](#)

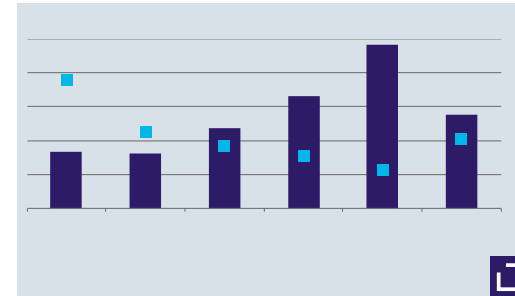


Strong growth in cryptocurrency markets despite recent losses
[See figure 6 →](#)

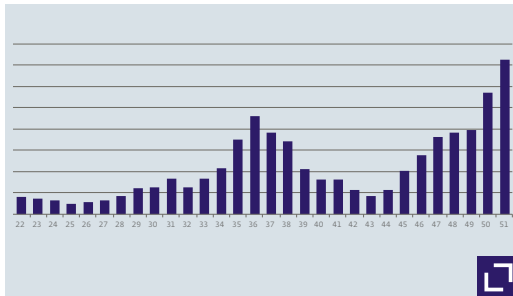
Figures



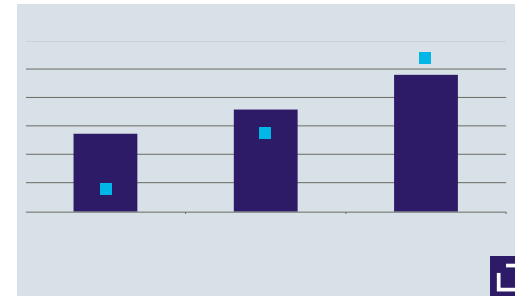
The proportion of interest-only mortgage debt is growing in all age groups
See figure 7 →



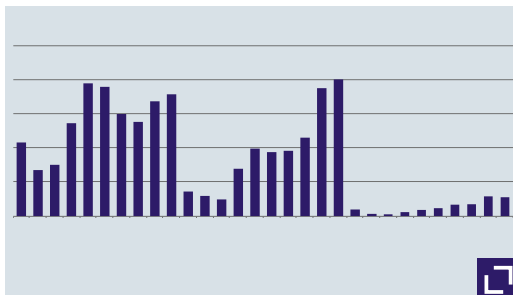
Rise in annual energy costs due to a 60% energy price increase in 2022 by income group
See figure 10 →



A large proportion of the interest-only mortgage debt is due to mature at the same time
See figure 8 →



Correlation between energy price increases, debt service capacity and arrears in banks' loan portfolios
See figure 11 →



Dutch households fix their interest rates for a relatively long period, but almost a quarter of their debt is due to mature in the next five years
See figure 9 →

Figure 1 Development of commodity prices

Spot prices, index year-end 2021=100

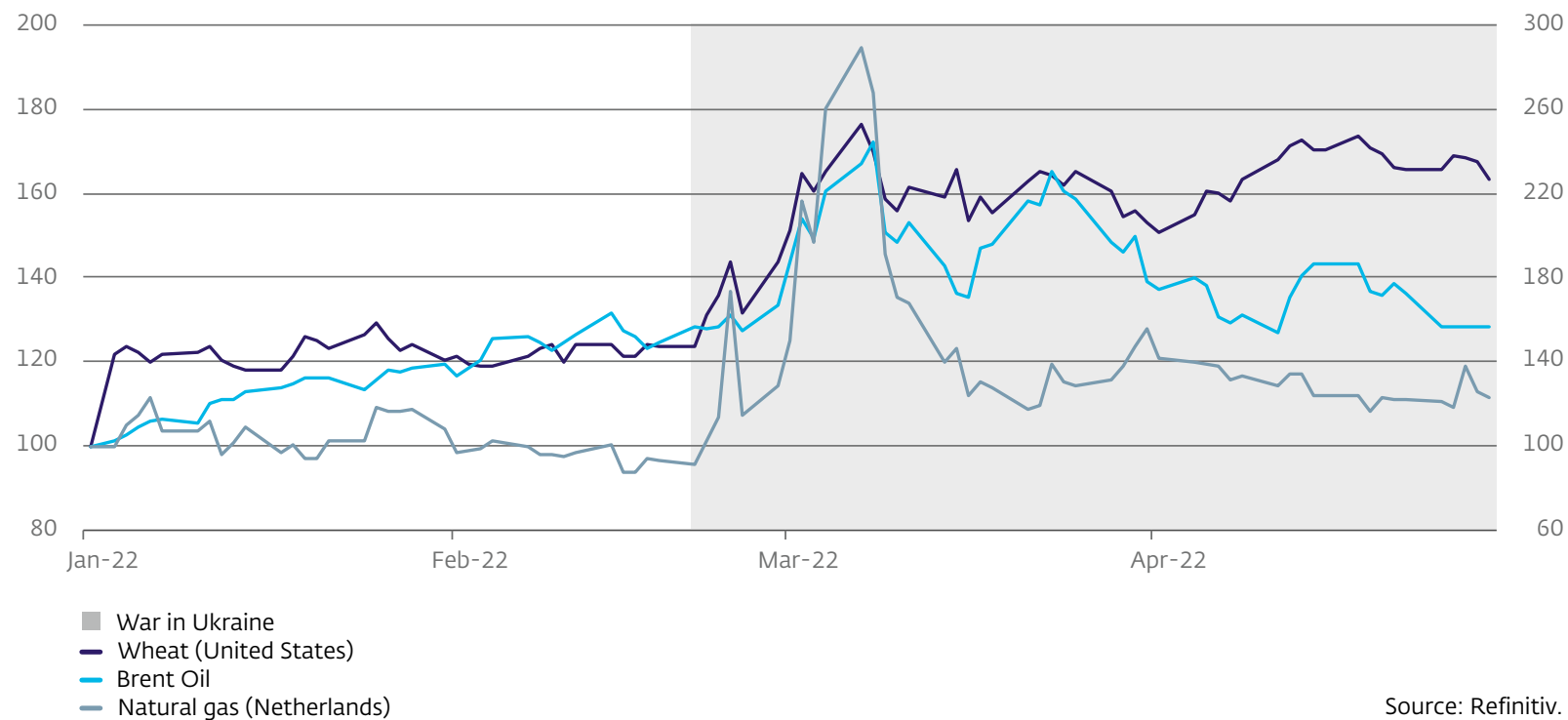


Figure 2 Consumer and producer confidence in the Netherlands

Sentiment indicator

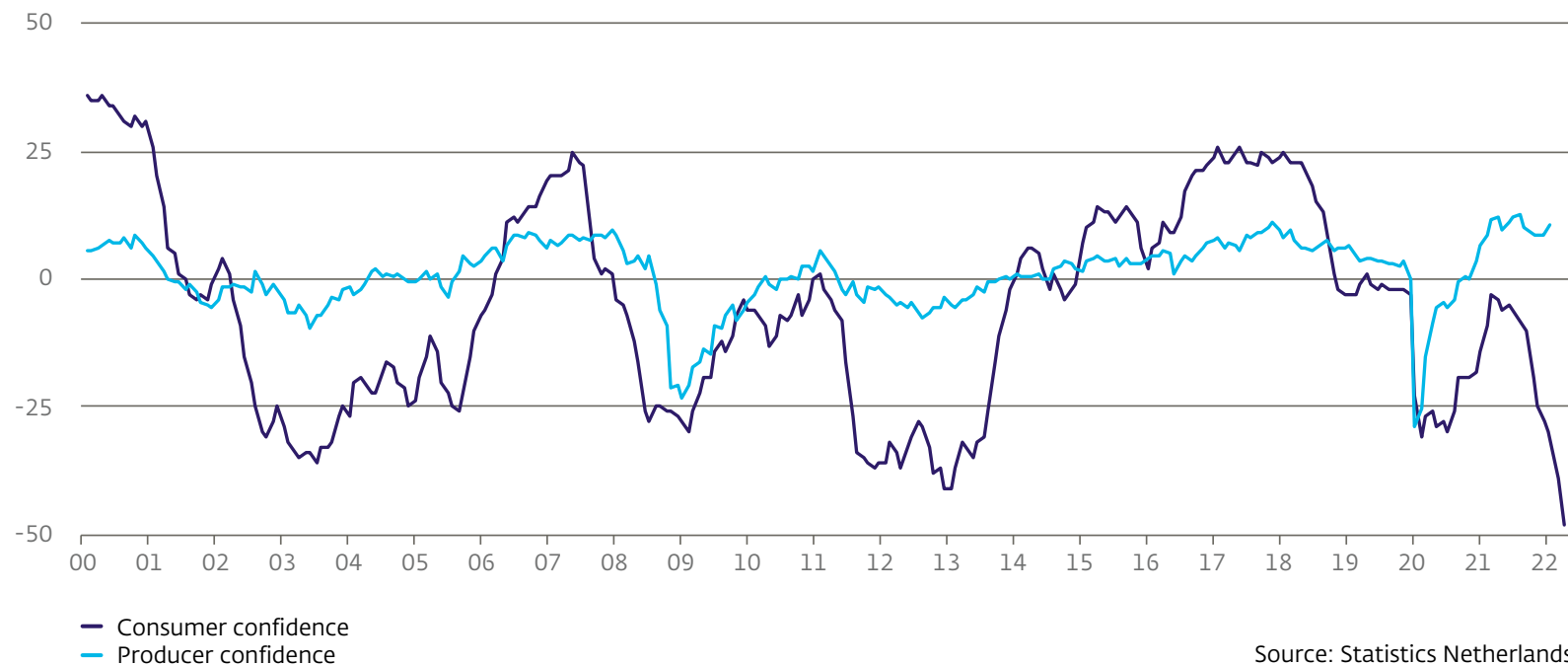
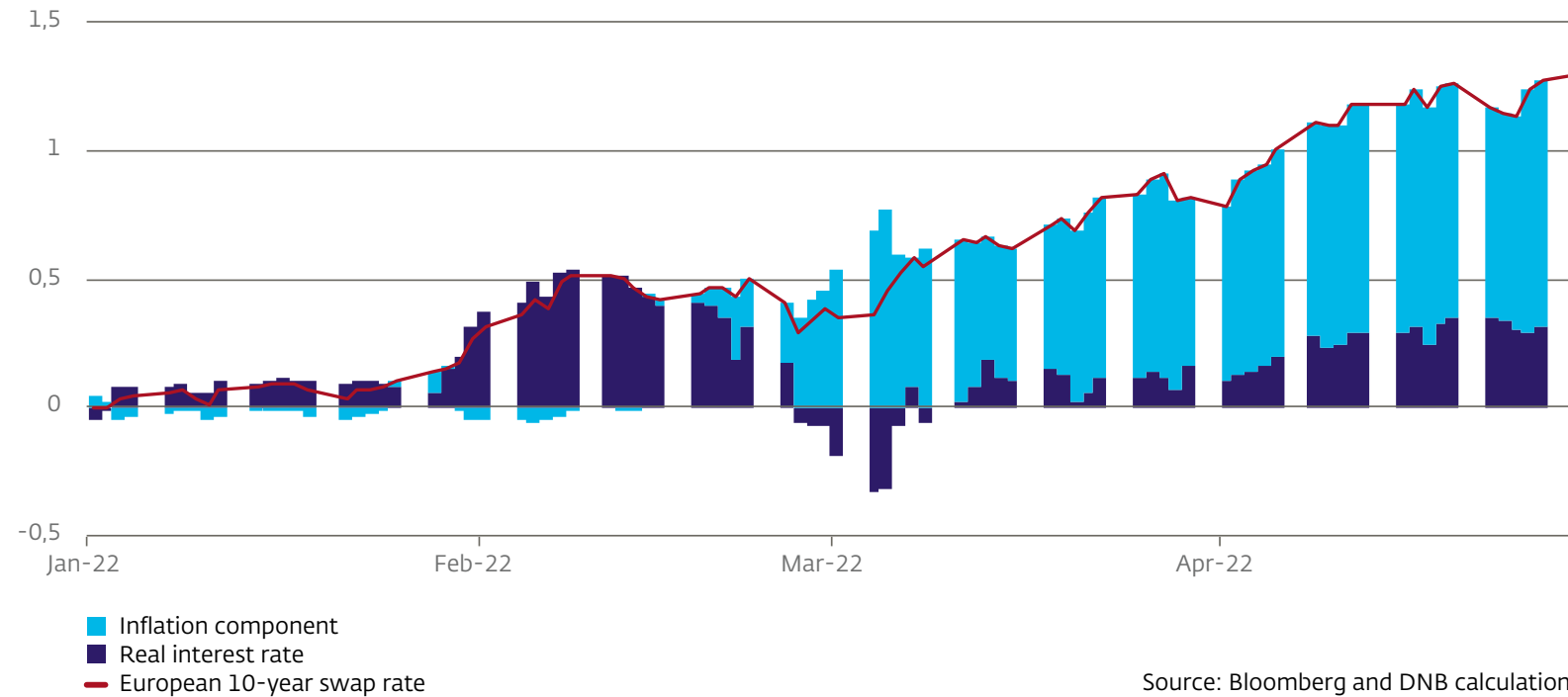


