DNB 2022 Annual Report

Staying the course

DeNederlandscheBank

EUROSYSTEEM

De Nederlandsche Bank N.V. 2022 Annual Report

Staying the course

Presented to the General Meeting on 22 March 2023.

The cut-off date for this report is 16 March 2023.

Explanatory notes
The original Annual Report, including the financial statements, was prepared in Dutch. In the event of discrepancies between the Dutch version and this English translation, the Dutch version prevails.

Gross domestic product (GDP), used to express quantities in some tables and charts, is GDP at market price unless stated otherwise.

Legend
0 (0.0) = the figure is less than half of the rounding used or nil
blank = a figure cannot logically occur or the data are not reported (to DNB)
- = data unavailable.

Rounding
Figures may not add up due to automatic rounding per series. As figures are rounded for each table, the individual tables do not always fully reconcile.

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The year under review in brief

The ink on the 2021 Annual Report was not yet dry when Russia invaded Ukraine on 24 February last year. This disruption of the international legal order came at a time when the world was slowly recovering from a pandemic that had consumed us for two years, and the winter lockdown of 2021/2022 had only just been lifted here in the Netherlands. Now, over a year later, the pandemic feels like an eternity ago, but the Russian war in Ukraine still rages on.

Both events left an indelible social and economic mark on the year under review. The unprecedented high rate of inflation is particularly striking for central bankers, coming as it has after an extended period when prices hardly budged. The sharp rise in prices, especially energy, was a real blow for many households and businesses, and government measures could only provide limited relief.

Our 2021 Annual report was entitled "Striking a new balance", a title that sounds almost cynical now. Indeed, the economy only drifted further away from the path towards a new balance during the year under review. The only notable exception was the transformation to a sustainable economy – even though the sudden acceleration of this transition was not really planned, and much more is needed to achieve the goals. In any case, recent years have revealed how profound social and economic uncertainties can be. Policymakers and other economic actors will have to take these uncertainties into account on an ongoing basis.

In this report, we first discuss economic developments over the past year, which were mainly dominated by the energy crisis and the economic policy response to this. We then look at the impact of these developments on the financial sector, for which De Nederlandsche Bank (DNB) has a special responsibility as a prudential supervisor and resolution authority. Not only did the sector face turbulent economic conditions in the year under review, but it also continued on a rapid path of digitalisation. We conclude with a number of recommendations for policymakers.

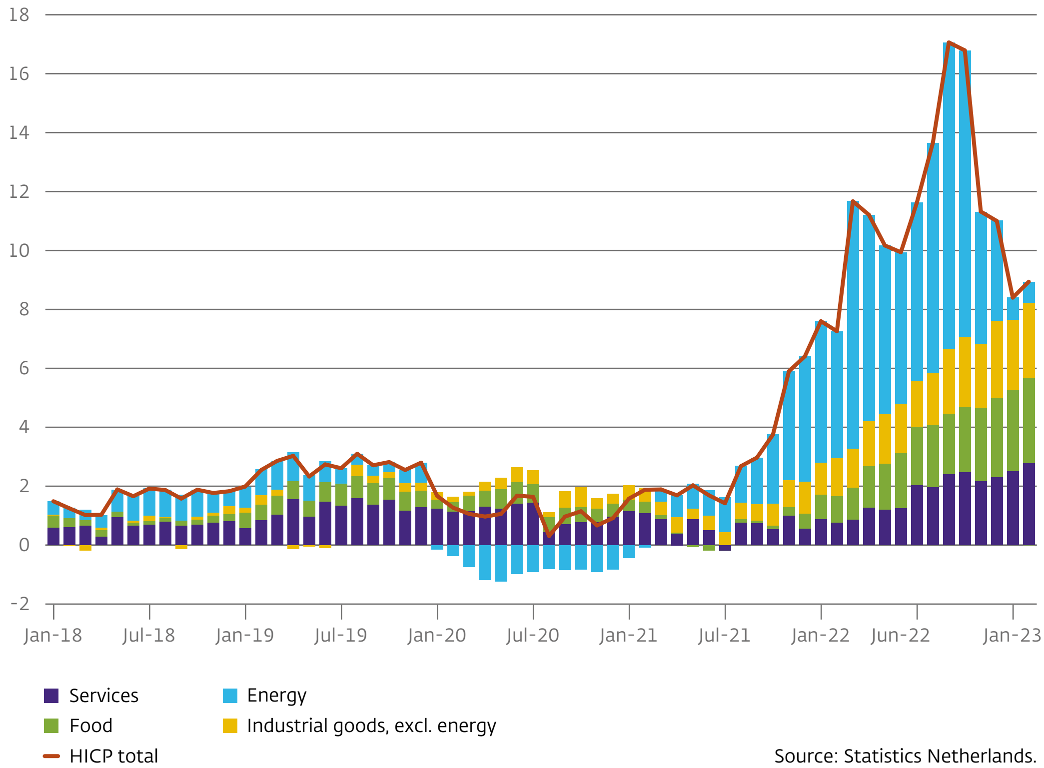
Economic boom times, inflation peak and recessionary sentiment

Following robust recovery from the pandemic, inflation causes the economy to cool off

Whereas economic and financial developments can often be readily interpreted in terms of traditional economic cycles, this is not the case for the year under review. The economy showed healthy growth rates in 2022 due to the rapid and robust recovery following the pandemic. The global economy grew by 3.4%, the euro area economy by 3.5% and the Dutch economy by as much as 4.5%. Combined with pandemic-related supply constraints and structural labour market shortages, this meant that the Dutch economy was actually operating above capacity: according to our December projections, GDP was 2.6% above potential in the year under review. There was no euphoria, however, as this development was accompanied by historically unprecedented inflation of 11.6% in the Netherlands, and 8.4% in the euro area. These high rates of inflation had their origins in the post-pandemic recovery and the sharp rise in energy and commodity prices (see Figure 1) following the Russian invasion of Ukraine. Inflation was a contributory factor in the unparalleled fall in consumer confidence and, to a lesser extent, business confidence. It also led to a sharp loss of purchasing power, especially among lower-income households, and rising costs for energy-intensive companies in particular. Together with the general uncertainty, this led to a cooling of the economy in the second half of the year under review, but so far there seems to be no risk of a deep freeze (see Figure 2). Understandably, high inflation and its consequences mean that this relatively favourable macroeconomic picture is not perceived as such by many households and businesses, however. Lower global trade growth also contributed to the slowdown, a result of similar developments among our trading partners, not to mention the problems in the pandemic-hit Chinese economy.

Figure 1 Development of Dutch inflation (HICP)

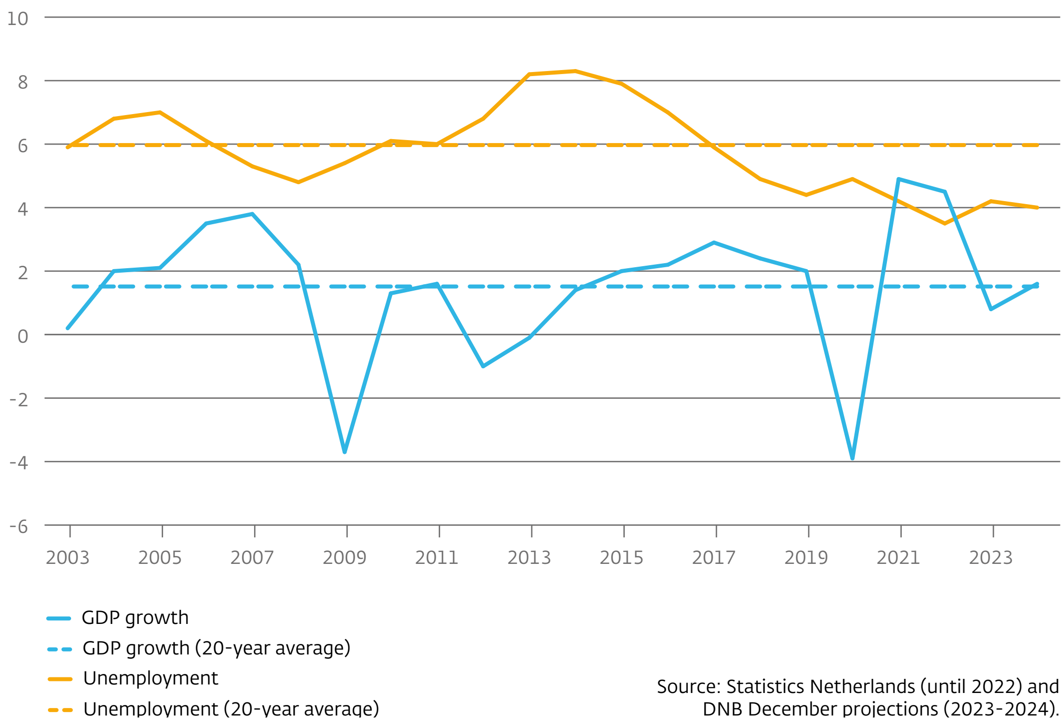
Annual percentage changes and contribution in percentage points



Source: Statistics Netherlands.

Figure 2 GDP growth and unemployment in the Netherlands

Annual percentage change and labour force percentage



Source: Statistics Netherlands (until 2022) and DNB December projections (2023-2024).

Inflation becoming more broadly entrenched in the economy

Inflation began to pick up as early as the summer of 2021 when the pandemic containment measures expired, resulting in a surge in spending that was propped up by government pandemic compensation policies. At the same time, the restrictive effect of those same measures on supply lingered for a while longer. While the rise in inflation was initially thought to be temporary, the Russian invasion of Ukraine quashed this notion when energy and commodity prices soared. Temporary or not, as price increases spread to other goods and services, inflation became increasingly entrenched in the economy. The ECB was thus compelled to take action and open up its monetary policy tool kit.

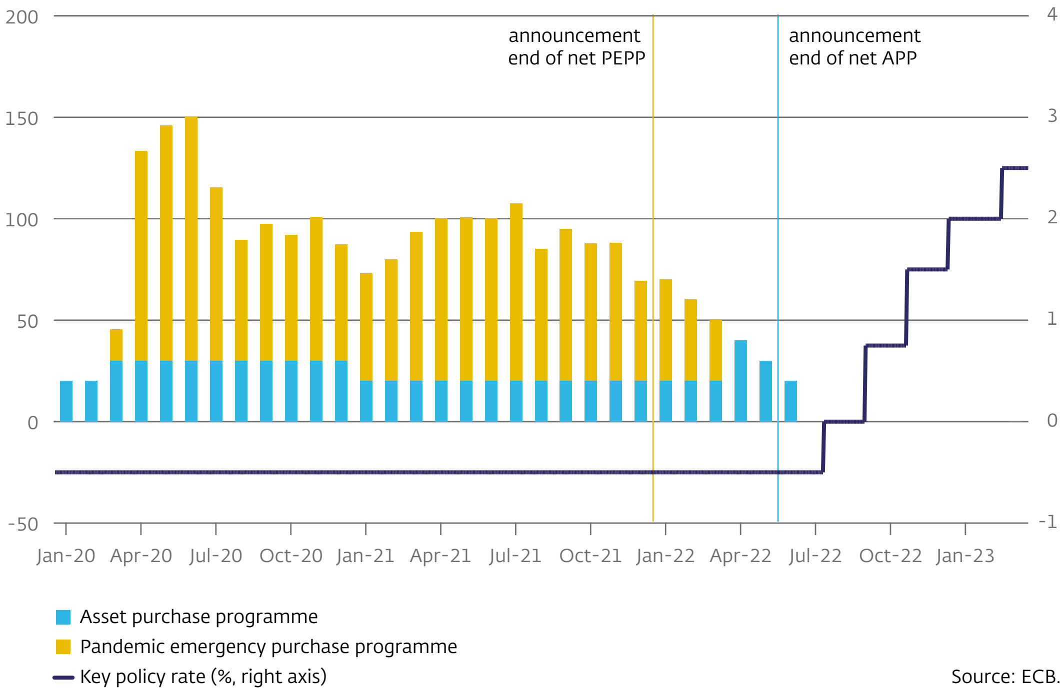
Inflation in the Netherlands peaked during the year under review, but projections suggest that inflation, especially core inflation (which excludes energy and food), will remain at elevated levels for longer than initially expected. Monetary policy makers generally seek to identify the causes underlying short-term supply shocks and to not overreact to them. Things become different when these supply shocks are more persistent and cause inflation to become more entrenched. Moreover, part of the current high inflation can also be attributed to the demand side of the economy, driven by the rapid recovery after the pandemic (also see a recent DNB analysis on this topic). This was even more pronounced in the United States, where inflation was more demand-driven, leading the Federal Reserve Board (Fed) to pull on the monetary reins much earlier and much harder.

The ECB uses its monetary policy to curb inflation

Spurred by rising inflation, in December 2021 the ECB abandoned the very accommodative monetary policy it had been pursuing since the global financial crisis. It has accelerated the wind-down of its purchase programmes and interest rates have been hiked substantially on several occasions (see Figure 3), with further rate hikes still in the pipeline. The ECB will continue to tighten its policy for as long as necessary and do whatever it takes to bring inflation back down to the 2% medium-term target and keep inflation expectations anchored. Given the current balance sheet position, which has been largely shaped by the monetary policy pursued in recent years, this tightening will have an adverse impact on DNB's profitability and thus on our own funds (see Box 1). It should be noted that the same development is happening at other central banks.

Figure 3 The ECB's monetary policy

EUR billion net monthly purchases and key policy rate



Source: ECB.

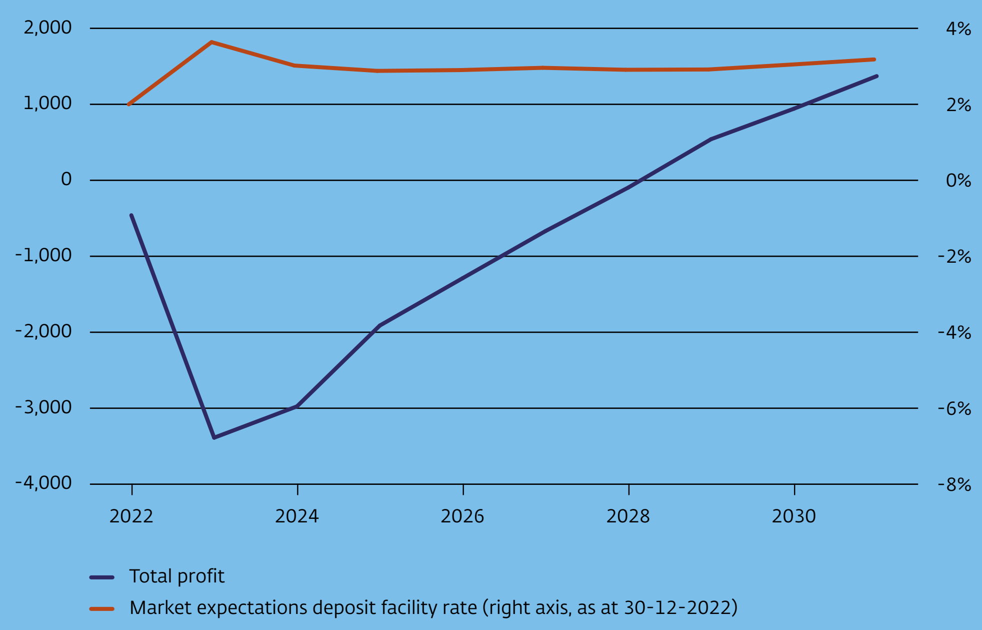
Box 1 DNB's financial position under pressure for the next few years

The Eurosystem used its balance sheet to ease monetary policy in response to the low inflation of recent years and the pandemic. These measures ensured that any financial crisis was avoided, and that citizens, businesses and governments could continue to count on cheap financing. The measures also helped ensure that lending in the euro area remained stable. The monetary measures have also resulted in a 93% increase in DNB's balance sheet, with the most pronounced expansion coming in the last three years. Correspondingly, the interest rate risks and credit risks on our balance sheet have also increased.

DNB will incur losses due to the tightening of monetary policy in response to the sudden rise in inflation last year. Indeed, higher interest rates mean DNB must pay more interest on the deposits commercial banks hold with DNB, while income from government bond holdings, which increased substantially under the ECB's purchase programmes, will not rise accordingly. The situation that is unfolding is similar to one we considered just last year – as part of our risk management – as an extreme but plausible scenario. The losses are expected to continue for several years (see Figure 4). Based on current interest rate expectations in the market, profits will turn positive again in 2028. Central banks both inside and outside the euro area, including those pursuing a different monetary strategy, will also suffer significant losses as a result of current market developments.

Figure 4 Possible development of DNB's profits

EUR mln and percent (key policy rate)



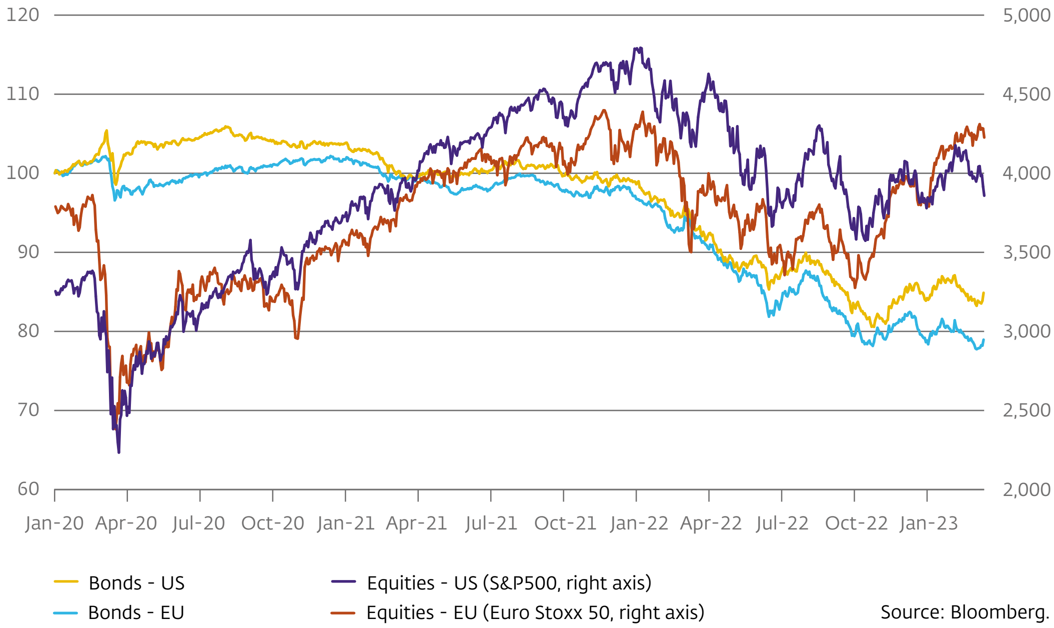
The losses do not outweigh the need to ensure price stability. Throughout, we have pursued prudent capital policies for the financial risks arising from the more accommodative monetary policy. Nevertheless, losses may increase to such an extent that even the buffers we have built up (over €11 billion) will be insufficient. While central banks can operate with negative own funds, such a situation must not be allowed to persist. We have initiated a capital policy review, which will be completed in the first half of 2023.

Financial markets experience difficult year due to inflation and interest rate developments

Inflation and interest rate developments, combined with economic uncertainty, have also weighed heavily on financial markets (see Figure 5). Whereas the interest rate on Dutch 10-year government bonds was around 0% at the end of 2021, it was 2.9% at the end of the year under review. The 10-year mortgage rate (with National Mortgage Guarantee – NHG) rose from 0.9% to 3.9% during this period. In the wake of these developments, European equity and bond prices fell by 12% and 19% respectively in the year under review, although they recovered at the beginning of 2023. For the time being, the impact on the economy appears to be limited. The resulting cooling of the economy is also needed to help curb inflation.

Figure 5 Development of bond and equity prices in the euro area and the US

Index 01-01-2020=100 and index price



Source: Bloomberg.

Moderate monetarism rediscovered

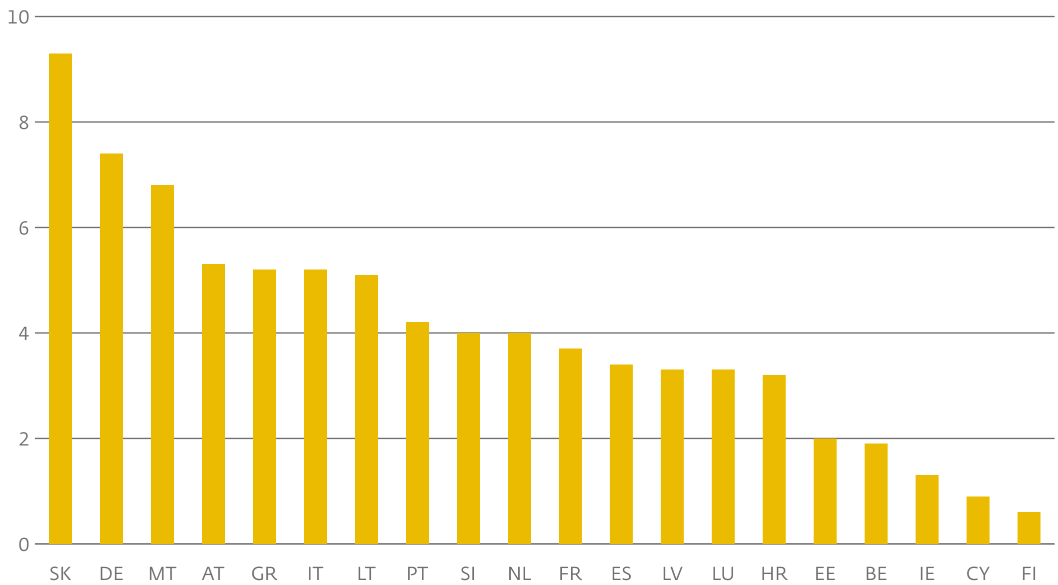
Although history does not repeat itself exactly, there are often lessons to be learned from the past. The 1970s were also characterised by high inflation, unlike today, the economy was struggling with low growth (or stagflation). Whereas inflation had previously been seen mainly as a monetary phenomenon, then DNB President Jelle Zijlstra introduced a new perspective: moderate monetarism. The main argument in this school of thinking is that while the central bank is primarily responsible for price stability, other policymakers and economic actors can make or break central bank policy. This concept is topical again in the current situation, as evidenced by recent research.

Monetary and fiscal policies should be mutually reinforcing

During the COVID-19 pandemic, monetary policy provided support to the financial system, while fiscal policy mainly supported spending by compensating households and businesses: it is precisely in times of very low interest rates that expansionary fiscal policy is most effective. The fact that expansionary fiscal policy was a key factor in the rapid and robust recovery of the economy following the pandemic does not mean that this remedy is appropriate in the current circumstances. Nevertheless, governments in Europe are generously compensating households and businesses for higher energy prices (see Figure 6). High inflation hits some groups in society disproportionately hard, and income support for these groups is understandable. However, this support should be targeted, temporary and offset elsewhere in the budget. Incentives to reduce energy consumption must also be maintained at adequate levels. The government has since announced that it will explore means to provide more targeted support to vulnerable households after 2023.

Figure 6 Compensation measures in response to energy crisis

Percentages of GDP

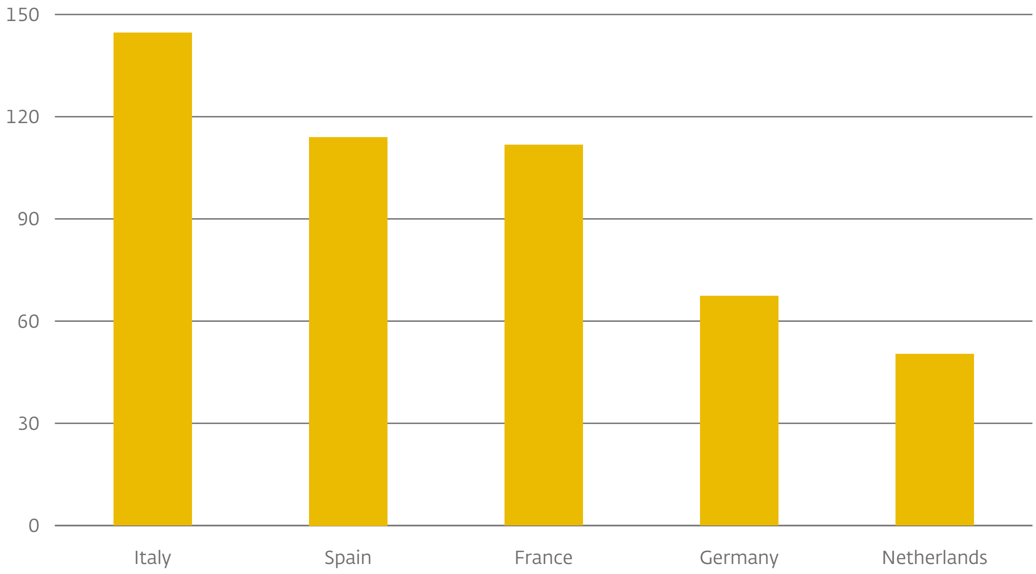


Source: Bruegel and DNB calculations.

Central banks and governments worked in tandem during the pandemic, reinforcing each other's efforts; now, however, their actions threaten to counteract one another. Given the current supply constraints, expansionary government policies may continue to push up inflation. This makes it more difficult for central banks to keep inflation in check, which is ultimately more costly for the economy. Dutch public finances are not at risk with a debt ratio of around 50% of GDP in the year under review, but other Member States have less room for manoeuvre (see Figure 7). In this regard, the European Commission's proposals to reform the fiscal rules, the Stability and Growth Pact (SGP), are very welcome, although they need to be developed further. Agreeing on these proposals should be a priority. Ultimately, a reformed SGP will have to prove its worth by contributing to lower debt levels and to fiscal policies aimed at stability. But even the Netherlands cannot afford to pursue the current fiscal policy for too long, as the experience of the 1970s has taught us (see Box 2). Indeed, energy prices are expected to remain at elevated levels for quite some time. The economy and society will have to adapt to this new reality. Untargeted and broad-based government compensation will not help.

Figure 7 Level of public debt in five EU countries

2022; percentage of GDP



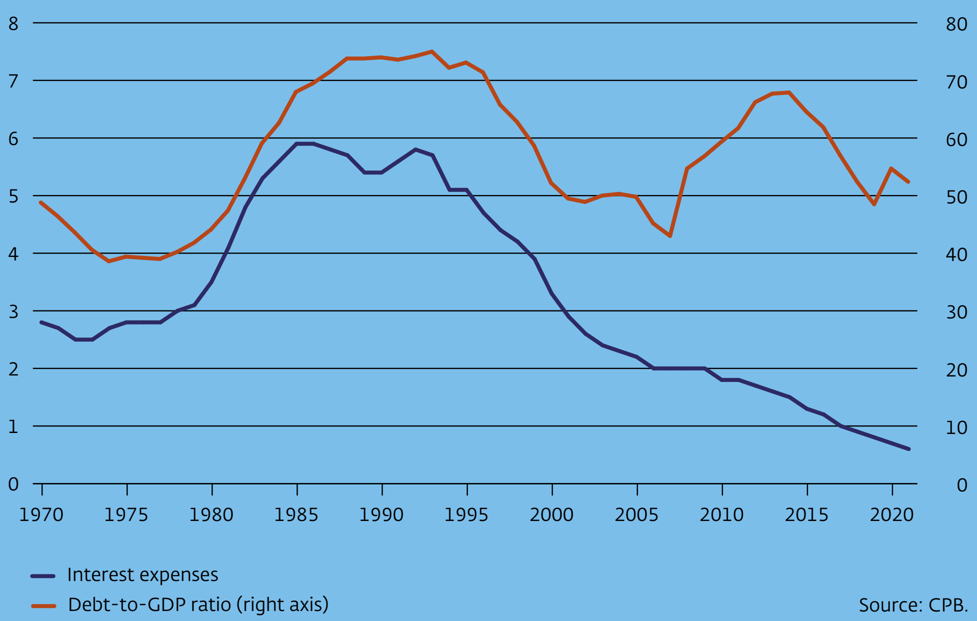
Source: European Commission autumn economic forecast.

Box 2 Fiscal policy: lessons from the 1970s

In the late 1970s, with a debt ratio of around 40% of GDP, there seemed little cause for concern about the tenability of public finances in the Netherlands. However, a combination of widening budget deficits, lagging growth and high unemployment caused the debt ratio to rise sharply to over 70% of GDP in the early 1980s. This period was also marked by high inflation and rising interest rates. As a result, interest charges rose to almost 6% of GDP, before starting a downward trend in the 1990s (see Figure 8). Alongside a decline in the debt-to-GDP ratio, the structural decline in the interest rate level was also a significant contributing factor. This explains why interest charges have continued to fall since the outbreak of the financial crisis, despite the rise in debt after 2007. This decline seems to have come to an end for now, however, with Dutch government bond yields rising sharply in 2022.

Figure 8 Development of public debt and interest expenditures

Percentages of GDP



High interest expenditures make it more difficult to reduce the debt ratio and come at the expense of other public spending. Italy, for instance, has on average had a higher primary balance (fiscal balance adjusted for interest charges) than the Netherlands over the past 20 years. At the same time, Italy's debt-to-GDP ratio has risen considerably compared to the Netherlands during this period. Differences in growth and interest expenditures are important factors here. Italy, with a debt of around 150% of GDP, spent about 3.5% of GDP on interest charges in 2021, compared to 0.6% for the Netherlands.

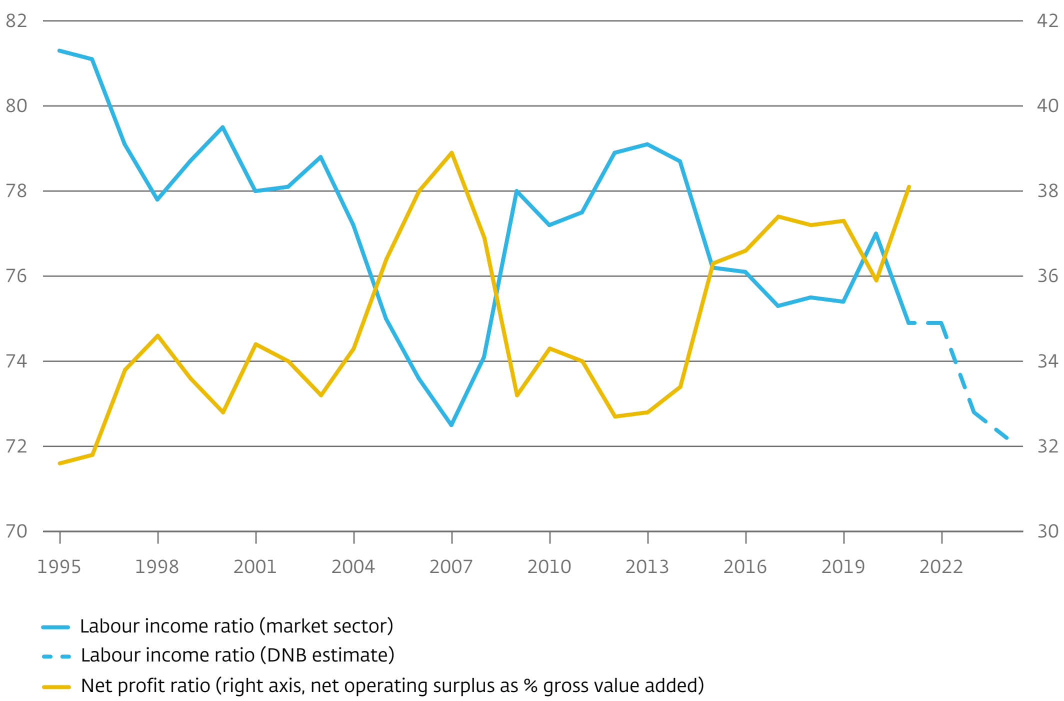
Commitments taken on in the past can thus continue to haunt a country for a long time. This highlights the need to return to a process of fiscal discipline in the Netherlands too, with higher spending being offset elsewhere in the budget. This is also necessary in light of challenges such as the energy transition and an ageing population, as well as the ongoing need to be able to absorb future shocks.

Appropriate wage movements are important for both purchasing power and inflation

Not only governments, but also employers and employees have a role to play in moderate monetarism. Wage increases are important to support household purchasing power. However, they should not be a source of excessive inflationary pressures. This is not the case in the Netherlands as yet, according to a DNB analysis. Although contract wage growth is accelerating (3.3% in 2022, up from 2.1% over 2021), analysis of the development of the labour income ratio (see Figure 9) and other trends reveals that there is room for wages to rise more than we have seen in recent years.

A good macroeconomic starting point for balanced wage growth is for wages to rise by the sum of labour productivity growth and domestically generated price growth; we call this the rise in the GDP deflator. Consequently, higher prices are not taken into account – we largely pay these to foreign countries, after all – and the distribution of earned national income between workers and entrepreneurs remains constant. Under this approach, employees do face a loss of purchasing power due to higher energy prices. The government is providing some cushioning to compensate households for this loss in 2023 through the price cap. This macroeconomic picture conceals significant differences between sectors, however. In sectors with high labour productivity growth and profitability, there may be more scope for wage growth; on the other hand, sectors suffering acutely from high energy prices may be better off with a smaller wage increase. Incidentally, the most recently concluded collective bargaining agreements reveal that wage increases are increasingly close to the aforementioned rule of thumb for responsible wage growth. If wage growth exceeds this level, it will be difficult to achieve the desired drop in core inflation, which continues to remain persistently high. Full and automatic price compensation would not be a sensible development in any case, as it would increase the risk of a wage-price spiral.

Figure 9 Labour income ratio and profit ratio



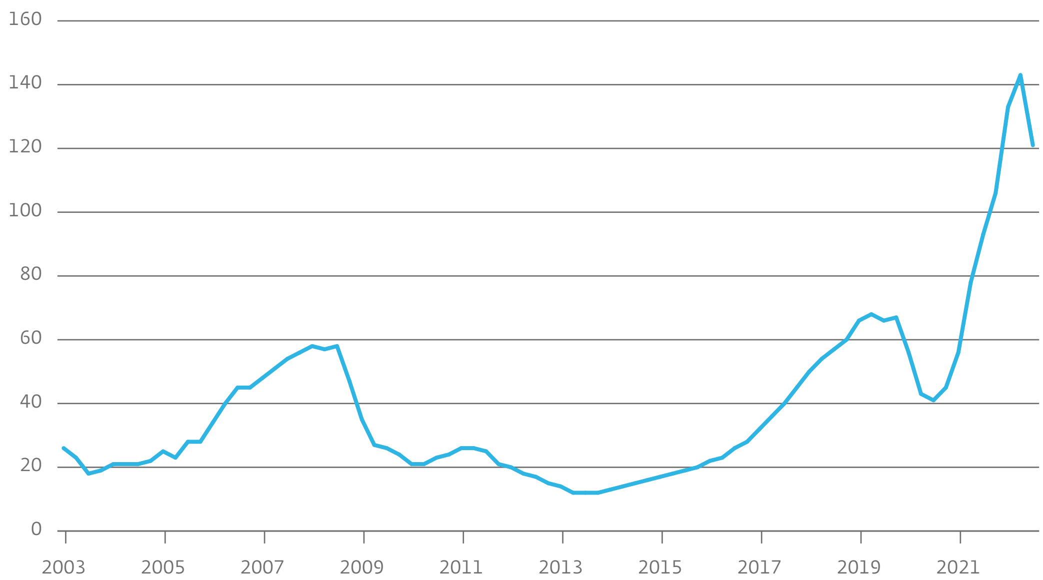
Labour market tightness a challenge for policymakers

Wages did not rise substantially at an earlier stage, which is remarkable given the tightness in the labour market (see Figure 10). This tightness is structural in nature, partly due to the ageing population, and will therefore not disappear despite the expected slowdown in growth. Unemployment stood at 3.5% in the year under review, and although it looks set to rise somewhat in the coming years, it will remain low. As a result, labour market tightness is a threat to the pace of housing construction and sustainability projects. Labour shortages also leave many businesses struggling. Unfortunately, there is no simple solution.

Increasing the labour supply can offer only a limited solution in light of the already high labour market participation rate. More than in the past, technological and organisational innovation should also be considered as a means to increase productivity and improve labour mobility to get more people working in the right place faster. A DNB analysis shows that additional regulation of the rental market can lead to lower residential mobility. Compensating companies for higher energy prices may also exacerbate the tightness, as it slows down the necessary reallocation from polluting sectors to green sectors. Against this background, our tax system is also in need of reform, involving a reduction of taxes on labour and an extensive simplification and greening of the tax system, naturally subject to the condition of maintaining healthy public finances. Given the urgent nature of labour market issues, it is important to lay the foundations for reform in good time.

Figure 10 Labour market tightness

Job vacancies per 100 unemployed people; seasonally adjusted



Source: Statistics Netherlands.

Harnessing the energy crisis to accelerate sustainability

The need to make our economy more sustainable was already high on the agenda, but it has gained even more momentum with the rise in energy prices. The price mechanism is clearly working: fossil fuel consumption is slowly dropping while greener alternatives are on the upswing. This is good news, although the underlying cause for the sharply higher prices is, of course, tragic. Natural gas consumption in the Netherlands has fallen by 22% over the past year, with both households and businesses doing their bit to conserve.

Higher energy prices present both risks and opportunities for the energy transition

High energy prices underline the need for the energy transition, but they also pose risks to the transition. Ensuring supply security in the short term means that investments in fossil projects cannot be avoided. Consider, for example, expansion of LNG production capacity abroad and LNG import capacity in the EU. Ideally, such investments should be temporary and these projects should not become part of the permanent energy infrastructure. This is difficult, however, because such large-scale investments often require long-term contracts. Higher energy prices may also incentivise new fossil fuel extraction projects such as tapping new gas fields and keeping coal mines open longer. Another important factor is societal resistance to the transition, possibly exacerbated by high energy prices. Comparisons are sometimes drawn between high prices in the here and now and emissions pricing further down the road. However, the current situation is more akin to a late, abrupt transition in which adequate emissions pricing had been delayed for too long and dependence on fossil fuels must be phased out practically overnight. Public support nevertheless remains essential for the transition.