Figure 3 Higher interest rates are mainly driven by inflation expectations

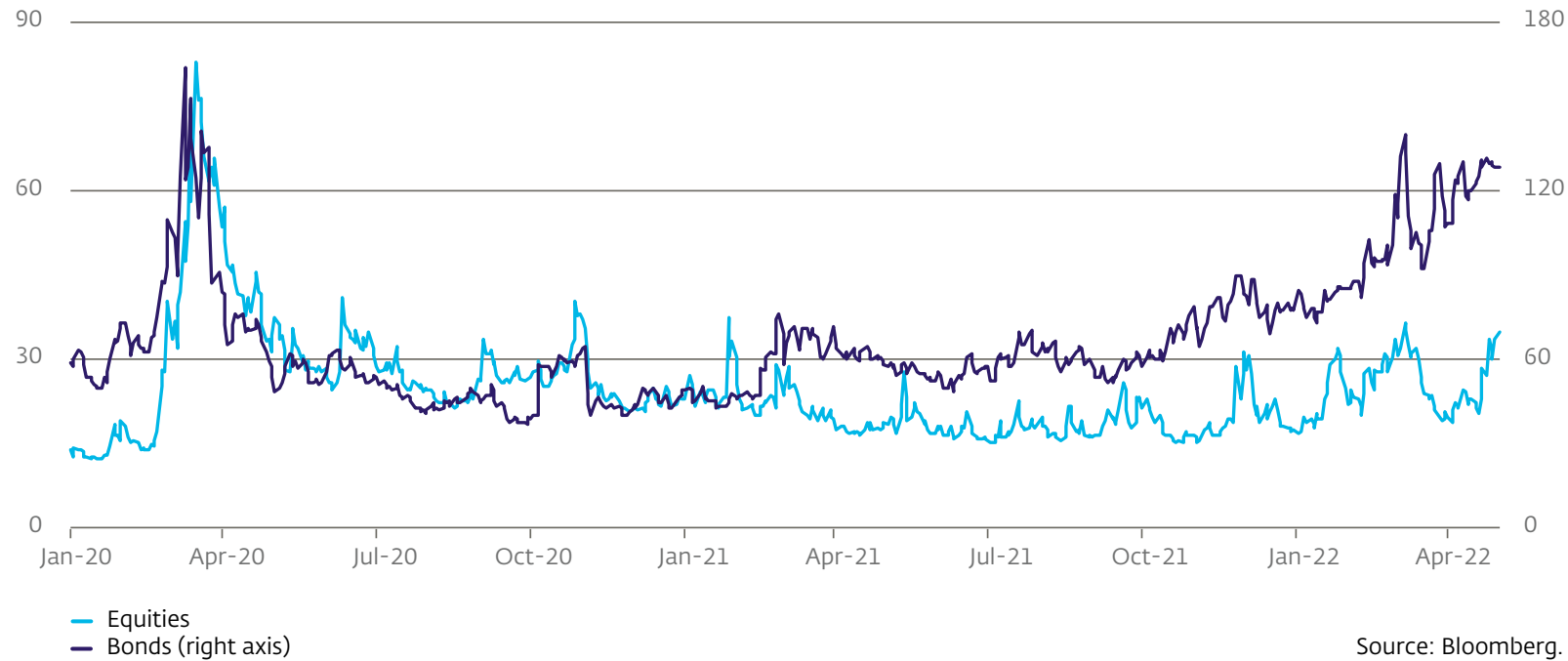
Percentage points



Note: Change in the European swap rate and its constituents compared to early 2022.

Figure 4 Volatility in bond markets is substantially higher than in equity markets

Index



Source: Bloomberg.

Note: implied volatility of bonds and equities in the United States (MOVE and VIX indices).