At the same time, high energy prices also present opportunities. High prices give citizens and businesses incentives to make more sustainable choices. This can involve simple behavioural changes, but also extensive investments in energy efficiency. Fossil fuels are no longer always the cheapest option. Governments have also become more aware of the dangers of over-reliance on (foreign) fossil sources. We can already see that this awareness has led to major plans to invest in renewables. However, the International Energy Agency (IEA) warns that additional investments are still needed globally if we are to meet the climate targets. In the Netherlands, material and labour shortages are one of the major challenges in the greening of our energy infrastructure. In addition, it is important that compensation is not used to cushion price shocks too much, as explained above, as doing so could delay the much-needed sustainability efforts. The adage “never let a good crisis go to waste” has gradually devolved into a cliché. During the COVID-19 crisis the call went up for a green recovery. We now know that much of the decline in emissions during the pandemic was only temporary. In the end, there was hardly any green recovery to speak of. The current crisis is more closely linked to climate issues because of its energy component, however. It is essential that the right choices are made worldwide now, and that later when we look back on the current energy crisis, we see it not only as a difficult period for many households and businesses, but also as the catalyst for a major leap forward in sustainability.

The financial sector has a key role to play in the energy transition.
Although financial institutions are dependent on government policies aimed at the real economy, the sector, as the financier of Dutch business, has an important role to play in achieving an orderly transition. The transition plans drawn up by financial institutions under the Climate Commitment will as of this year include the steps they will take to contribute to achieving the climate targets set by the Dutch government, alongside data on their exposure to carbon-intensive activities. At the same time, as a supervisory authority, we are committed to ensuring that financial institutions adequately assess and manage climate risks. This helps ensure their soundness. Thorough assessment of risks requires data, and important steps have been taken in recent years in defining reporting requirements to make transition-related data more readily available.

Financial sector displays resilience

In addition to the climate- and energy-related risks they face, the financial position of banks, insurers and pension funds is being affected by rising inflation and interest rates in particular. One bright spot in the current economic picture is the Dutch financial sector's resilience during the pandemic (see Figure 11). Incidentally, trust in the financial sector is not only achieved by having sound buffers, but also by ensuring that the sector is free of money laundering, terrorist financing and other criminal transactions. In this context, the year under review is characterised by an incipient shift away from the remediation of shortcomings to a more risk-based approach (see Box 3).
Another important development for the sector was the imposition of sanctions against Russia; supervision of compliance with the sanctions was a key focus for us during the year under review.

Banks and insurers were stable, but need to remain vigilant

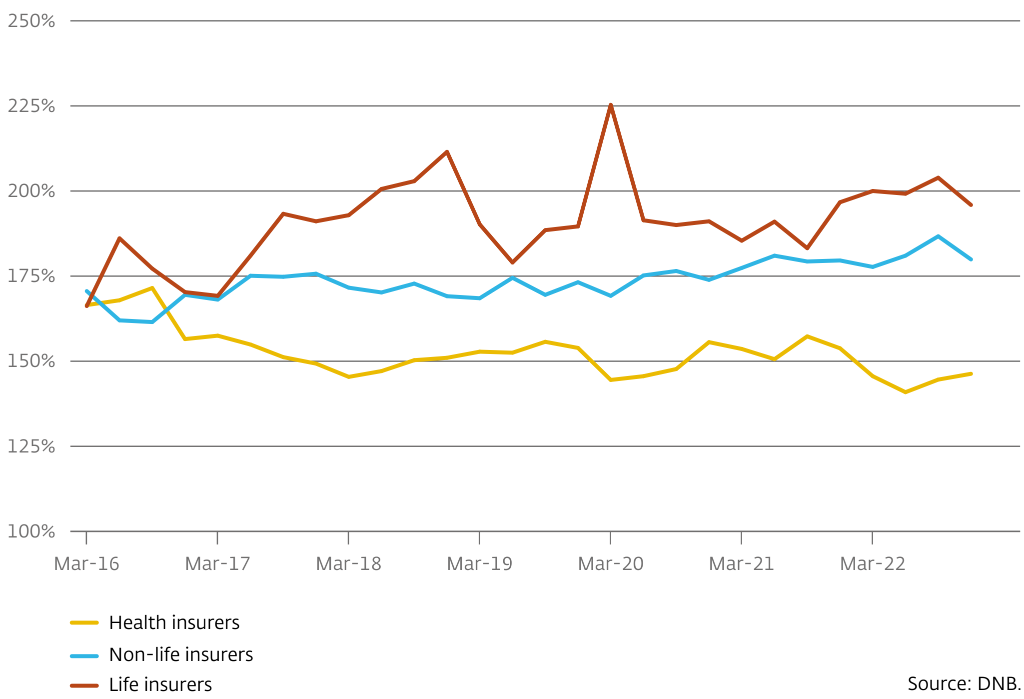
In recent years, the financial position of both non-life and life insurers has gradually improved, mainly due to higher interest rates. At the same time, the changing economic environment poses challenges for the sector. Rising costs and higher credit spreads pose a risk to solvency ratios. In addition, robust competition in a relatively saturated insurance market is weighing on the business model. These developments require insurers to remain alert and underline the importance of a proactive response to new opportunities such as the reform of the pension system and the changing risks facing society from climate change and digitalisation.

Banks have thus far managed to maintain their profitability. Partly thanks to the ample fiscal and monetary measures and the robust economic recovery, their credit losses were more limited during the COVID-19 crisis than initially expected. In addition, higher commission income and the ECB's refinancing operations contributed to their profit development. During the pandemic, banks' average capital ratio actually increased. Higher interest rates also improve banks' earnings outlook, as they can more easily maintain or even increase their interest margin. At the same time, banks can expect credit losses to rise. Indeed, the combination of lower economic growth, higher interest rates and persistently high energy costs could lead to payment problems for businesses and households due to high debts and reduced repayment capacity. Outstanding liabilities linked to the pandemic must also be factored in. These credit risks may arise mainly from outstanding corporate loans, commercial property exposures and mortgage portfolios, although the risks associated with the downturn in the housing market appear to be lower than before the global financial crisis (see Box 4). Dutch banks will therefore likely have to make additional provisions for non-performing corporate loans going forward, following a prolonged period of relatively low provisions for this purpose. They must also continue to carefully monitor their loan portfolios to identify potential payment problems in time, while also ensuring that their models are adequately equipped for the new situation.

Figure 11 Financial position of insurers, banks and pension funds

Insurers

Solvency ratio of insurers

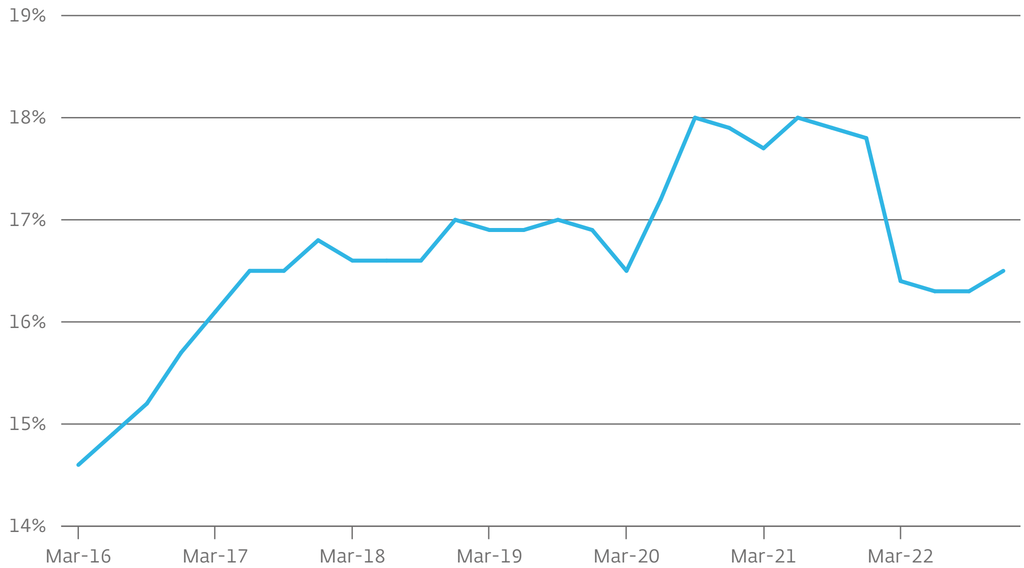


Source: DNB.

Explanatory note: solvency ratio expresses the ratio between eligible own funds and required capital.

Banks

Core capital ratio of banks (CET1)

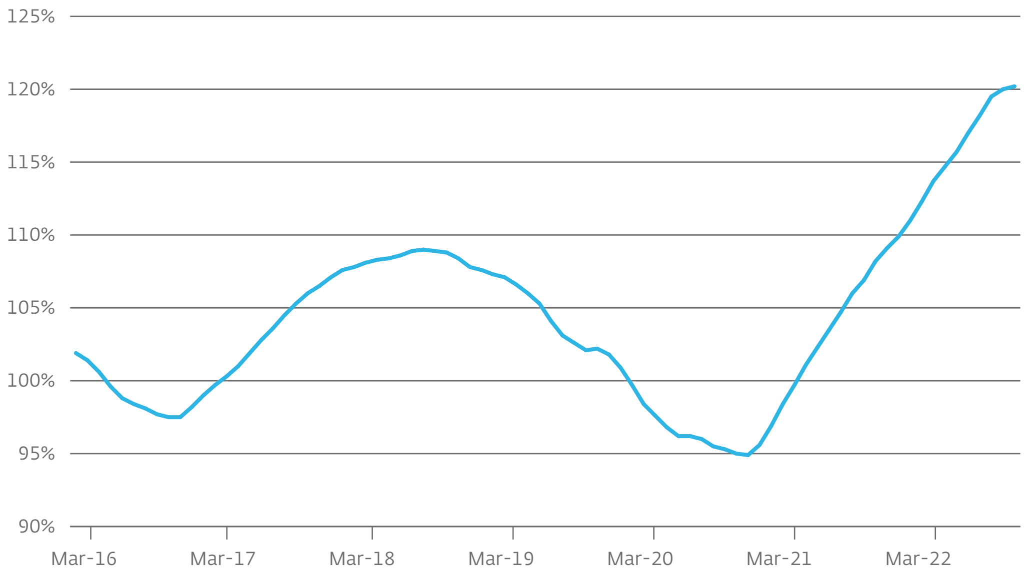


Source: DNB.

Explanatory note: core capital ratio refers to Common Equity Tier 1 capital (share capital, retained earnings and other reserves) expressed as a percentage of risk-weighted assets.

Pension funds

Policy funding ratio of pension funds



Source DNB.

Explanatory note: Policy funding ratio refers to the average of the last 12 monthly funding ratios. Monthly funding ratios reflect the ratio of pension funds' assets to liabilities.

Pension funds saw their financial position improve and are preparing for the new system

Although global stock exchanges performed poorly due to inflation and interest rates, pension funds saw their funding ratios rise sharply during the year under review. The term of pension liabilities exceeds that of investments, which means that a rise in interest rates leads to a reduction in liabilities and, on balance, a higher policy funding ratio (peaking at around 120% in 2022). Due to this and other factors, pension funds were able to resume indexation for the first time in a long time, a welcome boost to the purchasing power of retired people in particular. Pension funds would be well advised to manage their financial position diligently with a view to the transition to a new pension system by 1 January 2027. Just before the 2022 Christmas recess, the House of Representatives ratified the new Future of Pensions Act (*Wet toekomst pensioenen – Wtp*), thus ushering in this historic transition to a more future-proof pension system that is better suited to today's economic realities. Calculations by DNB and others show that most participants will be better off under the new system, but that accrued pension assets and benefits are more likely to move with the financial markets. Healthy funding ratios provide greater administrative scope to ensure a balanced transition to a new pension system. In the first half of 2023, the Senate will consider the *Wtp*, so that it can hopefully enter into force as planned on 1 July 2023. Meanwhile, the industry and DNB's supervisory division are also preparing for this major transition.

Box 3 The interface between the world of organised crime and the formal economy

Research conducted by Utrecht University in 2018 (based on data from 2009-2014) estimates the amount of criminal money earned in the Netherlands to be almost €16 billion annually. That money has to be laundered before it can be used in the formal economy. The point of money laundering is to give criminal money a veneer of legality. Criminal and terrorist organisations and individuals use laundered money for their own benefit and to finance additional activities. Ultimately, law-abiding citizens pay the price. They are confronted not only with higher taxes, but also with a society that is less safe and in which the rule of law is undermined. Examples include fire-prone drug labs in residential areas, extortion of businesses and citizens and liquidations in busy shopping streets.

Money laundering undermines public confidence in the financial sector. Citizens must be able to rely on the financial sector to work on preventing criminal money laundering without compromising services to those same citizens. There is great societal urgency to ensure that financial institutions – as gatekeepers of the financial system – actively prevent and combat financial crime such as money laundering. This is one way to prevent criminal money from finding its way into the legal economy. An ounce of prevention is worth a pound of cure, after all. As gatekeepers, institutions should take a risk-based approach to excluding criminals from their services.

In recent years, we have found that part of the banking sector has failed to fulfil its gatekeeper role effectively. A large number of banks have therefore initiated costly remediation programmes aimed at addressing the shortcomings. In 2021, the cost of this work was nearly €1.4 billion and involved the deployment of nearly 13,000 FTEs. In this context, it is important to make the fight against financial crime more effective and efficient, with fewer undesirable side effects such as unnecessary exclusion of bona fide customers (derisking) or heavy burdens on customers stemming from due diligence measures.

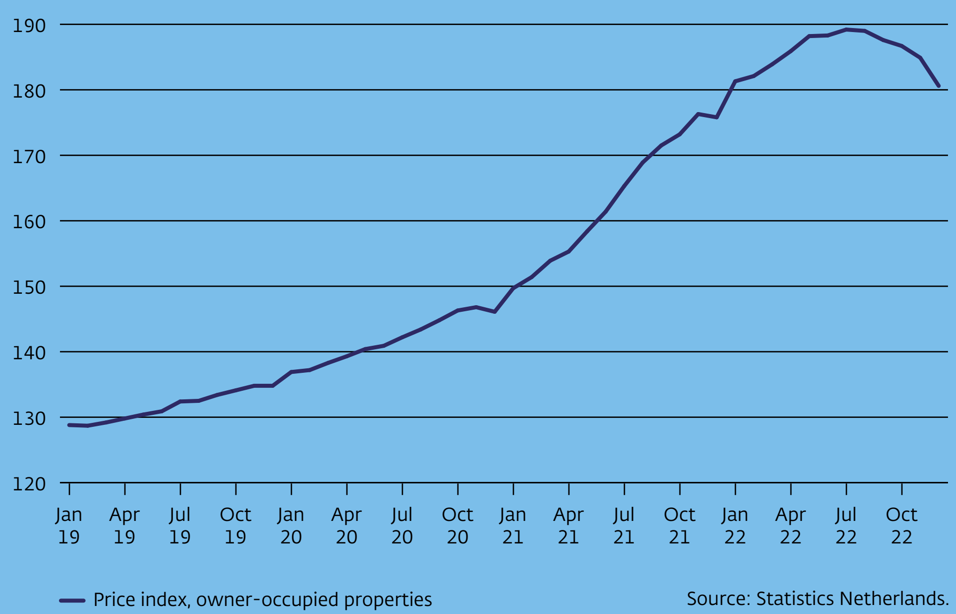
In 2022, we called on banks to adopt a more risk-based approach to their gatekeeper role. This involves focusing their resources on customers and customer groups that pose the highest risks of financial crime, and taking appropriate measures. Correspondingly, this also means that banks deploy fewer resources in the case of low risks. To make this distinction, banks must be able to assess risks effectively, and technology can help them do so. We are in talks with relevant parties to arrive at such a risk-based approach to preventing money laundering. We are identifying obstacles to this more targeted approach and exploring solutions.

Box 4 Dutch housing market cooling down

The housing market is a particularly difficult market to predict. In June 2020, we forecast that the COVID-19 pandemic would cause house prices to fall, but our prediction failed to materialise (see Figure 12). House prices have risen to record levels, especially in recent years, due to low interest rates, limited supply and measures that have stimulated demand.

Figure 12 Development of house prices

Index 2015=100



Source: Statistics Netherlands.

The housing market seemed to have reached a turning point in the second half of the year under review, with prices falling month-on-month, although prices were up slightly in January 2023. The rise in interest rates, increased uncertainty and the cooling economy are the cause. At the same time, some cooling down is welcome, given the overheated market in recent years that saw prices rise at an average annual rate of 16.9% between January 2021 and the peak in July 2022.

The Dutch economy is relatively sensitive to changes in house prices. Still, the risks are significantly lower now than shortly after the global financial crisis. First, banks are now better capitalised and excessive mortgage lending has been curtailed. In the year under review, for example, we extended the measures that set a floor for the risk weighting that banks can use to determine the capital they must hold as a buffer against mortgage loans. Also, the share of interest-only mortgages fell from 59% at the end of 2013 to 44% at the end of 2021. This decline plateaued in the year under review, prompting us to advise banks to be particularly vigilant and take measures to encourage a resumption of the decline. Finally, the proportion of houses that would be underwater in the event of a sharp fall in prices is also significantly lower than after the financial crisis. This is due to sharply higher prices and a decline in the share of interest-only mortgages. A 20% drop in house prices would mean that around 8% of homeowners would go underwater with their mortgage. That rate was almost 30% at the previous low point in the housing market in 2013. First-time buyers in particular who have recently purchased their first home are still at risk, although the long-term fixed mortgage rates they often have will help them avoid acute repayment problems.

Risks require sufficient buffers

The relatively solid foundation beneath the financial sector is no unnecessary luxury, as the risks to financial stability are currently high and there are few anticipated windfalls. The recent problems at Silicon Valley Bank in the US are an example of the vulnerability of the financial system as it rapidly moves from a low-for-long interest rate environment to significantly higher rates. Inflation may be more persistent and economic growth more unfavourable than financial markets have currently priced, with geopolitical risks also playing an important role. This could result in another shock in financial markets. In this context, it is particularly important to closely monitor the non-banking sector – often referred to as non-bank financial intermediation (NBFI) – and to make laws and regulations for this sector more stringent. The non-banking sector, which includes investment funds, money market funds, hedge funds, and credit intermediaries focusing on securitisation, has shown very strong global growth and is generally less regulated. This sector is also vast in the Netherlands (over €400 billion in 2021, or almost 50% of GDP, and one-sixth the size of the Dutch banking sector). The interconnectedness of the financial system means that minor ripples can grow into a tidal wave. Not for nothing did the Financial Stability Board (FSB) devote considerable attention to this sector during the year under review and is now working on proposals to better manage the risks it faces.

Macroprudential policy has an important role to play in ensuring the stability of the financial sector, in particular the banking system. More and more countries, including the Netherlands, have implemented this policy in recent years (the floor in the risk weighting for mortgages is an example, see Box 4). In 2020, for instance, part of the structural systemic risk buffers were replaced by a countercyclical buffer that moves with the economic cycle. It was initially set at 0% to support bank lending during the pandemic. An increase to 1% was announced in May 2022 due to increased risks, with a one-year transition period. Our goal is a 2% buffer target in a neutral risk environment. This year, we will once again review macroprudential buffers for banks, also in the light of developments in Europe, including the increasingly important Banking Union. As integration continues apace, we feel it is important that national buffers are considered in conjunction with those of our European partners.

Digitalisation of the financial sector accelerating

The digitalisation of the financial sector also continues unabated. This is evidenced by the increase in the use of artificial intelligence, cloud services, data mobility and other factors. In the end, the advantages of digitalisation outweigh the disadvantages. Digitalisation is making the sector more agile and efficient, while also contributing to better, more comprehensive and cheaper services for consumers and businesses. Digitalisation has also long been a factor in ever faster and cheaper cross-border financial services. However, there are also a number of disadvantages that need to be managed effectively. These include fragmentation in the value chain of financial institutions, concentration risks among critical ICT service providers, privacy issues and certain other negative side effects (see Box 5). Digitalisation, coupled with geopolitical fragmentation, is also increasing the sector's vulnerability to cyberattacks, which can severely erode confidence in financial institutions.

Box 5 Accessibility of the payment system

On 7 April 2022, 23 organisations closely involved in the payment system, including DNB, signed a Cash Covenant. The purpose of this Covenant is to ensure that cash (banknotes and coins) continues to function properly as a means of payment for consumers, even as electronic payments gradually gain ground. To this end, the Covenant contains various agreements, including on the number, accessibility and availability of cash machines, the fees banks charge to process cash, the acceptance of cash payments and the associated services to retailers.

As part of the Covenant, DNB, together with the Ministry of Finance, commissioned research on how cash can be preserved as a generally accepted means of payment in the public interest. The results are expected in the first half of 2023 and will be shared with the House of Representatives. Accessibility of the payment system remains of great importance; DNB research shows that 2.6 million adults in the Netherlands are unable to handle all their banking and payment matters independently. We have already taken an important step with the completion of our new Cash Centre (DCC). This future-proof and sustainable centre, located in Camp New Amsterdam in Zeist, a Royal Netherlands Marechaussee location, replaces the former vault and sorting facilities at our Amsterdam headquarters and will become operational in 2023.

The digital euro: cash with a digital twist

The digitalisation of the financial sector is also leading to a decline in the use of cash, and technology companies are gaining ground in Europe as providers of payment systems. Against this background, the Eurosystem is exploring the introduction of a digital euro, or cash with a digital twist, which can be used throughout the euro area, including for online payments. This study began in October 2021 and will take two years to complete. A decision will be taken in the autumn of 2023 on the next phase, which will focus on experimentation and laying the groundwork for a possible introduction. The digital euro will create a direct financial relationship between citizens and the central bank. This will boost confidence in the monetary system, especially in times of crisis. At the same time, there are still many questions about the digital euro, as recent months have shown. The Eurosystem as a whole will ensure that all stakeholders are closely involved and is made clear, and clearly communicate the purpose of the digital euro and its benefits for people. It should also be noted that the legislature has a significant role to play in the introduction of the digital euro. Potential misunderstandings about the digital euro must also be addressed. For example, on the degree of anonymity of payments with the digital euro: in this respect, we advocate for a similar level of privacy as is currently the case with cash payments.

Crypto markets turbulent

The digital euro should not be confused with crypto assets (cryptos), which experienced an exceptionally turbulent year in 2022, including the scandals surrounding Terra and FTX and their downfall. Over the past two years we have witnessed extreme examples of crypto-related boom-bust cycles. The question that arises is to what extent supervisory authorities should play a role in regulating these markets at all, given the speculative nature of cryptos and their association with potentially unethical activities. In our view, the increasing intermingling of cryptos with the traditional financial system means that supervisors cannot remain aloof. Although crypto markets are still relatively small and the turbulence plaguing them in the year under review had little or no impact on financial stability, the risks that they pose must nonetheless be contained. Furthermore, consumer and investor protection should be top-of-mind. We are therefore actively involved in the development of a common, international regulatory framework, in particular in collaboration with the FSB. In addition, important steps are being taken in the EU with the Markets in Crypto Assets Regulation (MiCAR). A global supervisory regime for these markets will need to include a mix of prohibitions, containment of potential contagion to the traditional financial sector – especially to those segments with high leverage such as banks – and traditional supervisory requirements for governance, capital and liquidity. However, there are limits to what supervision can do, and ultimately investors in particular need to be very aware of the inherently speculative nature of crypto investments.

These times call for a stable policy stance

Whereas preparations for the presentation of the 2020 Annual Report were disrupted by a sudden upsurge in coronavirus infections, a year later we were suddenly faced with the economic fallout from the Russian invasion of Ukraine. This characterises the inherently high level of uncertainty of the times we live in. The basic economic contours most economists are assuming are less foreboding than initially feared, although inflation has remained too high for too long. But the war in Ukraine is far from over, and energy prices remain an important and uncertain variable that can have a major impact on our economy. And we have not even touched on other geopolitical risks or the lacklustre state of global debt levels. The question that therefore arises is how policymakers and economic actors can best navigate these choppy waters. Every skipper will immediately understand the importance of keeping the rudder steady under these conditions.

Staying the course means, among other things, that policymakers themselves should not fan the flames of uncertainty or instability. More uncertainty is the last thing our economy needs. The focus must be on clear policies for the longer term. For us, this means first and foremost doing our part as a member of the Eurosystem to ensure the ECB fulfils its mandate: price stability in the medium term. And using forward-looking (scenario) analyses and effective macroprudential, microprudential and integrity supervision to help ensure the stability of financial institutions and the financial system in general, so that confidence in the financial system is maintained and the system can do its part to keep the economy ticking over smoothly. And in the unlikely event that a financial institution fails, as happened with Amsterdam Trade Bank in the year under review, we, as the resolution authority, work to preserve confidence in the system through our policy instruments and/or the deposit guarantee.

In the second place, it is vital to maintain sufficient buffers to absorb unexpected shocks. This applies to all sectors of the economy, especially the government and the financial sector. To a substantial extent, these buffers formed the life buoy for the Dutch economy during the pandemic, and they are a buoy we can still hold on to, even if it cannot carry much more weight. Prudence is therefore called for when using existing buffers, and they should where needed be replenished as soon as the opportunity arises. On the positive side, the starting position of the Dutch economy and its financial sector remains strong: household savings – which rose sharply during the pandemic as consumers took precautions against uncertain times ahead – are still relatively high, corporate profits have reached records at the macro level, the capital position of banks is healthy and the government debt ratio is already close to pre-pandemic levels, although the budget deficit is high given the booming state of the economy.

Still, it remains vital – alongside the steady rudder and a storm-proof ship – to stay the course to a clear point on the horizon. First and foremost, this means making our economy more sustainable, and ideally accelerating this process. This will only be possible if the structurally tight labour market is also tackled, a task both for the government and for the social partners. In addition, the Netherlands has a small and open economy that only thrives when Europe and the world are also doing well. This requires international efforts to stop the fragmentation of the global economy. And finally, it is vital that everyone in the Netherlands is involved in – and even embraces – the transitions that are coming. Instead of engaging in polarisation, we must acknowledge and take our joint responsibility.

2022 in brief

January

Our analysis shows that the government should help homeowners to improve the sustainability of their homes.

We warn of banks' profits coming under pressure as low interest rates persist.

February

As of 12 February 2022, DNB is the resolution authority for Dutch central clearing parties (CCPs).

Marking the publication of our annual report, Klaas Knot discusses the Dutch economy and the impact of the Russian war in Ukraine.

March

We activate the Dutch deposit guarantee for Amsterdam Trade Bank account holders.

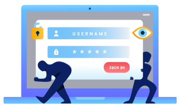
In our Payments Strategy, we emphasise that we want everyone in the Netherlands to be able to pay and for payments to remain secure.

April

In a roundtable discussion, we explain the macroeconomic risks to the financial system.

We introduce a new app that makes it easier to check euro banknotes for authenticity.

May



Our study shows that a cyberincident can affect financial stability mainly when operational problems spread through multiple channels of contagion and if this results in a major confidence shock.

We increase the countercyclical capital buffer (CCyB) from 0% to 1%. This means banks must set aside extra capital for the loans they grant.

June

At its monetary meeting in Amsterdam, the ECB announces it will terminate net asset purchases under the APP.

The FSC notes that uncertainties due to the Russian war in Ukraine and high inflation give rise to risks to financial stability.

FSB FINANCIAL STABILITY BOARD

The FSB meets in Amsterdam to discuss the outlook for global financial stability.

In a meeting, DNB and the ECB listen to young people's questions, criticisms and ideas on the future of our economy as well as high inflation.

We explain our position on the bill for a new pension system in a roundtable discussion in the Dutch House of Representatives.

July

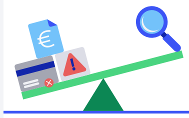
We apologise on 1 July – Keti Koti – for our role in the Atlantic trade in enslaved people in the nineteenth century. We also announce measures.

The ECB raises interest rates for the first time in 11 years.

EUROPESE CENTRALE BANK
EUROSYSTEEM

August

DNB advocates maintaining a careful balance between monetary policy and government measures supporting purchasing power.



In a study, we argue that a more risk-based approach will sharpen the focus of efforts to keep the financial sector free from financial crime.

September

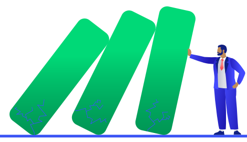
We impose an administrative fine of €3,325,000 on Binance Holdings Ltd for offering crypto services in the Netherlands without being registered with DNB as required under the law.

The ECB is tightening monetary policy in response to high inflation. This has a negative impact on our profitability and therefore on our capital position.

Avoiding a wage-price spiral requires effort from governments, central banks and social partners.

October

Robust economic recovery, but vulnerabilities are on the rise.



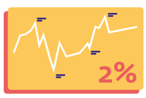
November

We believe it is important to agree on international regulation of crypto-assets such as Bitcoin, Ethereum and Tether.

A study we conduct shows that an insurance guarantee scheme (IGS) can be designed that offers policyholders affordable additional protection for their insurance.

Dutch households and businesses have very limited insurance cover against new and changing risks, such as floods and cyberattacks. Insurers must respond to these risks.

We have taken note of the ruling of the Trade and Industry Appeals Tribunal (CBb) in the bunq appeal case. We will naturally adjust our supervision accordingly. We are currently exploring the avenues available to do so.



In a roundtable discussion, Klaas Knot explains the sharp rise in inflation and what the ECB is doing to it get back on track to the 2% target.

We launch a new mortgage loans dashboard to make key mortgage data more accessible and user-friendly.

December

We devote our first ever public lecture to inflation.

The Dutch economy has cooled and is set to stabilise at 0.8% gross domestic product (GDP) growth in 2023. Major uncertainties remain.

Accountability

As reflected in our mission statement – "DNB seeks to safeguard financial stability and thus contributes to sustainable prosperity" – our core tasks are centred around sustainable economic development. This means economic growth without harm to the environment, supported by an inclusive financial and economic system, so that future generations do not have to pay for past mistakes. In this chapter, we explain how we have given form and substance to our mission in 2022, and what we have accomplished. We provide accountability with regard to the six strategic objectives set out in DNB2025, the change strategy implemented in 2020 to meet the challenges we face as steward of financial stability in the Netherlands.

Developments in 2022

As it was still recovering from the coronavirus pandemic, the world suffered another major shock in early 2022 when Russia invaded Ukraine. Economically, this resulted in a sharp rise in energy prices, leading to unprecedented levels of inflation, especially in Europe. Central banks, including the European Central Bank (ECB), responded by tightening their monetary policies. High inflation and rising interest rates are casting their shadow not only on the growth prospects of the Dutch economy, but also on financial stability. The latest DNB projections (December 2022) predict 0.8% economic growth for 2023, contrasting sharply with the 4.2% growth forecast for 2022.

The interest rate hikes and deteriorating economic outlook could affect the banking sector as a result of declining house prices and higher potential loan losses. On the other hand, the rising interest rates are also allowing banks to increase their interest margins again. Moreover, banks have sufficient buffers to absorb a blow, as evidenced by the results of a stress test published in 2022.

While the sharp rise in energy prices is conducive to the transition to a sustainable economy, the recent increases have been so steep that the transition process could be disorderly. Given its major economic consequences, the energy transition has and will continue to have our full attention. In our role as a supervisor, we integrate the climate and environmental risks faced by the financial sector into our supervisory framework. Besides climate risks, regulators and central banks are beginning to focus more explicitly on the potential stability risks associated with biodiversity loss as well.

A systemic crisis could also arise as a result of cyberattacks, which pose a growing risk as digitalisation continues. The effects of cyberattacks can rapidly spread through the financial system, partly as a result of the fact that many institutions depend on the same systems for payment and securities transactions. With this in mind, the topic of digital resilience remains high on our supervisory agenda. The same is true for combating financial crime. We are committed to a more risk-based approach in this area, which is expected to lead to better results. It will also reduce adverse side effects, such as the unnecessary refusal or exclusion of customers.

Building trust in the financial sector is the common thread running through our core tasks, as public trust in financial institutions is a crucial precondition for a well-functioning real economy. Trust in the financial sector remained stable in the year under review.

Like other employers, the tight labour market is forcing us to redouble our recruitment efforts to ensure that we are able to hire the right people. Our aim is still to have a diverse workforce with a wide range of knowledge and skills, which will allow us to remain a results-oriented and cost-conscious central bank, prudential supervisor and resolution authority.

Creating social value

We want to create social impact by ensuring price stability, balanced economic relationships, sound, future-proof and ethical financial institutions, a robust and accessible payment system and a financial sector that inspires public confidence. The value creation model below (see Figure 1) shows how we do this. Incidentally, it should be noted that there is not always a direct causal link between our core tasks and strategy on the one hand and our intended impact on the other: other parties besides DNB sometimes play a decisive role.

The aspects on the right-hand side of the value creation model are primarily discussed in the first three sections (Balanced relationships, Trust and CSR). We create social impact through the deployment of our social, intellectual, human and financial capital, listed on the left side of the value creation model. These resources are mainly discussed in the Digital, Staff and Cost-conscious sections. Our organisation, which is defined by its strategy, governance and operations, determines the deployment of people and resources. Together, input and organisation achieve specific results, aimed at generating the social impact we aspire to, and for which we keep potential short, medium and long-term risks firmly in mind.

Figure 1 Value creation model

Input

Financial capital

- Financial buffers and gold
- Contributions from own investments, monetary operations, other payment transactions and contribution from supervised institutions

Intellectual capital

- Expertise and knowledge development in monetary policy, macroeconomics, supervision, payments, financial stability, resolution and statistics
- Research and statistics
- Methodologies (including ATM), work programmes and procedures

Social capital

- Collaboration with national stakeholders (representation in over 40 bodies, including SER, CEC, REA, NFPS, Financial Stability Committee, FEC)
- Collaboration with international stake-holders, including Eurosystem, ECB, SSM, EBA, SRB, EIOPA, BIS, ESMA, IMF, FSB and NGFS
- Stakeholder consultations, e.g. with those involved in the Pension Agreement, users of statistics, Dutch households, within the iForum and the Sustainable Finance Platform
- Reputation among the general public and public trust in DNB

Human capital

- Labour market position, e.g. ranking for Top Employer certification
- Employee vitality and engagement, including absenteeism and employee satisfaction
- Diversity and inclusion, including ratio of women to men = gender and cultural diversity
- Compliance & integrity

Organisation

The toolset belonging to the statutory tasks:

- central bank task (monetary affairs, payments, macroeconomic advisory function, statistics)
- macroprudential policy task
- microprudential and integrity supervision task
- resolution task

Realisation of DNB2025 change strategy with ambitions:

- **CSR**
- **Balanced relationships**
- **Digital**
- **Trust**
- **Employees**
- **Cost-consciousness**

Operational management:

- Accomodation
- (Digital) work environment
- Employee talent development
- Monitoring and control
- Risk management

Results

Price stability

- Inflation and economic recovery after pandemic underestimated
- Issued warning on inflation risk resulting from purchasing power repair by policymakers
- Shared analysis and participated in policy debate on wage-price spiral and effect of energy prices on corporate profits
- Announced loss for coming years due to reversal of monetary policy

Balanced economic relationships in the Netherlands and the euro area

- Pandemic-related measures for banks completely phased out
- Lower limit introduced for risk weighting of mortgage loans
- Countercyclical capital buffer raised from 0% to 1% for banks
- Advised parliament on stimulating mid-market rental segment
- Participation in interdepartmental policy study on financing the energy transition.
- Worked in European forums to set up European supervisory regime according to Basel III
- Leveraged FSB chairpersonship in global policy consultations

Sound, future-proof, ethical and resolvable financial institutions and resilient financial system

- Called on banks to maintain their buffers at higher-than-required levels
- Began implementing recommendations in supervision following review of bankrupt life insurer Conservatrix
- Preparations for transition to new pension system on schedule
- Guide to managing climate and environmental risks made available to sector for consultation: supervisory expectations defined
- Greater integrity supervision capacity
- Round table discussions with sector on more risk-based approach to gatekeeper role and impact on access to banking services
- Trade and Industry Appeals Tribunal rules against us on certain points in bunq anti-money laundering rules case
- New statistics developed
- Loss-absorbing capital requirements imposed on all banks
- Deposit guarantee scheme activated and completed on schedule following bankruptcy of Amsterdam Trade Bank

Smooth operation of payment systems

- Payments Strategy published: accessibility and continuity are essential
- Study on the design of the cash chain and the influence of the digital transformation on accessibility
- Worked on creation of Cash Covenant with monitoring role for DNB
- Contributed to research into digital euro and ensured coordination with stakeholders
- Consolidation of Eurosystems TARGET2 and T2S postponed to 2023

Impact

Price stability

- Inflation up from 2.8% in 2021 to 11.6% in 2022. December 2021 projections expected inflation of 3% in 2022.
- ECB raises interest rates by 250 basis points in four steps. ECB monetary tightening in line with ECB views
- DNB loss reduces fiscal headroom in The Hague. Unconventional monetary policy provided €28bn extra fiscal space prior to reversal

Balanced economic relationships in the Netherlands and the euro area

- Solidity in Dutch financial sector at satisfactory level
- Housing market cools off partly due to higher interest rates; household financial position better than during 2008 crisis
- DNB recommendations on purchasing power repair not fully adopted
- Faster implementation of existing plans and additional policies needed to meet Dutch climate targets by 2030, according to PBL Netherlands Environmental Assessment Agency
- DNB plea for full implementation of European supervisory regime in accordance with Basel III still lacks sufficient impact
- IMF revises projection for growth of world economy downward: 25% probability of global recession

Sound, future-proof, ethical and resolvable financial institutions and resilient financial system

- Solidity of Dutch financial institutions in order
- Trust of Dutch households in financial institutions remained stablein 2022
- Public trust in DNB down slightly
- Management of integrity risks still leaves much to be desired
- Sector positive about new approach to gatekeeper role
- Better insight into money flows: significantly less money flowing through the Netherlands to tax havens
- DNB research shows that financial institutions are starting to integrate climate and environmental risks into their risk management

Smooth operation of payment systems

- Public trust in payment systems remained high
- No disruptions in TARGET2: 100% uptime
- Digital transformation survey results
- Cash Covenant: agreements on availability and accessibility for the next 5 years
- Coordination on design and need for digital euro in full swing

Social capital

President's Report
2022 in brief
Accountability
Balanced relationships
Trust
CSR
Digital
Staff
Cost-consciousness
Financial overview
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Financial statements
Annexes

Balanced relationships

Ambition 2020-2025	Progress in 2022	Actions in 2023
By 2025, economic relationships in the Netherlands and internationally will be more balanced, partly thanks to our efforts. Balanced economic relationships are a prerequisite for price and financial stability, and they contribute to sustainable prosperity. Rebalancing is necessary following the financial crisis of 2008, the European sovereign debt crisis and the COVID-19 pandemic.	■ Increased effectiveness of a broad range of policy input, for instance in relation to monetary policy and the pension system; less effective on purchasing power repair and not yet successful on European supervisory framework ■ Pandemic-related measures phased out ■ Supervisory implications of new pension contract mapped and capacity adjusted ■ Publication of DNB Payments Strategy 2022-2025.	■ Make a proactive contribution to price stability at ECB level ■ Provide effective policy input in national politics (for instance in relation to fiscal policy, the housing and labour markets, and pensions) ■ Achieve a robust, effective and efficient cash payment infrastructure based on research ■ Leverage FSB chairpersonship ■ Handle first conversion requests from pension funds

Price stability and changing interest rate environment

The past year was largely dominated by geopolitical turmoil and the sharp rise in inflation and interest rates. Russia's invasion of Ukraine has increased economic uncertainties globally, but certainly in Europe. In addition to a loss of purchasing power for the general public, rising inflation and interest rates are causing existing vulnerabilities in the financial system to re-emerge, creating challenging conditions for the financial sector. We analysed the impact of these headwinds on the financial sector and conducted a stress test to assess the consequences a further interest rate hike would have on the capital position of institutions. The results show that while the financial system is resilient, uncertainty remains high.