Figure 5 Decomposition of oil price movements by supply and demand

Cumulative price difference compared to 1 November 2021, US dollars per barrel

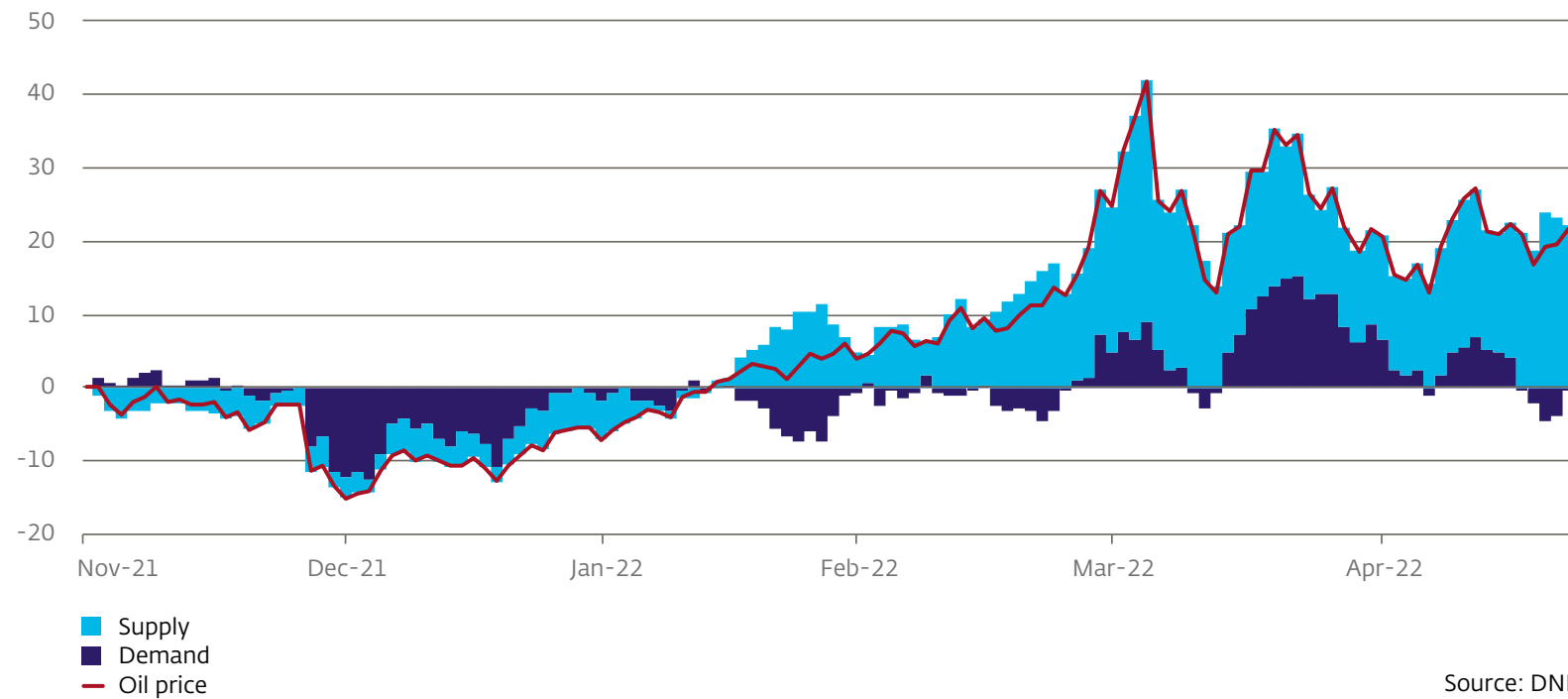


Figure 6 Market capitalisation of crypto assets has increased sharply

USD trillion, percentages

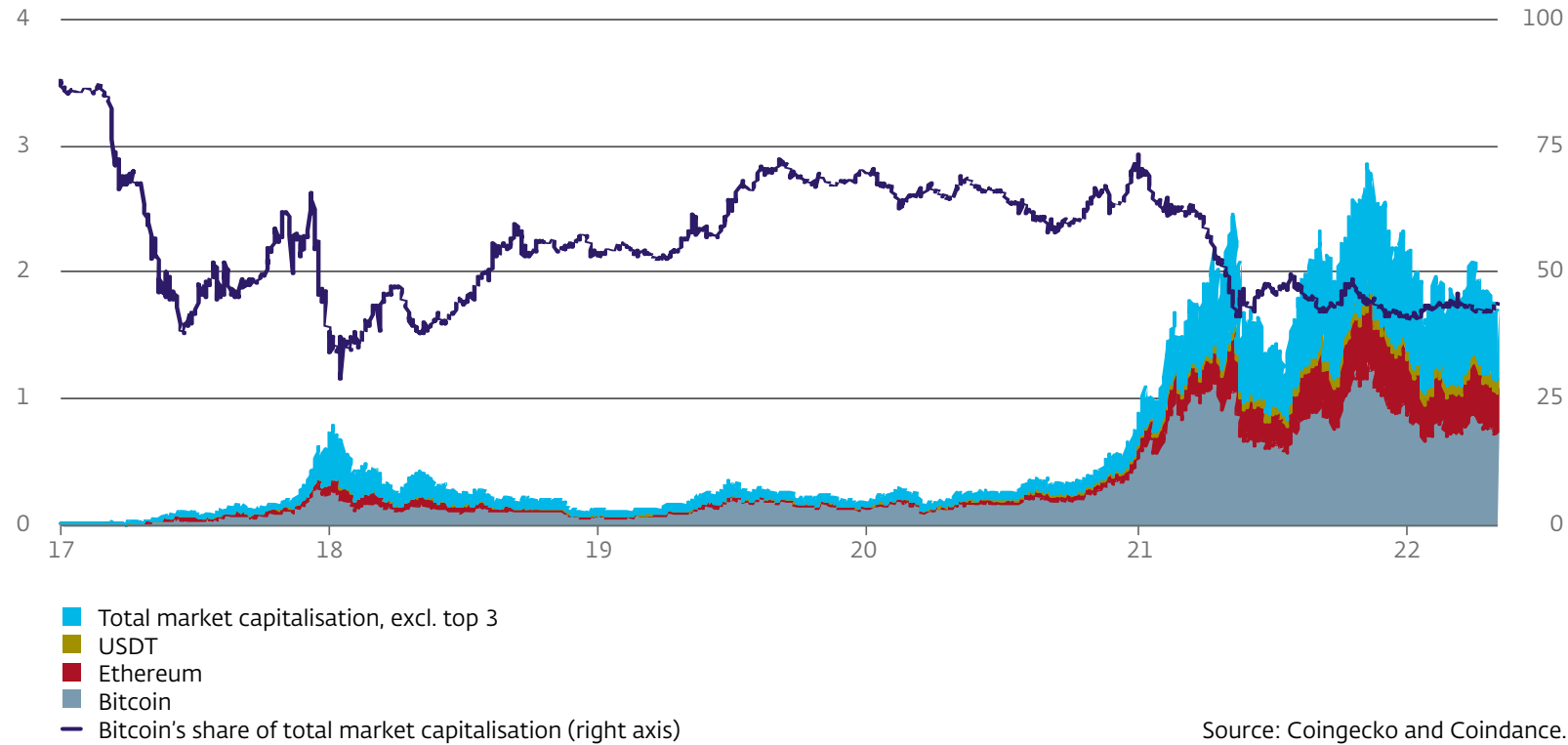
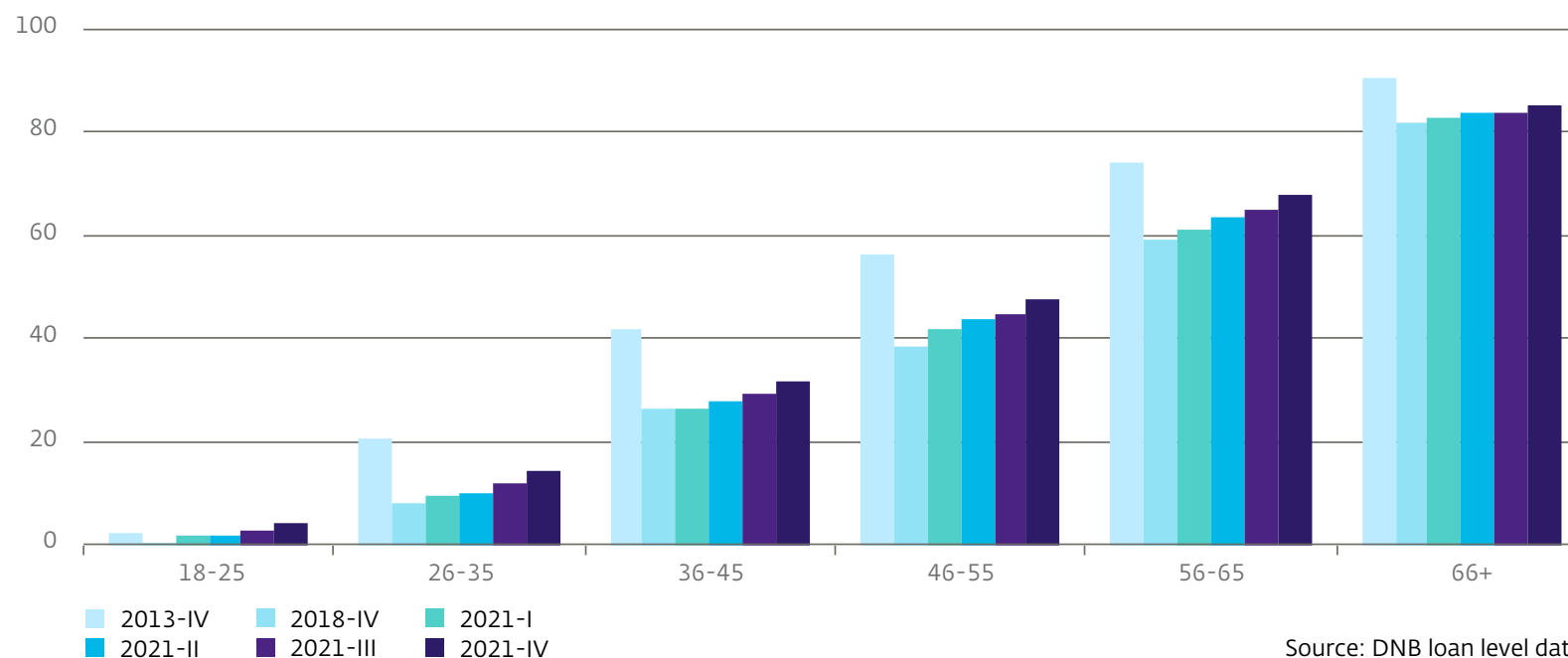


Figure 7 The proportion of interest-only mortgage loans is growing in all age brackets

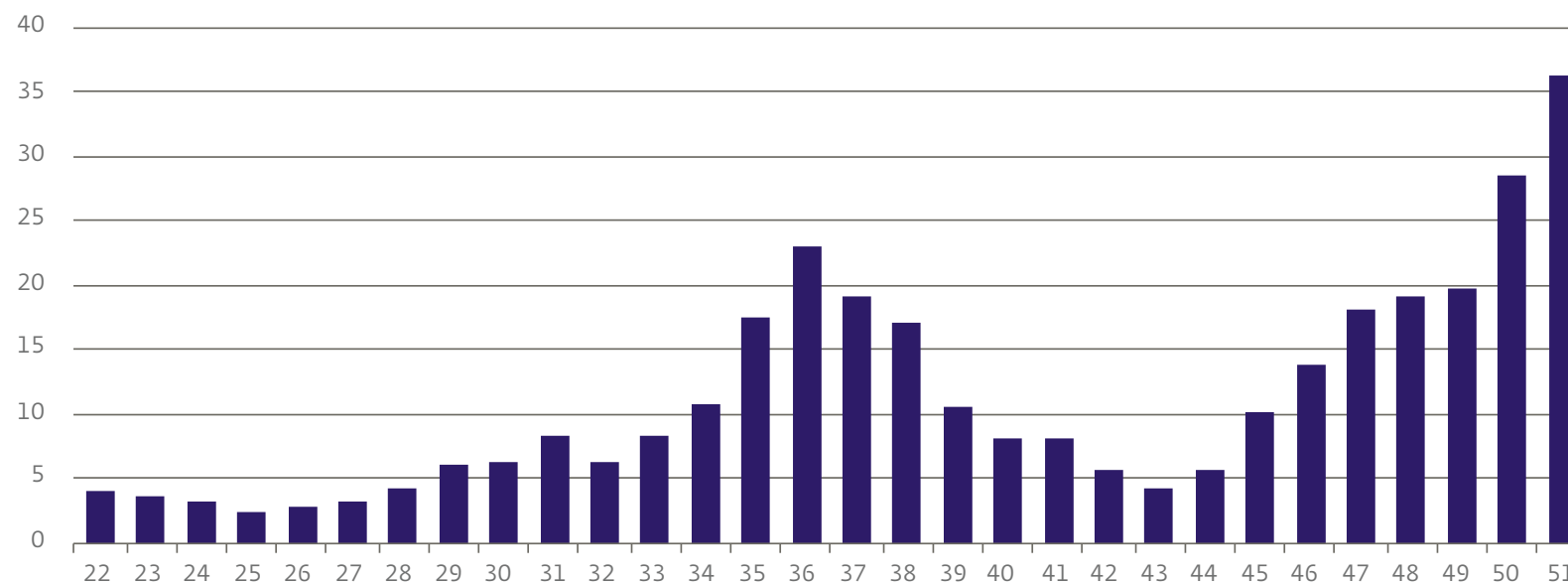
Percentage of mortgage loan production by age bracket



Notes: Figure based on DNB's RRE dataset. The RRE dataset consists of residential mortgages to Dutch households which banks and NN Group have on their balance sheets. The RRE dataset covers more than 75 percent of all outstanding Dutch residential mortgages households.

Figure 8 A large share of the interest-only mortgage debt matures simultaneously

EUR billion

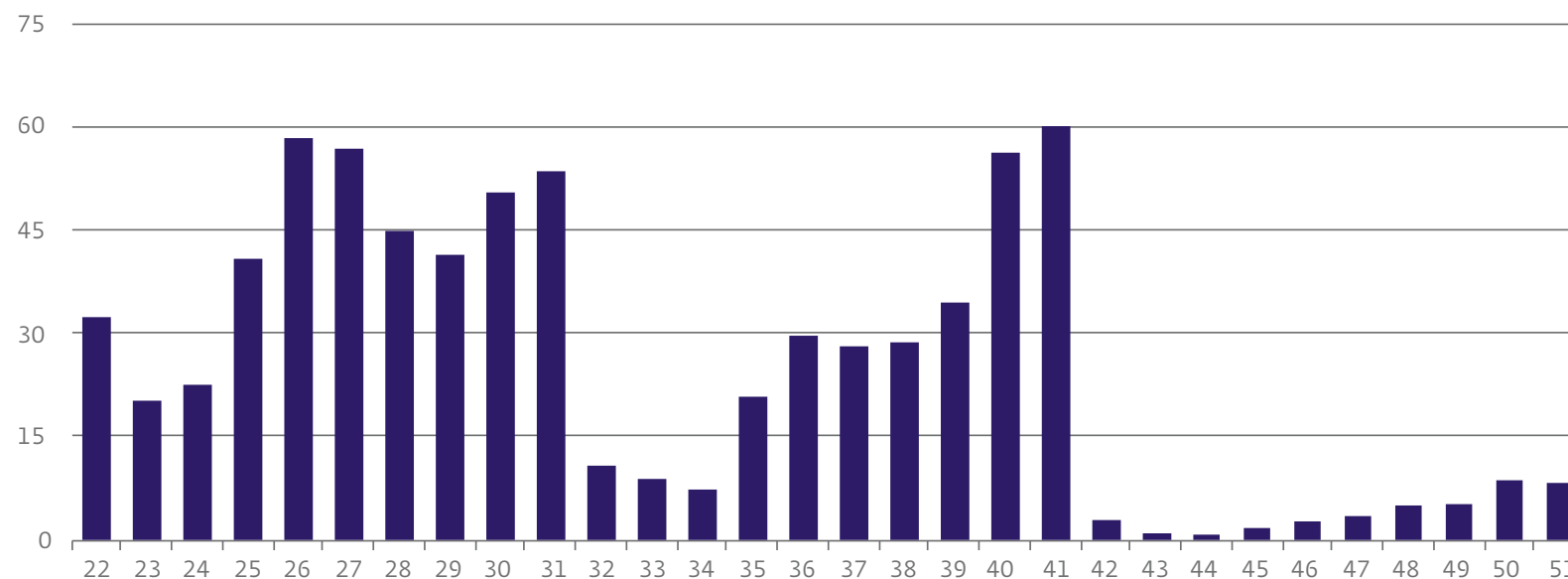


Sources: Statistics Netherlands and DNB loan level data.