We too were surprised by the persistence of high inflation rates. In 2021, we warned of the risk that inflation could become more structural if price increases were to influence the expectations of, for instance, employers' organisations and trade unions. Meanwhile, however, we also assumed that inflation would slow down over the course of 2022. At the end of 2021, the harmonised consumer price index was still expected to increase by only 3% in 2022, but this estimate was adjusted to 8.7% six months later. In the end, the index would rise by 11.6% in 2022, compared to a 2.8% increase in 2021. The current high inflation levels can largely be ascribed to extreme events not captured in our models, most notably the Russian invasion of Ukraine, which reduced gas supplies, and the demand boom after the coronavirus restrictions were lifted, which coincided with lingering supply constraints as a result of the pandemic.

DNB supported the monetary tightening implemented by the ECB. DNB President Klaas Knot was among the group of ECB Governing Council members who were the first to speak publicly about the need for a quick and meaningful interest rate response to curb persistently high inflation.

In addition to interest rate hikes totalling 250 basis points, a new instrument – the Transmission Protection Instrument (TPI) – has also been introduced. This instrument is designed to break undesirable, self-reinforcing dynamics in the government bond market. For the time being, TPI's announcement has proved sufficient to contain market turmoil. The usefulness and necessity of the instrument were explained to the public in a DNBulletin. In our interactions with the ECB and other national central banks, we have argued that the use of TPI should be subject to strict conditions, and that rising inflation should be met with a sharp response. Both of these points are reflected in the agreed policy.

Our advice to the government on how to design the compensation measures to support purchasing power was only partially adopted. The effectiveness of monetary policy is partly determined by the prevailing fiscal policy, which is why DNB has taken a clear position in the discussion about purchasing power repair measures, arguing against an overly generous compensation policy, both through publications and in discussions with the government. Excessive compensation would further fuel demand for services and goods, including energy, and drive up inflation. This would go against the monetary policy, which is aimed at reducing inflation. Meanwhile, a DNB analysis showed that the increased energy prices were only having a limited impact on macro-level corporate profitability. Generous and broad support measures are undesirable not only from an economic perspective, but also with a view to the government's sustainability ambitions. After all, if high energy prices persist, our economy will need to adapt. The aim should be to improve sustainability and reduce energy consumption, which is why a clear exit strategy for the compensation measures is required. In some instances, our policy recommendations on this topic have fallen on deaf ears in The Hague. All households will benefit from the energy price cap, for instance, and generous support measures for businesses have also been introduced.

In light of the looming threat of a wage-price spiral, we have conducted several studies on the labour market. Our analyses show that the risk of such a spiral is limited, but vigilance remains necessary. For employees, the loss of purchasing power associated with high inflation can at least partially be compensated with wage increases, which is why wage growth has accelerated since the summer. In various institutional bodies and in the public debate, this has led to concerns that wage and price increases could form a self-reinforcing spiral. We addressed this issue in a DNBulletin last summer. Despite mounting inflation concerns among consumers, there are currently no indications that inflation will become persistently entrenched as a result of wage increases and a self-reinforcing wage-price spiral. We refer to this analysis in conversations with stakeholders, and the Executive Board regularly repeats the main conclusion in speeches and interviews. In addition, we conducted an in-depth DNB analysis of wage-price spirals and responsible wage growth, and we published an ESB article on how inflation expectations affect wage growth. The risk that this interaction will result in a wage-price spiral is currently limited, our analysis found. Still, vigilance remains key, and preventing inflation from taking root is a joint task of governments, employers' organisations and trade unions, and central banks.

Balanced economic relationships in the Netherlands and the euro area

DNB has also pleaded for a more balanced housing market. In a DNB analysis, we warned that the government's new regulations for the mid-market rental segment would have a negative effect on supply, which is already tight. A larger rental segment offers several economic advantages and acts as a "safety valve" for the housing market. In addition, we have contributed to making the housing stock more sustainable through a DNB analysis that explored how greening interventions might be financed. Ultimately, sustainable homes are a prerequisite for a balanced housing market, as was recently underlined by the sharp rise in energy costs.

Box 1 Stakeholder survey

Recognising that financial stability and balanced economic relationships cannot be safeguarded by DNB alone, a productive dialogue and cooperation with many of our stakeholders are essential. During the year under review, we held our biennial stakeholder survey, in which we asked 1,279 people who interact with DNB as part of their work how they perceive us, with respondents from the pension and insurance sectors providing input that led to significant outcomes. Response from other stakeholders – for example those involved in our banking supervision and central bank tasks – was less extensive, limiting the wider applicability of our findings in these areas.

Stakeholders in the pension and insurance sectors say that DNB has a solid reputation, both rating our reputation with a score over 60. A score of 60 or higher indicates a "very good" reputation. One striking outcome is the significant jump in our reputation among stakeholders in the pension sector, with our score rising from 56 in 2020 to 64 in the year under review. Stakeholders subject to our insurance supervision gave us a score of 72, the same as two years ago. Our communication and interactions with our pension and insurance stakeholders have also improved. On the whole, the percentage of respondents who experienced an improvement over the last two years exceeded the percentage of respondents who reported a deterioration. Nevertheless, around 30% of stakeholders say they would like their contact with DNB to be even more intensive and open.

Preparations for the transition to the new pension system are in full swing. At the request of the Ministry of Social Affairs and Employment, we carried out several calculations on the impact of the transition to the new system on members and pensioners of different ages. In December 2022, we updated these calculations following a letter of advice from the Parameters 2022 Committee. The outcomes were presented in the House of Representatives. In our supervisory capacity, we also discussed the guidance we will offer during the transition phase – for instance in the form of Q&As and fact sheets – in several sector roundtables. In addition, we have made efforts to prepare the public for the transition to the new system through speeches, interviews, presentations and a position paper. Together with the Dutch Authority for the Financial Markets (AFM), we conducted a second survey among the pension funds and premium pension institutions about their preparations.

Furthermore, we have requested plans of action and milestone summaries from pension funds that expect to "convert" (transfer to the new system) as early as 2024. The transition to the new system will require substantial effort from both the sector and DNB. At DNB, the cost framework for the additional capacity needed for pension supervision in the years 2023 and 2024 has been widened.

The temporary measures for banks that were taken during the pandemic are being phased out. The lowering of capital requirements and the relaxation of supervisory norms during the pandemic helped to keep banks focused on maintaining lending and supporting the economy. In March 2020, systemic buffers for banks were reduced and the introduction of a lower limit for the risk weighting of mortgage loans was postponed. Now that the coronavirus crisis appears to be over, European-level temporary capital relief is being rolled back, and at the national level we are starting with the previously announced build-up of additional buffers. A lower limit for the risk weighting of loans to individuals secured by mortgages on real estate in the Netherlands was introduced on 1 January 2022. This is necessary because the risk weights applied by banks based on their own internal models do not adequately reflect systemic risk in the housing market. Moreover, due to the vulnerabilities in the housing market, this measure has been extended until 1 December 2024. We also raised the countercyclical capital buffer (CCyB) from 0% to 1% in spring 2022 as a first step towards the 2% level appropriate for a standard risk environment where cyclical risks are at "normal" to elevated levels. Banks must comply with the increased 1% requirement by 25 May 2023. The CCyB preserves capital for the absorption of losses and to maintain lending to households and businesses during lean times.

Our efforts to comprehensively revise the European supervisory regime based on the Final Basel III Accord have not yet yielded the desired results. At the end of 2022, the draft legislation (CRR3/CRD6) contained too many exceptions to Basel III in our view, threatening to make European supervision less effective. Basel III aims at these three objectives: improving the comparability of capital ratios, restricting the freedom to use internal models in determining the capital to be held, and improving the review processes. We sought to influence European-level discussions on this subject by providing relevant technical analyses. In addition, we published a position paper together with the Ministry of Finance, demonstrating our shared goals in this area. Further attempts to call attention to our plea to limit exceptions to Basel III were made through a letter to the European Commission, which we co-authored with 24 other supervisory authorities, and a DNBulletin.

In Europe and globally, we are closely involved in developing universal policy frameworks for banks, non-bank financial intermediation, cyber risks, climate risks and crypto assets.
In December 2021, DNB President Klaas Knot became chair of the Financial Stability Board (FSB). In this role, he helps set the international financial policy agenda, for instance by advising the G20, with a particular focus on structural vulnerabilities in the areas of climate change, non-bank financial intermediation and crypto assets – in addition to current developments. In Europe, we remain closely involved in the European Commission's macroprudential review. As of yet, little progress has been made in strengthening the macroprudential tools for non-banks, which we have advocated. Finally, in 2022 we became co-chair of a task force under the auspices of the Network of Central

Banks and Supervisors for Greening the Financial System (NGFS), whose aim is to draw attention to the stability risks associated with biodiversity loss.

We supported the National Bank of Ukraine in strengthening its cyber resilience, the use of collateral in providing emergency liquidity assistance (ELA) to Ukrainian banks, and in setting up a resolution regime for insurers. This Technical Assistance (TA) could only be offered through online sessions, which reached a total of 96 Ukrainian colleagues. By providing TA, we seek to strengthen our ties with the countries represented by the Netherlands and Belgium in the IMF. Besides Ukraine, this includes Armenia, Georgia, Moldova, Romania, Bulgaria, North Macedonia, Montenegro, Bosnia-Herzegovina, Croatia, Cyprus, Israel, Andorra and Luxembourg. Many TA requests from these countries were honoured as well.

With regard to our supervision of insurers, we reviewed the drafting process of policy statements, such as Q&As and good practices. Improvements have been initiated based on feedback from the sector. As a result of our review, all policy statements for insurers will be updated in 2022 and 2023, and the Open Book search portal will be made more accessible. Progress was made in the year under review with regard to our legislative goals for the Financial Markets Amendment Act 2024. The proposal has been reviewed, and consultation questions have been answered by the Ministry of Finance as well as DNB. Once the act is implemented, we will be able to supervise reorganisations and acquisitions in the insurance sector more effectively by introducing a declaration of no objection. In addition, we will have more instruments to counter undesirable reinsurance constructions, as supervisors will be able to assess these in advance.

If the government and insurers work together, it will be possible to improve the management of risks such as flooding and cyberattacks. As things currently stand, it is still difficult to insure against these risks. According to our study entitled "Insurers in a changing world", this requires a comprehensive approach, in which both insurers and government have a responsibility to raise risk awareness and to come together to explore how new insurance markets could be created. In case of flooding, for instance, it is important that the government makes it clear under which circumstances it would offer compensation. This would reduce the sense of uncertainty among the general public and enable insurers to market their insurance products. The Dutch Association of Insurers has responded positively to the study and says it endorses the recommendations.

Smooth operation of payment systems

To maximise the accessibility, availability and acceptance of cash, on 7 April 2022 we concluded a Cash Covenant with 21 organisations closely involved in the Dutch payment system (see also Box 5 in the President's Report). These include banks, cash service providers, and retailer and consumer organisations. The covenant contains agreements aimed at maintaining the cash infrastructure and ensuring that cash continues to be available as a well-functioning means of payment for consumers. The agreements cover, for example, the number of ATMs and their accessibility, the inclusivity of the payment system and cash acceptance. The banks have also agreed not to raise their fees for cash services until mid-2023. In principle, the agreements apply for a period of five years, but contract parties can break open the covenant following the outcome of the study by DNB and the Ministry of Finance on medium-term solutions for an effective and efficient cash infrastructure (the TICKET study), which will be published in the spring of 2023. We monitor compliance with the covenant agreements and enforce it if necessary. Reporting on this takes place in the National Forum on the Payment System (NFPS). The Minister of Finance presented the covenant to the House of Representatives (see also the CSR section).

In September, DNB, together with the Ministry of Finance, commissioned an independent study on the future design of the cash chain. The aim of the study, which was commissioned as part of the Cash Covenant, is to identify the best ways to safeguard the cash infrastructure and the public functions of cash in the longer term. All options for market organisation and funding, both public and private, are being explored. The study's outcomes can inform political decision-making on the cash infrastructure and cash accessibility.

We believe that the ongoing digitalisation of the payment market underlines the need to continue working towards an accessible and confidence-inspiring payment and securities system. This is a key outcome of the DNB Payments Strategy, which was published in 2022. The strategy is centred around three priorities: safeguarding a robust and secure payment system in the face of increased digital dependence, ensuring access to payments in an increasingly digital world, and strengthening the payment system in Europe and beyond in a dynamic international playing field. A study commissioned by the Dutch Payments Association on the costs and revenues of the Dutch payment system in 2021 found that the Netherlands has an extremely efficient – albeit unprofitable – payment system. Losses are mainly caused by the increased costs associated with compliance obligations, such as customer due diligence (know your customer) and anti-money laundering measures, and by the low interest income generated by payment transactions in 2021 as a result of the very low interest rate environment that existed until recently. The research findings will be used as input in the public debate on how to ensure sustainable funding for the Dutch payment system (see also the Trust section).

To ensure public access to central bank money in the future, we contribute to Eurosystem research on a digital euro. As the use of cash continues to decline, we believe it is important that public money remain accessible, as the convertibility of private money (bank deposits) into public money is essential to maintain trust in the monetary system. The aim of the research phase, which began in 2021 and will end in 2023, is to carry out an in-depth study into the design of a digital euro for use in retail payments. Decisions on the implementation and realisation of such a currency will be made once the study has been concluded. We contribute to the ECB's digital euro project through our participation in the Eurosystem's High Level Task Force. This project requires careful coordination with all stakeholders. At the European level, this is done with the European Commission and the Euro Retail Payments Board, and at the national level with the Ministry of Finance, the House of Representatives and the National Forum on the Payment System (NFPS). In the autumn of 2023, the ECB's Governing Council will make a decision on the introduction of a digital euro. Until then, the reasons for introducing this digital currency need to be explored more thoroughly, as support in the Netherlands has so far been limited.

In a study on crypto markets, we warned about the risks associated with cryptocurrencies – unbacked cryptos are speculative assets rather than a means of payment – but at the same time noted that the underlying technology and applications do offer opportunities, if properly regulated. The high volatility of crypto markets, the collapse of one of the largest trading platforms and the drop in cryptocurrencies' market capitalisation have clearly exposed the weaknesses of the crypto ecosystem. For instance, some stablecoins failed to live up to their promises, while lending with crypto as collateral proved to be unsustainable. Cryptos have so far mainly been used as a speculative tool and are not suitable as a reliable and widely accepted means of payment. At the same time, both new players and traditional financial service providers could make use of crypto technology by "tokenising" assets (converting assets into tokens stored on a blockchain), potentially offering efficiency and transparency benefits. Clearly, crypto markets have many of the same functions as traditional financial markets, and there is no reason to treat them differently. International regulatory proposals are therefore being drafted, to which we are contributing. The upcoming EU regulation for issuers of crypto assets and crypto service providers – the Markets in Crypto Assets Regulation (MiCAR) – is a welcome step in the regulation of European crypto markets. MiCAR is expected to take effect in 2024.

Statistics

New DNB statistics show a significant reduction in cash flows from the Netherlands to tax havens. Income flowing through the Netherlands to low-tax jurisdictions fell from €38.5 billion in 2019 to around €6 billion in 2021, a drop of nearly 85%. This decline shows that stricter laws and regulations on tax avoidance are effective at curbing these predominantly tax-motivated income flows through the Netherlands. Our statisticians have also provided insight into the financial relations between the Netherlands and Russia by mapping the Dutch financial sector's exposure. In addition, we answered various questions from media outlets and politicians on the nature and extent of direct investment relations between the Netherlands and Russia against the backdrop of the sanctions imposed on Russia after it invaded Ukraine.

Trust

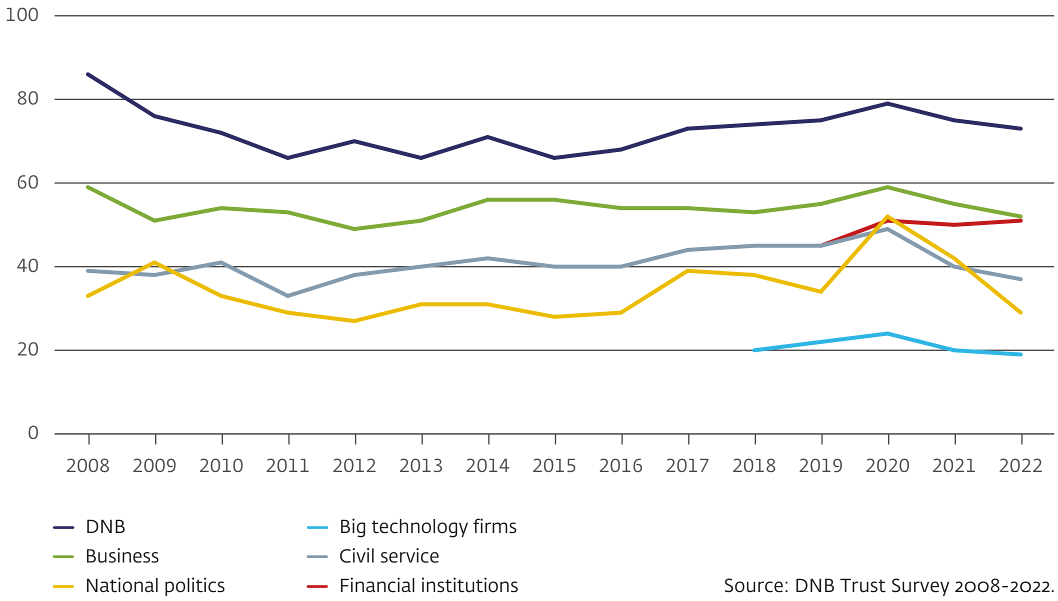
Trust Ambition 2020-2025	Progress in 2022	Actions in 2023
Our efforts have made a recognised contribution to public trust in financial institutions in the Netherlands. Public trust in financial institutions is an essential precondition for the functioning of the financial system, which in turn is essential for the development of the real economy.	■ Timely implementation of Open Government Act ■ Explained risk-based supervision and provided an overview of the sector's level of risk management in "Supervision in focus" ■ Deposit guarantee scheme successfully implemented (Amsterdam Trade Bank) ■ Adopted a more risk-based approach towards the role of financial institutions as gatekeepers ■ Established the Cash Covenant together with relevant parties to ensure the accessibility of cash (see also the CSR section) ■ Took steps towards automation of risk scoring models (see also the Digital section). ■ Gained experience in data-driven integrity investigations	■ Conduct baseline cyber resilience measurement for the financial sector ■ Organise sector roundtables on risk-based approach to gatekeeping ■ Develop measuring instrument to assess sustainability of financial institutions' business models ■ Create resolution plan for banks, insurers and CCPs

Public trust

Dutch households' trust in financial institutions remained stable in the year under review, according to our annual trust survey. Of those surveyed, 51% had fairly high or very high confidence in financial institutions (Figure 2). This is comparable to the results from the previous survey, which was conducted in 2021. In contrast, there was a decline in trust in national politics, the business sector and the civil service. Nearly 70% of respondents in 2022 were mostly or fully confident that Dutch banks would always be able to repay their funds held on deposit (Figure 3). Confidence in the ability of insurers to fulfil their obligations to policyholders was at a similar level. There was a slight drop in households' confidence in pension funds' ability to fulfil their commitments to pensioners. In recent years, however, confidence in this area has shown an overall increase, likely due to pension funds' increased funding ratios and the headroom these offer for the indexation of pension rights and entitlements.

Figure 2 Trust in financial institutions remains stable

Share of respondents with fairly high or very high trust

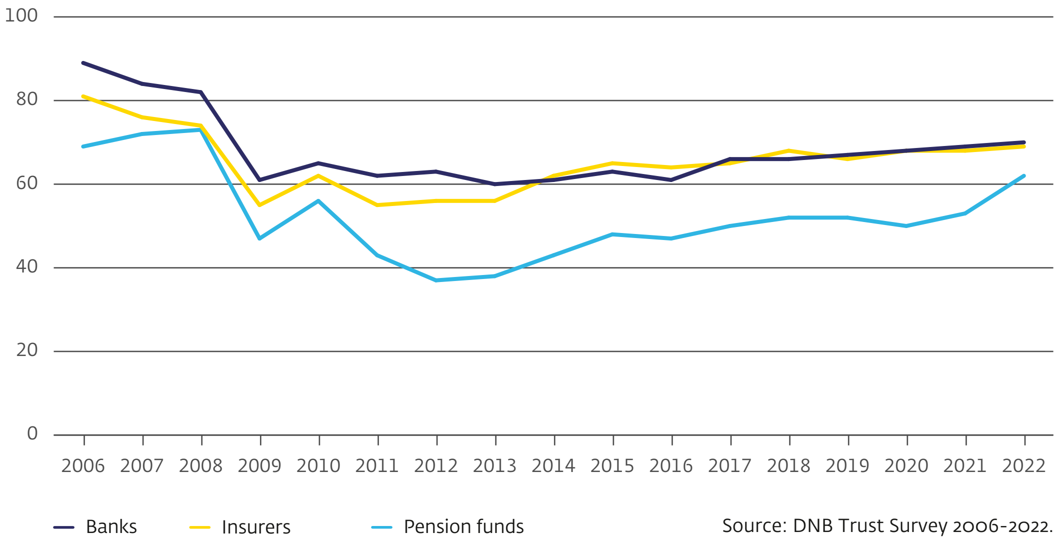


Source: DNB Trust Survey 2008-2022.

Note: Trust in financial institutions is the average level of trust in banks, insurers and pension funds, and has been measured in the same way as trust in the other entities since 2019. Trust in technology companies has been measured since 2018.

Figure 3 Public trust in the financial health of banks, insurers and pension funds

Share of respondents that have substantial or full trust



Source: DNB Trust Survey 2006-2022.

Trust in payment transactions remained at almost the same high level as in 2021. In October 2022, 72% of respondents had high or very high confidence in the payment system, according to data from DNB and the Dutch Payments Association. Only 2% reported having low or very low confidence. In August 2021, 74% of respondents said they had high or very high confidence in the payment system, while 1% said they had low or very low confidence. We measure confidence in the payment system continually throughout the year. Questions about which factors had affected respondents' trust were not asked in 2022.

The Dutch public's confidence in DNB decreased slightly last year, but was still at a high level compared to politics, financial institutions and the business sector (see Figure 2). Last year's trust survey revealed that 73% of respondents had fairly high or very high confidence in DNB, down from 75% the previous year. The survey results give no indication as to what might have caused this decline. At the same time, 61% of respondents said they agreed or strongly agreed that DNB's supervision gave them more confidence that financial institutions were meeting their obligations, up from 57% in 2021. The survey also revealed that confidence in the supervisory authority and the financial sector is greater when the former is transparent about how it supervises institutions. We also looked at which of our tasks contribute to confidence. This survey shows that the implementation of the Dutch deposit guarantee has contributed significantly to public confidence in DNB.

Our public reputation scores show a decline. Whereas research agency Kantar recorded a score of 59 across 2021, this dropped to 56 in the year under review. Kantar did not find a clear explanation for this decline. In the scoring system used, a result between 50 and 60 suggests a "good" reputation. From 2017 to 2020, the index showed values higher than 60 every year.

Solidity of financial institutions

In terms of solidity, financial institutions were mostly in good shape at the end of the year under review (see also Figure 11 in the President's Report). Bank resilience remained broadly stable throughout 2022, and was higher than before the pandemic. Capital buffers met the required standards. Given the current economic uncertainty, we believe it is important that banks also maintain buffers above regulatory standards, and that they exercise restraint with regard to capital distributions. This has been communicated to banks repeatedly, via various channels. Meanwhile, the solvency ratios of life and non-life insurers showed positive development. These ratios decreased for health insurers, partly because several insurers decided not to raise premiums as much as they would need to in order to compensate for the increased costs of healthcare in the year under review, drawing on their buffers instead. Buffers meet the required standards across the entire sector. Thanks to the increased interest rates, the pension sector was able to strengthen its financial position again, the same way it did in 2021, despite a decrease in total pension assets. Since most pension funds do not fully hedge their interest rate risk, the drop in the value of their liabilities as a result of rising interest rates outweighed the drop in the value of their investments.

Box 2 Conservatrix

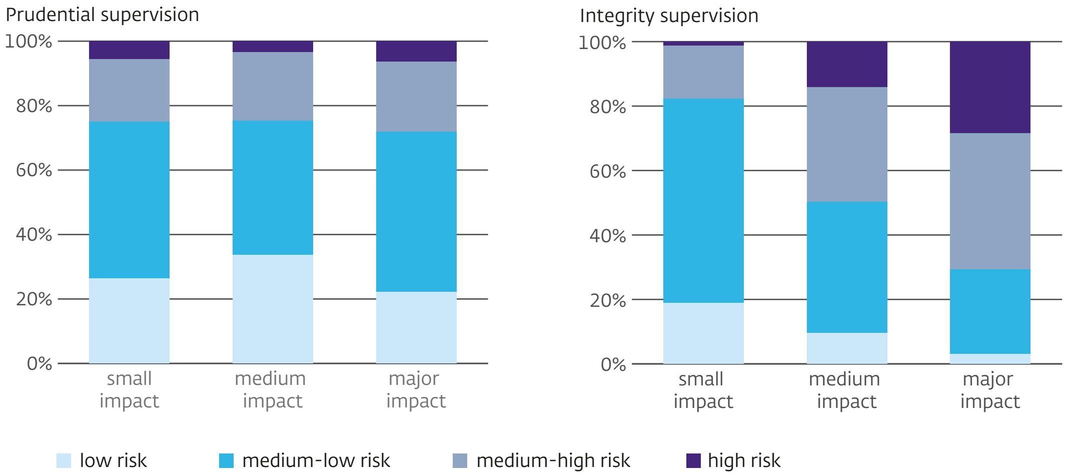
Following the evaluation committee's report on the bankruptcy of life insurer Conservatrix, published in December 2021, we drew up an implementation plan. We also took on board all recommendations regarding our own actions, which were varied and included taking into consideration special ownership structures of financial enterprises, optimising the exchange of information with foreign supervisory authorities, and improving how we handle external advice. The recommendations were translated into actions that are currently being implemented in our supervisory activities. For many of the actions, implementation has already been completed, and the remaining recommendations are expected to be integrated by 1 April 2023.
Meanwhile, Conservatrix's portfolio has been handed over to Waard Leven. We advised the liquidators on the proposed portfolio handover before it took place and were heard by the court on the policy condition amendments proposed by the liquidators.

Integrity risks in the Dutch financial sector

On average, the supervised institutions are in good shape in prudential terms, but the management of integrity risks still leaves something to be desired. There have been improvements compared to previous years, however. This is clear from Figure 4 in Supervision in focus, which shows the supervised institutions ranked first by their potential impact (small, medium, large) on confidence in the financial sector as a whole should they encounter difficulties. Second, the institutions are ranked according to the significance – in our estimation – of their integrity and prudential risks per impact category.

Especially institutions with a relatively high impact tend to have a risk score of 3 or higher within integrity supervision. Institutions are scored on 17 different supervisory aspects, and a component score of 3 or higher means that we find an institution's risk level unsatisfactory or its risk management inadequate. For medium- and high-impact institutions, this also means that these risks are outside the limits of our risk tolerance. To remedy this, we will increase our supervisory efforts and ensure that institutions take measures to manage risks. A decrease or increase in a risk score cannot be automatically attributed to supervisory efforts or a lack thereof. For instance, risk scores in the area of credit risk will increase in the event of an overall deterioration in the economic outlook.

Figure 4 Risk component scores by impact category, broken down by prudential and integrity supervision



To better align our supervision with our risk tolerance, we have further increased our integrity supervision capacity over the past year. We initiated intervention processes at a large number of institutions, in some cases following enforcement action, and supervised ongoing remediation processes. These are mostly multi-year processes aimed at improving control and lowering the risk level. In the year under review, we took 17 formal (e.g. instructions) and informal measures (e.g. compliance briefings) as part of our integrity supervision, compared to 27 in 2021.

Efforts to combat financial crime become more effective and efficient if a risk-based approach is adopted and more innovative applications are used (see also Box 3 in the President's Report). This is what we argue in our report "From recovery to balance", in which we review our own supervision and policies on the prevention of financial crime by banks. We are currently discussing new approaches with our stakeholders. The four largest retail banks contributed to the report by giving interviews and providing data. In its response to the report, the Dutch Banking Association (NVB) noted that it was "happy that DNB has indicated that it wants to offer direction as to what constitutes an adequate approach to low risk, and that it is open to the application of new technologies in customer risk assessment, such as machine learning, proceeding with care and due regard for privacy, of course".

Box 3 bunq

On appeal in the bunq case, the Trade and Industry Appeals Tribunal ruled that DNB was wrong on some points and right on others. At issue in the case was our instruction to bunq to comply with anti-money laundering rules, which we argued the bank was failing to comply with. The Tribunal ruled that there was insufficient substantiation for several of the instances of non-compliance we had found, particularly in relation to how bunq fulfils its statutory obligation to establish the purpose and nature of a customer relationship upfront and how bunq subsequently carries out its ongoing monitoring of a customer. The Tribunal also found, however, that we did provide convincing evidence that bunq is in non-compliance with various anti-money laundering rules, and held that we were justified in issuing an instruction.

We have recognised the implications of the ruling for our supervisory work. For instance, we no longer require institutions to validate their remedial efforts for instances of statutory non-compliance, nor that a management statement be provided upon completion of remediation. Furthermore, the ruling is currently also informing our response to recommendations made recently by intergovernmental organisations, such as the EBA and the FATF. As a result, the ruling – and these recommendations – could lead to further adjustments in our supervisory practice.

Several roundtable sessions were organised by the National Forum on the Payment System, which saw various sectors come together to discuss how the gatekeeper role of banks might impact access to banking services. The so-called "de-risking" policy, aimed at curbing financial crime, also has drawbacks as it may result in customers being prevented from opening a payment account, getting cut off from payment services or being restricted from using cash, without justification. Discussions were also held to clarify what a risk-based approach entails, what financial institutions can do to limit risk exposure themselves and how we can help them do so as a supervisory authority. Other topics that were discussed were the potential of machine learning in gatekeeping and the prerequisites for the safe application of these techniques. The hospitality industry, charitable organisations, social, political and religious organisations, the car trade and repair sector, wholesalers and retailers participated in these roundtables, which were organised in close cooperation with the Dutch Banking Association.

The international sanctions imposed on Russia in response to its invasion of Ukraine have had a major impact on our integrity supervision. About 5 to 7 FTEs have been reallocated as a result, and supervisory tasks have been partially reprioritised, which will remain the case in 2023. We answered a large number of questions from the sector, the media and politicians. The financial sector itself was kept informed of developments through news releases, while the sanction notifications we received were processed and shared with the Ministry of Finance. Two major sanctions investigations were carried out. One was a fairly traditional thematic examination conducted at a number of institutions across all sectors (pension funds, insurers, trust offices, crypto service providers, payment institutions and banks), while the other was a more innovative project in which we collaborated with an external provider to conduct research on the operation of sanctions screening systems at five payment institutions and 26 banks. Both studies will be completed in early 2023. There were also policy activities in relation to sanctions. For instance, we provided input to the relevant ministries on the nine sanctions packages that have been imposed since the Russian invasion of Ukraine, and we are working with the Ministry of Foreign Affairs to help modernise sanctions legislation. In addition, we are closely involved in initiatives to improve compliance with sanctions at the European level, for example at the EBA, which is working on sanctions guidance.

A pilot study on the use of smart analytical tools in integrity supervision among a number of insurers has yielded promising results. During this study into the effectiveness and efficiency of the sanctions screening systems in place at five insurers, we were assisted by an external party that provided a specialised stress test tool. It was found that several of the five insurers conducted little or no screening based on the Dutch sanctions list. Similar studies are currently also being conducted at 26 banks and five payment institutions.

Resolution

To be well prepared for an orderly resolution of distressed banks, we imposed requirements on all banks in 2022 regarding the amount of loss-absorbing capital they should hold in case they become unable to meet their financial obligations. This minimum requirement for own funds and eligible liabilities (MREL) ensures that there are sufficient assets to absorb losses and enable a restart. The Single Resolution Board (SRB) in Brussels, which oversees the major banks in the euro area, has imposed MREL requirements on seven significant institutions in the Netherlands, with DNB overseeing implementation. In addition, we instructed 22 smaller banks (less significant institutions) to hold sufficient loss-absorbing capital. Three of these banks could be eligible for resolution should they encounter major financial problems, while the remaining 19 would face bankruptcy. Of the 22 smaller banks, 20 must now meet a formal MREL requirement. For the two remaining banks, a formal MREL requirement has not been imposed yet, pending statement-of-views procedures.

Using the Public Interest Test, we have determined which banks would be eligible for resolution should they be at risk of collapse, and which would go bankrupt. The outcome is that two banks that previously would have been eligible for resolution would now be liquidated. This means that these banks are not required to hold subordinated liabilities on top of their capital requirement to meet the MREL requirement. They also no longer need to devote resources to resolution planning. Underlying the Public Interest Test is the assessment of the impact bankruptcy would have on the financial system and society.

We have prepared our first resolution plan for central clearing parties (CCPs). In addition to being responsible for an orderly resolution of banks and insurers, in 2022 we also became the resolution authority for CCPs. CCPs play a pivotal role in financial securities transactions. They are the linking pin between buyers and sellers of shares and derivatives and guarantee the rights and obligations associated with transactions. A resolution plan outlines the measures needed to enable a proper restart.

We have started a consultation process for a new policy rule that will give insurers more clarity on how best to comply with the obligation to be resolvable. The aim is to adopt this policy rule early in the second quarter. We have also examined a possible introduction of an insurance guarantee scheme (IGS), similar to the deposit guarantee scheme for banks. We concluded that various IGS designs that would offer policyholders affordable additional protection are conceivable.

Box 4 Amsterdam Trade Bank

On 22 April 2022, Amsterdam Trade Bank (ATB) filed for bankruptcy with the Amsterdam District Court. The sanctions imposed on Russia had far-reaching and disruptive consequences for ATB's business operations, mainly due to the fact that Alfabank, of which ATB was a subsidiary, had been placed on the US sanctions list. Alfabank and ATB subsequently also ended up on the UK sanctions list. As a result, several US- and UK-based service providers severed ties with ATB or were threatening to do so. Unable to find quick replacements for these service providers, there was a high risk that ATB would soon lose access to systems, staff, information and services that were essential for it to meet its commitments.

Starting in February, following the Russian invasion of Ukraine, we intensified our supervision of ATB, frequently requesting reports, including on the bank's liquidity position. There was also daily contact about the bank's situation, at both the board and workplace levels. Furthermore, we asked ATB to put in place the necessary safeguards to ensure that it complied with sanctions regulations and that no money could go to ATB's sanctioned shareholders.

Despite these efforts, bankruptcy could not be avoided. As a result of the bankruptcy, the Dutch Deposit Guarantee was activated in April 2022. ATB account holders were eligible to receive up to €100,000 from the Deposit Guarantee Fund. Within 10 working days, every account holder who reported to DNB had been compensated. By the end of December, 99% of the money had been returned to account holders who were entitled to it, amounting to a total of €668.4 million. The amount that was paid out has since been fully reimbursed by ATB's liquidators, restoring the Deposit Guarantee Fund's reserves.

Cyber and operational resilience

There was one major cyberattack on the financial sector in 2022, which was successfully repelled. This incident underlines the need for vigilance and constant cyber resilience testing. We supervised 11 hacking tests at financial institutions in 2022, and several exercises were held. The hacking tests are part of the TIBER testing programme – TIBER stands for Threat Intelligence-Based Ethical Red Teaming – in which the major financial institutions are ethically hacked to test their resilience to digital threats. In addition, we conducted so-called tabletops, in which topical cyber scenarios are recreated with the aim of learning from simulated crisis situations. Often, these exercises involve cross-institutional scenarios, such as a situation where a key player in the Dutch financial sector faces service disruptions due to a ransomware attack. In 2022, we teamed up with a number of banks to launch a project exploring the effects of a prolonged payment system outage as a result of a cyberattack. We also introduced a new internal system to monitor and protect our own digital infrastructure, phasing out the old system.

At the European level, the Digital Operational Resilience Act (DORA) has been adopted, giving us additional tools to further strengthen the cyber resilience of the financial sector, including that of third parties. This EU regulation, which will come into force in 2025, will ensure that critical third parties – such as providers of cloud computing services – come under the direct supervision of European supervisory authorities. This is necessary because financial institutions are increasingly dependent on third parties and services.

There were no major incidents in the year under review affecting the availability of the TARGET2 payment system. As a result, the availability of TARGET2 was 100%, the same as it was in 2021. Following three major incidents in 2020, an external audit was conducted, which produced a report containing 18 recommendations. These focused on improved risk management, more effective external communication, the introduction of overarching documentation and streng-thening internal governance (second line). Implementation of these recommendations continued in 2022 and should be completed by the end of 2023.

Work in the high-value interbank (wholesale) payment system in 2022 was dominated by the consolidation of the TARGET2 and T2S (TARGET2-Securities) Eurosystems and the migration of SWIFT to the ISO 20022 messaging standard for cross-border payments. The consolidation of the two Eurosystems was originally scheduled for 21 November 2022, but has been pushed back to 20 March 2023 following a decision by the ECB's Governing Council. The additional four months will allow TARGET2 participants to complete their tests in a stable environment, ensuring a smooth transition to the new T2 system.

Transparency and integrity at DNB

On 1 May 2022, the Open Government Act (*Wet open overheid – Woo*) came into force and was implemented at DNB. The *Woo* replaces the Freedom of Information Act (*Wet openbaarheid bestuur – Wob*). Unlike the *Wob*, the *Woo* in principle applies to all information held by DNB as an administrative body. Nevertheless, we can still invoke confidentiality provisions, for instance when it comes to confidential supervisory information or central banking tasks. Under the *Woo*, however, there is no more blanket exemption for information relating to our statutory tasks (central banking tasks, supervision and resolution). This means that we have to process all *Woo* information requests in these areas and provide a substantive response. There will be a three-year transition period for DNB, which started on 1 May 2022. During this period, the exemption that applied under the *Wob* will remain in place for documents held by DNB until 1 May 2022. As a result, documents that were held before this date cannot be released until 1 May 2025. Since 1 May 2022, we have received 14 *Woo* requests, ranging from topics such as gold bar lists to illegal trust services.

The Compliance, Integrity and Administrative Sanctions department's independent Compliance & Integrity unit encourages, advises and monitors our various business units with regard to our own compliance and integrity, including fraud risks. In the year under review, it advised on integrity and on the application of integrity regulations. In addition, compliance with integrity rules was monitored through annual statements and sample surveys, pre- and in-employment screenings were carried out, and integrity awareness was promoted among the Executive Board and employees. Furthermore, an integrity perception survey and five incident-driven integrity surveys were conducted (see Annex 1 Additional information).

CSR

Ambition 2020-2025	Progress in 2022	Actions in 2023
We strive for sustainable economic growth with no harmful effects on the environment. We strive for an inclusive financial and economic system.	■ Guide with tools financial institutions can use to manage climate and environmental risks released and submitted for feedback; launched an assessment framework for managing these risks ■ Spearheaded ECB-level efforts to develop statistics on physical risks, transition risks and green investments ■ Implemented a carbon monitor to measure the effects of payments and securities on climate change; measurements not yet carried out ■ Launched a study on the potential quantitative impact of biodiversity loss scenarios on the financial system ■ Frequently engaged with stakeholders, including with external stakeholders during roundtables on our sustainability strategy	■ Further embed climate and environmental risks in our supervision, including by updating our Good practices guide ■ Make the climate risk statistics produced together with the ECB widely available ■ Update Sustainable Finance Strategy based on stakeholder insights ■ Explore potential impact of social sustainability risks on the financial and economic system and our core tasks ■ Study costs and benefits of climate adaptation measures ■ Use the carbon monitor to track the payment system's emissions and find ways to bring these in line with the Paris Climate Agreement

Integration of sustainability in core tasks

As we work towards realising our CSR ambition by 2025 – fully integrating sustainability into our core business – we have made the most progress in embedding climate risks in our supervision, ensuring accessible payments and making socially responsible investments as part of our reserve management (see the Financial overview section). We made headway integrating climate risks into our supervision during the year under review, and we took steps to enable the integration of biodiversity loss and ecosystem degradation starting next year. Further progress is required in the area of environmental risks, such as resource depletion and pollution, for which we are still in the exploratory phase. In addition, we started an initial exploration of social risks and their materiality to the financial and economic system, which will look at risks with regard to human rights violations, the inclusiveness of the financial system and the accessibility of financial services. Within the "social" domain, the integration of inclusion into the payment system is further along, and we are committed to keeping the system accessible, including for vulnerable groups. In our investment policy, as in previous years, we take into account human rights controversies or practices that go against widely accepted social norms.

Stakeholder engagement

In order to harness external insights, we actively sought interaction with stakeholders. We engaged a broad group of stakeholders from finance, government, academia and the non-profit sector in a dialogue on new and existing themes and topics we could include in our sustainability strategy, and collected concrete proposals for actions to be taken. We also collected input from various NGOs. Because sustainability issues are systemic risks, our stakeholders suggested that we could further leverage our unique position as steward of financial stability to underline that urgent action is required and to formulate a long-term perspective. They also suggested highlighting the opportunities offered by the transition to a sustainable economy instead of only drawing attention to the risks, focusing on social risks and climate adaptation, and making existing themes more concrete. We will incorporate the insights these conversations produced into our priorities and the recalibration of our Sustainable Finance Strategy in 2023.

Engagement with external and internal stakeholders takes place more frequently and on a more structural basis. For instance, we have established an internal sustainability network that meets periodically. To increase our internal knowledge on sustainability risks and to gather new insights, also from other disciplines, we have organised several expert sessions in recent years on a wide range of topics, such as EU taxonomy, causes of biodiversity loss and ESG ratings. In these sessions, we speak with academics, NGOs and financial and public sector experts. We are also currently developing training courses to give supervisors the knowledge and skills they need to assess whether institutions are adequately managing climate and environmental risks. Externally, at the national level, we continued our efforts to make the Netherlands more sustainable through the Platform for Sustainable Finance (PvDF), which is chaired and run by DNB. In 2022, the PvDF published a roadmap towards a circular economy and launched a new initiative related to the role of the financial sector in the Netherlands' climate adaptation. Internationally, we contribute to various organisations and bodies, such as the ECB, EIOPA, G20, IMF and BIS. As co-chair of the Taskforce for Nature-related Risks of The Network of Central Banks and Supervisors for Greening the Financial System (NGFS), we are committed to embedding biodiversity loss and other environmental risks in our supervision.

Climate and environmental risks

Together with the PBL Netherlands Environmental Assessment Agency, we launched a project to develop scenarios that provide insight into the quantitative impact biodiversity loss could have on the Dutch financial sector. This is a follow-up to a joint report from 2020, which showed that Dutch financial institutions have a material exposure to biodiversity loss risks. We are now trying to quantify the losses these institutions would suffer under various scenarios, which has proved challenging. Unlike with climate risks, where carbon emissions can be used to quantify risk, there is no such clear indicator for biodiversity loss. Nevertheless, we expect to complete the project by the end of 2023.

With the publication of our "Guide to managing climate and environmental risks", we took an important step towards integrating climate and environmental risks into our supervision, which will in turn lead to integration into the risk management of financial institutions. The guide sets out focus areas and good practices for managing these risks and informs the supervisory dialogue between DNB and institutions. It applies to pension funds, insurers, electronic money and payment institutions, and investment firms and institutions. Where possible, the guide is aligned with the supervisory expectations applied by the ECB in its banking supervision. The guide was submitted to the financial sector for feedback at the end of 2022. The responses will be used to improve the final version, which will be shared in early 2023. This guide came about in response to the DNB report "Towards a sustainable balance", which we published in 2021, and a recommendation by the NGFS.

Box 5 Integrating climate and environmental risks at financial institutions

Based on surveys, we find that financial institutions have started integrating climate and environmental risks into their risk management, but there is still work to be done. Below is an overview of the progress made last year in each sector.

- **Banks.** Surveys among small and medium-sized banks (also referred to as Less Significant Institutions, or LSIs) show that almost all banks have taken steps towards integrating climate and environmental risks into their risk assessment and management, although there is still significant room for improvement when it comes to identifying and managing these risks. Furthermore, almost all banks have submitted action plans to DNB in order to meet the ECB Guide's expectations. The quality of these plans varies, however. The significant Dutch banks have also made progress in their management of climate and environmental risks, and the thematic examination reveals that the majority meet at least the minimum expectations set out in the ECB Guide. Nevertheless, the major banks still have a long way to go. The ECB stress test underlined that the assessment and management of climate risks are still insufficient. The major banks have until 2024 at the latest to address these issues.
- **Insurers.** The Own Risk and Solvency Assessment (ORSA) review, a number of on-site climate risk inspections and supervisory discussions show that insurers are paying more attention to these risks, especially in relation to their investments. ORSA materiality and risk analyses have also been improved. Further integration of climate risk into strategy, governance, risk frameworks and disclosure remains necessary, however.
- **Pension funds.** The Own Risk and Solvency Assessment and on-site inspections show that pension funds have taken steps to integrate ESG risks into their investment cycles. However, the embedding of these risks in the risk management cycle (identification, assessment, control and monitoring) still requires improvement. Last year, EIOPA conducted the first European climate stress test for pension institutions' transition risks. Both DNB and a number of Dutch pension institutions actively contributed to this. The stress test revealed a limited negative impact on the participating Dutch pension institutions, based on one scenario. Given the high degree of uncertainty when it comes to climate scenarios, EIOPA concluded that it would be useful to consider a number of different scenarios in future stress tests.

In 2022, we also made progress in embedding climate and environmental risks in our own supervisory methodology. Dashboards to monitor sustainability risks for banks and insurers are now being developed, similar to the dashboard we developed for pension funds. For now, the main goal is to quantify transition risks, such as the organisations' carbon footprint. We currently expect that banks and insurers will be able to monitor their carbon footprint on a structural basis starting in 2023. How physical climate risks such as flooding, environmental disasters and biodiversity loss should be quantified is still being explored. Work has also begun on the development of an assessment framework to evaluate the management of climate and environmental risks by institutions under our supervision, in keeping with our Conference of the Parties (COP) 26 pledge (see Figure 5). In 2023, we will examine selected institutions on their management of climate and environmental risks. Based on the insights gained from these examinations, the Guide to managing climate and environmental risks will be updated with new good practices next year. We will also continue the process of embedding sustainability risks in our supervisory methodology in 2023, focusing on integrating quantitative indicators for institutions' exposure to climate and environmental risks and qualitative input on the management of these risks into risk assessment.

Figure 5 Progress on COP26 pledge

Pledge	Achieved in 2022*
A strong financial system that is resilient to sustainability risks In 2022, we will:	
■ Develop a monitoring framework that enhances our ability to assess climate risks at the institutions under our supervision, address those risks and take enforcement measures if necessary.	✓
Increased focus on sustainability in the performance of our monetary tasks and in the payment system In 2022, we will:	
■ Map out how we can further reduce carbon emissions in the payment system and bring them in line with the goals of the Paris Climate Agreement.	✗
■ Develop good practices for climate risk management in cooperation with other parties in the Dutch market infrastructure.	✗
■ Further integrate climate aspects into the monetary policy framework, within the context of and in line with the Eurosystem.	✓
An informed debate on making the economy more sustainable In 2022, we will:	
■ Explore the further integration of climate risks into our macroeconomic models.	✓
■ Use simulation instruments to calculate the direct impact of carbon pricing on different sectors.	✗
■ Continue to advise the Dutch government on economic and financial policies to combat climate change and mitigate the effects of global warming.	✓
Robust sustainability data and statistics In 2022, we will:	
■ Take further steps to apply state-of-the-art data sources and methodologies for climate risk quantification in our work.	✓
A sustainable organisation In 2022, we will:	
■ Take further steps to align our investment portfolio with the Paris Climate Agreement.	✓
■ Research the physical climate risks of our own investments.	✓
■ Benchmark the carbon footprint of our operations against other central banks and Dutch administrative bodies.	✓

* A detailed explanation of the status can be found in this CSR section, under *Climate risks, monetary policy and balance sheet management* and Socially responsible investment in own investments in the Financial overview section, and under *Environmental protection and carbon footprint of business operations* in Annex 1 Additional information.

We spearheaded ECB-level efforts to develop European sustainability statistics. In 2023, we will release the first sustainability statistics together with the ECB and other European central banks, providing insight into the carbon footprint, physical climate risks and green investments of the Dutch financial sector. In addition, a work plan has been proposed with concrete ways to improve the measurement methods for these indicators in 2023 and 2024. Special attention will be paid to three topics: the distinction between the role of divestments on the one hand and the greening of companies on the other; the development of the carbon footprint of financial institutions' investment portfolios; and, finally, the establishment of reliable time series so that developments can be tracked over time. The first study on this was published in early 2023. DNB was also one of the lead authors of the NGFS final report "Bridging the Data Gaps", which offers concrete policy recommendations on how to improve the quality, accessibility and comparability of climate data.

An analysis of banks' loan portfolios shows that companies are not adapting fast enough to meet the goals of the Paris Climate Agreement, leading to transition risks for banks. For this analysis, we linked supervision data to forward-looking metrics from an external data provider. This allowed us to see the production plans for the coming years of companies in carbon-intensive sectors to which banks have extended credit. The results were published in the DNB analysis "Towards more sustainable lending".

Monetary and macroeconomic policy

As part of the Eurosystem, we contribute to the integration of climate risks into monetary policy and aim to bring our own equities and corporate bonds in line with the Paris Climate Agreement by 2025 (see Financial overview). The 2021 balance sheet stress test we conducted on physical and transition-related climate change risks is still relevant, but by developing a climate dashboard we aim to get a better handle on these risks. This year, for the first time, we are reporting on scope 3 of the carbon emissions of our own investments. We also show how both absolute and relative carbon emissions within scopes 1 and 2 have developed in recent years (see Financial overview).

Based on our own analysis, we are seeing early signs that equity and bond markets are slowly but surely pricing climate risks. At the same time, experts and international financial institutions fear that climate risks are being underestimated and that they are not consistently priced. Partly for this reason, sustainable finance is an increasingly important topic on the agendas of international institutions and consultative bodies. Last year, we contributed to BIS analyses on climate risks, to the NGFS report "Enhancing market transparency in green and transition finance" and to the OECD "Policy guidance on market practices to strengthen ESG investing and finance a climate transition". Finally, in collaboration with OMFIF, we organised a conference on the interplay between bio-diversity loss and financial markets. In the coming year, we again plan to conduct research on how climate risks are priced into financial markets, and we aim to play an active role in international discussions on the subject.

We have contributed in various ways to the public debate on energy relief. For instance, we participated in a roundtable discussion before the Standing Parliamentary Committee on Economic Affairs and Climate about the impact of energy prices on industry and businesses. Our input in the public debate was partly informed by a DNB analysis, which showed that higher energy prices are only having a limited macro-level impact on the profitability of Dutch companies. These findings were widely reported in the media. In an opinion piece in NRC, we also pointed out that the design of the relief measures should take into account the impact on the energy transition.

There was a sizeable reduction in greenhouse gas emissions in 2022. In the first half of the year, emissions (excluding land use) were 10% lower compared to the year before – a significant drop. It should be noted, however, that emissions trends in the Netherlands and the EU were strongly driven by the energy crisis in 2022, and less by climate policy. This makes it likely that a significant part of this reduction will prove to be incidental.

We contribute to the interdepartmental policy study Financing the Energy Transition, which aims to find ways to tighten Dutch climate policy to ensure that the Netherlands meets its climate targets. For the purposes of this study, we surveyed the Dutch public on the effects of the high energy prices on households' greening efforts. The results have been shared with other contributors to the study and will be published in early 2023. This research builds on an earlier DNB analysis on how to finance sustainability efforts in the housing market, which also involved a roundtable discussion with relevant stakeholders.

In its coalition agreement, the government announced several steps towards better emissions pricing: reducing the number of regressive energy taxes, shifting taxation from electricity to gas, phasing out fossil subsidies, reinstating the air passenger tax and introducing a minimum Emission Trading Scheme (ETS) price for industry. These are measures that we championed in the run-up to the 2021 House elections and during the formation process. Another positive development is that the emission reduction target has been sharply tightened by the new government, although doubts have been raised about the feasibility of the ambitious new goal. In terms of European emissions pricing, we were pleased to see that the ETS price was relatively high for much of the year (see Figure 6), although there were also significant fluctuations. Furthermore, the European Commission has promising plans for better emissions pricing with its FF55 package, such as tightening and expanding the ETS and minimum energy tax rates, but these may be diluted if there is a lack of support among Member States.

Figure 6 Developments Emission Trading Scheme price

Daily figures; euro per tonne

Cash and payment systems

We introduced a carbon monitor for retail payments to determine the potential of reduction targets as well as their impact. Emissions will be monitored starting in 2023. The outcomes will be discussed with chain partners to determine the potential and impact of reduction targets, helping us realise our ambition to bring emissions for cash payments below 4,000 tonnes of CO2 by 2030, and below 1,000 tonnes for debit payments, in line with the Paris Climate Agreement.

To draw attention to climate and environmental risks in financial market infrastructures (FMIs) among central clearing parties (CCPs), central securities depositories (CSDs) and payment institutions, we held a roundtable discussion and consultation rounds with these parties. These conversations revealed that not all of our discussion partners were paying attention to these risks yet. For these parties, we created a good practices overview to help them embed climate and environmental risks in their governance and risk management. The good practices have been coordinated with the industry and several national and international authorities. After they are published in early 2023, they will underpin industry discussions. Besides helping these parties manage their climate and environmental risks, we also want to encourage them to explore other opportunities to create impact. They could do this, for instance, by promoting the resolution of ESG products or emission allowances, and by critically assessing their own burden on the natural environment.

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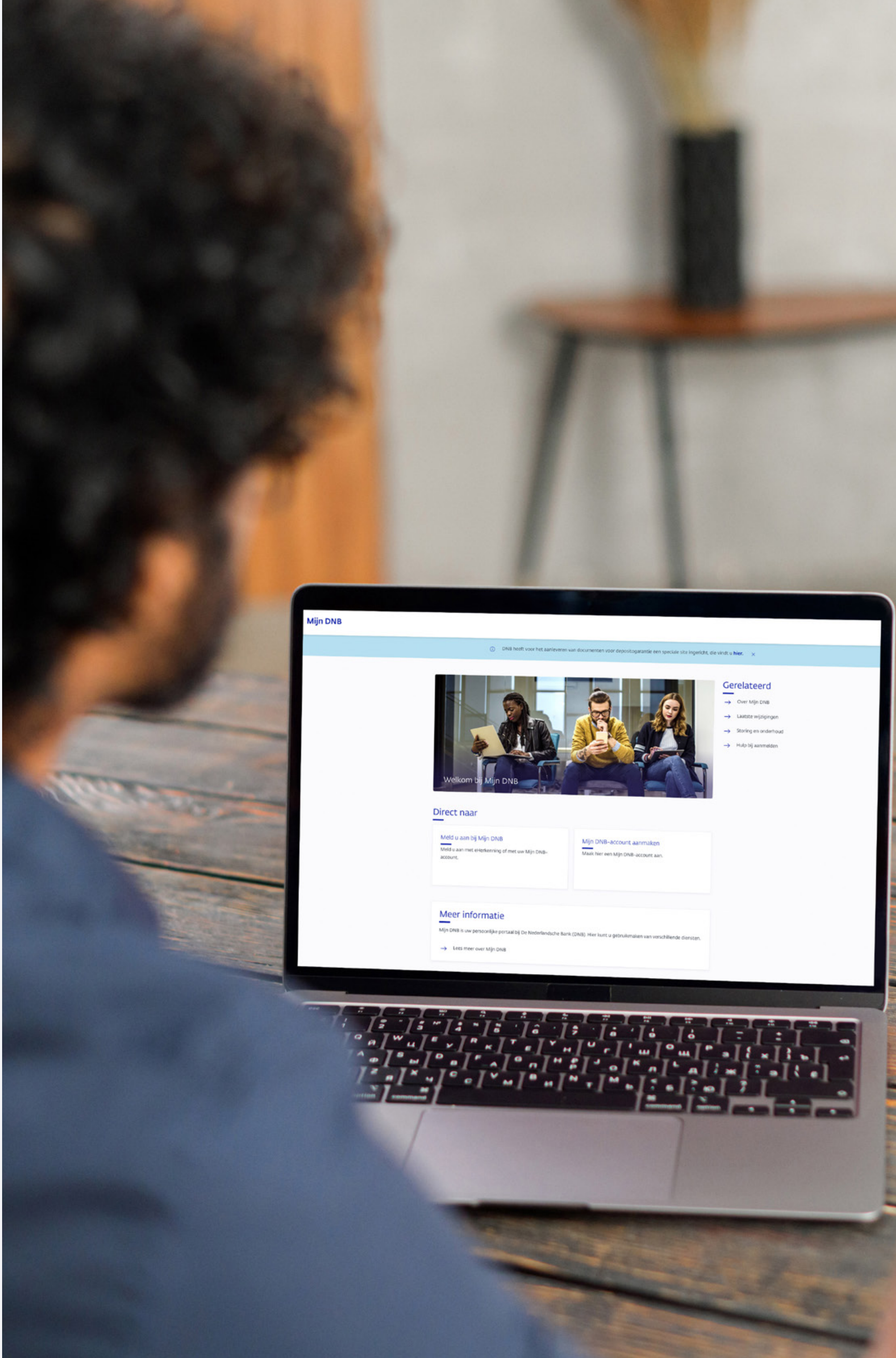


Digital

Digital Ambition 2020-2025	Progress in 2022	Actions in 2023
Our work is data-driven and based on digital technologies in all our areas of activity. We are recognised as a digitally engaged participant in the financial sector. With the use of data, technology and digital processes, we can perform our tasks as effectively and efficiently as possible. We are also a respected peer in the sector in terms of digital know-how.	■ Created a roadmap for the digitalisation and automation of processes - Less progress than intended on digitalisation of supervision chain process - All existing services added to My DNB portal; not all upcoming services have been added yet ■ Data ownership was embedded across DNB ■ DNB's data maturity grew from 1.7 to 2.2 on the 5-point scale of the DNB Data Maturity Model ■ Role of data owner fleshed out ■ Our digital environment was made more robust as 95% of our employees have now switched over to Smart Workspace	■ Further digitalise processes in the supervision chain to achieve 75% digitalisation ■ Continue experimenting with data-driven surveys in supervision ■ Collect user ratings for the digital supervision strategy and the digital tools that have been developed ■ Optimise services such as qualitative and supervisory surveys and add formal messages to My DNB

Digitalisation of supervision processes

Our smart supervision transformation is coming about more slowly than intended. This is partly due to the fact that development teams were needed for other ICT projects, such as the strengthening of our ICT foundation to ensure a robust working environment, which included the transition to Smart Workspace. The transformation also requires more resources than expected, while the available change capacity of the business was overestimated. Originally, the plan was to move from the 'second wave' (supervisory processes become digitalised and data-driven) to the 'third wave' (introduction of self-learning algorithms in supervision) before the end of the year under review. However, this transition has been postponed to the end of 2024. This means that in 2023 and 2024, the focus will remain on digitalising the existing supervisory processes. The problems in relation to our ICT facilities were not foreseen when the 2021-2024 cost framework was drawn up. Nevertheless, we remain on track to achieve our savings targets. This is because the personnel budget that was earmarked for experimentation with innovative techniques has not been used due to the postponement of the transition to the 'third wave'. The fourth and final wave will consist of research on the reliability of AI outcomes for our supervision.

With the digitalisation of the various processes that make up the supervision chain – receiving and analysing data, determining risk scores, planning supervisory activities – steps have been taken, but progress still fell short of expectations. In 2022, it became possible to view dashboards and other supporting information with a single click, allowing supervisors to assess institutions' risk scores more swiftly. In addition, the system supports direct scheduling of thematic examinations and supervisory activities for each institution, without supervisors having to manually combine information from different files and systems. Next, we will make the tooling more user-friendly by adding features and improving the access to information for the assessments. Institutions regularly submit requests and reports to us. We processed 46% of these in 2022, which means that 81% of the total volume is now digitally accessible. By 2024, we aim to have digitalised all requests and reports submitted to us by institutions.

Digital communication

Services have been added to My DNB, the portal that allows our external stakeholders to communicate with us securely and efficiently – and not just for the institutions we supervise. For example, anyone can now use My DNB to submit a request to exchange guilders or damaged euros. It is also the primary tool central banks outside the euro area that have an account with DNB use to access our services. My DNB also facilitated the implementation of the Deposit Guarantee Scheme (DGS). For supervised institutions, My DNB includes all existing online services, such as the Supervision Calendar, which shows institutions their upcoming supervisory activities. We were unable to add a number of new services, as we used the resources that were originally allocated to this project for a qualitative surveys pilot in early 2022, because the sector needs a more user-friendly and less error-prone reporting method. This pilot proved successful, which is why we continued developing it in 2022, allowing us to use this tooling to assess non-financial risks in qualitative surveys in 2023.

Use of advanced analytics techniques

Despite the postponement of the above-mentioned third wave, in which we intend to introduce self-learning algorithms, we have gained new and useful experience in using advanced analytics techniques in our supervision with the help of a grant awarded by the European Commission. For instance, using natural language processing techniques (including text mining), we have been able to streamline our analysis processes for various qualitative reports submitted by institutions, remaining vigilant with regard to responsible use. Examples include analyses of board meeting minutes, the assessment of sustainability claims made by financial institutions and group transfers of accrued benefits at pension funds. A structural solution for the automatic categorisation of texts that are submitted to us will be further developed in 2023.

Stakeholder engagement

To keep a clear view of both the opportunities and risks presented by technological developments, we continued our dialogue with the sector, including in the iForum. There, we discussed the European Commission's AI Regulation and the discussion paper on data mobility we published together with the AFM. We use sector input to formulate appropriate policies on these issues. In early 2023, we will conduct a review aimed at increasing the effectiveness of the iForum.

Data reporting pilot yields encouraging results. During the year under review, we carried out a pilot in which we made an internal DNB data monitoring tool available to insurers, giving them easy access to more concrete information regarding possible deficiencies in their periodic data reports.

The results were so encouraging, both to us and the insurers, that we will consider implementing this instrument more widely in 2023.

Through the InnovationHub set up jointly with the AFM, we fielded 211 questions from the sector on the relationship between the digital innovation challenges faced by market participants and possible supervisory rules applicable to them. In 2021, there were 259 questions. Through the InnovationHub, the AFM and DNB provide support on all queries companies may have about supervision and regulations in relation to innovative financial products and services. Our support is available to both new and existing companies, regardless of whether they are subject to the supervision of the AFM or DNB. Together with the sector (industry associations and individual institutions), the AFM and DNB looked at how the InnovationHub might be improved, and the platform will be updated in 2023. This will lead to shorter response times and better awareness and visibility of the InnovationHub in the sector.

Data management

To make optimal use of the data at our disposal, governance around data use has been further fleshed out. For instance, the role of data owners was defined in more detail, and data owners were appointed in areas where data ownership had not yet been clearly established. These new data owners were given training to instruct them about their responsibilities with regard to risk management, access and quality assurance. In addition, a new data architecture was approved, which will ensure more standardisation and greater uniformity of data.

Our data maturity level increased in 2022. On the 5-point scale of the DNB Data Maturity Model, our score rose from 1.7 (in 2021) to 2.2, keeping us on track to reach our target score of 3 by the end of 2024.

Working environment

The roll-out of the new digital workplace, which aims to create a robust working environment, is almost complete. More than 95% of employees had switched to our new Windows 365 working environment ('Smart Workspace') by the end of 2022. This has created more stability and there have been fewer incidents. To reduce our reliance on external contractors, our ICT division has been reinforced with about 100 new staff members. This will continue to have our attention in 2023, as we strive to achieve a healthy balance between internal staff and external contractors.

Staff

Staff Ambition 2020-2025	Progress in 2022	Actions in 2023
We are committed to greater diversity, open dialogue and enhancing the digital skills of our employees.	■ We have not yet achieved our gender diversity goals at the staff and management levels ■ We are still experimenting with a 50/50 guideline for hybrid working, but our temporary headquarters is insufficiently equipped to facilitate office working	■ 80% of employees complete Diversity & Inclusion e-learning ■ Launch labour market campaign aimed at recruitment for hard-to-fill vacancies ■ Update Diversity & Inclusion strategy ■ Improve employees' digital skills through appropriate course offerings

Labour market

While the tight labour market has also affected us, making it more difficult to fill certain positions, we are still managing to find suitable candidates for most vacancies thanks to our position in the labour market and targeted recruitment activities. In 2022, we had a net staff growth of 102 employees, compared to 54 in 2021. Turnover remains highest among employees between the ages of 30 and 39. There were hard-to-fill vacancies in the Monetary Affairs domain, including in the areas of asset management and cybersecurity. In supervision, mid-level actuaries are a scarce target group.

In addition to the recruitment of recent graduates and young professionals, our HR policy increasingly focuses on retaining young talent. Given our reasonable success so far in attracting young, talented staff, it is becoming all the more important to retain them. With this goal in mind and to complement the existing Questions talent programme, we launched a broad development programme for all young professionals at DNB, called Explore, as well as a young professional programme for Pension Supervision. We will also pay more attention to internal career planning and advancement opportunities for employees in 2023. Our traineeships attract sufficient interest. During the year under review, we received applications from 269 candidates for the regular traineeship, 14 of whom were eventually selected for the programme. Five candidates who were not offered a traineeship were hired for regular positions. Several years ago, we also introduced Data & Tech traineeships, for which we received applications from 54 candidates in 2022 , 6 of whom were selected. One candidate was appointed to a regular position. To raise our wider profile as well, we will launch a new labour market campaign in 2023.

DNB has a relatively strong position in the labour market. In 2022, we once again attained a higher ranking compared to the year before in the Top Employers ranking, earning a spot in the top 10. In doing so, we achieved our objective of improving every year. Our jump up the list in the year under review was mainly due to a high score on Development, a sign of appreciation for our new approach to performance management. Our score on Engagement also stands out. This can mainly be attributed to our focus on vitality and engagement.

Diversity

Our diversity and inclusion ambitions were not only reflected in the division plans in 2022, but also in a training curriculum for employees, in the appointment of a chief diversity officer and in the measures we took to account for our historical involvement in slavery (see Box 6). Divisions and departments have included targeted diversity and inclusion targets in their annual plans, in line with our DNB-wide goals. This has also made diversity and inclusion a more frequent topic of conversation within our organisation and in our recruitment. To minimise the influence of subjective views and unconscious biases, HR staff received training to help make the recruitment and selection process as objective as possible. A Diversity & Inclusion e-learning module developed specifically for DNB was offered to all employees, and we introduced a diversity and inclusion training curriculum. By the end of 2023, we want 80% of our employees to have completed the e-learning module.

At both the staff and management levels, we need to continue on the course we have set to achieve our targets in 2023. In 2021, 40.4% of all employees were women, but 2022 saw a small drop, to 40.2%. At management level, the share of women rose from 36.1% to 37.9%. We aim to raise this to 40% in 2023. We have various programmes in place that will help us achieve our targets, such as Talent to the Top, and we are making diversity a priority for selection committees and leadership programmes.

By 2025, we want to employ 45 people with a disability (for at least 25.5 hours per week). In 2022, people with a disability accounted for 25 participation FTEs. The recruitment of talented new employees with a work impairment in the current tight labour market and employee retention are the main challenges we now face as we strive to achieve our targets.

In order to promote cultural diversity at management level, we decided in 2022 that 10% of our managers should have a non-Western cultural background by 2030. The interim target for 2025 is 5%. A survey held in 2022 showed that on 1 June that year, 1.6% of management had a non-Western migration background. For DNB as a whole, the share of colleagues with a non-Western migration background was 11% in 2022, almost equal to the national average of 12%. By helping talented employees advance their careers at DNB – including with the help of a mentoring programme – we are endeavouring to get closer to our target.

Box 6 DNB's historical links to slavery

Following the publication of an independent study by Leiden University on 9 February 2022, DNB acknowledged its historical involvement in slavery, highlighting three points. First, part of DNB's start-up capital was derived from the proceeds of slavery. Second, some of its directors were privately involved in slavery. And third, when slavery was abolished by the Netherlands in 1863, DNB offered financial compensation to plantation owners on behalf of the Dutch government.

After the report's publication, we spoke to grassroots and other civil society organisations, academics, descendants of enslaved people and both an internal and external focus group. Acknowledging the suffering of enslaved people and apologising for our involvement in slavery are essential to healing past and present trauma. During the Keti Koti celebration in Amsterdam's Oosterpark on 1 July 2022, Klaas Knot apologised on behalf of DNB for its historical involvement in slavery to all descendants of enslaved people in the Netherlands, Suriname, Bonaire, Sint Eustatius, Saba, Aruba, Curaçao and Sint Maarten.

We also announced a set of appropriate, meaningful and proportionate measures to help repair the damage caused by slavery. For instance, we pledged €5 million to fund measures aimed at further raising awareness about the history of slavery, such as the National Slavery Museum and a knowledge centre. As part of the implementation of these measures, the programme manager of our slavery project conducted several exploratory interviews, for which she travelled to Suriname and Curaçao. Over the next 10 years, we will also make an annual contribution of €500,000 to a fund for projects aimed at reducing the current impact of historical slavery. A provision was made for this total contribution of 10 million euros in 2022 (for further information see liability item 11, Other provisions, under Provisions, on page 143). We are also taking steps to make our own organisation more diverse and inclusive, for instance by appointing a chief diversity officer and setting cultural diversity targets for management. We will be transparent about our past in our renovated headquarters in Amsterdam, through presentations and our art collection. Moreover, we will continue our historical research.

Digital proficiency

In 2022, 36% of employees received training as part of the Data & Tech curriculum, which is designed to help employees improve their digital skills. For supervisors, we introduced Smart Supervisor Basic Training, and similar initiatives are underway for staff in the non-supervisory divisions. Our goal is to make the best use of technical developments that can make our work more effective.

Working environment

Now that the pandemic has subsided, employees are expected to spend about 50% of their working hours at the office, depending of course on their specific role. In practice, some teams are finding it difficult to comply with this guideline. There have been a large number of initiatives to promote cohesion. For instance, we organised a week of networking activities around the theme "we all rely on our colleagues", focusing on job satisfaction at DNB and teamwork. Our Blue Zone programme, which promotes work-life balance and vitality, is still in place.

Box 7 Culture & Change programme

The appointment of a Culture & Change programme manager has reinvigorated the organisation-wide culture change process. The programme focuses on the themes 'Safe & direct', 'Collaboration & appreciation' and 'Focus on results'. Employees and the Executive Board agree that these are areas in which DNB could make further improvements, which are necessary to realise our DNB2025 ambitions. To assess our progress since the start of the process in 2019, we conducted an employee survey in 2022 to find out how our staff rate our performance on the three Culture & Change themes. The DNB-wide results of the survey showed a very small improvement in our scores for each theme. Nonetheless, the Executive Board was satisfied with the outcome, especially in light of the impact of the pandemic and the switch to remote working.

The survey results will serve as the basis for a divisional change approach driven and supported by the Culture & Change programme. In recent months, almost all divisions have started exploring aspects they want to improve. Many divisions have also put together a team of employees who want to contribute to DNB's culture change. Supported by the Culture & Change programme, they will begin implementing improvements in 2023. The Culture & Change programme will also focus on communicating the usefulness and necessity of the intended changes by launching a DNB-wide campaign. Based on an analysis conducted by behavioural psychologists, a creative agency will design a change campaign slated for launch in early 2023. Furthermore, our HR policies, processes and training offering were screened (in collaboration with HR) to assess their alignment with the culture themes, to ensure that they support the desired behaviour.

Cost-conscious

Strategy lines 2020-2025	Progress in 2022	Actions in 2023
Greater cost-consciousness and emphasis on operational management will boost effectiveness and improve insight into the results achieved.	■ Recalibrated management philosophy to emphasise that steering through programmes, projects and processes is equally as important as the execution of our core tasks ■ Process architecture established and process owners appointed ■ Introduction of OGSM methodology for managing the annual planning cycles of domains and divisions ■ Carried out health check for Monetary Affairs	■ Perfect process architecture so that all processes are in order ■ Implement recalibrated management philosophy (including through appraisal system in management development) ■ Follow up on outcomes of Monetary Affairs and Internal Operations health checks

Internal governance

We took several steps to tighten our internal governance in 2022, for instance by recalibrating our governance model. The principles of the recalibrated model – the original 'integrated management' model was introduced in 2004 – reflect the increased importance of horizontal cooperation across divisions, organisational aspects of governance, and project- and programme-based working methods. The updated model emphasises that these aspects are equally as important as the line operations associated with carrying out our statutory duties. In keeping with the recalibrated governance model, initiatives have been developed to raise the level of our programme and project management through the further improvement of our portfolio management. We also changed our annual governance planning cycle, making it more results-oriented and efficient. As a result of these changes, we will begin using the OGSM (objectives, goals, strategies, measures) method after 2023. The modified cycle will provide the Executive Board with a more robust framework for top-down management but will also give the divisions more leeway in their internal management.