Note: Figure shows a projection of the RRE and Mercurius dataset to total mortgage debt of Dutch households (total mortgage debt based on CBS data). The RRE dataset consists of residential mortgages to Dutch households that banks and NN Group have on their balance sheets. The Mercurius dataset consists of residential mortgages to Dutch households that pension funds, real estate funds and insurers have on their balance sheets. The RRE and Mercurius datasets cover approximately 88 percent of all outstanding residential mortgages to Dutch households. The RRE data is based on mortgage information from 2021Q4 and the Mercury data is based on information from 2021Q2.

Figure 9 Dutch households fix their interest rates for a relatively long time, but a quarter of their debt matures in the next five years

Amount of mortgage debt with expiring fixed-interest period (amounts in EUR billions)



Sources: Statistics Netherlands and DNB loan level data.

Note: Figure shows a projection of the RRE and Mercurius dataset to total mortgage debt of Dutch households (total mortgage debt based on CBS data). The RRE dataset consists of residential mortgages to Dutch households that banks and NN Group have on their balance sheets. The Mercurius dataset consists of residential mortgages to Dutch households that pension funds, real estate funds and insurers have on their balance sheets. The RRE and Mercurius datasets cover approximately 88 percent of all outstanding residential mortgages to Dutch households. The RRE data is based on mortgage information from 2021Q4 and the Mercury data is based on information from 2021Q2.

Figure 10 Rise in annual energy costs due to a 60% energy price increase in 2022 by income bracket

In euro, percentages

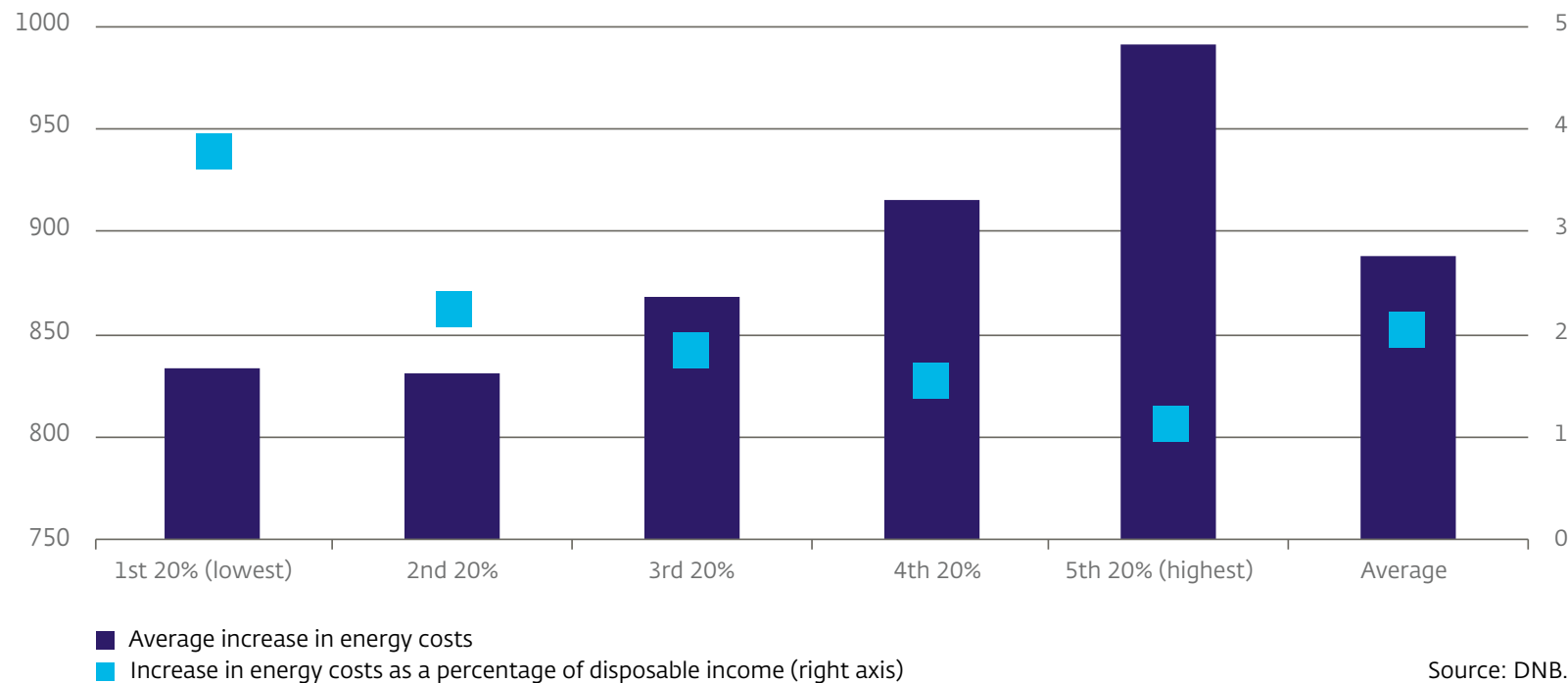
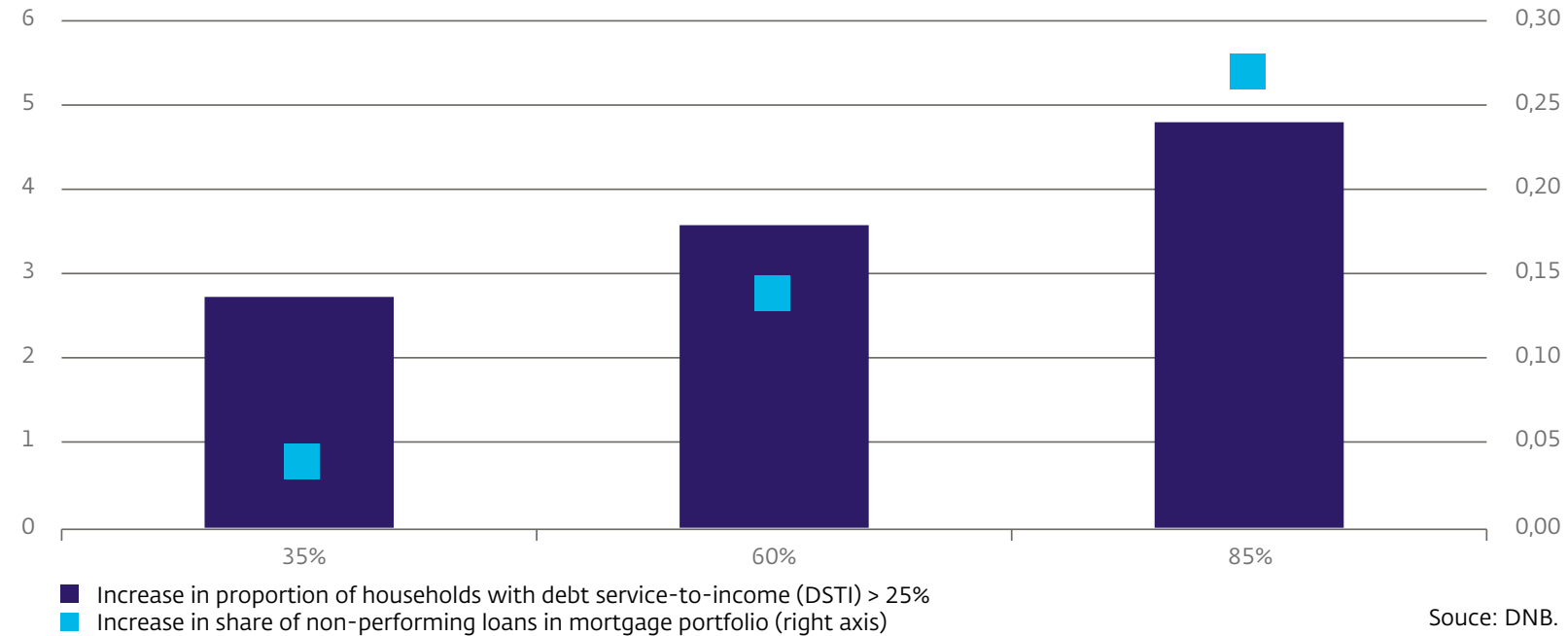


Figure 11 Correlation between energy price increases, repayment capacity and arrears in banks' loan portfolios

Percentage points



2 Financial institutions

The economic and financial consequences of the war in Ukraine are again testing the resilience of financial institutions, which have so far weathered the successive shocks well. The financial sector has proved resilient to the economic impact of the COVID-19 crisis. The war in Ukraine is once again putting financial institutions to the test. The Dutch financial sector's direct exposures to Russia and Ukraine are limited, but the indirect impact will depend very much on the further course and consequences of the conflict. Box 2 explains these direct and indirect risks to the Dutch financial sector.

2.1 Banks

Dutch banks have weathered the economic impact of the COVID-19 crisis well. For example, Dutch banks' capital and liquidity positions remained well above the statutory minimum requirements during the pandemic (Figure 12). Dutch banks' average core capital ratio increased during the COVID-19 crisis from 16.9% in the fourth quarter of 2019 to 17.7% in the fourth quarter of 2021. The liquidity coverage ratio, a key measure of banks' liquidity position, rose from 145 to 166 during this period. The Dutch banking sector is thus better capitalised than the EU average (15.7% in the third quarter of 2021).

Box 2 Dutch financial sector's exposures to Russia and Ukraine

Thomas van den Berg and Dylan Pastoor

The total direct exposures of the Dutch financial sector to Russia are limited. The exposure to Russia across all sectors (banks, pension funds, insurers and investment firms) had already decreased following the annexation of Crimea in 2014. This is most noticeable among banks, which had a low exposure of around 0.2% of total bank exposures and the end of 2021. The direct consequences of the conflict for the Dutch financial sector are therefore limited, although there are differences at the level of individual banks. 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. The aggregate exposures of the Dutch financial sector to Central and Eastern European countries are also limited, however. The total 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.

The Dutch financial sector's exposure to energy-sensitive business sectors is limited relative to total assets. Rising, volatile energy prices may increase the credit risk for financial institutions. For energy-sensitive sectors, energy costs are high relative to total revenues. The ECB has conducted research to identify the sectors that are considered energy-sensitive⁷. Dutch financial institutions have approximately 15% of their total assets exposed to these sectors.⁸ This is a conservative approximation that does not differentiate in terms of energy-intensity between companies within sectors. The actual exposure to energy-sensitive companies will therefore be lower rather than higher. Moreover, certain energy-sensitive companies, such as those

⁷ Agriculture, mining, manufacturing, water distribution, wholesale and retail trade, transport and storage, accommodation and food service activities, recreation and other services.

⁸ This concerns the exposures of banks, insurers, pension funds and investment firms. Exposure to energy-sensitive sectors through foreign investment institutions was also examined.

active in mining and quarrying, may also benefit greatly from increased prices and volatility.

Non-bank operators also have limited direct exposures to Russian assets. European funds held around €38 billion of Russian assets at the end of 2021, which is relatively little as a share of total assets under management. The exposures of open-ended funds are particularly important, as these entities often allow daily withdrawals and are therefore vulnerable to any drying up of liquidity. The exposures are also concentrated in specific groups of funds. Funds with a focus on emerging markets, in particular, have seen bigger withdrawals in recent months, while at the same time having a very limited ability to value assets. If a fund consequently gets into difficulty, it may close for withdrawals in accordance with its prospectus. While most funds have seen relatively limited withdrawals since February, two Dutch funds have suspended them. In Europe, a number of funds were

forced to close for withdrawals, mainly due to problems in valuing Russian assets.