With the adoption of the process architecture and the appointment of process owners, our process management has moved into a new phase. Dozens of our employees have been trained in process management. The process architecture now provides us with a structure to set up business and support processes in a uniform way, identify bottlenecks and carry out interventions to continuously improve processes and manage process risks. During the year under review, most of the 21 identified key processes were further fleshed out in more granular detail.

In 2022, we took important steps in strengthening our countervailing power and properly embedding the role of the second line within DNB. In this context, we created the Finance & Risk Management (F&R) division, with the aim of strengthening our integrated internal control and the second line, both for risk and finance. This division is now responsible for all second-line ICT risk management activities and the first-line executive CISO tasks, further strengthening our countervailing power in this area as well.

Transparency on risk-based approach

In 2022, we made our supervision more transparent by providing more information on our risk-based approach. A 2021 evaluation of DNB's efficiency and effectiveness as an independent public body recommended that we increase support for risk-based supervision by offering greater transparency. The clearest example of our response to this recommendation during the year under review is the publication of Supervision in focus, in which we provided quantitative insight into the supervision process for the first time. Specifically, it presented a number of figures providing insight into our aggregated risk assessment of supervised institutions. The scope of this publication will be expanded next year (see also the Trust section).

Cost development

Our realised costs for 2022 (apart from banknotes and the FEC), are reasonably in line with the budget. In the budget, savings were expected in several areas, including those resulting from the multiannual targets set out in the cost framework for carrying out our tasks as an independent public body. There were also a number of DNB-wide efforts to cut expenditure, such as reduction targets for the commuting allowance budgets, enabled by the continuation of the hybrid model, in which employees work partly from home. There have also been cutbacks on foreign travel costs to raise sustainability awareness (see Financial overview for a further explanation of cost development).

Health check

An in-depth analysis of the Monetary Affairs (MoZa) domain has produced an enhanced MoZa strategy, which aims to ensure that the real costs for this domain in 2026 – and beyond – do not exceed those in the 2022 budget, despite the expansion of its statutory tasks. To make this possible, investments will be needed in the next few years, especially in MoZa's operations, as shown by the change process that is now underway. Although this process will begin generating savings from 2023 onwards, these will be insufficient to fully absorb the costs associated with the transformation and expansion of MoZa's statutory tasks between 2023 and 2025. This will lead to a temporary annual overrun of the agreed framework of an average of €5.8 million over the next few years (until 2025). Starting in 2026, we will commit to annual structural savings of €2.2 million compared to the framework. The aim is for the real costs to remain at the same level as in the 2022 budget.

In line with the analysis of the MoZa domain mentioned above, the Internal Operations domain was also analysed in 2022 to systematically assess whether we are still sufficiently fit for purpose and fit for future. The aim was to identify ways to further optimise the internal organisation with regard to task performance and the way areas of expertise are organised, to ultimately make the domain more effective. External benchmark data was used for the purposes of this analysis.

Office accommodation

The renovation of our Amsterdam headquarters building has suffered several setbacks, including the discovery of more asbestos in the façade of the low-rise structure. As a result, the low-rise façade (4,100 sq m) cannot be reused, but must be completely replaced. This investment is needed to create a safe working environment for our employees and to ensure that the building has a sustainable future. The setback will lead to a schedule overrun of almost a year and additional costs. Exceptional market conditions due to the war in Ukraine and tensions in the energy market are also causing sharp price increases and supply chain bottlenecks. Together with the contractor, we are now looking for solutions that will allow us to return to our building in 2024. Meanwhile, we are working together with the City of Amsterdam and the neighbourhood to green the area and further strengthen our relationship with local residents. We are also making headway on our plans to become a meeting centre for the financial sector, Amsterdam residents and the general public, and we have conducted a first series of experiments in which we programmed activities in co-creation with partners. Examples include activities organised together with and for local residents at the temporary art installation "Times of Growth" on Frederiksplein and activities with the Green Mile, the Social Creative Council and Stichting Studiezalen.

The Cash Centre was delivered by the contractor on 1 September, on schedule and within budget. Everything is on track for move-in during 2023, from the installation and testing of security and ICT systems to furnishing and operational preparations. The new Cash Centre will be a sustainable distribution, processing and storage centre for banknotes, coins and gold.

Financial overview

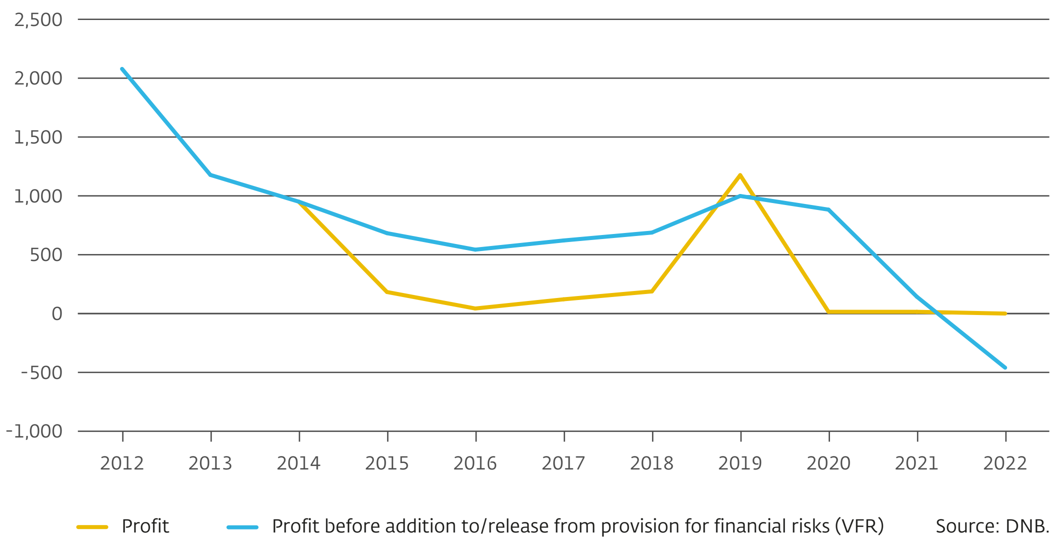
The year under review was marked by unexpectedly high inflation countered by a tightening of monetary policy. High inflation, caused in part by disruptions in supply chains and energy shortages due to the Russian war in Ukraine, forced the ECB's Governing Council to intervene. It has done so by raising policy rates and discontinuing net purchases under its purchase programmes in a bid to bringing inflation down to 2% in the medium term. We are experiencing the financial consequences of this reversal of monetary policy as we made a loss for 2022 and expect to post substantial losses in the years ahead, too. This section discusses our loss, costs, exposures, risks and buffers, capital position, climate risks and socially responsible investment policy.[1]

Loss

For 2022, we recorded a loss before the €460 million release from the Provision for Financial Risks. As key policy rates rise, we are facing increases in the rates we pay on deposits which banks hold with us. At the same time, our interest income on the purchased bonds is not rising in parallel. The discrepancy between the rates paid and those received is particularly wide due to the sizeable monetary support operations undertaken in response to the COVID-19 pandemic outbreak. To absorb the loss, we released the full amount of €460 million from the Provision for Financial Risks. In the absence of a profit, we do not distribute a dividend to the shareholder (see Figure 7).[2]
Our profitability will also be under pressure in the years ahead (see 'Capital position' below).

Figure 7 Long-term profit development

EUR million



Source: DNB.

1 The 'Exposures', 'Risks and buffers' and 'Capital position' paragraphs are part of the risk paragraph in the financial statements and are therefore included in the scope of the independent auditor's report (see page 167). Totals may not add up due to rounding
2 The release from the Provision for Financial Risks is in line with our capital policy.

Our financial result is mainly driven by monetary exposures and deposits. Monetary operations contributed negatively to our financial results in 2022, producing a €280 million loss. The bonds purchased under the purchase programmes depressed our result because interest rates were negative on average. Likewise, the favourable borrowing conditions for banks on the three-year refinancing operations (Targeted Longer-Term Refinancing Operations, TLTRO-III) also give rise to interest expenses that depress our result. However, these have been lower in 2022 than we had previously anticipated because the ECB's Governing Council adjusted the interest rates of the TLTRO-III operations. This adjustment was deemed necessary to ensure consistency with wider monetary policy normalisation, in light of persistent inflation throughout 2022.[3] Offsetting this adjustment in the TLTRO-III operations is the fact that we have been paying interest on the main counterpart for monetary exposures, which is monetary deposits, for the first time since 2014. The Eurosystem conducts monetary operations jointly (see Box 3).

The loss for 2022 must be viewed in light of the positive effects which unconventional monetary policy has brought about in the past few years. This policy helped avert a financial crisis during the pandemic. Lending was also maintained in the Netherlands and elsewhere in the euro area, partly thanks to bank refinancing operations at favourable interest rates. In addition, the Dutch government has benefited from the lower financing costs resulting from the ECB's monetary purchase operations. Its interest savings are estimated at €28 billion.

Box 3 Monetary operations

The active purchasing programmes are the asset purchase programme (APP) launched in 2014 and the pandemic emergency purchase programme (PEPP) launched in March 2020. With these purchases, the Eurosystem creates additional liquidity to maintain favourable financing conditions and contribute to the ECB's objective of price stability. Purchases under the PEPP took place until March 2022, and reinvestments will be made at least until the end of 2024. Purchases under the APP took place until July 2022 and reinvestments will be made only partially from March 2023. The inactive Securities Markets Programme (SMP) purchase programme is gradually expiring, and the previous Covered Bond Purchase Programmes (CBPP1&2) expired in 2022.

Most of the purchases under the APP and the PEPP are debt securities issued by the public sector. The programmes do not involve an arrangement for sharing income and risks on these government bonds in the Eurosystem. By contrast, the income and risks under the other purchase programmes are shared among the central banks on the basis of their Eurosystem capital keys. The asset-backed securities purchase programme (ABSPP) is on the ECB's balance sheet and is primarily at the ECB's risk. More details on the securities purchased under the various programmes are provided on page 126 of the financial statements.

3 For more details, see asset item 5.2 Longer-term refinancing operations on page 123.

Liquidity provision to banks takes place through open market operations (OMOs). In addition to regular liquidity provision these also include the targeted long-term refinancing operations (TLTROs) aimed at supporting credit growth and the pandemic emergency long-term refinancing operations (PELTROs). The PELTRO loans all expired during 2022. The interest rate on TLTRO-III was reduced between June 2020 and June 2022 to support lending during the pandemic. This reduction affected our financial results. Until June 2022, the interest rate stood at -1% (0.5 percentage points below the deposit facility rate), provided the banks met the conditions for lending the money to businesses and households, other than through mortgage loans. Between June and November 2022, the interest rate on TLTRO-III loans was indexed-linked to the average deposit facility or main refinancing rate over the full term of the TLTRO operation. After November 2022, the interest rate changed to be indexed-linked to the average deposit facility or main refinancing rate for the period between November 2022 and the date of maturity or early redemption. This liquidity provision is for the shared account and risk of the Eurosystem central banks.

In 2022, the ECB created the Transmission Protection Instrument (TPI). This instrument is designed to counter unexpected market disturbances that pose a serious threat to monetary policy transmission in the euro area. There was no need to activate the TPI as yet.

Own investments performed poorly in 2022, in line with market trends, but ultimately they made a positive contribution to our financial results because investment losses were largely charged to the revaluation reserve. The €97 million gain (including IMF receivables) is due to the realisation of part of the revaluation reserve on developed market equity funds. Price gains had caused the size of the equity portfolio to reach our strategic upper limit in early 2022, and we sold equity fund units to bring the portfolio back to within strategic ranges. In the process, we realised part of the revaluation reserve for equity funds (€298 million). Due to subsequent market conditions, we wrote down a further €213 million, mainly on emerging markets equity funds, fixed-income securities and investment-grade bond funds. This write-down is largely charged to profit or loss, given that the revaluation reserve for these portfolios is low or nil.[4]

The non-monetary deposits made a €22 million negative contribution to our 2022 financial results. These are deposits we hold for other central banks, central clearing institutions and public institutions at a rate of interest equal or just below the deposit facility rate. Deposit rates went up over the year, depressing interest income, which turned into interest expenses compared to the previous year.

4 See page 109 for the accounting policies.

Table 1 Breakdown of our financial results

EUR million

	31-12-2022	31-12-2021	Difference
OMO	(617)	(1,196)	579
CBPP1 & 2	0	1	-1
CBPP3	81	70	11
SMP	12	50	-38
CSPP	180	149	31
PSPP	434	247	187
PEPP	(184)	(286)	102
Money market liabilities for monetary deposits	(382)	956	-1,338
Eurosystem receivable	196	0	196
Release from/(addition to) provision for monetary policy operations	0	0	0
Total monetary operations	**(280)**	**(9)**	**-271**
Euro portfolio fixed-income securities	1	1	0
Foreign currency denominated fixed-income securities	(125)	(41)	-84
Equity funds	245	290	-45
High-yield bond funds	1	1	0
Investment-grade bond funds	(22)	1	-23
IMF receivables	(3)	2	-5
Total own investments and IMF receivables	**97**	**254**	**-157**
Money market liabilities for non-monetary deposits	(22)	144	-166
Total sundry (including expenses)*	(255)	(246)	-9
Total release from provision for financial risks	460	(128)	588
Profit	**-**	**15**	**-15**

* Sundry includes operating expenses, fees and charges paid by supervised institutions and income from participating interests.

Costs

The realised costs for our core tasks in 2022 are €488.8 million; this represents a 3% underrun of the budget of €14 million. Adjusted for the costs of banknote production and of the Financial Expertise Centre, there is a budget overrun of €3.6 million, less than 1%. The costs of banknote production depend on the production volume the ECB assigns to us and are therefore determined by external factors. The Financial Expertise Centre has not been part of our financial accounting since 2022. The costs for each core task are set out in Table 2.

The €3.6 million overrun of our regular budget represents the balance of an underrun on costs for ZBO tasks and an overrun on the Monetary Affairs budget. The €3.7 million underrun of the ZBO budget was mainly caused by the fact that throughout 2022 the supervisory resources we needed to perform our supervisory activities were on average 20 FTEs less than budgeted. Despite a strong inflow of new recruits, tight labour market conditions and our budgeted upscaling caused understaffing throughout 2022, resulting in lower staff costs. In addition, costs for hiring external capacity for on-site inspections at banks were lower than budgeted. A more detailed explanation of the costs of our ZBO tasks can be found in the Dutch-language 2022 independent public body (ZBO) report. The overrun in the Monetary Affairs budget of €7.4 million was affected mainly by the creation in 2022 of a one-off provision of €10 million related to the measures we announced when we apologised for our historical links to slavery. Adjusted for these one-off costs the budget was underspent by €2.6 million. This underspend was caused by lower staff and hiring costs, notably in our Statistics Division, partly offset by higher IT costs.

Table 2 Costs per core task

EUR million

Task	Actual 2022	Budget 2022	Difference	Actual 2021	Actual 2020
Supervision	197.0	201.6	-4.6	188.2	176.4
Resolution	15.7	16.0	-0.3	15.7	10.7
DGS	7.1	5.9	1.1	7.2	10.8
ZBO subtotal	**219.8**	**223.5**	**-3.7**	**211.1**	**197.9**
Financial stability	18.7	19.1	-0.4	16.9	12.7
Cash and payments systems	114.1	111.4	2.7	114.0	105.5
Monetary policy and reserve management	74.8	69.6	5.2	73.2	64.3
Statistics	52.9	53.0	-0.1	46.5	47.7
Monetary affairs total	**260.5**	**253.1**	**7.4**	**250.7**	**230.2**
DNB total excl. FEC and banknote production costs	**480.3**	**476.6**	**3.6**	**461.8**	**428.1**
FEC	0.0	3.3	-3.3	3.5	3.3
Banknote production costs	8.5	22.8	-14.3	42.1	23.0
DNB total	**488.8**	**502.8**	**-14.0**	**507.3**	**454.4**

Exposures

Monetary exposures at risk fell to €328 billion in the second half of 2022. This €41 billion decline from last year was almost entirely driven by a decrease in exposures under open market operations (OMOs) due to bank repayments on TLTROs. Exposures under the APP and PEPP increased, but less than anticipated as net purchases under these programmes were discontinued. Table 3 shows total exposures by purchase programme and country.

Table 3 Our monetary exposures by purchase programme and country (EUR billion)

The exposures on which we incur a risk are reported. The total may differ from the sum of the exposures for each country and each programme due to rounding differences.

	OMO	SMP	CBPP 3	PSPP	CSPP	PEPP	Total
Netherlands	3.6	0.0	1.4	110.6	6.0	75.8	197.4
France	19.1	0.0	5.0	0.0	6.3	0.8	31.3
Germany	13.9	0.0	3.9	0.0	2.5	0.4	20.7
Italy	20.9	0.0	1.5	0.0	1.4	0.1	24.0
Spain	7.8	0.0	2.4	0.0	1.4	0.3	11.9
Other	12.2	0.1	2.1	16.2	2.7	9.1	42.5
Total	**77.6**	**0.1**	**16.3**	**126.8**	**20.3**	**86.6**	**327.7**
Change relative to December 2021	-51.5	-0.2	0.2	6.5	2.0	1.6	-41.4

The size of our own investment portfolio decreased slightly in 2022 due to adverse share price developments and the sale of equity fund units referred to above. Table 4 shows the composition of our own investments and the size of our IMF receivables. The foreign currency portfolio consists of high-grade government and semi-government bonds. We deliberately maintain a low risk profile for this portfolio, using forward exchange contracts to hedge most of the currency risk. In addition to self-managed foreign currency portfolios, we also have participations in externally managed investment funds with equities and corporate bonds. Our holdings in external equity funds fell in 2022 due to adverse price movements and sales. The size of our bond funds fell slightly. The increase in the IMF receivable is broken down in the notes to the balance sheet under '2.1 Receivables from the International Monetary Fund (IMF)'on page 116. The currency risk on the IMF receivables, which are expressed in a basket of international currencies (special drawing rights – SDRs), is also hedged.

Table 4 Composition of own investments and IMF receivables

EUR billion

	31-12-2022	31-12-2021	Difference
Foreign currency denominated fixed-income securities	4.3	4.6	-0.3
Equity funds	1.9	2.7	-0.8
High-yield bond funds	0.6	0.6	-0.1
Investment-grade bond funds	0.5	0.6	-0.1
IMF receivables	4.6	4.2	0.4
Total	**11.9**	**12.7**	**-0.8**

Risks and buffers

Our total calculated risk exposure increased sharply by €12 billion to €26 billion in 2022. This total risk largely consists of interest rate risk and credit risk arising from monetary operations. We use proprietary risk models to determine the size of our risks, and we apply strict guidelines for their governance, in line with good financial sector practices. In line with these guidelines, our models were validated in 2022 by experts from our supervisory divisions who were not involved in their development. A new market risk model has also been approved for use in this way.

Monetary operations in particular created a significant interest rate risk. At year-end 2022, the modelled interest rate risk stood at €21.5 billion. The interest rate risk arises from the large maturity differences between our assets and liabilities. On the one hand, we purchased long-term bonds at low or even negative interest rates, thereby fixing low interest income for a long period of time. On the other, banks largely hold their surplus liquidity as short-term deposits with us, on which we pay variable interest rates. We determine the extent of interest rate risk by projecting an extreme but plausible scenario with sharply rising key policy rates. In this scenario, which is prepared with the help of an independent panel of monetary experts at DNB, inflation remains above the 2% target for much longer than anticipated. Due to structurally higher drivers of inflation, policy rates are also structurally higher in this scenario. Whereas rising key policy interest rates have limited impact on our interest income from purchases, they do lead to higher interest charges on deposits. In addition to interest rate risk, the monetary operations also give rise to credit risk. The calculated credit risk on monetary operations remained virtually unchanged at €3.2 billion. Most of the credit risk stems from the purchase programmes. Lending to banks through OMOs only contributes to a limited extent to our overall risks as the interest rate on this type of lending will be variable after the temporary pandemic measures expire, and collateral limits the credit risk on the loans. The risk on own investments (including IMF receivables) amounts to €1.1 billion.

The risks from the unconventional monetary policy will remain on our balance sheet for many years, with risks structurally exceeding our buffers. This is due to the large size and long average remaining maturity (of 7.25 years) of the bonds purchased under the various programmes. The level of our risks is also highly dependent on the impact of further monetary policy measures on our balance sheet developments and on market conditions. Our capital policy distinguishes between buffers to cover temporary risks (Provision for Financial Risks) and buffers to cover long-term risks and latent uncertainties (capital). Our buffers have decreased as we released the amount of our loss for 2022 from the Provision for Financial Risks. Table 5 summarises the key figures.

Gold occupies a special position in our risk framework. Our gold reserves (€33.6 billion) are intended to cover ultimate systemic risks that can materialise in extreme scenarios beyond the limits of the risk calculations. Gold is ideally suited to cover ultimate systemic risks because its value tends to increase in times of financial stress. The gold revaluation reserves serve to absorb negative price shocks. Revaluation reserves and the gold price risk fall outside our capital policy and regular risk analyses. We manage gold reserves passively.

Capital position

In the years ahead, we will need to draw down our buffers considerably to absorb our losses. We expect to post significant losses in the coming years. We estimate the extent to which we expect to draw down our buffers – our Provision for Financial Risks, and our capital and reserves – based on the expected trend in interest rates as priced in by the financial markets. On this basis, we anticipate cumulative losses of around €10.3 billion for 2023-2028. This is slightly below the amount of our total buffers of €10.8 billion. We subsequently expect to return to profitability, but this is subject to uncertainty.

If losses continue to mount, a situation may arise in which we are faced with an equity deficit.[5] The rules governing our buffers are laid down in the capital policy that we agreed with the Ministry of Finance in 2019.[6] In it, we jointly endorsed the need for an adequate capital position to ensure DNB's financial independence. The 2019 policy allowed us to build additional buffers to some extent. However, our profitability was insufficient to build buffers to a level that would allow us to amply absorb the losses we expect for the coming years. However, unlike a commercial bank, we cannot go bankrupt as long as we are authorised to issue the legal tender. Moreover, as the sole shareholder, the Dutch State has every interest in having a trustworthy central bank, and there is an implicit state guarantee. While temporary negative net equity is permissible and workable, under Eurosystem rules any situation should be avoided in which DNB's net equity is negative for a prolonged period of time.[7] Prolonged negative net equity will eventually compromise DNB's independence and credibility, harming the effectiveness of the Eurosystem's monetary policy.

The possibilities for DNB to supplement its buffers are currently limited. In principle, we supplement these by retaining future profits. However, should expected profits be too low or the equity deficit too large, additional measures may be necessary to restore the balance sheet to solidity. In an extreme scenario, a capital contribution from the shareholder may be necessary, as mentioned in the annual information letter of the Minister of Finance to the House of Representatives about DNB's risks.[8] We will evaluate the capital policy with the Ministry of Finance in the first half of 2023.

5 See Note 13 'Capital and reserves' in the financial statements for further details.
6 More details of our capital policy (in Dutch) can be found here.
7 ECB Convergence Report, June 2022.
8 See also the "Annual information letter on risks incurred by DNB and the Dutch State due to ECB policy" of July 2022 (in Dutch).

Table 5 Our exposures, risks and buffers

Exposures involving risks for DNB, excluding gold and intra-system exposures.
EUR billion

	31-12-2022	31-12-2021	Difference
Total exposures	**339.6**	**381.9**	**42.2**
Monetary exposures	327.7	369.1	-41.4
Own investments and other portfolios	11.9	12.7	-0.8
Total risk*	**26.0**	**13.7**	**12.3**
Risk under provision for financial risks (VFR)	23.4	11.1	12.3
Other risks	2.6	2.6	0.0
Risk buffer	**10.8**	**11.3**	**-0.5**
VFR	2.3	2.8	-0.5
Capital and reserves	8.5	8.5	0.0

* The risk under the VFR consists of the interest rate risk and the credit risk on purchases in the active asset purchase programmes APP and PEPP, excluding exposures to the Dutch government. All other risks, including the risks from other purchase programmes, own investments and liquidity provision to banks (OMOs), are covered by capital and reserves. .

Climate-related risks

Climate-related risks are steadily gaining prominence in our monetary policy and balance sheet management. Decisions on monetary policy are made by the full Governing Council of the ECB, of which our President is a member. We often act as a motivator in the area of sustainability in the international context.

Over the past year, the ECB's Governing Council has taken further steps to incorporate climate change into its monetary policy operations. In line with the goals of the Paris Climate Agreement, the Eurosystem has started to gradually decarbonise its investment grade corporate bond holdings under the corporate sector purchase programme (CSPP). In reinvesting this portfolio, it will be tilted towards issuers with better climate scores. In addition, the Eurosystem will limit the share of assets issued by entities with a high carbon footprint that can be pledged as collateral by individual counterparties when borrowing from the Eurosystem. This measure is expected to take effect by the end of 2024. Additionally, from 2023, the Eurosystem considers climate change risks when reviewing haircuts applied to corporate bonds used as collateral. Haircuts are reductions applied to the value of collateral based on its riskiness. Expectations are that from 2026, the collateral framework will be subject to the European Corporate Sustainability Reporting Directive (CSRD). From then onwards the Eurosystem will only accept collateral from companies and debtors that comply with the CSRD. The ECB will run test exercises one year ahead of actual implementation. Furthermore, the Eurosystem will further enhance its risk assessment tools and capabilities to better include climate-related risks. For instance, together with ESMA, the Eurosystem will urge rating agencies to incorporate climate risks into their ratings to a larger extent. In addition, the Eurosystem is taking steps to encourage national central banks to include climate-related risks in their in-house credit assessment ratings. Furthermore, in the first quarter of 2023, the ECB will publish the results of a climate stress test for purchases of investment grade corporate bonds (CSPP), covered bonds (CBPP) and securitisations (ABSPP).

The results of the climate stress test on our balance sheet and monetary exposures from 2021 still apply. The stress test uses three long-term scenarios from the Network of Central Banks and Supervisors for Greening the Financial System (NGFS). They are "net-zero 2050", "delayed transition" and "current policies". After the NGFS updated these climate scenarios in 2022, their description remained virtually unchanged. Moreover, the long-term trends for macroeconomic variables such as interest rates and equity returns did not change significantly from the baseline scenario. In addition, the composition of our balance sheet and exposures have not changed to the extent that a new climate stress test would result in different outcomes. This means that our profit and interest rate risk are highly sensitive to the "net-zero 2050" scenario (Figure 8). The "delayed transition" and "current policies" scenarios have a relatively large impact on market risks in the long term, because many enterprises are vulnerable to long-term climate risks (Figure 9). We share knowledge of our climate stress tests with other national central banks. In 2023, we plan to conduct a different type of climate stress test that focuses on a short-term scenario in the form of a physical shock, such as flooding of part of the Netherlands. Such a climate stress test focuses on the risks we face on our monetary counterparties and collateral.

Figure 8 Climate scenario impact on our profit and risks

Scenario	Our profit	Our total risks
Net-zero 2050	high	high
Delayed transition	medium	low
Current policies	low	low

Climate scenario impact on our profit and risks (interest rate risk and credit risk) for 2021-2030, in absolute terms See also DNB Annual Report 2021.

Figure 9 Climate scenario impact on our market risks own investments)

Scenario	Corporate bonds		Equities	
	Short term	Long term	Short term	Long term
Net-zero 2050	medium	medium	medium	medium
Delayed transition	low	high	low	high
Current policies	low	high	low	high

Climate scenario impact on the market risks of corporate bonds and equities in our portfolios, relative to the NGFS baseline scenario. See also DNB Annual Report 2021.

We are developing a climate risk dashboard to gain a better understanding of our own transition and physical risks. Based on the dashboard we also expect to further develop the methodology for the climate stress test. The climate stress test and the climate risk dashboard are part of the climate risk management framework that will be further fleshed out in 2023 under the aegis of our risk management committee. We liaise with other central banks on climate risk management and actively contribute to the newly established NGFS workstream that addresses climate-related risks and monetary policy.

Sustainable and responsible investment in our own investments

For our own investments, we introduced a dual investment objective in 2021, focusing explicitly on environmental and social value creation in addition to financial returns. To do so, we use our Sustainable and Responsible Investment policy, which is an extension of the DNB-wide Sustainable Finance Strategy and is based on screening, exclusion, active share ownership and ESG integration. We screen all our own investments for violations of the United Nations Global Compact and exclude enterprises associated with controversial weapons. To manage our equity and corporate bond portfolios, we only engage the services of external assets managers that include Environmental, Social & Governance (ESG) criteria in their investment decisions, are active shareholders and engage with enterprises on ESG issues. We also require our external asset managers to report on the portfolios' weighted average carbon intensity (WACI) on a quarterly basis. If a portfolio's WACI differs strongly from the benchmark or from the previous quarter, we engage with the external asset manager. With respect to the investments in debt securities of governments, supranational institutions and agencies that we manage internally, we evaluate issuers on ESG criteria in addition to financial health. Climate-related risks are also part of this assessment. For example, we look at the extent to which issuers depend on fossil fuel revenues, and may decide to divest when we deem transition risks too high. Climate-related risks and challenges to our own investments are addressed by the investment committee, which consists of four DNB members (division directors and/or department heads) and two external members who have gained extensive experience at Dutch asset managers. The Executive Board decides on the strategic asset allocation, also considering climate-related risks. In addition, the risk management committee monitors climate-related risks from a balance sheet-wide perspective and renders advice to the Executive Board.

In 2022, our efforts included the use of forward-looking climate data and an initial exploration of biodiversity risks. For instance, we have included climate indicators in the creation of the triennial Strategic Asset Allocation (SAA), taking into account, among other things, the implied temperature rise of different asset allocations. In the year under review we also analysed the extent to which our externally managed portfolios are invested in sectors with a high negative impact on, or dependence on, biodiversity. We see this analysis as a first step towards integrating and quantifying biodiversity risks and opportunities in our portfolios, and we will follow up on this in 2023.

We have raised our green bond target for 2023 to 20% of the internally managed bonds issued by governments, supranational institutions and agencies. This includes loans certified by the Climate Bonds Initiative or that comply with the International Capital Markets Association's green bond principles. In 2022, investments in green bonds increased by €128 million to €554 million, equivalent to about 12% of bond investments in governments, supranational institutions and agencies. Of this increase, the vast majority is attributable to the new purchases of green bonds, while around €20 million is due to exchange rate effects.

We aim to have investments in equities and corporate bonds as much as possible in line with the Paris Climate Agreement by 2025. To achieve this, we are moving to investing through discretionary mandates, deploying a combination of stewardship and exclusions. In this way, we aim to contribute to the transition to a sustainable economy and climate neutrality by 2050, and also to better manage the climate-related risks in our balance sheet. We do so on the basis of investment guidelines for climate benchmark providers drawn up by the EU Technical Expert Group on Sustainable Finance. In 2023, we will start transferring equity investments to discretionary mandates.

The calculation of carbon emissions for our own investments has been updated based on agreements made within the Eurosystem. As of this year, all central banks in the Eurosystem report the carbon emissions from (part of) their own investments. To ensure comparability, it was decided to use common data providers and streamline the calculation method. However, even with the new calculation method , the evolution of carbon emissions metrics over time remains difficult to interpret. For example, total carbon emissions increase when invested assets are increased. Also, relative carbon emissions based on an enterprise's revenues may decrease with rising overall prices and constant absolute carbon emissions (see our Occasional Study on Misleading Footprints from 2021). In 2023, we will further investigate the effects of inflation and exchange rates on our carbon emission metrics.

We have adjusted the calculation of carbon emissions for government bonds. It was decided within the Eurosystem to report on government bonds based on carbon emissions allocations along three measures (see Table 6). The measure based on "consumption" considers all carbon emissions linked to domestic demand in a given country, even if production to meet that demand takes place abroad. The measure based on "output" covers all carbon emissions within national borders, while the measure based on "government" includes only the government's own carbon emissions. We use output emissions as our main starting point, because this indicator quantifies emissions concentrated within national borders and can therefore be directly controlled by governments.

Table 6 CO2 emissions from government bonds*

	Consumption	Output	Government
Portfolio size** EUR billion	2,660	2,660	2,660
Total absolute CO_2 emissions Tonnes of CO_2	924,319 100%	774,024 100%	102,986 100%
CO_2 emissions per million euro invested (Carbon Footprint) Tonnes of CO_2 /EUR million	347 100%	291 100%	39 100%
Revenue weighted CO_2 emissions (WACI)*** Tonnes of CO_2 /EUR million	17 100%	291 100%	238 100%

Sources: ISS, Carbon4 Finance, World Bank, Bloomberg.

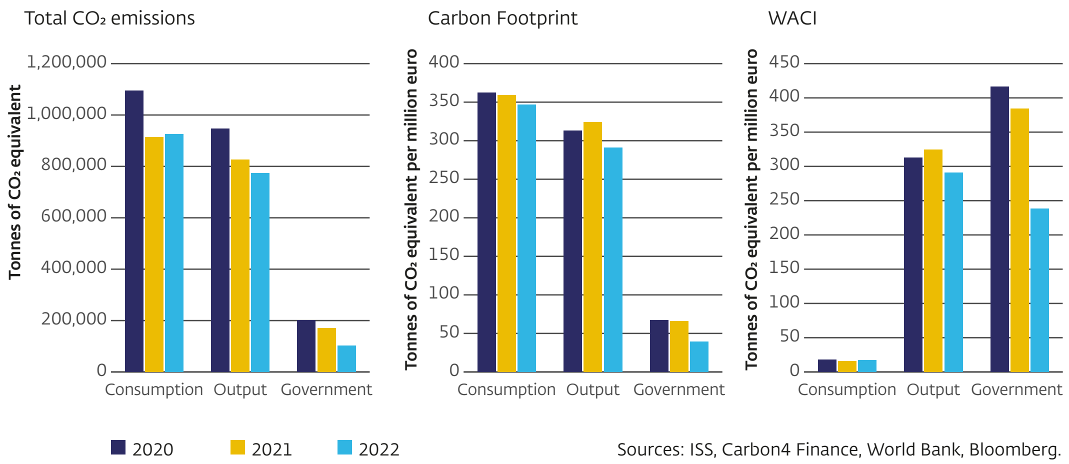
Note: The percentages refer to data availability calculated as a weighted percentage.

* This includes treasury bonds and bonds of lower-tier governments such as provinces.
** Portfolio size as at 31 December 2022, excluding cash and derivatives. Portfolio size can fluctuate significantly due to market conditions.
*** Several alternatives to revenue are used for WACI. These are total population for consumption, GNP (PPP) for output, and government consumption for government. Because the carbon footprint uses GNP (PPP) as the attribution factor for all measures, the WACI and carbon footprint of output emissions match.

See Annex 2 for further notes, under 'Definitions and assumptions for reported indicators' and 'Method and data collection'.

Total carbon emissions from our own investments in government bonds decreased compared to 2021 (see Figure 10). All three emissions measures (consumption, output and government) for government bonds have 100% data coverage. Relative CO2 emissions decreased in 2022. The decrease in the carbon footprint and WACI of output emissions can be attributed to minor asset allocation shifts, GDP growth and lower carbon emissions in the underlying countries (-7% on average).

Figure 10: Trends in CO_2 emissions from government bonds, 2020-2022



Sources: ISS, Carbon4 Finance, World Bank, Bloomberg.

See Annex 2 for further notes, under 'Definitions and assumptions for reported indicators' and 'Method and data collection'.

For our investments in enterprises, supranational institutions and agencies, we also report scope 3 data for the first time this year to gain more insight into the actual climate impact of our investments (see Table 7). Whereas scope 1 and 2 concern an enterprise's direct carbon emissions, scope 3 covers emissions from the entire life cycle of products. This means that carbon emissions from purchased raw materials (upstream), the use of the products, and their disposal (downstream) are also reflected. Including scope 3 has a major effect on both the volumes and the breakdown of carbon emissions. For the equities and corporate bond portfolios, it increases total carbon emissions 8.5 times compared to scope 1 and 2 alone. For investments in supranational institutions and agencies, total carbon emissions even increase 14-fold, as most of these are credit institutions whose loans indirectly finance carbon emissions. As scope 3 data are often estimated, they typically differ from one data provider to the other.

Table 7 CO_2 emissions from investments in enterprises, supranational institutions and agencies

	Scope 1+2				Scope 1+2+3			
	Total	Supra-national institutions and agencies	Corporate bonds	Equities	Total	Supra-national institutions and agencies	Corporate bonds	Equities
Portfolio size*	4,513	1,607	980	1,926	4,513	1,607	980	1,926
EUR mln.								
Total absolute CO_2 emissions	172,277	1,422	84,925	85,930	1,455,404	20,073	576,647	858,686
Tonnes of CO_2	87%	77%	77%	99%	87%	77%	77%	99%
Carbon footprint**	44	1	112	45	372	16	760	449
Tonnes of CO_2/ EUR million	87%	77%	77%	99%	87%	77%	77%	99%
WACI***	111	6	246	126	940	335	1,393	1,154
Tonnes of CO_2/ EUR million	87%	77%	77%	99%	87%	77%	77%	99%

Source: ISS, Carbon4 Finance, World Bank, Bloomberg.

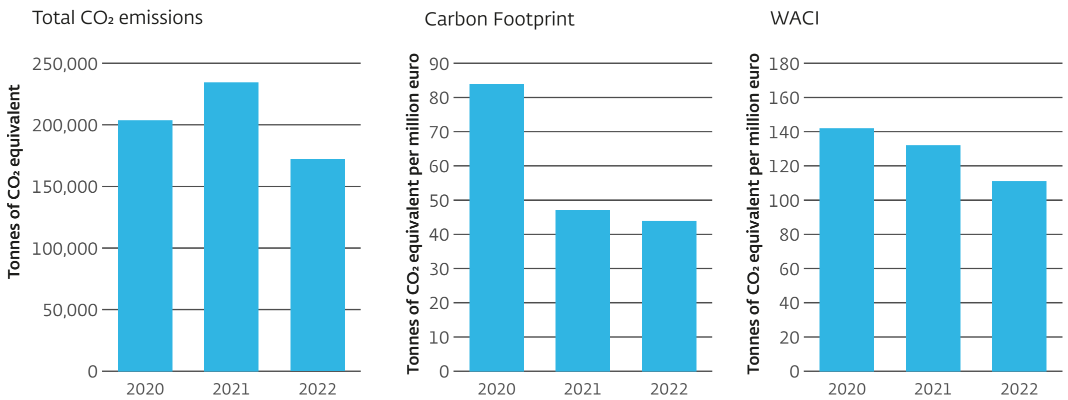
Note: The percentages refer to data availability calculated as a weighted percentage.

* Portfolio size as at 31 December 2022, excluding cash and derivatives. Portfolio size can fluctuate significantly due to market conditions.
** The carbon footprint represents emissions per million euro invested.
*** WACI represents emissions per million euro of revenues of the underlying institutions.

See Annex 2 for further notes, under 'Definitions and assumptions for reported indicators' and 'Method and data collection'.

Total carbon emissions from our own investments in enterprises, supranational institutions and agencies decreased compared to 2021 (based on scope 1 and 2, Figure 11). Again, the decrease is partly due to portfolio shrinkage. Owing in part to lower stock exchange prices, the value of investments in enterprises, supranational institutions and agencies fell by about 20%. Relative carbon emissions also decreased, as evidenced by the carbon footprint and the WACI. As with government bonds, there changes in asset allocation were minor. Accordingly, we largely attribute the emissions decrease to higher revenues and/or enterprise values on the one hand and lower underlying carbon emissions on the other. About half of all portfolio enterprises report absolute emissions reductions of more than 10% compared to 2020, while only one fifth report increases of 10% or more. Improved data availability for supranational institutions and agencies also affects the figures (81% in 2021 against 9% in 2020). Many of these are credit institutions with relatively low scope 1+2 carbon emissions, meaning that their higher data coverage depresses the average carbon footprint.

Figure 11 Trends in scope 1+2 carbon emissions from enterprises, supranational institutions and agencies, 2020-2022



Sources: ISS, Carbon4 Finance, World Bank, Bloomberg.

See Annex 2 for further notes, under 'Definitions and assumptions for reported indicators' and 'Method and data collection'.

Risk management

We manage our risks using an integrated approach, as we believe this allows us to achieve our organisational goals efficiently and effectively. We cannot eliminate all risks, nor do we wish to do so, but we do aim to handle them in a conscious manner. Our risk management approach is aligned with the methods of the Eurosystem, the ESCB and the SSM.

Financial risk management

The Risk Management Committee (RMC) steers the monitoring of our balance sheet risks and advises the Executive Board from a financial risk perspective. The RMC identifies and monitors the financial risks arising from our monetary operations, emergency liquidity assistance, investment portfolios, customer activities, gold holdings and financial relations with the International Monetary Fund, and sets frameworks to manage them (see Financial overview section).

Operational risk management

Our operational risk management (ORM) is structured according to the Three Lines Model, which is embedded in our ORM framework. In 2022, we completed the integration of this model into our organisation. Managing operational risks is an ongoing process. Risk assessments are periodically carried out at the level of organisational objectives, processes and major projects and changes. This involves recording the risks and, if required, establishing management measures (controls). The effectiveness of key management measures is subject to periodical review as well, and adjustments are made where necessary. Key risk indicators (KRIs) are also used to measure and predict the development of risks. At least once every quarter, the organisation reports to the Operational Risk Board (ORB) on key current operational risks, risk management and any incidents that may have occurred. The ORB consists of first- and second-line representatives and is mandated by management to accept and monitor operational risks. Deviations from the risk appetite (see below) are also submitted to the ORB and, in some instances, to the Executive Board. Where necessary, the ORB or the Executive Board can make adjustments.

Box 9 Three Lines Model at DNB

We have set up our risk management according to the Three Lines Model.

First line	The first-line divisions are responsible for the identification, assessment and documented management of operational risks
Second line	The second line creates policy frameworks, advises and challenges the first line, and monitors and reports on organisation-wide risks
Third line	The Internal Audit Department audits the effectiveness of the governance framework and the consistent application of policies and processes.

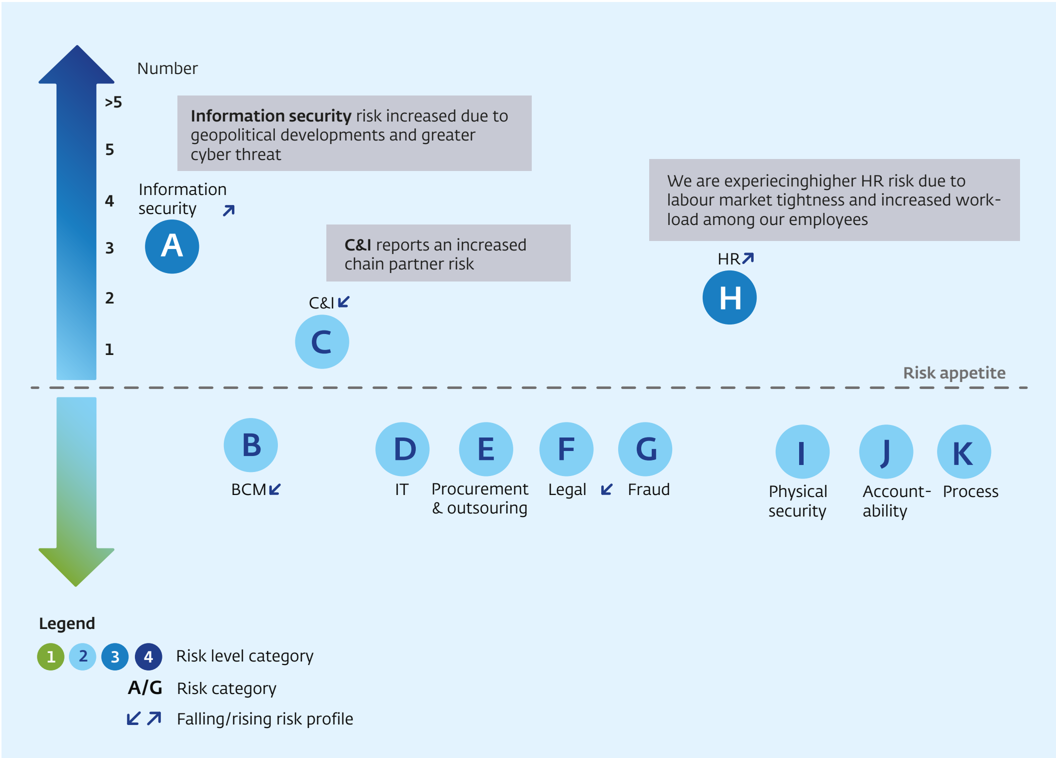
The Risk Appetite Statement indicates our willingness to accept risks. We use a risk matrix that generates a risk score based on probability and impact, ranging from 'very low' to 'very high'. For most operational risks, we have a low to medium risk appetite, making DNB moderately risk-averse. We prefer options that minimise uncertainty, but by no means seek to exclude every risk. Our risk appetite for fraud and inappropriate workplace behaviour is very low. The same is true for risks that impact the financial core infrastructure or the security of restricted areas on our premises. On the other hand, we have a relatively high risk appetite for risks arising from unintentional human error, or from the open atmosphere we strive for in our organisation and at our various locations.

By discussing risks in a timely manner and taking additional measures where necessary, we were able to keep our risk profile within our risk appetite, almost across the board (Figure 12). We paid specific attention to our information security and HR risks. The Russian invasion of Ukraine played an important role with regard to our information security risk, which was elevated a number of times throughout the year. Our HR risk increased in 2022 and remains high. This is particularly driven by the tightness in the labour market, the impact this has on our ability to fill vacancies and the pressure this puts on our employees. In the coming period, we will therefore pay special attention to information security and to our position as an employer, in relation to both current employees and new hires.

In 2023, we will work on further integrating risk management into governance, recalibrating the ORM framework and improving risk culture and awareness. We are continuing the integration of risk management into our governance processes based on an integrated approach implemented by the new Finance & Risk Management division. We are also improving our management data on emerging risks, the effectiveness of controls and KRIs, and we are recalibrating our risk categories by simplifying the existing categorisation. In addition, we are strengthening the position of risk management for important current topics such as culture, sustainability and society, as well as for information management and changes. One way we are improving our risk culture is by setting up a coordinated training and awareness programme for risk professionals, as well as for our other employees.

Figure 12 Operational risks exceeding risk appetite by risk category

Bank-wide by risk category



Operational risks and incidents

The main challenges over the past year primarily had to do with attracting and retaining employees in the current tight labour market, remaining agile and maintaining employee morale. There is a risk that a lack of quality staff could be detrimental to employee vitality. In 2022, the overheated labour market led to higher-than-average turnover. It took more effort to attract and retain new staff for positions that required highly sought after – and thus scarce – expertise. Measures we took to manage these risks included making available an extensive range of training and education opportunities, as well as the implementation of a proactive labour market policy, which included a labour market campaign and campus recruitment. In the end, we managed to fill sufficient vacancies and maintain staffing levels (see also the Staff section).

Another risk is that the confidentiality, integrity and availability of information may not be ensured, for example through the use of unauthorised resources or due to information being accessible to unauthorised parties, possibly resulting in reputational damage. Information is a key building block for us in the execution of our tasks, and secure, timely and reliable information provision and processing are crucial. Mounting geopolitical tensions in 2022 and a heightened cyber threat level further increased our information security risk. To ensure a high level of information security and the continuity of our business processes, we have launched several programmes (such as the #zeker awareness programme, Role-Based Access Control and Emergency Recovery). This topic also has the attention of the Executive Board. In addition to policy and technical measures, we continuously strive to strengthen soft controls, such as risk culture and risk awareness.

Operational incidents and their follow-up are recorded and handled centrally, in accordance with our incident management process. In doing so, we consistently works towards creating an open reporting culture while also underlining the importance of reporting operational incidents so that we can learn from them as an organisation. In 2022, four incidents were reported that fell outside our risk appetite. These incidents have provided us with important insights that will help us in prioritising additional measures and awareness campaigns to prevent recurrence. In the coming period, for instance, we will pay extra attention to process management, IT systems and recovery, and we will continue to focus on information security and the open culture we aim to create.

There are emerging operational risks as a result of geopolitical risks, cyber risks, sustainability risks and labour market risks. Increasing global political tensions and their economic and social consequences have an effect on the physical and cyber threats we face, adding to the importance of business continuity risk management and organisational resilience. The rise in cybercrime is reflected in an increasing number of malware, ransomware and phishing attacks, resulting in increased information security, ICT and business continuity risks. In addition to ensuring that we have sufficient knowledge in this area, we will raise awareness of these risks and pay extra attention to the correct and sensible handling of confidential information in the coming period. Furthermore, challenges related to sustainability and climate change, the energy supply and resource scarcity are causing turbulence and changing our environment, which means that these issues will have an impact on a wide range of risks we face. Moving forward, we will continue our efforts to identify and limit these risks. Finally, continued tightness in the labour market will make it even more difficult to fill specific vacancies and increase our HR risk, which further underlines the importance of the measures mentioned above (promoting training opportunities at DNB, implementing a proactive labour market policy and redoubling our recruitment efforts).

Executive Board, Supervisory Board, Bank Council, Employees Council and governance

From left to right: Nicole Stolk, Steven Maijoor, Klaas Knot (president), Else Bos and Olaf Sleijpen.

As of the date of adoption of the 2022 financial statements, the Executive Board, Supervisory Board, Bank Council and Employees Council were composed as follows:

Executive Board

President:

Klaas Knot (1967, Dutch, economics, end of second term: 2025)

Executive Board Member and Chair of Prudential Supervision:

Else Bos (1959, Dutch, econometrics, end of first term: 2025)

Executive Board Member of Banking Supervision:

Steven Maijoor (1964, Dutch, business economics, end of first term: 2028)

Executive Board Member of Monetary Affairs:

Olaf Sleijpen (1970, Dutch, economics, end of first term: 2027)

Executive Board Member of Resolution and Internal Operations:

Nicole Stolk (1969, Dutch, history and Dutch law, end of first term: 2025)

Company Secretary:

Ingrid Ernst (1969, Dutch, Dutch law)

The allocation of responsibilities among the members of the Executive Board is shown in the organisation chart on our website.

Else Bos has temporarily suspended her duties due to illness with effect from 12 December 2022. Steven Maijoor has taken over her duties for the time being.

Supervisory Board

Chair:

Wim Kuijken (1952, Dutch, economics, end of second term: 2023)
Member of the Remuneration and Appointments Committee

Vice-chair:

Margot Scheltema (1954, Dutch, international law, end of second term: 2023)
Chair of the Supervision Committee
Member of the Audit Committee

Government-appointed member:

Annemieke Nijhof (1966, Dutch, chemical technology, end of second term: 2023)
Member of the Audit Committee
Member of the Bank Council since 2015

Other members:

Peter Blom (1956, Dutch, economics, end of first term: 2025), duties temporarily and voluntarily suspended with effect from 7 November 2022
Member of the Supervision Committee

Roger Dassen (1965, Dutch, business economics and accountancy, end of second term: 2026)
Chair of the Audit Committee.

Marry de Gaay Fortman (1965, Dutch, Dutch law, end of first term: 2024)
Member of the Remuneration and Appointments Committee
Member of the Supervision Committee

Mirjam van Praag (1967, Dutch, econometrics, end of first term: 2024)
Member of the Supervision Committee
Member of the Bank Council on behalf of the Supervisory Board since 2020

Feike Sijbesma (1959, Dutch, medical biology and business administration, to step down with effect from 22 March 2023)
Chair of the Remuneration and Appointments Committee

Frans Muller (1961, Dutch, business economics, end of first term: 2027)
Membership of committees to be decided

Remuneration and Appointments Committee
Feike Sijbesma, Chair
Wim Kuijken
Marry de Gaay Fortman

Audit Committee
Roger Dassen, Chair
Annemieke Nijhof
Margot Scheltema

Supervision Committee
Margot Scheltema, Chair
Marry de Gaay Fortman
Mirjam van Praag
Peter Blom

The other positions held by the Executive Board and Supervisory Board members are posted on our website.

Bank Council

Chair:
Barbara Baarsma
Professor of Corporate Finance and Financial Markets at the University of Amsterdam

Other members:
Tjeerd Bosklopper
Chair of the Dutch Association of Insurers

Tuur Elzinga
Chair of FNV

Piet Fortuin
Chair of CNV

Harry Garretsen
Professor of Economics at the University of Groningen

Nic van Holstein
Chair of the Trade Union Federation for Professionals

Ger Jaarsma
Chair of the Federation of the Dutch Pension Funds

Medy van der Laan
Chair of the Dutch Banking Association

Annemieke Nijhof
Member on behalf of the Supervisory Board as a government-appointed member

Mirjam van Praag
Member on behalf of the Supervisory Board

Sjaak van der Tak
Chair of LTO Nederland

Ingrid Thijssen
Chair of VNO-NCW.

Jacco Vonhof
Chair of Royal Association MKB-Nederland

Representative of the Ministry of Finance:
Christiaan Rebergen, Treasurer-General

Employees Council

Jos Westerweele (Chair)
Carel van den Berg
Jacqueline van Breugel
Annemarie van Dijk
Bernard de Groes
Saideh Hashemi
Elina Kogan
Marjon Linger-Reingoud
Anja Peerenboom
Paul Suilen
Aaldert van Verseveld

Sandra Koentjes (Professional Secretary)

Governance

De Nederlandsche Bank (DNB) is a public limited company incorporated under Dutch law. In its capacity as the central bank of the Netherlands, DNB forms part of the European System of Central Banks. In addition, DNB is a supervisory authority. In that capacity it is part of the Single Supervisory Mechanism (SSM). DNB is also the national resolution authority. In this role it participates in the Single Resolution Mechanism (SRM). As the financial sector supervisor and national resolution authority, DNB is an independent public body.

DNB is led by an Executive Board consisting of a President and at least three and at most five members.

The President of DNB is also a member of the Governing Council and the General Council of the European Central Bank (ECB).

The Executive Board Member of Monetary Affairs is responsible for financial stability, financial markets, economic policy and research, payment systems and DNB's statistics function. He is also a Crown-appointed member of the Social and Economic Council of the Netherlands (SER).

Responsibility for supervision of financial institutions is divided between two Executive Board Members of Supervision: the Chair of Prudential Supervision and the Executive Board Member of Banking Supervision. The Chair of Prudential Supervision is responsible for supervision policy and supervision of insurers and pension funds. She represents DNB on the Board of Supervisors of EIOPA, the European Insurance and Occupational Pensions Authority. DNB has a Prudential Supervision Council for Financial Institutions, chaired by the Chair of Prudential Supervision, to support the internal deliberations and decision-making by the Executive Board Members of Supervision concerning supervisory matters.

The Executive Board Member of Banking Supervision is responsible for supervision of banks, horizontal expertise functions within supervision, integrity and legal affairs. He is a member of the ECB's Supervisory Board, which is responsible for decision-making on the supervision of significant banks in the euro area within the framework of the SSM. He is also a member of the Board of Supervisors of the European Banking Authority (EBA), which is responsible for applying common rules to the supervision of banks in the European Union.

The Executive Board Member of Resolution and Internal Operations is responsible for resolution tasks concerning specific financial enterprises, such as Dutch banks, investment firms and insurers. She also represents DNB on the Single Resolution Board (SRB). DNB has a Resolution Council, chaired by the Executive Board Member of Resolution and Internal Operations, to support the Executive Board's internal deliberations and decision-making concerning resolution matters.
The Executive Board Member of Resolution and Internal Operations is also responsible for managing our internal operations. This includes operational management, data & information technology, and departments dealing with HR, security, communications, risk management & strategy, and finance.

The Supervisory Board supervises the general course of business at DNB and the Executive Board's policy regarding the implementation of Section 4 of the Bank Act 1998. It is also responsible for adopting the financial statements. The Supervisory Board has several other significant powers, including approval of the budget and of certain Executive Board decisions. It consists of at least seven and at most ten members, one of whom is appointed by the Minister of Finance.

DNB has a single shareholder: the Dutch State, which is represented by the Minister of Finance, also in the General Meeting. The Executive Board renders account to the General Meeting by presenting its annual report and financial statements over the past financial year. The General Meeting has significant powers, including approving the financial statements, discharging Executive Board and Supervisory Board members, appointing Supervisory Board members and appointing the external auditor.

The Bank Council functions as a sounding board for the Executive Board. It consists of at least eleven and at most thirteen members. Two members of the Supervisory Board, including the government-appointed member, sit on the Bank Council. With regard to the other members, DNB aims to ensure that the various sectors of society are represented.

Our website provides more information on the governance structure, as also laid down in the Bank Act 1998 and in DNB's Articles of Association and Rules of Procedure. Although the Dutch Corporate Governance Code only applies to listed companies, we strive to implement the principles and best practices from the code as much as possible. We explain our implementation of the code in more detail on our website.

Report of the Supervisory Board

Introduction

In 2022 the Supervisory Board examined the way in which DNB's policies relating to its core tasks and internal operations were carried out, emphasising its accommodation programme, the sourcing of certain ICT services, its sustainability strategy (including the ambitions and targets of its own investments), the publication and follow-up of the slavery study, the digital transformation and cyber risks, and its integrity supervision. These and other issues were the reason for the Board's close involvement with DNB throughout 2022.

Composition and appointments

The Executive and Supervisory Board composition remained unchanged in 2022. However, Peter Blom has decided to temporarily step down as a member with effect from 7 November 2022. Blom's decision comes following a petition filed by Stichting Certificaathouders Triodos Bank with the Enterprise Division of the Amsterdam Court of Appeal on 10 October 2022 to initiate inquiry proceedings. Blom has been a member of DNB's Supervisory Board since 1 September 2021. He was chair of the Triodos Bank Executive Board until 21 May 2021. Blom has decided to step down temporarily in order to eliminate any semblance of a conflict of interest during any proceedings.

As of the date of adoption of the 2022 financial statements, the Supervisory Board consisted of nine members: Wim Kuijken (Chair), Margot Scheltema (Vice-Chair), Annemieke Nijhof (government-appointed member), Feike Sijbesma, Marry de Gaay Fortman, Roger Dassen, Mirjam van Praag, Peter Blom and Frans Muller.

As of 1 October, Roger Dassen was reappointed by the shareholder for a second term. The shareholder appointed Frans Muller as a member of the Supervisory Board as of 1 January 2023. The Board is pleased that Muller's membership means the continuation of robust managerial and organisational experience on the board and looks forward to working constructively and effectively with him. Muller succeeds Feike Sijbesma, who stepped down at the General Meeting on 22 March 2023, after having been a Supervisory Board member for ten years. The Board is deeply indebted to him for his commitment, dedication and loyalty to DNB. Among other things, he has contributed greatly to developments at DNB in the area of sustainability. As Chair of the Remuneration and Appointments Committee, he has made a significant contribution to the continuity and stability of DNB's Executive Board. His confidence and decisiveness have helped the Supervisory Board, and by extension DNB, to maintain a robust position.

The gender balance on the Executive Board is now 40% women and 60% men. The gender balance on the Supervisory Board (taking into account Sijbesma's resignation) is 50%/50%. DNB thus meets statutory targets for gender balance on both boards. In the event of appointment or reappointment, the Board will focus on the adopted profiles, which include the aim of diversity. It should be noted that the aim of diversity extends beyond gender balance and also takes account of expertise, background, age and competencies. For further details, see the expertise matrix and gender diversity matrix below. (Note: The matrices address the Board's composition during the year under review).

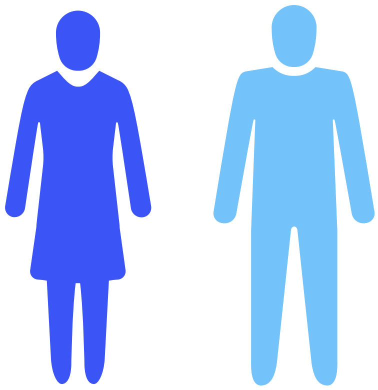
Area of expertise	Kuijken	Scheltema	Nijhof	De Gaay Fortman	Van Praag	Sijbesma	Dassen	Blom
Management								
Management and organisation	■	■	■	■	■	■	■	■
Accounting, administrative organisation and internal control structure		■					■	■
Stakeholder management	■		■	■	■	■	■	■
Risk management		■		■	■	■	■	■
Outsourcing	■					■	■	
Legal affairs and corporate governance		■		■				■
Core tasks								
Macroeconomic issues	■				■	■	■	■
Financial stability and institutions		■		■	■			■
Cash and payment systems								■
Statistics					■			
Strategic issues								
Sustainability			■	■		■	■	■
Digital IT	■					■	■	
Public interest	■	■	■	■	■			

Age brackets

45 – 55
Van Praag

56 – 65
Nijhof
De Gaay Fortman

66 – 75
Scheltema



Age brackets

56 – 65
Sijbesma
Dassen
Blom

66 – 75
Kuijken

The participation of Supervisory Board members in the Bank Council remained unchanged in 2022. Annemieke Nijhof continued her membership as a government-appointed Supervisory Board member throughout 2022. Mirjam van Praag stayed on as Bank Council member appointed by the Supervisory Board throughout 2022.

The composition of the Supervisory Board, its committees and the Executive Board is provided from page 91 of this Annual Report. The profiles of the Executive and Supervisory Board members and the other positions they hold can be found on DNB's website.

Duties

The average attendance rate at Supervisory Board meetings was high (approximately 90%), as shown in the table below. None of the members were regularly absent. The table below specifies the attendance rates of each of the members in the plenary Supervisory Board (SB), Remuneration and Appointments Committee (RAC), Audit Committee (AC) and Supervision Committee (SC) meetings. Prior to each plenary meeting, there was always a discussion without the Executive Board being present.

Member	SB	RAC	AC	SC
Wim Kuijken	8/8	5/5		
Margot Scheltema	8/8	1/1	6/7	5/5
Feike Sijbesma	6/8	5/5		
Marry de Gaay Fortman	8/8	5/5		5/5
Annemieke Nijhof	7/8		6/7	3/5
Roger Dassen	7/8		6/7	
Mirjam van Praag	6/8			3/5
Peter Blom	7/7			5/5

The Chair of the Supervisory Board and the President of DNB were in frequent contact about issues concerning the Supervisory Board's work and developments concerning DNB. The activities of the three Supervisory Board committees are described below on pages 100-104. As part of its supervision of the general course of business at DNB, the Supervisory Board discussed the DNB-wide financial results and accountability for 2022 in the Audit Committee and in its plenary meetings. The Supervisory Board discussed the results and accountability for 2022 with regard to independent public body (ZBO) activities in the Audit Committee, Supervision Committee and plenary meetings. These discussions were based on quarterly financial reports, the management letter and audit report from the external auditor and the internal audit department's (IAD) quarterly reports.

Another major concern for the Board in 2022 was the size of the balance sheet items related to monetary operations and the associated risks. The year under review was marked by unexpectedly high inflation and, as a result, accelerated monetary policy tightening. Interest rate increases led to a negative result for 2022 prior to a withdrawal of €460 million from the provision for financial risks (VFR), and negative results are also expected in the years ahead. The Board took careful note of the President's letter of 9 September 2022 to the Minister of Finance regarding the negative development of DNB's capital position and welcomes the capital policy review in 2023 as announced in the letter. To absorb the negative result, the Executive Board, with the support of the Supervisory Board, decided to withdraw €460 million from the VFR. Net profit for 2022 came to €0 million (2021: €15 million). There was no addition the general reserve and no dividend is to be paid. No gold sales took place in 2022.

The Supervisory Board discussed the 2022 financial statements with the Executive Board at length, in the presence of the external auditor. It then adopted the financial statements and submitted them to the shareholder for approval. The Supervisory Board discussed the budget for 2023, including the independent public body budget, and approved it on 25 November 2022. The Supervisory Board established that the internal operational and control instruments, such as the planning and control cycle and the risk management and control system, operated effectively.

Following deliberation by the Supervisory Board, the Executive Board and several members of the Supervisory Board reviewed the independent public body budget in the annual budget meeting with the Ministry of Finance. The Supervisory Board is pleased to see that the Executive Board practises transparency in the budgeting process and engages in dialogue about it with its main stakeholders. The Supervisory Board also believes DNB exercises its supervision decisively and intrusively, formulating unambiguous priorities. Based on available resources, the Executive Board and Supervisory Board continuously look for effective and efficient solutions to execute DNB's core tasks and to further strengthen its internal operational management.

The Supervisory Board continued to devote particular attention to DNB's internal organisation in 2022. On various occasions, the Supervisory Board and Executive Board discussed control over DNB's Digital Agenda and the accommodation programme in considerable depth. The DNB Cash Centre in Zeist was completed in 2022 and preparations for its commissioning started. With regard to the renovation of the Amsterdam headquarters building, exceptional market conditions due to the war in Ukraine and tensions in the energy market are leading to sharp price increases and supply chain bottlenecks. Solutions are being sought with the contractor to meet the planned move-in date of 2024. The Supervisory Board also discussed internal operational management, stressing the importance of a balanced weighing of cost efficiency, sustainability, security and transparency.
The Board also engaged the division directors in dialogue to enhance the interaction between the Supervisory Board and the broader organisation. Furthermore, the Supervisory Board engaged with the Executive Board on the publication and follow-up of the slavery study. The Board welcomed the expression of apologies on behalf of DNB for its role in the Atlantic trade in enslaved people in the nineteenth century, and the implementation of a number of measures to contribute to raising awareness of this history and reducing its repercussions. Finally, the Supervisory Board and Executive Board discussed progress on the DNB2025 strategy, with a focus on the digital transformation and sustainability. With regard to sustainability, the Supervisory Board spoke with the Executive Board about DNB's sustainable finance strategy, including the ambitions and targets of its own investments. This strategy describes the short-term and medium-term objectives for fully integrating sustainability into DNB's core tasks as well as into its operational management.
By regularly engaging the Executive Board in dialogue on themes such as labour market positioning, diversity and inclusion, process and programme management, and DNB's risk management, the Supervisory Board seeks to contribute to strengthening DNB's corporate culture and improving the quality of its performance. In this context, the Supervisory Board welcomes initiatives such as the DNB culture programme, support for employee networks and the recent appointment of the Chief Diversity & Inclusion.

At each of its meetings, the Supervisory Board addressed the most important trends in DNB's areas of responsibility, derived from the periodic update on current affairs, with the Executive Board members, who informed the Supervisory Board about the international forum meetings they attended.

During a joint retreat, the Supervisory Board and Executive Board discussed the ethical aspects of the application of artificial intelligence and developments in cryptos and stablecoins.

Members of the Supervisory Board attended consultation meetings between the Executive Board and the Employees Council. The Chair of the Supervisory Board and the Chair of the Audit Committee met periodically with the head of the department responsible for compliance and integrity, and the Chair of the Audit Committee regularly met with the Head of the IAD and the external auditor.
The Supervisory Board assessed its own performance in 2022 and discussed the results at a plenary meeting without the Executive Board being present. Among other things, the Supervisory Board looked at the balance between the functioning of the committees and the plenary meetings.
The Supervisory Board sees room for improvement by discussing strategic questions more frequently and in more depth in its plenary meetings. At this meeting, the Supervisory Board also discussed its cooperation with the Executive Board, the individual members of the Executive Board, and the Executive Board's performance. The Supervisory Board also addressed the results of the board evaluation commissioned by the Executive Board.

Audit Committee

In the year under review, the Audit Committee consisted of Roger Dassen (Chair), Margot Scheltema and Annemieke Nijhof. Meetings were held in the presence of the Executive Board Member for Resolution and Internal Operations, the external auditor, the Head of IAD, the Director of the Finance & Risk Management Division and several internal officers from the relevant areas.

The Audit Committee extensively discussed the financial statements, the audit plan and the external auditor's findings, and advised the Supervisory Board to adopt the 2022 financial statements and to approve the independent public body report for 2022. Furthermore, the Audit Committee discussed the 2023 budget and the 2023 independent public body budget at length with the Executive Board. The Audit Committee advised the Supervisory Board to approve both budgets. In 2022, as in previous years, the Audit Committee examined the external auditor's report and management letter, establishing that the Executive Board acted adequately on the findings and recommendations set out in the management letter.

The Committee discusses current affairs relating to DNB's internal operations with the Executive Board Member of Resolution and Internal Operations at each meeting, with the themes of accommodation, information security, risk management and control over DNB's digital agenda being key priorities for the Audit Committee. In 2022, the Audit Committee's focus included the transformation to a smart supervisor. DNB is experiencing delays in this transformation due to fundamental IT setbacks and because the deployment that is required of the supervisors for the transformation constantly conflicts with their primary task of supervision (absorptive capacity). The Audit Committee also reviewed the establishment of the Finance & Risk Management division and the introduction of the OGSM methodology for managing DNB. In addition, it discusses the quarterly reports on compliance and integrity and the quarterly financial reports. Throughout 2022 the Audit Committee regularly discussed the progress made on DNB's accommodation programme, specifically emphasising the business case update. The Committee regularly meets with relevant representatives of the lines of defence within DNB and with the external auditor. The Audit Committee and the Supervisory Board took note of the updated (20 December 2022) Corporate Governance Code. DNB voluntarily abides by the principles and best practice provisions contained in the Code. Just as with the 2016 Code, the Supervisory Board will engage with the Executive Board on how it complies with the Code and publish substantiation on DNB's website.

Remuneration and Appointments Committee

Throughout the year under review, the Remuneration and Appointments Committee consisted of Feike Sijbesma (Chair), Wim Kuijken and Marry de Gaay Fortman.

The Committee devoted attention to preparing for the appointment of a board member with experience serving as chair of a supervisory board, which resulted in the appointment of Frans Muller as of 1 January 2023.

The Committee spoke with the President about his performance and that of the other Executive Board members, following the Supervisory Board's annual evaluation. A periodic meeting between the Chair of the Supervisory Board and the shareholder is part of the Supervisory Board's role in compliance matters, for instance when assessing the compatibility of secondary positions.

Supervision Committee

The Supervision Committee consisted of Margot Scheltema (Chair), Marry de Gaay Fortman, Mirjam van Praag and Peter Blom (who temporarily stepped down as of 7 November 2022). Annemieke Nijhof also participated in the meetings, which were held in the presence of DNB's two Executive Board Members of Supervision and several officers from the relevant areas. The Supervision Committee's agenda is based in part on an annual agenda and in part on current events. The meetings focused on a number of practical cases, current policy issues and gaining a deeper understanding of various supervisory topics. Among other things, the Supervision Committee looked at the progress of the digital supervision strategy, the situation in the insurance sector, the role of supervisors with respect to open standards in the law, the supervision of compliance with the Anti-Money Laundering and Anti-Terrorist Financing Act, the impact of the pension transition on supervision, the sustainable finance strategy in relation to supervision, and criteria for governance supervision. As part of the Supervisory Board's monitoring of DNB's policy in respect of its prudential supervision, the Supervision Committee exchanged views with the Executive Board in all meetings about institution-specific supervision cases and their evaluation to which the latter devoted particular attention in that period, to the extent relevant to safeguarding the quality and effectiveness of DNB's supervision policy. The Supervision Committee, like the Audit Committee, advised the Supervisory Board to approve the independent public body report for 2022 and the independent public body budget for 2023.

Statement on Independence

The Regulation on Incompatible Offices and the Regulation on Conflicts of Interest apply to Supervisory Board members without restriction. Supervisory Board members are not employed by DNB and were not a DNB employee at any time in the five years preceding their appointment, nor do they have any relationship with DNB from which they could obtain personal gain. Supervisory Board members receive a fixed annual fee that is not related to DNB's results in any given year. All Supervisory Board members are independent within the meaning of the Dutch Corporate Governance Code. Any potential secondary position is assessed on the basis of the Regulation on Incompatible Offices and submitted to DNB's department responsible for compliance and integrity for advice. This procedure was also followed in 2022, for both Supervisory Board members and Executive Board members.

Concluding words

The Supervisory Board looks back on an eventful year in which the consequences of the war in Ukraine took a heavy toll on Dutch society and the Dutch economy in addition to being a humanitarian tragedy for those directly affected. Having barely recovered from the effects of the COVID-19 pandemic, Europe had to deal with inflation that reached unprecedented levels, partly driven by soaring energy prices. The Board notes that over the past year, despite the exceptional circumstances DNB maintained its commitment to the performance of its core tasks and internal operational management. The Supervisory Board would like to thank DNB's staff and its Executive Board for their contribution to sustainable prosperity in the Netherlands and looks forward to its continued cooperation with the Executive Board in 2023.

Amsterdam, 22 March 2023
Supervisory Board
De Nederlandsche Bank N.V.