The sanctions also have an operational impact on financial institutions, but Dutch institutions report that they are well able to implement the sanctions. Institutions and companies are expected to comply with the sanctions. This means they must properly monitor transaction counterparties and freeze assets of Russian entities and individuals on the sanctions list. As of 19 May, DNB had received 2,160 notifications of sanctions and Dutch financial institutions had frozen assets worth €636 million and stopped transactions worth €480 million. The non-financial sector is also expected to comply with the rules on sanctions. Institutions must also be particularly vigilant in their know your customer (KYC) procedures, as there is a risk that companies on the sanctions list will attempt to use structures to circumvent the sanctions.

Furthermore, in the last quarter of 2021, banks' lending book grew again (3.2%, y-o-y) for the first time since the COVID-19 crisis. New corporate loan origination is also increasing, although there are large differences between sectors that have been impacted to a greater or lesser extent by the containment measures. The fact that the banking sector has been able to absorb an unexpectedly large shock is partly due to the reforms to the prudential framework that have been implemented following the financial crisis at national and European level and have made the banking sector more resilient. For example, additional (systemic) buffers were introduced and additional requirements were imposed. The monetary, fiscal and prudential policy response also limited the impact of the COVID-19 crisis on the economy and hence on the Dutch banking sector.

Although the final COVID-19 support measures have been withdrawn, this is not expected to lead to a significant increase in non-performing loans (NPLs).

The phasing out of support measures shows that the COVID-19 crisis is slowly coming to an end.

For example, the government discontinued the generic support measures, such as the NOW scheme, on 1 April 2022. Although this may lead to an increase in NPLs in some sectors (such as hospitality and accommodation), no large-scale cliff effects are expected. The Tax Administration has also announced that deferred taxes of €19 billion will have to be repaid as of 1 October 2022 over a period of five years. We believe that around 7.5% of businesses are at a high risk of encountering problems in repaying this tax debt.⁹ The government itself recently said it expects a tax shortfall of €6 billion. These repayment problems may push the number of NPLs higher to the extent that these businesses also have bank loans. Meanwhile, the number of corporate insolvencies has been at an all-time low for some time: in 2021, around 1,500 business were declared bankrupt, compared to around 3,200 in 2019. The increase in NPLs is to some extent a catch-up effect consistent with the normalisation of economic conditions, coupled with an expected rise in bankruptcies in some sectors.

At the same time, banks' credit quality may come under pressure from the war in Ukraine. While the Dutch banking sector's exposures to the directly affected countries may be limited (see [Box 2](#)), the war in Ukraine may affect the macroeconomic momentum (see also [Macrofinancial environment](#)). The credit quality of the Dutch banking sector may deteriorate, particularly as a result of second-order effects.¹⁰ Companies that are heavily dependent on gas, such as greenhouse horticulture or chemical companies, may be squeezed in the short term. Rising energy prices may put profit margins under pressure. Banks should maintain adequate provisions for this in good time. In the longer term, high inflation and a slump in consumer confidence may result in lower economic growth, also affecting banks. The war in Ukraine has also increased banks' funding costs.

In addition, banks face a number of challenges that increase the pressure on profitability. Banks' profitability is currently robust and emerging market interest rates may have a positive effect on profitability over the longer term (see [Box 3](#) for an analysis of the impact of high inflation and rising interest rates on banks. Higher interest expenses may nevertheless impair the debt sustainability of businesses and households and lead to an increase in bankruptcies. A number of structural developments, such as the energy transition, digitisation and BigTech, may also put pressure on profitability. Banks also face significant operational challenges, especially as a result of the sanctions recently imposed on Russia and Belarus and their implementation.

⁹ See DNB (2022). De Invloed van het corona steun- en herstellepakket op het Nederlandse bedrijfsleven.

¹⁰ See also DNB (2022). Consequences of the war in Ukraine for the economy of the Netherlands

Box 3 The consequences of high inflation and interest rate rises for Dutch banks

Francesco Caloia, Remco van der Molen and Alessandro Pollastri

Banks' profitability has been under pressure in recent years due to the persistently low interest rates. At the end of 2021 this downward trend halted and interest rates have been rising since then. Interest rates rose rapidly, particularly following the outbreak of the war in Ukraine, partly as a result of the substantially higher inflation and market participants' expectations for the subsequent policy responses from central banks. In such a situation a rise in interest rates is not necessarily favourable for banks. High inflation and underlying supply problems have a depressive effect on economic growth. This puts pressure on bank incomes. Moreover, an interest rate rise does not immediately lead to higher interest income for banks, because many loans have an interest rate that is fixed for a long period. In this box we set out the consequences of an interest rate rise and high inflation for banks on the basis of a stress test.¹¹ We look at interest income, credit risk and valuation effects.

Scenario: high inflation and an upward interest rate shock
The stress test assumes a macroeconomic scenario in which long-term disruptions to energy and commodities markets lead to substantially higher inflation and put a brake on international economic activity. This stress scenario is based on the alternative scenario from the updated projection for the Dutch economy, which we [published](#) in March 2022.¹² This scenario has inflation at 9.5% and 3.4% in 2022 and 2023 respectively. An upward interest rate shock of 200 basis points was then added to this stress scenario at the beginning of 2022, and the economic consequences were calculated over the following three years using the Nigem macroeconomic model. The interest rate rise is largely due to the assumed monetary tightening by central banks in response to the persistently high inflation. The higher interest leads to lower GDP growth (0.7 percentage points over three years), causing unemployment to rise by 0.4 percentage points. The assumed additional interest rate rise in the stress scenario takes the

capital market interest rate at the end of 2024 to 2.8 percentage points, more than 280 bps higher than at the end of 2021. By comparison, the 10-year swap rate has risen by more than 100 bps since the end of 2021, the start of the projection period (see [Figure 3](#)).

Effect on interest income

In the stress scenario the interest rate rise leads to lower net interest income in the short term. A higher interest rate is in principle beneficial for banks' profitability. An interest rate rise poses a risk in the short term, however, due to the maturity mismatch between assets and liabilities. Banks' assets, such as mortgage loans, generally have a longer maturity than the liabilities, such as deposits and market finance. As a result, banks' interest expenditure may increase faster than interest income when interest rates rise. Dutch banks have largely hedged this interest rate risk by means of derivatives. In addition, the ultimate effect depends greatly on how long banks can hold off before increasing their deposit

¹¹ The stress test was conducted on the basis of data from the four largest Dutch banks (ING, Rabobank, ABN Amro and Volksbank). They collectively make up 85% of total Dutch banking sector.

¹² The developments up to 9 March have been included in this scenario as far as possible.

interest. This is uncertain, and it is difficult to predict how savers and businesses will react to differences in deposit interest rates between banks. This applies all the more to the current, exceptional situation in which deposit interest rates are often zero or even negative. In the stress test we assume that banks will be required to raise their deposit interest rates faster than in previous periods of rising interest rates. As a result, banks' net interest income will fall in the short term.

Effect on credit risk and credit losses.

The interest rate rise causes the credit risk of loan portfolios to increase. This is partly a direct effect, since households and businesses have to contend with higher interest expenses. There is also an indirect effect, since the interest rate rise leads to lower economic growth and higher unemployment. Both effects increase the probability of default (PD). High energy prices can also lead to higher defaults, both directly, because households and businesses have less money to meet interest and loan repayments, and indirectly, because higher energy prices constrain economic growth (see [Housing market](#)). In this analysis we take specific account of the effect of homeowners' higher energy bills on

mortgage defaults. This shows that the direct effect is considerably smaller than the indirect effect. Furthermore, since the value of the collateral rises more slowly, the possible loss in the event of default is greater (loss given default, LGD). The higher PD and LGD lead to an increase in credit losses. The increase in credit risk also means that banks' risk-weighted assets (RWA) increase. Since the amount of capital the banks hold is compared to the RWA, their capital ratio deteriorates as a result.

Valuation effects

An interest rate rise also affects the value of financial instruments on banks' balance sheets, to the extent that they are carried at the current market value. This applies particularly to government bonds, which are worth less when interest rates rise, but also to derivatives. In total almost 20% of the assets of the Dutch banking sector and 10% of its liabilities are carried at the current market value. We calculate the valuation effects on the basis of the term of the instruments reported by banks, also taking account of asset and liability derivatives. On this basis we conclude that valuation effects pose a minor risk to Dutch banks. This is because only a limited part of the assets are affected, and because

the impact is largely offset by the positive valuation effect on liabilities and derivatives. Moreover, the valuation effect diminishes over time. The valuation shock is most pronounced immediately after the interest rate shock and then gradually diminishes, because the price of a fixed-income financial instrument moves closer to the nominal value as time elapses. The loss of value in the first year is therefore largely made up in the subsequent years.

Effect on capital ratios

Banks' capital position decreases in the stress scenario by 3.3 percentage points. Half of this decrease can be attributed to the interest rate shock; the other half is caused by the economic consequences of the sharp rise in energy and commodity prices. The decrease in the CET1 capital ratio is particularly the consequence of the increase in credit losses. The heavier risk weighting also contributes substantially to the decrease in the average capital ratio. The effect of the losses as a result of market risk is limited. Operating profit still contributes to the capital position, but less than in the baseline due to the negative effect of the interest rate rise on net interest income. Dutch banks appear to be well able to absorb the impact of this stress scenario.

Figure 13 Impact on capital position after three years

Percentage of risk-weighted assets



Source: DNB.

The average CET1 capital ratio of Dutch banks in the stress scenario ultimately falls from 16.6% to 13.3% (Figure 13). This means banks would still have room to absorb additional losses, and remain able to maintain lending levels.

Amsterdam Trade Bank (ATB) failed due to disruptions to its operations as a result of the sanctions. Amsterdam District Court declared ATB bankrupt at the bank's own request on 22 April 2022. ATB was a financially sound bank, but the sanctions imposed seriously disrupted its business operations. ATB's customers are protected up to €100,000 by the Dutch Deposit Guarantee (see also [Box 4](#)).

Finally, the cyber risk to which banks and other financial institutions are exposed has increased.

Due to their important role in the economy and the possibility that hackers could gain access to large sums of money, financial institutions run a relatively high risk of cyberattacks. The war in Ukraine and the increase in geopolitical tensions have further increased the cyberthreat. Cyberattacks are a powerful weapon and can be used by governments to disrupt the economy and financial system in other countries. Financial institutions may then be affected. In addition, the financial sector may be directly impacted by attacks on third parties, such as ICT service providers. The trend towards outsourcing of digital business processes makes financial institutions more vulnerable to disruptions. We are currently investigating with the aid of a stress test for Dutch banks how a cyber incident could lead to a systemic crisis. The results of this test will be published in the near future.

Box 4 Bankruptcy of Amsterdam Trade Bank leads to first pay-outs under overhauled Deposit Guarantee

Ivy Jeuken, Olav Scholten, Thijs Stegeman, Sven Stevenson

The Dutch bank ATB has been declared bankrupt.

Fortunately, banks do not fail very often in the Netherlands. The previous bank failure was that of DSB Bank, which was declared bankrupt in 2009. ATB was a financially sound bank, partly as a result of the substantial reserves that it held by agreement with DNB. The fact that ATB was nevertheless declared bankrupt is due to the direct and indirect consequences of the sanctions, particularly those imposed by the authorities in the United States and the United Kingdom on Russian individuals and companies with Russian shareholders following the invasion of Ukraine. The receivers appointed by Amsterdam District Court are now liquidating ATB's assets.