Wim Kuijken, Chair
Margot Scheltema, Vice-Chair
Annemieke Nijhof, government-appointed member
Feike Sijbesma
Marry de Gaay Fortman
Roger Dassen
Mirjam van Praag
Peter Blom
Frans Muller

2022 Financial statements

Balance sheet as at 31 December 2022

(before appropriation of profit)

Millions

		31 December 2022	31 December 2021
	Assets	EUR	EUR
1	Gold and gold receivables	33,595	31,693
2	Claims on non-euro area residents denominated in foreign currency	25,989	25,516
2.1	Receivables from the International Monetary Fund (IMF)	21,150	20,607
2.2	Balances held with banks and investments in securities, external loans and other external assets	4,839	4,909
3	Claims on euro area residents denominated in foreign currency	169	640
4	Claims on non-euro area residents denominated in euro	122	154
5	Lending to euro area credit institutions related to monetary policy operations denominated in euro	62,145	173,282
5.1	Main refinancing operations	250	0
5.2	Longer-term refinancing operations	61,895	173,282
5.3	Fine-tuning reverse operations	0	0
5.4	Structural reverse operations	0	0
5.5	Marginal lending facility	0	0
5.6	Credits related to margin calls	0	0
6	Other claims on euro area credit institutions denominated in euro	0	0
7	Securities of euro area residents denominated in euro	211,793	204,405
7.1	Securities held for monetary policy purposes	209,285	201,457
7.2	Other securities	2,508	2,948
8	Intra-Eurosystem claims	151,133	71,790
8.1	Participating interest in the ECB	622	586
8.2	Claims equivalent to the transfer of foreign reserves to the ECB	2,364	2,364
8.3	Claims related to the issuance of ECB debt certificates	0	0
8.4	Net claims related to the allocation of euro banknotes within the Eurosystem	67,528	68,840
8.5	Other intra-Eurosystem claims (net)	80,619	0
9	Other assets	3,150	2,412
9.1	Euro area coins	0	0
9.2	Tangible and intangible fixed assets	300	211
9.3	Other financial assets	153	168
9.4	Off-balance sheet instruments revaluation differences	0	0
9.5	Accruals and prepaid expenses	2,692	1,952
9.6	Other investments	5	81
	Total assets	**488,096**	**509,892**

		31 December 2022	31 December 2021
	Liabilities	EUR	EUR
1	Banknotes in circulation	84,756	83,266
2	Liabilities to euro area credit institutions related to monetary policy operations denominated in euro	291,632	301,789
2.1	Current accounts (covering the minimum reserve system)	14,463	295,689
2.2	Deposit facility	277,169	6,100
2.3	Fixed-term deposits	0	0
2.4	Fine-tuning reverse operations	0	0
2.5	Deposits related to margin calls	0	0
3	Other liabilities to euro area credit institutions denominated in euro	589	51
4	Liabilities to other euro area residents denominated in euro	16,742	12,610
4.1	General government	13,917	9,986
4.2	Other liabilities	2,825	2,624
5	Liabilities to non-euro area residents denominated in euro	32,425	27,668
6	Liabilities to euro area residents denominated in foreign currency	0	0
7	Liabilities to non-euro area residents denominated in foreign currency	0	0
8	Counterpart of special drawing rights allocated by the IMF	16,535	16,326
9	Intra-Eurosystem liabilities	0	22,443
9.1	Liabilities related to the issuance of ECB debt certificates	0	0
9.2	Other intra-Eurosystem liabilities (net)	0	22,443
10	Other liabilities	1,673	2,661
10.1	Off-balance sheet instruments revaluation differences	266	278
10.2	Accruals and deferred income	1,198	2,182
10.3	Other investments	209	201
11	Provisions	2,378	2,839
12	Revaluation accounts	32,883	31,741
13	Capital and reserves	8,483	8,483
13.1	Issued capital	500	500
13.2	General reserve	7,968	7,970
13.3	Statutory reserve	15	13
14	Profit for the year	0	15
	Total liabilities	**488,096**	**509,892**

Profit and loss account for the year ended 31 December 2022

		2022		2021	
		EUR		EUR	
1	Interest income	2,887		1,598	
2	Interest expenses	(2,957)		(1,556)	
	Net interest income		**(70)**		**42**
3	Realised gains/(losses) from financial operations	285		302	
4	Write-downs on financial assets and positions	(213)		(25)	
5	Transfer to/(from) provision for financial risks	460		(128)	
	Net result from financial operations and write-downs		**532**		**149**
6	Fees and commissions income	18		17	
7	Fees and commissions expense	(18)		(15)	
	Net fees and commissions income/(expense)		**0**		**2**
8	Income from equity shares and participating interests		13		47
9	Net result of monetary income pooling		(212)		65
10	Other income		222		217
	Total net income		**485**		**522**
11	Staff costs		(258)		(256)
12	Other administrative costs		(196)		(182)
13	Depreciation and amortisation of tangible and intangible fixed assets		(25)		(28)
14	Banknote production costs		(8)		(42)
15	Other expenses		0		0
16	Capitalised software costs		2		1
17	Corporate income tax		0		0
	Profit for the year		**0**		**15**

Notes to the balance sheet as at 31 December 2022 and the profit and loss account for the year 2022

1. Accounting policies

The financial statements are prepared in accordance with the models and accounting policies applying to the European Central Bank (ECB) and the European System of Central Banks (ESCB) (hereafter: ESCB accounting policies[1]) and the harmonised disclosures to the balance sheet and the profit and loss account prepared by the Eurosystem. This is possible under the exemption provisions of Section 17 of the Bank Act 1998. Where Section 17 does not provide any exemption or where the ESCB accounting policies or harmonised disclosures do not cover the subject, the financial statements are prepared in accordance with the provisions of Part 9 of Book 2 of the Dutch Civil Code, which have been elaborated in the Dutch Accounting Standards (Richtlijnen voor de Jaarverslaggeving – RJ). All individual items in the balance sheet and profit and loss account are recognised in accordance with the ESCB accounting policies, with the exception of accelerated depreciation of tangible fixed assets and the provision for employee benefits. In addition, remuneration is disclosed in accordance with the provisions of the Public and Semi-public Sector Executives Remuneration (Standards) Act (Wet normering topinkomens – WNT).

The ESCB accounting policies are broadly in line with the Dutch Generally Accepted Accounting Principles (GAAP). In deviation from Part 9 of Book 2 of the Dutch Civil Code:

a. unrealised gains from assets and liabilities measured at revalued amounts are recognised as set out under 'Revaluation' below;
b. the balance sheet format differs from that set out in the Financial Statements Formats Decree;
c. no cash flow statement is included;
d. a Provision for Financial Risks may be established; and
e. tangible and intangible fixed assets are depreciated and amortised, respectively, over their standard estimated useful lives.

The provisions of Part 9 of Book 2 of the Dutch Civil Code are reflected in the financial statements mainly in the disclosures relating to the following balance sheet and profit and loss account items:

a. capital and reserves
b. participating interests
c. events after the balance sheet date
d. off-balance sheet rights and obligations
e. revaluation accounts

1 ECB/2016/34 as amended by ECB/2019/34 and ECB/2021/51.

f. realised gains/(losses) from financial operations
g. number of employees
h. fees paid to the external auditor
i. remuneration (also in accordance with the WNT)

Comparison with preceding year

In 2022, DNB switched to a new investments accounting system. In connection with this transition, the method for amortising fixed-income securities was changed from the adjusted Internal Rate of Return (IRR) method to the regular IRR method. This transition resulted in EUR 116 million of additional interest income for 2022, which will be charged to profit or loss in future financial years. This change in accounting estimates does not affect the gains or losses over the full term of the fixed-income securities. With the transition to the new system, the valuation of securities not held for monetary policy purposes and investment funds was adjusted from the next-to-last to the last trading day of the financial year. The comparative figures were not restated accordingly. See also the note under 'Securities held for monetary policy purposes' in the 'Accounting policies' section and the note to profit and loss account items 1 and 2 'Net interest income').

Securities held for monetary policy purposes

Securities held for monetary policy purposes are valued at amortised cost, subject to impairment. See the breakdown in the note to asset item 7.1 'Securities held for monetary policy purposes' on page 125 for further details.

Securities not held for monetary policy purposes and investment funds

Marketable securities held for other than monetary policy purposes are valued at the closing price prevailing on the next-to-last trading day of the year. Options embedded in securities are not separated for valuation purposes.

Marketable investment funds and portfolios that are externally managed and strictly replicate the performance of an index-linked fund are valued at market price (net asset value). Valuation is on a net – fund – basis and not on the basis of the underlying assets, provided that the investments meet certain predetermined criteria, broadly speaking in relation to the level of influence of DNB on the day-to-day operations of the fund, the legal status of the fund and the way in which returns are evaluated.

Revaluation

Revaluation differences arising from price differences in respect of securities not held for monetary policy purposes are determined on a code-by-code[2] basis. Revaluations arising from exchange rate differences are determined on a currency-by-currency basis. Unrealised revaluation gains are added to the item 'Revaluation accounts'. Unrealised revaluation losses are charged to the 'Revaluation accounts' item to the extent that the balance of the relevant revaluation account is positive.

2 The ESCB accounting policies define code as international securities identification number/type.

Any shortfall is taken to the profit and loss account at year-end. Price revaluation losses on a security are not netted against price revaluation gains on another security or exchange rate revaluation gains. There is no netting between the revaluation results of different marketable investment funds. Exchange rate revaluation losses on any one currency are not netted against exchange rate revaluation gains on any other currency or against price revaluation gains. For gold and gold receivables, no distinction is made between price and currency revaluation. Holdings of special drawing rights (SDRs), including designated individual foreign exchange holdings underlying the SDR basket held to replicate the SDRs for risk hedging purposes are treated as one holding[3].

Gold and gold receivables

Gold and gold receivables are valued at the price which the ECB publishes on the last trading day and revalued as set out under 'Revaluation'.

Conversion of foreign currencies

The financial statements are presented in euro (EUR), which is DNB's functional and presentation currency. On- and off-balance sheet rights and obligations denominated in foreign currency are converted into euro at the exchange rates which the ECB publishes on the last trading day and revalued as set out under 'Revaluation'. Income and expense denominated in foreign currency are converted at the exchange rates which the ECB publishes on the transaction dates.

Repurchase and reverse repurchase transactions

A repurchase transaction (repo) is a spot sale of securities hedged by a forward purchase of the same securities. Cash receipts from the spot sale are presented in the balance sheet as a deposit. In the light of the forward purchase, the securities continue to be recognised as assets. Hence, the amount involved in the forward purchase is disclosed in the balance sheet under liabilities. A reverse repurchase transaction (reverse repo) is regarded as lending. The securities received as collateral are not recognised in the balance sheet and do not, therefore, affect the balance sheet position of the portfolios concerned.

Other financial instruments

Other financial instruments include foreign exchange forwards and foreign exchange swaps, as well as interest rate swaps and futures. On initial recognition, foreign exchange forwards and foreign exchange swaps are valued at their spot rates. Subsequent differences between spot and forward rates are amortised and recognised in the profit and loss account. This allows their value to evolve towards the forward rate over time. Interest rate swaps are valued at market rates. Futures are settled on a day-to-day basis. Currency positions are included in the revaluation accounts and revalued as set out under 'Revaluation'.

3 See Article 9(3) of the ESCB accounting policies.

Intra-ESCB and intra-Eurosystem claims and liabilities

Intra-ESCB balances are the result of cross-border payments within the European Union (EU) settled in euro by the central banks. Such transactions are for the most part initiated by private institutions. Most are settled within TARGET2[4] and give rise to bilateral balances in the TARGET2 accounts held by the EU central banks. Such bilateral balances are netted on a daily basis and assigned to the ECB, leaving every national central bank (NCB) with a single bilateral net position vis-à-vis the ECB. DNB's position vis-à-vis the ECB arising from TARGET2 transactions is presented, together with other euro-denominated positions within the ESCB (such as claims relating to interim income distributions to the NCBs and monetary income), as a net asset or liability item under 'Other intra-Eurosystem claims/liabilities (net)' on DNB's balance sheet. Positions held within the ESCB vis-à-vis NCBs outside the euro area arising from TARGET2 transactions are presented in 'Claims on/liabilities to non-euro area residents denominated in euro'.

Intra-Eurosystem positions arising from DNB's participating interest in the ECB are reported under 'Participating interest in the ECB'. This item comprises (i) DNB's paid-up share in the ECB's subscribed capital and (ii) net amounts paid due to an increase in DNB's share in the ECB's accumulated equity value[5] resulting from previous capital key adjustments.

Intra-Eurosystem positions arising from the transfer of foreign reserve assets to the ECB by NCBs which joined the Eurosystem are reported in 'Claims equivalent to the transfer of foreign reserves to the ECB'.

Positions arising from the allocation of euro banknotes within the Eurosystem are included as a single net asset or liability item under 'Net claims/liabilities related to the allocation of euro banknotes within the Eurosystem'. See 'Banknotes in circulation' for further details.

Participating interests

Participating interests are valued at cost, subject to impairment. Income from participating interests is recorded in the profit and loss account under 'Income from equity shares and participating interests'.

The participating interest in the ECB is accounted for in accordance with the principles set out under 'Intra-ESCB and intra-Eurosystem claims and liabilities'.

Tangible and intangible fixed assets

Tangible and intangible fixed assets are valued at cost less depreciation or amortisation, subject to impairment. For intangible assets, in addition to the primary acquisition cost and the costs of external advisers relating to these assets, the in-house hours spent on these assets are also

4 TARGET2 stands for Trans-European Automated Real-Time Gross Settlement Express Transfer system 2.
5 Equity value means the total of the ECB's reserves, revaluation accounts and provisions equivalent to reserves, minus any loss carried forward from previous periods. In the event of capital key adjustments taking place during the financial year, the equity value also includes the ECB's accumulated net profit or net loss until the date of the adjustment.

capitalised. For software developed in-house under 'Intangible fixed assets', a statutory reserve has been formed. Depreciation and amortisation are calculated on a straight-line basis from the moment the asset is put into use. The standard useful life of buildings and renovations is 25 years, that of equipment, plant and furniture 10 years and that of computer hardware, software, motor vehicles and intangible assets 4 years. Accelerated depreciation or amortisation is applied if a shorter useful life is likely. Land is not depreciated. Retired tangible fixed assets are valued at the lower of book value and expected realisable value.

From 2023 onwards, DNB will apply the component approach to its new and renovated premises. This means depreciation periods will differ from the standard depreciation periods set out in the ESCB accounting policies referred to above.

Other assets (excluding tangible and intangible fixed assets) and accruals and income collected in advance

'Other assets' (excluding tangible and intangible fixed assets) and 'Accruals and income collected in advance' are valued at cost or nominal value, subject to impairment. Transactions in 'Other assets' and 'Accruals and income collected in advance' are recognised in the financial statements as at the settlement date, with the exception of foreign exchange transactions and related accruals, which are reported as at the trade date, in accordance with the economic approach.

Banknotes in circulation

The ECB and the euro area NCBs, which together comprise the Eurosystem, issue euro banknotes[6]. The total value of the euro banknote circulation is allocated to the Eurosystem central banks on the last working day of each month, in accordance with the banknote allocation key[7].

The ECB has been allocated a share of 8% of the total value of euro banknotes in circulation, whereas the remaining 92% has been allocated to NCBs in proportion to their weightings in the Eurosystem capital key. The value of the share of banknotes in circulation allocated to each NCB is accounted for on the liabilities side of the balance sheet under 'Banknotes in circulation'. The difference between the value of the euro banknotes allocated to each NCB in accordance with the banknote allocation key and the value of the euro banknotes actually circulated by the relevant NCB gives rise to interest-bearing[8] intra-Eurosystem positions. These claims or liabilities are presented under 'Net claims/liabilities related to the allocation of euro banknotes within the Eurosystem'.

6 Decision (EU) of the European Central Bank of 13 December 2010 on the issue of euro banknotes (recast) (ECB/2010/29 and ECB 2011/67/EU), OJ L 35 of 9.2.2011, pp. 26-29. The unofficial consolidated text summarising the recasts is available here.
7 Banknote allocation key means the percentages that result from taking into account the ECB's share in the total euro banknote issue and applying the subscribed capital key to the NCBs' share in such total.
8 Decision (EU) 2016/2248 of the European Central Bank of 3 November 2016 on the allocation of monetary income of the national central banks of Member States whose currency is the euro (recast) (ECB/2016/36, OJ L 347 of 20 December 2016, pp. 26-36. The unofficial consolidated text summarising the recasts is available here.

The interest income and expense on these balances are settled by the ECB and are disclosed under 'Net interest income' in the profit and loss account[9].

Provision for Financial Risks

A Provision for Financial Risks may be established pursuant to Article 8 of the accounting policies that apply to the ECB and the ESCB. DNB has established a Provision for Financial Risks to cover its exposure to transitory and volatile risks whose size it has established on the basis of a reasoned estimate. It has formed the current Provision for Financial Risks with an eye to interest rate risk and credit risk pertaining to the asset purchase programme (APP[10]) and the pandemic emergency purchase programme (PEPP[10]), excluding exposures to the Dutch government.

Pension and other retirement schemes

The pension entitlements of staff as well as of others having comparable entitlements have been transferred to Stichting Pensioenfonds van De Nederlandsche Bank N.V. (DNB Pension Fund). Through an agreement, DNB has undertaken to pay to the DNB Pension Fund, subject to conditions agreed for the purpose, such amounts as to ensure the pensions under the Pension Fund's pension schemes. In the agreement, the financial methodology is set out in a premium, supplement and risk policy ladder; in the target assets, allowance is made for the indexation ambition. The level of the amounts payable by DNB and the liabilities reported in the financial statements in respect of other retirement schemes are calculated on an actuarial basis.

Other balance sheet items

Other balance sheet items are valued at nominal value, subject to impairment.

ECB profit distribution

After adoption by the ECB's Governing Council, the ECB's profit is distributed to the NCBs of the Eurosystem in proportion to their weightings in the Eurosystem capital key. The amount distributed to DNB is disclosed in the profit and loss account under 'Income from equity shares and participating interests'.

An amount equal to the ECB's income arising from the 8% share of euro banknotes in circulation allocated to the ECB, as well as the income arising from securities purchased through a) the securities markets programme (SMP), b) the third covered bond purchase programme (CBPP3), c) the asset-backed securities purchase programme (ABSPP), d) the public sector purchase programme (PSPP) and e) the pandemic emergency purchase programme (PEPP), is distributed in January of the following year by means of an interim profit distribution, unless otherwise decided by the Governing Council.[11] Any such other decision is taken where, on the basis of a reasoned estimate prepared by the ECB's Executive Board, the ECB's Governing Council expects that the ECB will have

9 Decision (EU) 2016/2248 of the European Central Bank of 3 November 2016 on the allocation of monetary income of the national central banks of Member States whose currency is the euro (recast) (ECB/2016/36, OJ L 347 of 20 December 2016, pp. 26-36.
10 See the tables in asset item 7.1 'Securities held for monetary policy purposes' for further details of the purchase programmes.
11 Decision (EU) 2015/298 of the European Central Bank of 15 December 2014 on the interim distribution of the income of the European Central Bank (recast), (ECB/2014/57), OJ L53, 25.2.2015, p. 24. The unofficial consolidated text summarising the recasts is available here.

an overall annual loss or will make an annual net profit that is less than the estimated amount of its income referred to above. The Governing Council may also decide to allocate all or part of the earned income to its Financial Risk Provision. Moreover, the Governing Council of the ECB may also reduce the earned income from its allocated 8% share of euro banknotes distributed in January by charging to it the expenses incurred in connection with the issue and handling of euro banknotes. The final distribution takes place in the month following the interim profit distribution and accrues to the next financial year in accordance with the prescribed accounting policy.

Recognition of income and expense

Income and expense are allocated to the financial year to which they relate. Realised gains and losses on investments are determined according to the average cost method and recognised in the profit and loss account. Unrealised gains are not recognised as income, but recorded directly in the revaluation accounts. Unrealised losses are taken to the profit and loss account if they exceed previous revaluation gains registered in the corresponding revaluation account. They are not reversed in subsequent years against new unrealised gains. Unrealised revaluation losses are recorded in the profit and loss account.

Significant accounting estimates and judgements

The preparation of the financial statements requires management to make significant estimates and judgements that affect the reported amounts. These include estimates of useful lives of tangible fixed assets not depreciated in accordance with ESCB accounting policies, and assessments as to whether provisions must be established, with the exception of the Provision for Financial Risks. The estimate of the risk to which DNB is exposed is relevant to determining the amount added to or released from the Provision for Financial Risks, if the financial result permits.

2. Notes to the balance sheet

Assets

1. Gold and gold receivables

In the financial year, the volume of the gold holdings did not change. As at 31 December 2022, the gold holdings consisted of 19.7 million fine troy ounces (or 612 tonnes) of gold. Their market value stood at EUR 1,706.08 per fine troy ounce (31 December 2021: EUR 1,609.48). The euro value of this item was higher at year-end 2022 compared with year-end 2021 due to an increase in the market price of gold. The increase was added to the revaluation accounts.

Millions

	EUR
Balance as at 31 December 2020	30,401
Revaluation 2021	1,292
Balance as at 31 December 2021	31,693
Revaluation 2022	1,902
Balance as at 31 December 2022	**33,595**

2. Claims on non-euro area residents denominated in foreign currency

As at 31 December 2022, this item stood at EUR 25,989 million (31 December 2021: EUR 25,516 million). It can be broken down as follows:

- 2.1 Receivables from the International Monetary Fund (IMF)

Receivables from the IMF totalled EUR 21,150 million (31 December 2021: EUR 20,607 million). The SDR[12]/EUR exchange rate as at 31 December 2022 stood at EUR 1.2517 (31 December 2021: SDR/EUR 1.2359).

The receivables from the IMF are funded and held by DNB for the IMF membership of the Dutch State. The Dutch State has extended a credit guarantee up to the sum of the commitments with the exception of the special drawing rights.

12 The value of the SDR is based on a basket of international currencies: the euro, the US dollar, the Chinese yuan, the Japanese yen and the pound sterling.

Millions

	31 December 2022		31 December 2021	
	SDR	EUR	SDR	EUR
Reserve tranche position	2,441	3,056	2,166	2,677
Loans	768	961	834	1,030
Special drawing rights	13,688	17,133	13,674	16,900
Total	**16,897**	**21,150**	**16,674**	**20,607**

Reserve tranche position

The reserve tranche position stood at EUR 3,056 million as at 31 December 2022 (31 December 2021: EUR 2,677 million), and it is part of the national quota. All IMF member states have made quotas available to the IMF. Their amounts are related to the member states' relative positions in the global economy. The Dutch quota amounts to SDR 8,737 million. The reserve tranche position (SDR 2,441 million) is the share in this quota effectively drawn by the IMF. The remaining amount – the IMF's euro holdings (SDR 6,296 million) – is kept by DNB.

Loans

Loans stood at EUR 961 million as at 31 December 2022 (31 December 2021: EUR 1,030 million).

Millions

	Total facility		End of drawing period*	31 December 2022		31 December 2021	
	SDR	EUR		SDR	EUR	SDR	EUR
PRGT	1,494	1,870	31-12-2029	724	906	725	896
NAB	9,190	11,503	31-12-2025	44	55	109	134
2020 credit line		5,863	31-12-2023	-	-	-	-
Total				**768**	**961**	**834**	**1,030**

* The drawing period is the period during which loans can be taken out.

They can be broken down as follows:

Millions

	Residual maturity* 31 December 2022				Residual maturity* 31 December 2021			
	Total	< 1 year	1 - 2 years	> 2 years	Total	< 1 year	1 - 2 years	> 2 years
	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR
PRGT**	**906**	4	33	869	**896**	2	4	890
NAB**	**55**	-	-	55	**134**	-	-	134
2020 credit line	**-**	-	-	-	**-**	-	-	-
	961	**4**	**33**	**924**	**1,030**	**2**	**4**	**1,024**

* The residual maturity is the period between the balance sheet date and the expiration date.
** PRGT and NAB loans have 10-year terms from the time of granting.

The Poverty Reduction and Growth Trust (PRGT) is a fund set up to supply the principal amounts of subsidised low-interest loans to the poorest developing countries.

The New Arrangement to Borrow (NAB) is a credit line which DNB has made available to the IMF. The IMF can use this credit line for its regular operations in addition to the quota. In 2022, early repayments of EUR 79 million were made on the NAB loans. There have been no increases in the PRGT or NAB facility in 2022.

The IMF can draw on the 2020 credit line if resources from the quota and the NAB are insufficient.

Special drawing rights

As at 31 December 2022, DNB's special drawing rights amounted to EUR 17,133 million (31 December 2021: EUR 16,900 million). The difference can be largely explained by the different SDR/EUR exchange rate compared to 31 December 2021. They represent the right to exchange SDR holdings to obtain other currencies and vice versa.

The special drawing rights correspond with the liability item 8 'Counterpart of special drawing rights allocated by the IMF'. At 31 December 2022, these stood at EUR 16,535 million (31 December 2021: EUR 16,326 million). This concerns the total allocation of special drawing rights by the IMF for the benefit of the Dutch State's membership.

- 2.2 Balances with banks and security investments, external loans and other external assets

As at 31 December 2022, this item stood at EUR 4,839 million (31 December 2021: EUR 4,909 million).

The breakdown of this item by currency is as follows:

Millions

	31 December 2022			31 December 2021		
	Foreign currency	EUR	Exchange rate	Foreign currency	EUR	Exchange rate
USD	3,879	3,637	1.067	4,118	3,636	1.133
JPY	120,045	853	140.660	112,797	865	130.380
CZK	1,501	62	24.116	1,690	68	24.858
CAD	87	61	1.444	100	69	1.439
CNY	451	61	7.358	478	66	7.195
NOK	640	61	10.514	686	69	9.989
AUD	86	55	1.569	108	69	1.562
GBP	43	49	0.887	56	67	0.840
Other currencies		0			0	
Total		**4,839**			**4,909**	

The table below provides a breakdown of these foreign currency balances by category.

Millions

	31 December 2022	31 December 2021
	EUR	EUR
Fixed-income securities	4,100	3,695
Equity funds	368	822
Reverse repos	360	371
Nostro accounts	11	21
Total	**4,839**	**4,909**

In early 2022, positions held in an equity fund were sold. See 'Realised gains/losses from financial operations' under 'Notes to the profit and loss account' for further details. The Financial overview section of the Accountability chapter provides a more detailed discussion of the developments in own investments at a portfolio level.

The table below provides a breakdown of investment categories by residual maturity.

Millions

	Residual maturity* 31 December 2022					Residual maturity* 31 December 2021				
	Total	No maturity	< 1 year	1 - 2 years	> 2 years	Total	No maturity	< 1 year	1 - 2 years	> 2 years
	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR
Fixed-income securities	**4,100**	-	2,227	723	1,150	**3,695**	-	2,342	389	964
Equity funds	**368**	368	-	-	-	**822**	822	-	-	-
Reverse repos	**360**	-	360	-	-	**371**	-	371	-	-
Nostro accounts	**11**	11	-	-	-	**21**	21	-	-	-
Total	**4,839**	**379**	**2,587**	**723**	**1,150**	**4,909**	**843**	**2,713**	**389**	**964**

* The residual maturity is the period between the balance sheet date and the expiration date.

3. Claims on euro area residents denominated in foreign currency

As at 31 December 2022, this item stood at EUR 169 million (31 December 2021: EUR 640 million).

The breakdown of this item by currency is as follows.

Millions

	31 December 2022			31 December 2021		
	Foreign currency	EUR	Exchange rate	Foreign currency	EUR	Exchange rate
USD	165	154	1.0666	725	640	1.1326
GBP	9	10	0.8869	-	-	0.8403
AUD	8	5	1.5693	0	0	1.5615
Other currencies		0			0	
Total		**169**			**640**	

The table below specifies these foreign currency balances by category.

Millions

	31 December 2022	31 December 2021
	EUR	EUR
Fixed-income securities	161	638
Nostro accounts	8	2
Total	**169**	**640**

The Financial overview section of the Accountability chapter provides a more detailed discussion of the movements in own investments at a portfolio level.

The table below provides a breakdown of investment categories by residual maturity.

Millions

	Residual maturity* 31 December 2022					Residual maturity* 31 December 2021				
	Total	No maturity	< 1 year	1 - 2 years	> 2 years	Total	No maturity	< 1 year	1 - 2 years	> 2 years
	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR
Fixed-income securities	**161**	-	146	5	10	**638**	-	445	95	98
Nostro accounts	**8**	8	-	-	-	**2**	2	-	-	-
Total	**169**	**8**	**146**	**5**	**10**	**640**	**2**	**445**	**95**	**98**

* The residual maturity is the period between the balance sheet date and the expiration date.

4. Claims on non-euro area residents denominated in euro

As at 31 December 2022, this item stood at EUR 122 million (31 December 2021: EUR 154 million). These claims can be broken down as follows:

Millions

	31 December 2022	31 December 2021
	EUR	EUR
Fixed-income securities	115	148
Nostro accounts	7	6
Total	**122**	**154**

The Financial overview section of the Accountability chapter provides a more detailed discussion of the movements in own investments at a portfolio level.

The equity funds and nostro accounts have no fixed maturity.

5. Lending to euro area credit institutions related to monetary policy operations denominated in euro

As at 31 December 2022, the Eurosystem's claim arising from the item 'Lending to euro area credit institutions related to monetary policy operations denominated in euro' totalled EUR 1,324,347 million (31 December 2021: EUR 2,201,882 million). Of this total, lending by DNB to Dutch-based credit institutions amounted to EUR 62,145 million (31 December 2021: EUR 173,282 million). In accordance with Article 32.4 of the ESCB and ECB Statute, all risks relating to such lending will, if materialised, following a decision by the ECB's Governing Council, be borne in full by the Eurosystem NCBs in proportion to the Eurosystem capital key in force at the time when the loss is suffered. To have access to this facility, a financial institution must meet the requirements laid down by the ECB, including the collateral eligibility criteria. Losses occur only if the counterparty defaults on the repayment and, in addition, the sale of the collateral fails to cover the debt.

This item can be broken down as follows:

Millions	31 December 2022	31 December 2021
	EUR	EUR
Main refinancing operations	250	-
Longer-term refinancing operations	61,895	173,282
Fine-tuning reverse operations	-	-
Structural reverse operations	-	-
Marginal lending facility	-	-
Credits related to margin calls	-	-
Total	**62,145**	**173,282**

In 2022, the following interest rates apply from the dates stated:

	Main refinancing operations rate	Deposit facility rate
21 December 2022	2.50%	2.00%
2 November 2022	2.00%	1.50%
14 September 2022	1.25%	0.75%
27 July 2022	0.50%	0.00%
18 September 2019	0.00%	(0.50%)

- 5.1 Main refinancing operations

Main refinancing operations amounted to EUR 250 million as at 31 December 2022 (31 December 2021: nil). They are conducted as standard tenders on a weekly basis, usually with a maturity of one week. The main refinancing operations are conducted as fixed-rate tenders. They play a key role in steering interest rates, regulating market liquidity and signalling the monetary policy stance.

- 5.2 Longer-term refinancing operations

Longer-term refinancing operations, amounting to EUR 61,895 million as at 31 December 2022 (31 December 2021: EUR 173,282 million) mainly relate to TLTRO-III loans. These loans provide longer-term liquidity. In 2022, EUR 111,587 million in TLTRO III loans was repaid. The largest repayments, totalling EUR 110,672 million, took place in late 2022 following the ECB Governing Council's decision on 27 October 2022.

In 2019 the ECB's Governing Council introduced the first of an initial series of seven targeted longer-term refinancing operations under the third programme (TLTRO III loans). On 10 December 2020 the Governing Council decided to add three more longer-term refinancing operations, which were conducted between June and December 2021. They have a maturity of three years. For the first seven TLTRO III transactions, credit institutions have a full or partial early repayment option on a quarterly basis, starting from September 2021, if at least one year of the maturity has elapsed[13]. Starting with the eighth TLTRO III transaction, credit institutions have this option starting from June 2022. The Governing Council of the ECB had initially decided that the final interest rate applicable to each TLTRO III operation would be as low as the average interest rate on the deposit facility prevailing over the life of the operation. In response to the COVID-19 shock, the Governing Council decided in 2020[14] that the interest rate applied from 24 June 2020 to 23 June 2021 and from 24 June 2021 to 23 June 2022 (the special interest rate period and the additional special interest rate period) would be up to 50 basis points below the average interest rate on the deposit facility prevailing over the same period, and in any case not higher than -1%. In addition, on 27 October 2022, the Governing Council decided that from 23 November 2022 until the maturity date or early redemption date of each outstanding TLTRO-III operation, the interest rate would be equal to the average deposit or main refinancing rate over this period, whichever is applicable. On the same date, the Governing Council decided to introduce three additional voluntary early repayment dates to allow TLTRO-III participants to repay part or all of their TLTRO-III loans before their maturity dates.

The actual interest rate depends on whether the credit institutions meet certain conditions. This will not be known until the maturity date of each loan. Until then a realistic estimate can only be made for the special interest period, the additional special interest period to the extent that these interest rates have been communicated to the counterparties, and the period from the operation's launch to 22 November 2022.

This means the following interest rates were used for TLTRO-III interest expenses for 2022:

i. for the period ending 23 June, the interest rates for the additional special interest period for which the interest-related data were communicated to counterparties on 10 June 2022 apply;
ii. for the period from 24 June to 22 November, the average deposit or main refinancing rate applicable over the term of the operation to 22 November 2022 applies;
iii. for the period from 23 November to 31 December, the average deposit or main refinancing rate applicable to that period applies.

The financial result for this item also includes adjustments to interest expenses made before the special interest periods due to the increase in policy rates in 2022.

13 Decision (EU) 2020/407 of the European Central Bank of 16 March 2020 amending Decision (EU) 2019/1311 on a third series of targeted longer-term refinancing operations (ECB/2020/13)
14 Decisions of the Governing Council of the ECB of 30 April 2020 and 10 December 2020.

- 5.3 Fine-tuning reverse operations

Fine-tuning reverse operations aim to regulate the market liquidity situation and steer interest rates, particularly to smooth the effects on interest rates caused by unexpected market fluctuations. Owing to their nature, they are conducted on an ad-hoc basis. In 2022, as in 2021, they were not conducted.

- 5.4 Structural reverse operations

These are reverse open-market transactions through standard tenders to enable the Eurosystem to adjust its structural liquidity position vis-à-vis the financial sector. In 2022, as in 2021, they were not conducted.

- 5.5 Marginal lending facility

Marginal lending facilities may be used by counterparties to obtain deposits from NCBs at a pre-specified deposit interest rate against eligible assets until the morning of the next business day. In 2022, as in 2021, this facility was not used.

- 5.6 Credits related to margin calls

These are credits to counterparties in case the collateral provided exceeds a predetermined limit, resulting in excess collateral relative to the outstanding monetary policy operations. In 2022, as in 2021, no credits related to margin calls were extended.

7. Securities of euro area residents denominated in euro

As at 31 December 2022, this item stood at EUR 211,793 million (31 December 2021: EUR 204,405 million), consisting of 'Securities held for monetary policy purposes' and 'Other securities'.

- 7.1 Securities held for monetary policy purposes

This item consists of securities acquired by DNB within the scope of the third covered bond purchase programmes (CBPP3), the securities markets programme (SMP), the public sector purchase programme (PSPP) and the pandemic emergency purchase programme (PEPP).

The securities under the first and second covered bond purchase programmes (CBPP1 and CBPP2) matured during 2022. Both the ECB and the euro area NCBs therefore no longer have any exposures to these programmes as at 31 December 2022. The SMP ended in September 2012, but has not yet fully expired.

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	Start date	End date	End date	Eligible securities*
Completed / Terminated programmes				
CBPP1	July 2009	June 2010	ECB/2009/16	Covered bonds issued by euro area residents
CBPP2	November 2011	October 2012	ECB/2011/17	Covered bonds issued by euro area residents
SMP	May 2010	September 2012	ECB/2010/5	Private-sector and public-sector securities issued in the euro area
Asset purchase programme (APP)				
CBPP3	October 2014	active	ECB/2020/8 (amended)	Covered bonds issued by euro area residents
ABSPP	November 2014	active	ECB/2014/45 (amended)	Senior and guaranteed mezzanine tranches of asset-backed securities of euro area residents
PSPP	March 2015	active	ECB/2020/9	Bonds issued by euro-area central, regional or local governments or recognised agencies as well as by international organisations and multilateral development banks located in the euro area
CSPP	June 2016	active	ECB/2016/16 (amended)	Bonds and commercial paper issued by non-bank corporations established in the euro area
Pandemic emergency purchase programme (PEPP)				
PEPP	March 2020	active	ECB/2020/17 (amended)	All asset categories eligible under the APP**

* Further eligibility criteria for specific programmes are set out in the Governing Council's decisions.
** Including securities issued by the Greek government..

In the first quarter of 2022 the Eurosystem continued its net purchases of securities under the asset purchase programme (APP)[15] at a monthly pace of EUR 20 billion on average. In March 2022, the ECB's Governing Council[16] decided to revise its net purchase schedule to EUR 40 billion in April, EUR 30 billion in May and EUR 20 billion in June. In June 2022 the Governing Council decided[17] to discontinue net asset purchases under the APP as of 1 July 2022. The Governing Council intends to continue reinvesting, in full, the principal payments from maturing securities purchased under the APP until 28 February 2023. Subsequently, the APP portfolio will decline at a measured and predictable pace, as the Eurosystem will not reinvest all of the principal payments from maturing securities. This decrease will average EUR 15 billion a month until the end of the second quarter of 2023. The subsequent pace will be determined in due course. The Governing Council will regularly

15 See the ECB's website for further details.
16 See the press release of 10 March 2022 on the decision by the Governing Council of the ECB.
17 See the press release of 9 June 2022 on the decision by the Governing Council of the ECB.

reassess the pace of the APP portfolio reduction to ensure it remains consistent with the overall monetary policy strategy and stance, to preserve market functioning, and to maintain firm control over short-term money market conditions.

In addition, in the first quarter of 2022, the Eurosystem continued net asset purchases under the pandemic emergency purchase programme (PEPP)[18] , albeit at a lower pace than previous quarters as decided by the ECB's Governing Council in December 2021[19]. It then decided to discontinue net asset purchases under the PEPP at the end of March 2022. Furthermore, the Governing Council decided to extend the reinvestment period of the principal amounts of securities purchased under the PEPP until at least the end of 2024. Reinvestment flexibility will remain an element of monetary policy whenever threats to monetary policy transmission jeopardise the attainment of price stability. The future roll-off of the PEPP portfolio will be managed to avoid interference with the appropriate monetary policy stance.

18 See the ECB's website for further details.
19 See the press release of 16 December 2021 on the decision by the Governing Council of the ECB.

The amortised cost of the fixed-income securities held by DNB and the other Eurosystem central banks is as follows:

Millions

	31 December 2022			31 December 2021		
Amortised cost	DNB	Other Eurosystem	Total Eurosystem	DNB	Other Eurosystem	Total Eurosystem
	EUR	EUR	EUR	EUR	EUR	EUR
Completed / Terminated programmes						
CBPP1	-	-	**-**	-	429	**429**
CBPP2	-	-	**-**	40	2,366	**2,406**
SMP	209	2,651	**2,860**	454	6,068	**6,522**
Total Completed / Terminated programmes	**209**	**2,651**	**2,860**	**494**	**8,863**	**9,357**
APP						
CBPP3	24,660	277,313	**301,973**	22,855	275,312	**298,167**
ABSPP	-	22,895	**22,895**	-	28,403	**28,403**
PSPP - government	109,577	2,199,861	**2,309,438**	103,659	2,118,940	**2,222,599**
PSPP - supranational	-	275,228	**275,228**	-	264,537	**264,537**
CSPP	-	344,119	**344,119**	-	309,676	**309,676**
Total APP	**134,237**	**3,119,416**	**3,253,653**	**126,514**	**2,996,868**	**3,123,382**
PEPP						
PEPP - covered bonds	404	5,648	**6,052**	414	5,659	**6,073**
PEPP - government	74,435	1,408,418	**1,482,853**	74,035	1,326,185	**1,400,220**
PEPP - supranational	-	145,687	**145,687**	-	130,590	**130,590**
PEPP - corporate bonds	-	46,074	**46,074**	-	43,782	**43,782**
Total PEPP	**74,839**	**1,605,827**	**1,680,666**	**74,449**	**1,506,216**	**1,580,665**
Total	**209,285**	**4,727,894**	**4,937,179**	**201,457**	**4,511,947**	**4,713,403**

In accordance with the decision of the Governing Council taken under Article 32.4 of the ESCB and ECB Statute, losses from these programmes[20], if they were to materialise, are shared in full by the Eurosystem NCBs, in proportion to the prevailing ECB capital key shares. Excluding financial losses from PSPP-government and PEPP-government securities, which are not shared by all Eurosystem NCBs.