The sanctions seriously disrupted ATB's business operations. ATB could not be sure of continued access to essential information systems requiring software licences, particularly from American and British service providers. Various service providers terminated their services to ATB or threatened to do so imminently. ATB saw no possibility of finding alternative service providers in the near term.

The upheaval and the resulting uncertainty led to various employees terminating their contracts with ATB or considering doing so in the near future. Operations consequently came under further pressure. A number of systemically important Dutch banks also refused transfers from ATB savings accounts. ATB's payments activity was consequently severely constrained. It was ultimately forced to file for bankruptcy.

Due to the rising tensions between Ukraine and Russia and the possible consequences, DNB intensified its supervision of ATB from February 2022.

We required more extensive and detailed reporting by the bank on the operational and financial consequences of the sanctions. The necessary guarantees from ATB were also sought to show that it could continue to comply with transaction monitoring and the freezing of deposits and payments to sanctioned persons as described in the sanctions regulations. Bankruptcy was nevertheless ultimately unavoidable in view of the aforementioned serious disruption to the business operations.

ATB customers' savings are protected up to €100,000 by the Dutch Deposit Guarantee. Money on accounts at Dutch banks is protected up to €100,000 per person per bank. The Dutch deposit guarantee is a form of consumer protection and thus contributes to financial stability. Account holders do not have to worry about losing their money in the event of a bank failure, at least up to the maximum protection level. The deposit guarantee thus minimises the risk that account holders will seek to withdraw their savings en masse. ATB had around 23,000 active account holders, with a total of around €700 million being protected by the deposit guarantee. It is notable that ATB was providing cross-border services for almost 6,000 customers in Germany when it failed.

The failure of ATB led to the first pay-out under the overhauled deposit guarantee scheme. After the 2008-2009 financial crisis, lessons were drawn at European level on the optimum design of the deposit guarantee scheme. Key changes include a shorter pay-out period and the compulsory accumulation of the Deposit Guarantee Fund. As a result of the short

pay-out period, the majority of ATB customers were able to access their money again within 10 working days, whereas in 2009 customers had to wait up to three months for a pay-out. By 23 May, about 95% of deposits and 80% of customers had been paid out. In addition, the pay-out procedure for most customers has been automated and is available through a web portal, so application forms are not necessary in many cases. As a result of the fund structure, the money is available to be paid out immediately and the banks' funding of the deposit guarantee is less procyclical.

Pay-outs to account holders abroad are more complex. This is an issue, particularly because the Dutch banking sector is very Europe-oriented. Most Dutch banks operate in other European member states through branches and/or cross-border services. New pay-out techniques could help to further accelerate the process for these foreign customers. Developments in online identification, such as the European eIDAS initiative, can help in this regard and are important also to guarantee optimum consumer protection through the DGS in the future.

a clear picture of insurers' underlying vulnerabilities (see also [Policy](#)).

The higher inflation and interest rates also have consequences for the business model and financial position of insurers. Although the impact on each insurer differs, higher interest rates may ultimately be positive. Persistent low interest rates have for a long time been the main challenge for insurers. Many insurers have issued long-term guarantees in the past and in a long-term low interest rate environment there is a risk that they will not be able to fulfil these guarantees. Low interest rates also mean that insurers need to sell new life insurance policies with relatively high premiums in order to maintain profitability. Higher interest rates can thus be positive for the business model. In addition, a higher market interest rate narrows the difference relative to the interest rate at which insurers value their liabilities (using the Ultimate Forward Rate and the Volatility Adjustment). The UFR effect in particular decreases when interest rates are higher. If a large interest rate rise occurs in a short period, this can give rise to liquidity risks for life insurers, as a result of margin calls on their interest rate derivatives. The increased inflation also has

2.2 Insurers

The solvency of insurers comfortably exceeds the statutory requirements but does not always provide a full picture of the underlying vulnerabilities. The average solvency ratio is 199% for life insurers and 180% for non-life insurers and has not changed materially since the Solvency II framework was introduced in 2016 ([Figure 14](#)). Although the exposures to Russian assets are limited ([Box 2](#)), insurers may be affected indirectly by the war in Ukraine, for example by increased inflation risks or lower asset prices. These risks have

not yet led to a deterioration in solvency, however. The results of the EIOPA stress test, published at the end of 2021, also show that Dutch insurers are resilient to the scenario in the test.¹³ Although the impact of the EIOPA scenario on Dutch insurers was limited in terms of both solvency and liquidity, and lower than the European average, it should be noted that it was substantially mitigated by the Long-Term Guarantee measures. The use of the Ultimate Forward Rate and the Volatility Adjustment means that the statutory solvency and stress test results do not always provide

¹³ See EIOPA (2001). Forty-four European insurers participated in the stress test, including Aegon, Nationale Nederlanden and Achmea. At national level ASR and Athora also took part in the stress test. The scenario includes a decline in swap rates, divergence in government interest rates, widening credit spreads and sharp falls in the value of equity and real estate.

consequences for insurers. For life insurers inflation can lead to higher claims on pension products and insurance contracts indexed for inflation. This does not apply to liabilities in nominal terms, where the risk is borne by the policyholder. In the case of non-life insurers inflation can lead to higher-than-expected claims. Inflation also leads to higher cost assumptions. Both types of inflation can lead to lower solvency risks if they are not mitigated by means of premium increases or other measures. Rising or surging interest rates and inflation can also impact insurers' asset portfolios as a result of corrections to market valuations. In the second half of the year we will publish a study on the financial position and role of insurers in the Dutch economy.

2.3 Pension funds

The recovery in the funding ratios of pension funds has continued. The rise in interest rates is the main factor in this recovery. Since the term of the pension funds' liabilities is substantially longer than that of the investments, interest rates play an important role in the development of the funding ratio. Since the end of March 2020, just after the sharp fall caused by the COVID-19 crisis, the funding ratio has risen by 29 percentage points (Figure 15, left). The policy funding ratio the end of March was 111%. The number of pension funds with a funding ratio below 105% has fallen further (Figure 15, right).

Although the high inflation has no direct impact on funding ratios, it squeezes the pension's purchasing power. Given the current framework, with a focus on nominally secure claims, high inflation has no direct impact on pension funds' funding ratios. However, high inflation erodes the real value of assets accrued within pension funds. Inflation and interest rate developments can also have a negative impact on the value of pension funds' investments. The proposed regulations would enable pension funds to start indexation earlier, but this is not a *free lunch* and would need to be considered carefully by each pension fund.

The transition to the new pension system will demand the full attention of the pension sector in the period ahead. Fleshing out the details of the pension agreement represents an important step towards a more future-proof pension system, with fewer inter-generational tensions and better alignment with the changing labour market. The strong points of the current system are also retained, such as mandatory membership, collective administration and a collective investment policy. At the end of March, the minister presented the details of the incorporation of the pension agreement in the Future Pensions Act to the House of Representatives for scrutiny. Depending on the legislative process in the House of Representatives

and the Senate, the new legislation is expected to come into force on 1 January 2023. The social partners and pension providers will then have four years to adapt pension schemes to the new legislation, i.e. until 1 January 2027.

Given the advantages of the new system, it is important to press ahead with the reform, even though indexation is in prospect again. Rising funding ratios mean less likelihood of cuts to pension rights and more prospect of pension indexation. The transition to the new remains important, however, because the rising interest rates and funding ratios provide no solution to the structural problems in the current system. In the run-up to the transition to the new system, pension funds will be offered the possibility of earlier indexation. Because earlier indexation entails a redistribution between participants and affects the resources available within the fund to ensure a balanced transition, it is important that these generation effects are assessed and considered in the transition and any indexation.

2.4 Non-bank financial intermediation

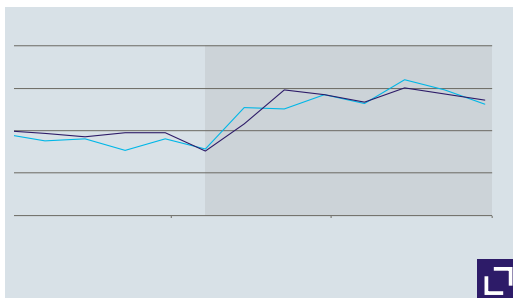
Large-scale, forced sales by funds can trigger market turbulence and cause liquidity to dry up.

The spring of 2020 saw a downturn in market sentiment due to the outbreak of the COVID-19 pandemic, resulting in strong demand for liquidity. Some investment funds were forced to liquidate their positions rapidly amid falling prices (fire sales) in order to meet their obligations and restore liquidity buffers. The outflow was exacerbated by inherent vulnerabilities in the structure of certain funds. Central bank intervention was necessary to restore the proper functioning of the market. The policy response to this turbulence, on both a global and European level, is still ongoing and the structural vulnerabilities in non-bank financial intermediation have not yet been sufficiently addressed (see also [FSR Spring 2021](#)). Full liquidation of funds can create unnecessary stress in markets.

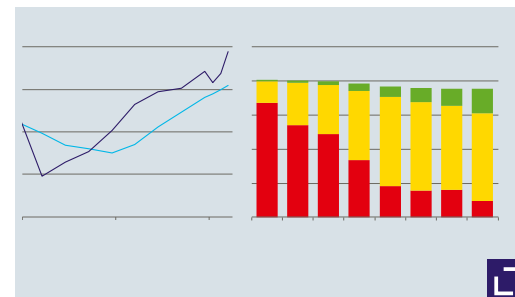
Liquidity problems due to increased margin calls in energy and commodity markets have proved manageable for the time being, but liquidity remains limited. Sharp rises in prices of energy and commodities, such as nickel, triggered rapid changes in the value of derivative contracts. This led to increased margin calls for some traders. In 2021 an international working group presented its findings on the operation of margin calls for consultation, with an emphasis on predictability, transparency, volatility and liquidity management.¹⁴ The recent market stress provides an opportunity to further strengthen this report and the identified follow-up. In addition, ESMA, the European markets authority, has announced an investigation into concentration risk in the energy and commodity markets and the countering of procyclical effects of margin models.

¹⁴ BCBS, CPMI and IOSCO (2021), Review of margining practices.

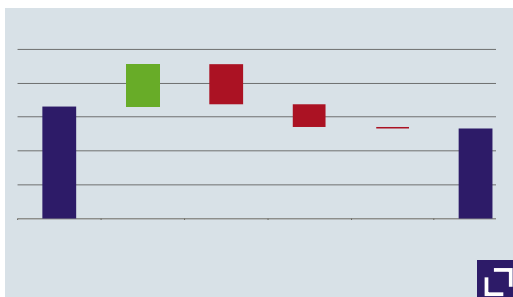
Figures



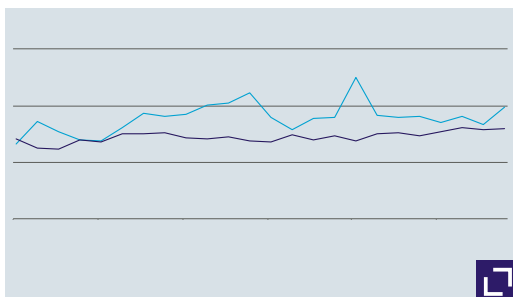
Dutch banks have maintained satisfactory capital and liquidity positions
[See figure 12 →](#)



Funding ratios continue to recover
[See figure 15 →](#)



Impact on capital position after three years
[See figure 13 →](#)



Insurers' solvency remains stable
[See figure 14 →](#)

Figure 12 Dutch banks' capital and liquidity positions are satisfactory

Percentages

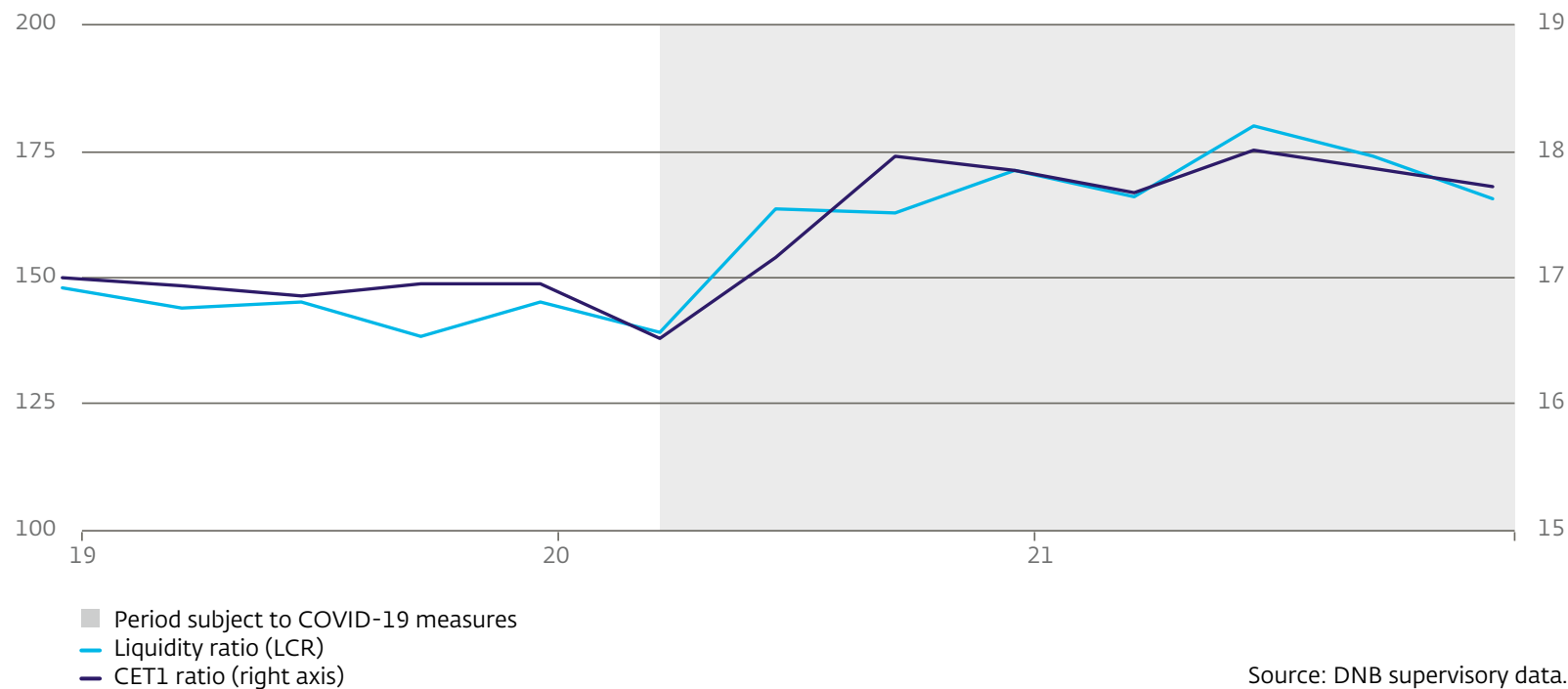


Figure 13 Impact on capital position after three years

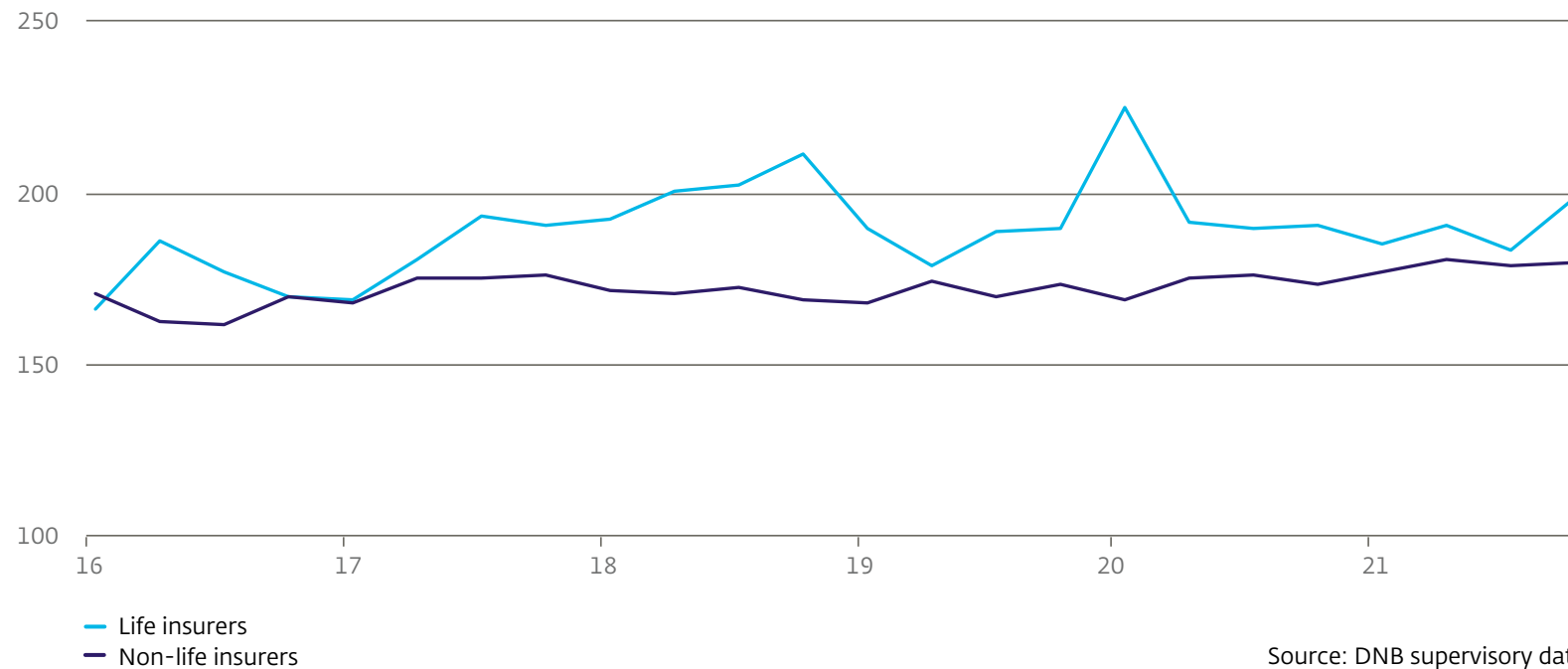
Percentage of risk-weighted assets



Source: DNB.

Figure 14 Insurers' solvency remains stable

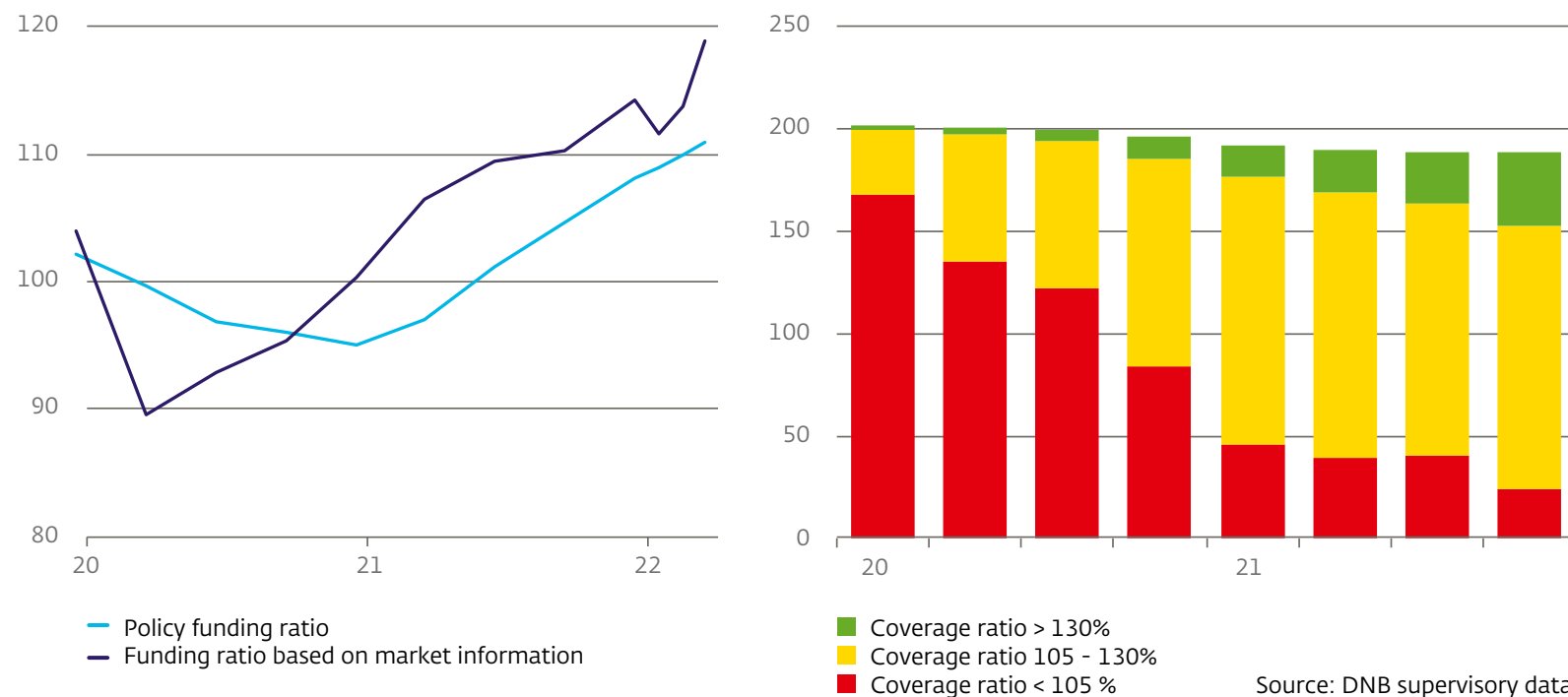
Percentages



Source: DNB supervisory data.

Figure 15 Funding levels continue their recovery

Percentage, number of pension funds



3 Policy

3.1 Countercyclical capital buffer

On 25 February, DNB adopted a new analytical framework for determining the countercyclical capital buffer (CCyB) for banks.¹⁵ The framework monitors a range of indicators relating to the macroeconomic environment, the state of financial and non-financial sectors, and the financial markets. A general risk assessment is developed on the basis of these indicators and expert judgement. We determine the buffer rate of the CCyB on this basis. We aim for a 2% CCyB in a standard risk environment (i.e. a situation in which cyclical systemic risks are neither particularly high nor particularly low). This way, we want to take greater account of the inherent uncertainty in the measurement of cyclical systemic risks. In addition, despite the fact that data often arrives with a one-quarter delay and that building up the buffer normally takes a year, this ensures that banks have releasable capital in a timely manner.

The current risk profile provides clear grounds for starting to build up the CCyB, despite the attendant uncertainty due to the war in Ukraine. In the recovery

phase, as defined in the framework, the damage to bank balance sheets and the economy after a shock becomes increasingly evident, after which economic recovery begins. The current risk profile is already well beyond this point: the economy has recovered strongly after COVID-19, and despite the effects of the war in Ukraine, positive growth is still expected for the Netherlands in 2022 and 2023. Although consumer confidence has recently declined (partly due to high inflation and the war), the current account surplus and producer confidence remain on track. The banks' financial position and profitability also remain robust. These developments – together with the diminishing uncertainty surrounding the COVID-19 crisis – are consistent with a standard risk environment. Moreover, cyclical risks are currently at a “normal” to elevated level. Although the war in Ukraine brings uncertainty, no fundamental turning point in the cycle is as yet apparent. Finally, this uncertainty can be addressed by building up buffers in good time.

Against this background, we are raising the CCyB to 1% as a first step. Provided there is no sharp

deterioration in the risk profile, the buffer will take effect on 25 May 2023. When the systemic risk buffers for ABN AMRO, Rabobank and ING were lowered in March 2020, we also announced our intention or restore the buffers by gradually raising the CCyB to 2%. This CCyB would come into effect when the impact of the COVID-19 outbreak on the banking sector was sufficiently behind us and would bring the capital requirements of the three major banks back to the pre-COVID-19 crisis level. Banks are well able to bear a higher CCyB. This is because they usually have large management buffers and because DNB considers the CCyB in conjunction with other capital requirements.¹⁶ The buffer will be phased in over one year, after which it will become binding on 25 May 2023. We also stress that we are prepared to release the buffer, in accordance with the CCyB framework, even during the phase-in period, if the risk profile deteriorates significantly as a result of the war.

The CCyB promotes the resilience of the banking sector by creating a better balance between the amount of “fixed” and “releasable” buffer capital.

¹⁵ See DNB (2022). Analytical framework for setting the countercyclical capital buffer in the Netherlands.

¹⁶ For example, we will take possible overlap into account when determining the Pillar II Guidance (P2G) for less significant institutions. Similarly, we will consider to what extent the introduction of the CCyB requires an adjustment in the O-SII buffer for significant institutions that were not given additional lending headroom during the exceptional market conditions in March 2020 through a reduction in the systemic risk buffer.

The amount of “releasable” capital is given a larger role within the total buffer capital, without any significant increase in capital requirements. The higher amount of releasable capital means DNB is better equipped to give banks additional headroom during a crisis to absorb losses and continue to fulfil their crucial function in the financial system. The importance of buffers, and of the possibility of partly releasing them, has become clear during the COVID-19 pandemic. This then supports the economy and can mitigate the impact or duration of shocks. Therefore, during the European Commission’s review of the macroprudential framework, we expressed a positive view on the role of releasable capital in this framework.

3.2 Review of the macroprudential framework

Banks

The European Commission (EC) is currently evaluating the macroprudential framework. The EC conducts a review every five years to assess whether the macroprudential framework is equipped to absorb systemic risks. Specifically, the EC seeks advice from the European Central Bank, the European Banking Authority and the European Systemic Risk Board in

four areas: i) the design of the buffer framework, ii) missing or redundant tools, iii) internal market considerations and iv) global and emerging risks. As the national macroprudential authority, DNB has given the EC a detailed response and welcomes the ongoing review. It is important that the macroprudential toolkit is adequate to address existing and new risks, and the review also provides an ideal opportunity to incorporate the lessons from the COVID-19 crisis in the European framework. The EC will send concrete legislative proposals (where appropriate) to the European Parliament and the European Council by 31 December 2022 to strengthen the macroprudential framework.

The current macroprudential toolkit for banks is able to hedge all or part of the systemic risks, but the framework could be further refined. For example, many instruments are aimed at creating resilience to existing systemic risks, but there are fewer instruments to counter the build-up of risks. In addition, in our consultation response, we argued for a more harmonised use of buffers in Europe. The applicable framework could be fleshed out or clarified in the area of buffer setting. We also called for a sufficiently flexible framework and for an investigation of how “non-traditional” risks, such as the effects of cybercrime and

climate change, could be addressed with the current macroprudential toolkit or whether new instruments are needed. Finally, in line with our own policy, we also advocate more active use of the CCyB, including at the European level. Although the applicable framework allows for proactive use of the CCyB, this could be further clarified and encouraged.

Insurers

Improvements in the legal framework for insurers can be achieved in the ongoing review of Solvency II.

EIOPA published an opinion with proposals to amend Solvency II at the end of 2020, followed by a proposal from the European Commission in the autumn of 2021. Negotiations on this proposal are currently taking place. Compared to the EIOPA opinion, the Commission proposals have been watered down in some respects. We are committed to achieving improvements in the framework in crucial areas, without materially changing the solvency requirements, as the European Commission’s proposals would, on balance, reduce these solvency requirements. First and foremost, it is important that the review leads to an adjustment of the interest rate curve used to value liabilities. We support the Commission’s proposed new extrapolation method for valuing liabilities, as it leads to greater

stability in insurers' solvency and better reflects market interest rates. In addition, it is important to address overshooting effects of Volatility Adjustment.¹⁷ Finally, we believe it is important to include macroprudential elements in the framework so that authorities have the necessary tools to mitigate systemic risks in the insurance sector.

Non-bank financial intermediation (NBFI)

We support the international policy agenda to address vulnerabilities in non-banking entities.

This work is coordinated globally by the *Financial Stability Board*. In 2022, the FSB will work to strengthen the systemic risk perspective on NBFI, among other things. This consists on the one hand of a better understanding of these systemic risks through improved monitoring and surveillance and on the other hand of bringing together findings from different workflows (such as on money market funds, open-ended funds and margining).¹⁸ In Europe, several relevant policies are being implemented that could make the non-bank sector more resilient to shocks, such as the revision of the Alternative Investment Funds Directive (AIFMD), Undertakings for Collective Investment in Transferable Securities (UCITS) and the Money Markets Funds Regulation (MMFR).

Further regulation of crypto-assets is needed and, because of their inherently cross-border nature, an internationally coordinated approach is important.

Because of the way they are designed, crypto-assets are accessible 24/7 worldwide without the need to use a central service provider. Many currencies also operate on the basis of pseudo-anonymity. These characteristics of cryptocurrency offer advantages to consumers and investors, but also mean that cryptocurrencies lend themselves to illegal purposes. Incidents such as large-scale money laundering scandals or fraud could undermine confidence in crypto-assets. We believe that consumers and investors currently lack sufficient protection in cryptocurrency markets. Appropriate regulation is needed to maintain financial stability and ensure that the digital payment system operates in a robust and reliable manner. At European level, legislation is currently being finalised in the Markets in Crypto-Assets Regulation (MiCAR). MiCAR provides a harmonised European regulatory framework for the issuance of crypto-assets and crypto-asset services. However, the nature of these currencies also means that we must continue to cooperate internationally to address crypto-related risks. That is why we contribute, for example, to the work of the *Financial Stability Board* to further identify the risks of crypto-assets and to

ensure an internationally consistent framework for regulations and standards.

3.3 Housing market and interest-only mortgages

The problems in the housing market are complex and there are no comprehensive short-term solutions.

In any case, more building is important, because every house built increases accessibility. The government is demonstrating ambition with its plans on the supply side and by aiming to build 100,000 new homes each year. The availability of construction materials and labour as well as the nitrogen problem are obstacles to the realisation of these plans, however.

The demand side requires attention. A positive point is that the government plans to abolish the extended gift exemption for owner-occupied homes. The tax treatment of rented and owner-occupied homes should also be gradually aligned (DNB, 2021), since tax subsidies distort the market and push up prices. Furthermore, policies that further stretch spending capacity – such as first-time buyer loans and taking less account of student loans – should be avoided. They would only drive up house prices further.

¹⁷ Overshooting effects of the Volatility Adjustment (VA) occur if the losses in the market value of fixed income securities, resulting from an increase in credit spreads, are fully offset (or more than offset) by the damping effect of the VA.

¹⁸ See FSB (2022). FSB Work Programme for 2022.

We remain committed to limiting the risks of interest-only mortgages, with a decrease in the amount of outstanding interest-only debt. Lenders currently have little or no visibility on their customers' financial situation after an interest-only mortgage has been taken out. We support the introduction of an information obligation over the term of new interest-only mortgages. In the case of existing mortgages, we expect lenders to make an effort to obtain additional information on customers. In our microprudential supervision we will ensure that financial institutions manage and, where necessary, mitigate the risks identified in the additional information. According to the Code of Conduct for Mortgage Finance, the interest-only loan must not exceed 50% of the value of the home. A number of exceptions to this rule apply, including when refinancing a mortgage if the household continues to live in the home and if the financing is substantially lower than the maximum finance charge percentage. We believe these two exceptions should be abolished. These measures should bring about a gradual decrease in the total volume of interest-only mortgages. Rising mortgage interest rates also make the deductibility of mortgage interest a stronger incentive in the selection of a mortgage with regular

repayment of the principal. In the years ahead, we will monitor the intended phase-out and evaluate the effectiveness of the proposed measures.

3.4 Monetary policy

The current uncertainties require a clear monetary policy stance. Developments with regard to inflation and inflation expectations will determine the further timing and shape of monetary policy. The ECB – in line with the strategic review of its strategy – will also take account of the impact on financial stability. Any undue delay in the normalisation of monetary policy could pose risks to financial stability. After a long period of accommodative financial conditions and a search for yield, an adjustment of the economy and the financial system is both inevitable and desirable.¹⁹ At the same time, it is important that this normalisation takes place predictably, as a sudden tightening of financial conditions could also have a negative impact on financial stability.

The financial system must also be able to absorb a gradual normalisation of financial conditions. In recent months financial markets have shown that they can cope with rising in market interest rates if they

have clear communication and can prepare well. Several other central banks have already made several interest rate moves. Moreover, the reforms introduced since the credit crisis have made the financial system more solid.

The vulnerability of the financial system can also be reduced by aligning measures with other policy areas. The interaction with fiscal policy is also very important for stable macroeconomic development. Budgetary expenditure has increased in many countries due to the war in Ukraine. From a cyclical perspective, however, reprioritisation is preferable to additional expenditure, as fiscal stimulus would fuel inflationary effects and intensify Europe's debt problems. Member States must also continue to focus on structural measures that strengthen growth potential and tackle underlying vulnerabilities. Finally, supervisory authorities must continue to ensure that the financial system is prepared for unexpected shocks and maintain sufficient buffers. The previously mentioned macroprudential policy agenda is in line with this.

¹⁹ See [DNB \(2021\)](#). Financial Stability Report, Autumn 2021

Risk map



Note

The data used in this OFS are published separately in one data file on dnb.nl, together with an overview of microprudential indicators.

The data in this OFS was last updated on the 1st of May 2022.

Note

The risk map presents a schematic overview of the main risks to financial stability. The size of the circles reflects the magnitude of risk. The colour of the circles reflects whether viewed over the medium term, a risk sharply increases (red), moderately increases (yellow), decreases (green) or remains unchanged (grey).

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