20 The ABSPP is on the ECB's balance sheet and is primarily at the ECB's risk. Any losses are charged to the NCBs through the ECB's profit distribution.

The Governing Council of the ECB and the Executive Board of DNB regularly assess the financial risks associated with the securities held under these programmes. The annual impairment test is conducted by the Eurosystem for each programme on the basis of the information available at the balance sheet date. In cases where impairment indicators are observed, further analysis is performed to confirm that the cash flows of the underlying securities have not been affected by an impairment event. DNB's policy is in accordance with the decision by the ECB's Governing Council. The annual impairment test conducted as at 31 December 2022 has led the ECB's Governing Council to expect that all future cash flows from the securities held under these programmes will be received.

The amortised cost and market values[21] of the fixed-income securities held by DNB are as follows:

Millions

	31 December 2022		31 December 2021	
	Amortised cost	Market value	Amortised cost	Market value
	EUR	EUR	EUR	EUR
Completed / Terminated programmes				
CBPP2	-	-	40	40
SMP	209	220	454	499
Asset purchase programme (APP)				
CBPP3	24,660	20,071	22,855	23,263
PSPP - government	109,576	94,429	103,659	107,616
Pandemic emergency purchase programme (PEPP)				
PEPP - covered bonds	405	279	414	406
PEPP - government	74,435	62,068	74,035	73,587
Total	**209,285**	**177,067**	**201,457**	**205,411**

21 Market values are indicative and are derived on the basis of market quotes. Where market quotations are unavailable, estimates based on internal Eurosystem models are used. Market values are not presented in the balance sheet or in the profit and loss account, but are provided here for comparative purposes only.

The table below provides a breakdown of the maturities of the fixed-income securities.

Millions

	Residual maturity* 31 December 2022						Residual maturity* 31 December 2021					
	Total	< 1 year	1 - 2 years	2 - 5 years	5 - 10 years	> 10 years	Total	< 1 year	1 - 2 years	2 - 5 years	5 - 10 years	> 10 years
	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR
Completed / Terminated programmes												
CBPP2	**-**	-	-	-	-	-	**40**	40	-	-	-	-
SMP	**209**	-	90	119	-	-	**454**	249	-	205	-	-
Asset purchase programme (APP)												
CBPP3	**24,660**	1,434	1,301	3,583	9,244	9,098	**22,855**	1,961	1,449	3,441	6,982	9,022
PSPP - government	**109,576**	10,826	10,687	24,505	29,598	33,960	**103,659**	10,522	11,001	21,160	30,389	30,587
Pandemic emergency purchase programme (PEPP)												
PEPP - covered bonds	**405**	-	-	1	105	299	**414**	30	-	1	89	294
PEPP - government	**74,435**	13,726	5,185	14,959	17,236	23,329	**74,035**	14,260	4,968	12,530	20,372	21,905
Total	**209,285**	**25,986**	**17,263**	**43,167**	**56,183**	**66,686**	**201,457**	**27,062**	**17,418**	**37,337**	**57,832**	**61,808**

* The residual maturity is the period between the balance sheet date and the expiration date.

The Financial overview section of the Accountability chapter provides a more detailed discussion of the various risks to which the monetary programmes are exposed.

- 7.2 Other securities

As at 31 December 2022, this item stood at EUR 2,508 million (31 December 2021: EUR 2,948 million). It consists of positions in equity funds and bond funds valued at market value.

The table below specifies other securities by investment category.

Millions	31 December 2022	31 December 2021
	EUR	EUR
Equity funds	1,460	1,728
High-yield bond funds	568	640
Investment-grade bond funds	480	580
Total	**2,508**	**2,948**

As these funds have no fixed maturity, they are not broken down by maturity. The Financial overview section of the Accountability chapter provides a more detailed discussion of the movements in own investments at a portfolio level.

8 Intra-Eurosystem claims

As at 31 December 2022, this item stood at EUR 151,133 million (31 December 2021: EUR 71,790 million).

- 8.1 Participating interest in the ECB

Pursuant to Article 28 of the ESCB and ECB Statute, the NCBs of the ESCB are the sole subscribers to the capital of the ECB. Subscriptions depend on shares which are fixed in accordance with Article 29 of the ESCB and ECB Statute and are subject to adjustment every five years or whenever there is a change in composition of the ESCB national central banks.

As at 31 December 2022, this item stood at EUR 622 million (31 December 2021: EUR 586 million). This is comprised of EUR 516 million in capital contribution (31 December 2021: EUR 480 million) and EUR 106 million in contributions resulting from the changes in DNB's share in the ECB's accumulated net equity (31 December 2021: EUR 106 million).

The table below sets out the NCBs' shares in the authorised, subscribed and paid-up capital of the ECB.

Percentages and millions

	31 December 2022			
	Eurosystem capital key	Capital key	Authorised and subscribed capital	Paid-up capital
	%	%	EUR	EUR
National Bank of Belgium	3.6432	2.9630	321	321
Deutsche Bundesbank	26.3615	21.4394	2,321	2,321
Eesti Pank	0.2817	0.2291	25	25
Central Bank of Ireland	1.6934	1.3772	149	149
Bank of Greece	2.4735	2.0117	218	218
Banco de España	11.9246	9.6981	1,050	1,050
Banque de France	20.4243	16.6108	1,798	1,798
Banca d'Italia	16.9885	13.8165	1,496	1,496
Central Bank of Cyprus	0.2152	0.1750	19	19
Latvijas Banka	0.3897	0.3169	34	34
Lietuvos bankas	0.5788	0.4707	51	51
Banque centrale du Luxembourg	0.3294	0.2679	29	29
Central Bank of Malta	0.1049	0.0853	9	9
De Nederlandsche Bank	**5.8604**	**4.7662**	**516**	**516**
Oesterreichische Nationalbank	2.9269	2.3804	258	258
Banco de Portugal	2.3405	1.9035	206	206
Banka Slovenije	0.4815	0.3916	42	42
Národná banka Slovenska	1.1452	0.9314	101	101
Suomen Pankki-Finlands Bank	1.8369	1.4939	162	162
Subtotal for euro area NCBs*	*100.0000*	*81.3286*	*8,804*	*8,804*
Bulgarian National Bank	-	0.9832	106	4
Česká národní banka	-	1.8794	203	8
Danmarks Nationalbank	-	1.7591	190	7
Hrvatska narodna banka	-	0.6595	71	3
Magyar Nemzeti Bank	-	1.5488	168	6
Narodowy Bank Polski	-	6.0335	653	25
Banca Națională a României	-	2.8289	306	11
Sveriges Riksbank	-	2.9790	322	12
Subtotal for non-euro area NCBs*	-	*18.6714*	*2,021*	*76*
Total for euro area and non-euro area NCBs	**-**	**100.0000**	**10,825**	**8,880**

* Totals may not add up owing to rounding.

The ECB's authorised and subscribed capital remained unchanged at EUR 10,825 million after the Bank of England's withdrawal from the ESCB on 31 January 2020. The ECB's paid-up capital also remained unchanged at EUR 7,659 million in 2020 as the remaining NCBs assumed the Bank of England's paid-up share of EUR 58 million. In addition, the ECB's Governing Council decided that the euro area NCBs must subsequently pay up their increased share in the ECB's subscribed capital in full in two annual instalments in 2021 and 2022[22]. To this end, DNB paid up the first instalment of EUR 36 million on 29 December 2021. DNB paid up the second instalment of EUR 36 million on 28 December 2022, further increasing its share in the ECB's authorised and subscribed capital from EUR 480 million in 2021 to EUR 516 million at 31 December 2022. At 31 December 2022, the ECB's paid-up capital amounted to EUR 8,880 million.

- 8.2 Claims equivalent to the transfer of foreign reserves to the ECB

As at 31 December 2022, these claims – arising from the transfer of foreign reserve assets to the ECB – totalled EUR 2,364 million (31 December 2021: EUR 2,364 million). Pursuant to Article 30.2 of the ESCB and ECB Statute, the transfer is in proportion to DNB's share in the ECB's subscribed capital. The interest paid on these claims is calculated daily at the latest established rate used in the main refinancing operations of the Eurosystem, with a zero return on the gold component.

- 8.4 Net claims related to the allocation of euro banknotes within the Eurosystem

This item, amounting to EUR 67,528 million as at 31 December 2022 (31 December 2021: EUR 68,840 million), consists of a net claim of DNB on the Eurosystem relating to the reallocation of euro banknotes. See 'Intra-ESCB and intra-Eurosystem claims and liabilities' and 'Banknotes in circulation' in the 'Accounting policies' section for further details. The interest paid on these claims is calculated daily at the latest established rate used in the main refinancing operations of the Eurosystem.

- 8.5 Other intra-Eurosystem claims (net)

As at 31 December 2022, this net claim stood at EUR 80,619 million. As at 31 December 2021, there was a net liability of EUR 22,443 million, which was disclosed under the liability item 9.2 'Other intra-Eurosystem liabilities (net)'. This item is comprised of three components.

22 In particular, Decision (EU) 2020/138 of the European Central Bank of 22 January 2020 on the paying-up of the European Central Bank's capital by the national central banks of Member States whose currency is the euro and repealing Decision (EU) 2019/44 (ECB/2020/4), Decision (EU) 2020/136 of the European Central Bank of 22 January 2020 on the paying-up of the European Central Bank's capital by the non-euro area national central banks and repealing Decision (EU) 2019/48 (ECB/2020/2) and Decision (EU) 2020/139 of the European Central Bank of 22 January 2020 laying down the terms and conditions for transfers of the European Central Bank's capital shares between the national central banks and for the adjustment of the paid-up capital and repealing Decision (EU) 2019/45 (ECB/2020/5).

Millions

	31 December 2022	31 December 2021
	EUR	EUR
Claims on the ECB in respect of TARGET2	80,831	(22,517)
Claims on the ECB in respect of monetary income	(212)	65
Claims on the ECB in respect of the ECB interim profit distribution	-	9
Total	**80,619**	**(22,443)**

The first component is DNB's TARGET2 claim on the ECB of EUR 80,831 million (31 December 2021: a liability of EUR 22,517 million). This claim is related to receipts and payments of credit institutions and NCBs via TARGET2 which result in balances held in Eurosystem NCB correspondent accounts. The interest paid on this claim is calculated daily at the latest established rate used in the main refinancing operations of the Eurosystem.

The second component is DNB's position vis-à-vis the ECB due to the annual pooling and distribution of monetary income by the Eurosystem NCBs. DNB had a liability in respect of monetary income of EUR 212 million to the ECB in 2022. A net liability means that, on balance, DNB earned more on its monetary operations than would be expected based on its Eurosystem capital key. See the notes to profit and loss account item 9 'Net result of monetary income pooling' on page 157).

The third component is DNB's claim on the ECB in connection with the interim profit distribution by the ECB. In 2021, this amounted to a claim of EUR 9 million. Given the ECB's result for 2022, the Governing Council of the ECB decided to retain the income earned by the ECB on banknotes in circulation, as well as the income earned on securities purchased under the SMP, the APP and the PEPP. See 'ECB profit distribution' under 'Accounting policies' on page 114 for further details. As at 31 December 2022, the receivable is therefore nil.

9. Other assets

As at 31 December 2022, this item totalled EUR 3,150 million (31 December 2021: EUR 2,412 million).

- 9.2 Tangible and intangible fixed assets

The table below sets out the components of and movements in tangible and intangible fixed assets.

Millions

	Total tangible and intangible fixed assets	Total tangible fixed assets	Land and buildings*	Fittings	Fixed assets under construction	Total intangible fixed assets	Development costs (software)
	EUR	EUR	EUR	EUR	EUR	EUR	EUR
Book value as at 31 December 2020	**152**	**140**	55	15	70	**12**	12
Movements:							
Reclassification	-	-	3	-	(3)	-	-
Additions	**87**	**82**	-	2	80	**5**	5
Disposals	-	-	-	-	-	-	-
Depreciation and amortisation	**(28)**	**(24)**	(19)	(5)	-	**(4)**	(4)
Impairment losses	-	-	-	-	-	-	-
Book value as at 31 December 2021	**211**	**198**	39	12	147	**13**	13
Movements:							
Reclassification	-	-	129	2	(131)	-	-
Additions	**114**	**108**	-	5	103	**6**	6
Disposals	-	-	-	-	-	-	-
Depreciation and amortisation	**(25)**	**(21)**	(16)	(5)	-	**(4)**	(4)
Impairment losses	-	-	-	-	-	-	-
Book value as at 31 December 2022	**300**	**285**	152	14	119	**15**	15
Cost	**538**	**440**	220	101	119	**98**	98
Accumulated depreciation and amortisation	**(238)**	**(155)**	(68)	(87)	-	**(83)**	(83)
Book value as at 31 December 2022	**300**	**285**	152	14	119	**15**	15

* Land and buildings includes land in the amount of EUR 7 million. Land is not depreciated.

In 2020 DNB started sustainable renovations of its property at Frederiksplein. As a consequence, the large majority of its workforce are now based in the Toorop building at Spaklerweg in Amsterdam. DNB assumed future contractual financial commitments for the renovation of the property at Frederiksplein of 97 million.

The banknote operations and gold stocks were moved to Haarlem in 2020, pending their transfer to the DNB Cash Centre (DCC) in Zeist. The DCC was completed in 2022, which is why EUR 129 million was reclassified from 'Fixed assets under construction' to 'Land and buildings'. Specific work still needs to be carried out before the facility can be put into use. Depreciation of the DCC will take place using the component approach (See 'Tangible and intangible fixed assets' under 'Accounting policies' on page 112 for further details) and will start on the date when it is put into use, which is scheduled for 2023.

- 9.3 Other financial assets

The table below sets out the subcategories of 'Other financial assets'.

Millions

	31 December 2022	31 December 2021
	EUR	EUR
Participating interests	61	61
Equities and equity funds	3	3
Other receivables	89	104
Total	**153**	**168**

Participating interests

The participating interests concern shares in the Bank for International Settlements (BIS), the Society for Worldwide Interbank Financial Telecommunication scrl (SWIFT), and N.V. Settlement Bank of the Netherlands (SBN). The shareholding percentages for the BIS, SWIFT and SBN are unchanged from 2021. The BIS shares are 25% paid-up. As in 2021, the contingent liability for the uncalled part of the shares stood at SDR 64.9 million as at 31 December 2022. Although DNB holds 100% of the shares in SBN, this entity is not within DNB's scope of consolidation. The reason is that DNB cannot exercise any policy-making influence over SBN, which is entirely controlled by external parties.

Percentages and millions

Participating interests	Participation share	Location	Shareholders' equity*	31 December 2022	31 December 2021
			EUR	EUR	EUR
BIS	3.10	Basel (Zwitserland)	29,349	52	52
SWIFT	0.03	La Hulpe (België)	616	0	0
SBN	100.00	Amsterdam	9	9	9
Total				**61**	**61**

* Shareholders' equity of SWIFT and SBN is based on the 2021 annual financial statements.
Shareholders' equity of the BIS is based on the 2022 annual financial statements (financial year from 1 April to 31 March)..

Other receivables

Other receivables mainly include a receivable from a Dutch financial institution arising from staff mortgage loans. The mortgage loan portfolio is periodically assigned to DNB under a concession agreement.

- 9.5 Accruals and prepaid expenses

As at 31 December 2022, this item stood at EUR 2,692 million (31 December 2021: EUR 1,952 million). This item mainly consists of accrued interest on the monetary portfolios and Eurosystem claims. It also comprises unamortised results, which can be broken down as follows:

Millions

	31 December 2022	31 December 2021
	EUR	EUR
Foreign exchange swaps	85	52
Foreign exchange forwards	5	1
Total	**90**	**53**

Liabilities

1. Banknotes in circulation

This item consists of DNB's share in the total euro banknotes circulated by the Eurosystem.

The table below sets out the composition of banknotes put into circulation by DNB less banknotes returned to DNB, by denomination.

Millions

	31 December 2022		31 December 2021	
	Number	EUR	Number	EUR
EUR 5	(200)	(998)	(196)	(981)
EUR 10	(233)	(2,331)	(225)	(2,249)
EUR 20	(601)	(12,019)	(602)	(12,048)
EUR 50	899	44,944	806	40,287
EUR 100	(88)	(8,788)	(75)	(7,540)
EUR 200	25	5,098	27	5,416
EUR 500	(17)	(8,678)	(17)	(8,459)
Total euro banknotes circulated by DNB		17,228		14,426
Reallocation of euro banknotes in circulation	74,898		76,080	
Euro banknotes allocated to the ECB (8% of the sum of 17,228 + 74,898)*	(7,370)		(7,240)	
		67,528		68,840
Total		**84,756**		**83,266**

* Totals may not add up owing to rounding.

During 2022, the total value of banknotes in circulation within the Eurosystem increased by 2% (2021: 8%). As a result of the reallocation of euro banknotes, DNB's share in the euro banknotes in circulation was EUR 84,756 million at 31 December 2022 (31 December 2021: EUR 83,266 million). The value of the euro banknotes DNB actually issued in 2022 increased by 19% from EUR 14,426 million to EUR 17,228 million. The difference of EUR 67,528 million between the reallocated amount and the total amount of euro banknotes put into circulation through DNB is shown under 'Net claims related to the allocation of euro banknotes within the Eurosystem'. The negative numbers of banknotes for certain denominations are accounted for by the fact that, on a net basis, DNB issued fewer of these banknotes than it received from circulation.

2. Liabilities to euro area credit institutions related to monetary policy operations denominated in euro

This item relates to liabilities to credit institutions arising from DNB's money market policy conducted on behalf of the Eurosystem. As at 31 December 2022, this item stood at EUR 291,632 million (31 December 2021: EUR 301,789 million).

- 2.1 Current accounts (covering the minimum reserve system)

These liabilities, amounting to EUR 14,463 million as at 31 December 2022 (31 December 2021: EUR 295,689 million) contain the credit balances on the transaction accounts of credit institutions that are required to hold minimum reserves, excluding funds of credit institutions that are not freely disposable and accounts of credit institutions exempt from minimum reserve requirements. The latter, if any, are disclosed under liability item 3 'Other liabilities to euro area credit institutions denominated in euro'.

The main refinancing rate of interest was paid on these mandatory reserve holdings until 20 December 2022. On 27 October 2022, the Governing Council of the ECB decided to remunerate mandatory reserves at the deposit facility rate from 21 December 2022. Since June 2014, the remuneration on excess liquidity holdings had been the lower of either 0% or the deposit facility rate. Starting on 30 October 2019, the Governing Council of the ECB introduced a two-tier system for reserve remuneration, which exempted part of credit institutions' reserve holdings in excess of minimum reserve requirements from negative remuneration at the rate applicable on the deposit facility. This part was remunerated at the annual rate of 0%. The volume that was exempt from the deposit facility rate was determined as six[23] times a credit institution's minimum reserve requirements. Due to the increase in policy rates from 14 September 2022, the Governing Council decided to suspend the two-tier system by setting the multiplier to zero. The two-tier system for reimbursement of excess reserves had become redundant.

- 2.2 Deposit facility

This permanent facility, amounting to EUR 277,169 million as at 31 December 2022 (31 December 2021: EUR 6,100 million), may be used by credit institutions to place overnight deposits at DNB at the deposit facility rate. The increase from 31 December 2021 is due to increased policy rates, making it more attractive for credit institutions to use the deposit facility rather than the current account.

- 2.3 Fixed-term deposits

Fixed-term deposits are fine-tuning liquidity absorbing operations that take the form of deposits. As in 2021, no bids were made in 2022.

- 2.4 Fine-tuning reverse operations

These are monetary policy operations intended to tighten liquidity. As in 2021, no such operations were conducted in 2022.

23 The Governing Council can change the multiplier over time in line with changing levels of excess liquidity holdings.

- 2.5 Deposits related to margin calls

This item refers to deposits made by counterparties in those instances where the market value of the collateral pledged falls short of a pre-established trigger point, implying a deficit of collateral with respect to outstanding monetary policy operations. In 2022, as in 2021, no deposits related to margin calls were held.

3. Other liabilities to euro area credit institutions denominated in euro

This item, amounting to EUR 589 million as at 31 December 2022 (31 December 2021: EUR 51 million) consists of liabilities in respect of repo transactions.

4. Liabilities to other euro area residents denominated in euro

As at 31 December 2022, this item totalled EUR 16,742 million (31 December 2021: EUR 12,610 million).

- 4.1 General government

This item, amounting to EUR 13,917 million as at 31 December 2022 (31 December 2021: EUR 9,986 million) comprises non-monetary deposits as part of DNB's services to governments and supranational institutions. It consists mainly of EUR 13,908 million in liabilities to the Dutch State (31 December 2021: EUR 6,815 million)

- 4.2 Other liabilities

This item, amounting to EUR 2,825 million as at 31 December 2022 (31 December 2021: EUR 2,624 million) consists predominantly of non-monetary deposits held by financial institutions not required to maintain a minimum reserve as part of DNB's services to other euro area residents.

5. Liabilities to non-euro area residents denominated in euro

This item, amounting to EUR 32,425 million as at 31 December 2022 (31 December 2021: EUR 27,668 million) consists of EUR 28,752 million in non-monetary deposits as part of DNB's services to non-euro area central banks and governments (31 December 2021: EUR 24,943 million), EUR 3,184 million in liabilities to the European Single Resolution Fund (31 December 2021: EUR 2,389 million) and EUR 480 million in liabilities from repo transactions (31 December 2021: EUR 310 million) and EUR 9 million in liabilities related to margin calls (31 December 2019: EUR 26 million).

8. Counterpart of special drawing rights allocated by the IMF

This item is disclosed under asset item 2.1 'Receivables from the International Monetary Fund (IMF)'.

10. Other liabilities

As at 31 December 2022, this item stood at EUR 1,673 million (31 December 2021: EUR 2,661 million), consisting predominantly of accrued interest related to TLTRO III operations of EUR 924 million (31 December 2021: EUR 2,084 million) and cash collateral of EUR 182 million (31 December 2021: EUR 192 million).

The breakdown of the revaluation differences of EUR 266 million can be found in the table of off-balance sheet positions related to currency swaps, currency forwards and interest rate swaps on page 147.

11. Provisions

Provisions can be broken down as follows:

Millions

	Total	Provision for financial risks	Provision for employee benefits	Other provisions
	EUR	EUR	EUR	EUR
Balance as at 31 December 2020	**2,707**	2,678	22	7
Withdrawal	**(6)**	-	(1)	(5)
Release	**(1)**	-	(1)	-
Addition	**139**	128	7	4
Balance as at 31 December 2021	**2,839**	2,806	27	6
Withdrawal	**(465)**	(460)	(2)	(3)
Release	**(8)**	-	(7)	(1)
Addition	**12**	-	1	11
Balance as at 31 December 2022	**2,378**	**2,346**	**19**	**13**

Provision for Financial Risks

In 2022, EUR 460 million was withdrawn from the Provision for Financial Risks (2021: EUR 128 million added). As at 31 December 2022, the provision totalled EUR 2,346 million (31 December 2021: EUR 2,806 million).

The Financial overview section of the Accountability chapter provides a more detailed discussion on the withdrawal from the provision and the risks to which DNB is exposed.

Provision for employee benefits

The provision for employee benefits decreased by EUR 8 million to EUR 19 million (31 December 2021: EUR 27 million).

DNB operates the following arrangements:

- a defined benefit pension scheme
- a contribution to the healthcare insurance premiums of a group of pensioners and former employees
- a service anniversary and retirement bonus arrangement
- a surviving dependents' benefit scheme in the event of death
- a state pension bridging arrangement

DNB operates an average-pay staff pension scheme, which features provisional indexation based on the consumer price index. Annual indexation takes place only if DNB Pension Fund's financial position allows this. DNB Pension Fund's policy funding ratio stood at 133.9% at 31 December 2022 (31 December 2021: 127.7%). As in 2021, this means it was not underfunded in 2022. Almost full indexation was applied in the year under review. The pension contribution paid is charged to the profit and loss account, rather than set against a provision. See 'Pension and other retirement schemes' under 'Accounting policies' on page 114 for further details.

The contribution towards the health insurance premiums payable by pensioners and former employees is an allowance towards the costs concerned.

The service anniversary and retirement bonus arrangements provide for bonuses payable to staff upon 20, 30, 40 and 50 years' service and retirement, and payments made in the event of incapacity for work and to surviving dependants.

The surviving dependents' benefit scheme in the event of death includes a lump-sum payment of 2, 3 or 6 months of pension benefits to surviving dependents of a former employee.

The state pension bridging arrangement was agreed under the collective labour agreement. It comprises a lump sum payment equal to the prevailing monthly state pension (AOW) for unmarried persons multiplied by the number of months the DNB employee retires before the statutory state pension date, subject to a maximum of 36 months.

The liabilities and annual costs are actuarially determined. The assumptions used were:

	31 December 2022	31 December 2021
Discount rate for other employee benefits	Scheme-dependent (anniversaries: 3.85% healthcare: 3.70% surviving dependents: 3.65%)	Scheme-dependent (anniversaries: 0.85% healthcare: 1.15% surviving dependents: 1.15%)
Price inflation	2.00%	2.00%
Indexation of pension entitlements	2.00%	2.00%
General salary increase	7.00% (2023) 4.5% (2024) 2.00% (2025 and beyond)	2.00%
Individual salary increase (average)	2.00%	2.00%
Expected average retirement age	Assumption for all participants: 67	Assumption for all participants: 67
Mortality outlook	Mortality table AG 2022 + mortality experience	Mortality table AG 2020 + mortality experience

Other provisions

Other provisions primarily consist of the EUR 10 million provision related to DNB's historical links to slavery formed in 2022 (for further details see Box 6 on page 64 in the Accountability chapter) and provisions with respect to restructuring (31 December 2022: EUR 3 million, 31 December 2021: EUR 6 million).

12. Revaluation accounts

As at 31 December 2022, this item totalled EUR 32,883 million (31 December 2021: EUR 31,741 million).

The table below sets out the components of and net movements in the revaluation accounts.

Millions

	Total	Gold	Foreign currency	Fixed-income securities	Equity funds	High-yield bond funds	Investment-grade bond funds
	EUR	EUR	EUR	EUR	EUR	EUR	EUR
Balance as at 31 December 2020	**30,173**	29,275	21	30	685	77	85
Net revaluation movements	**1,568**	1,292	4	(21)	281	20	(8)
Balance as at 31 December 2021	**31,741**	30,567	25	9	966	97	77
Net revaluation movements	**1,142**	1,902	(16)	(8)	(586)	(73)	(77)
Balance as at 31 December 2022	**32,883**	**32,469**	**9**	**1**	**380**	**24**	**-**

The net increase in the aggregate amount for the revaluation accounts of EUR 1,142 million can be ascribed to the higher market value of gold. The revaluation accounts of other investments decreased mainly due to price losses. In early 2022, positions held in an equity fund were sold, realising EUR 298 million in revaluation reserves on the equity funds.

13. Capital and reserves

DNB's authorised capital, which is fully issued and paid up, amounts to EUR 500 million and is divided into 500 shares of EUR 1 million each. All shares are held by the Dutch State. The statutory reserve has been formed for the book value of the intangible fixed assets.

The table below sets out the movements in capital and reserves before appropriation of profit:

Millions

	Total	Issued capital	General reserve	Statutory reserve
	EUR	EUR	EUR	EUR
Balance as at 31 December 2020	8,483	500	7,971	12
Profit for the year 2020	15			
Dividend	(15)			
Addition of 2020 net profit*	-		-	
Movement in statutory reserve	-		(1)	1
Balance as at 31 December 2021	**8,483**	**500**	**7,970**	**13**
Balance as at 31 December 2021	-			
Dividend	-			
Addition of 2021 net profit*	-		-	
Movement in statutory reserve	-		(2)	2
Balance as at 31 December 2022	**8,483**	**500**	**7,968**	**15**

* Addition of net profit concerns profit after dividend payment.

14. Profit for the year and appropriation of profit

The profit for the 2022 financial year was nil (2021: EUR 15 million).

With due observance of the relevant provision of the Articles of Association and the shareholder's mandate, the proposed appropriation of profit is set out below.

Millions

	2022	2021
	EUR	EUR
Addition to the general reserve	-	-
Distribution to the State	-	15
Profit for the year	**-**	**15**

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Off-balance sheet positions revaluation differences

The off-balance sheet positions are shown below. Their conversion to euro results in net revaluation differences.

Millions

	31 December 2022							31 December 2021						
	Total	EUR	USD	JPY	GBP	CNH	SDR	Total	EUR	USD	JPY	GBP	CNH	SDR
Foreign exchange swaps														
Receivables	**7,651**	6,848	803	-	0	0	-	**8,181**	7,289	892	-	-	-	-
Payables	**(7,951)**	-	(5,367)	(1,006)	(150)	(239)	(1,189)	**(8,449)**	-	(5,143)	(1,000)	(151)	(208)	(1,947)
	(300)	6,848	(4,564)	(1,006)	(150)	(239)	(1,189)	**(268)**	7,289	(4,251)	(1,000)	(151)	(208)	(1,947)
Foreign exchange forwards														
Receivables	**3,548**	2,192	1,354	-	2	-	-	**4,075**	2,202	1,873	-	-	-	-
Payables	**(3,514)**	(1,108)	(1,922)	(103)	(96)	(160)	(125)	**(4,085)**	(1,657)	(1,872)	-	-	-	(556)
	34	1,084	(568)	(103)	(94)	(160)	(125)	**(10)**	545	1	-	-	-	(556)
Total*	**(266)**	**7,932**	**(5,132)**	**(1,109)**	**(244)**	**(399)**	**(1,314)**	**(278)**	**7,834**	**(4,250)**	**(1,000)**	**(151)**	**(208)**	**(2,503)**

* DNB has fully hedged the exchange rate risk of the exposures listed, except for working stocks.

The currency swaps and forwards are used to hedge currency risks. The purpose of interest rate swaps is to hedge interest rate risk. Futures are used to control the maturity profile of the investment portfolio.

A foreign exchange swap is a transaction in which parties agree to directly buy or sell one currency in exchange for another currency at the spot rate and later to sell or buy back the currency at the forward rate. A currency forward contract is a transaction in which parties agree to buy or sell a currency in return for another currency at a specific rate and for delivery at a date in the future. Upon initial recognition, positions are valued at the spot rate, split into off-balance sheet presentation at the forward rate and a forward profit or loss recognised under 'Accruals and prepaid expenses', which is amortised. The amortised profit or loss represents the difference between the forward rate and the spot rate. This allows the value to evolve towards the forward rate over time.

A future is a negotiable contract under which a predetermined volume of specific underlying assets is purchased or sold on a specific date and time. As at 31 December 2022, DNB's outstanding futures position was EUR 352 million in US dollars (31 December 2021: EUR 524 million). Gains and losses on futures are settled on a daily basis.

Securities lending programme

In accordance with the ECB's Governing Council's decisions, DNB has made available for lending its holdings of securities purchased under the covered bond purchase programme (CBPP3), the public sector purchase programme (PSPP) and the pandemic emergency purchase programme (PEPP). Unless these securities lending operations are conducted against cash collateral, they are recorded in off-balance-sheet accounts.[24] Such securities lending operations with a nominal value of EUR 393 million (31 December 2021: EUR 873 million) were outstanding as at 31 December 2022.

Foreign currency position

As at 31 December 2022, the euro equivalent of the total sum of assets denominated in foreign currency (included in asset items 2 and 3) amounted to EUR 26,158 million (31 December 2021: EUR 26,156 million). As at 31 December 2022, the euro equivalent of the total sum of liabilities denominated in foreign currency (included in liability items 6, 7 and 8) amounted to EUR 16,535 million (31 December 2021: EUR 16,326 million). These positions are included in the revaluation accounts and revalued as set out under 'Revaluation'. DNB has fully hedged its currency exposures, except for those on fixed-income securities denominated in currencies other than USD and JPY, equity funds and working stocks.

Management and custody

DNB manages and holds securities and other documents of value in custody as part of its Eurosystem Reserve Management Services (ERMS) to central banks outside the euro area and governments. Such management and custody are for the account and risk of the depositors. Income is recognised in the profit and loss account under commission income.

Buffers for balance sheet-wide risks

The financial risk as at 31 December 2022 was determined at EUR 26.0 billion (31 December 2021: EUR 13.7 billion). Of the total balance sheet-wide risk, EUR 23.4 billion (31 December 2021: EUR 11.1 billion) relates to specific risks under the asset purchase programme (APP) and the pandemic emergency purchase programme (PEPP)[25]. As at 31 December 2022, the Provision for Financial Risks stood at EUR 2.3 billion (31 December 2021: EUR 2.8 billion).

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24 If cash collateral is not invested at year-end, these transactions are recognised in the balance sheet accounts. See the note to liability item 10 'Other liabilities'.

25 The APP and PEPP risks are comprised of interest rate risk and credit risk on the purchases (excluding exposures to the Dutch government). The Financial overview section of the Accountability chapter provides a more detailed discussion on the risks to which DNB is exposed. The rubrics 'exposures', 'risks and buffers' and 'capital position' are part of the risk paragraph in the Financial overview section and are therefore included in the scope of the independent auditor's report.

The table below provides a breakdown of the buffers for balance sheet-wide risks.

Millions

	31 December 2022	31 December 2021
	EUR	EUR
Capital and reserves (excluding statutory reserve)*	8,468	8,470
Provision for financial risks	2,346	2,806
Total	**10,814**	**11,276**

* Capital and reserves does not include profit for the financial year.

The Financial overview section of the Accountability chapter provides a more detailed discussion of the risks to which the DNB is exposed.

Events after the balance sheet date

Croatia's adoption of the euro

In accordance with Council Decision (EU) 2022/1211 based on Article 140(2) of the Treaty on the Functioning of the European Union, Croatia adopted the euro on 1 January 2023.

The Eurosystem capital key has changed as a result. Among other things, this has an impact on future monetary income pooling (see the note on the system to determine monetary income on page 157). The table below shows the changes to the Eurosystem capital keys as of 1 January 2023.

Percentages

	Eurosystem capital key from 1 January 2023	Eurosystem capital key up to and including 31 December 2022
	%	%
Nationale Bank van België	3.6139	3.6432
Deutsche Bundesbank	26.1494	26.3615
Eesti Pank	0.2794	0.2817
Central Bank of Ireland	1.6798	1.6934
Bank of Greece	2.4536	2.4735
Banco de España	11.8287	11.9246
Banque de France	20.2600	20.4243
Banca d'Italia	16.8518	16.9885
Central Bank of Cyprus	0.2134	0.2152
Hrvatska narodna banka	0.8044	-
Latvijas Banka	0.3865	0.3897
Lietuvos bankas	0.5741	0.5788
Banque centrale du Luxembourg	0.3268	0.3294
Central Bank of Malta	0.1040	0.1049
De Nederlandsche Bank	**5.8133**	**5.8604**
Oesterreichische Nationalbank	2.9033	2.9269
Banco de Portugal	2.3217	2.3405
Banka Slovenije	0.4776	0.4815
Národná banka Slovenska	1.1360	1.1452
Suomen Pankki-Finlands Bank	1.8221	1.8369
Total euro area NCBs	*100.0000*	*100.0000*

New IMF agreements with respect to PRGT and RST

In February 2023, the agreements were signed for increases to the PRGT facility by SDR 500 million and the Resilience and Sustainability Trust (RST) facility consisting of a loan of SDR 1 billion and a deposit of SDR 0.2 billion. The Dutch State issued credit guarantees for these commitments.

Additional repayment options for TLTRO-III loans

Between 1 January 2023 and the adoption of the financial statements by the general meeting on 22 March 2023, TLTRO-III loans worth EUR 5,250 million were repaid early to DNB. Total Eurosystem-wide repayments in this period were EUR 99,345 million. See the breakdown in the note to asset item 5.2 'Longer-term refinancing operations' on page 123 for more details.

Off-balance sheet rights and obligations

Liability claims and proceedings

By reason of its supervisory task or otherwise, DNB may receive liability notices or pre-announcements of such notices. In some cases liability proceedings have been brought against DNB. Where the liability amounts cannot reasonably be estimated or where a liability is unlikely to be settled, DNB suffices by disclosing such cases in this section. No liability proceedings against DNB are currently pending.

IMF

Within the context of the Netherlands' IMF membership, DNB has made various credit lines available to the IMF. More details are provided on pages 116 to 118.

Provision of euro liquidity through swap agreements

DNB has a reverse repurchase agreement with a national central bank outside the euro area. Under the agreement, DNB makes euro liquidity available in this central bank's area of operations, with the aim of preventing market disruptions by meeting potential liquidity needs.

Outsourcing

DNB has outsourced part of its ICT function to an external party – the end user services, the data centre and related services. Over the course of 2023, these services will be purchased from a successor external party, for which a tender is currently underway. Under the current contract, DNB's financial liability largely depends on its future scalable service purchase volume.

Rental and lease agreements

DNB has rented part of the Toorop building and the neighbouring premises at Omval in Amsterdam since 1 July 2018. The term of the rental agreements is until 31 August 2025. DNB relocated in 2020 as its office building at Frederiksplein is undergoing major renovation. Annual rental charges are taken to the profit and loss account. The rental liability is presented in the table below.

In 2019 DNB entered into a ground lease agreement with the Dutch State for the benefit of a newly built location that will house DNB's banknote operations and gold vaults. The term of the agreement is 60 years. Annual ground rent payments are taken to the profit and loss account. The liability assumed is presented in the table below.

DNB has rented part of the building formerly in use by the Joh. Enschedé printing company in Haarlem since 1 October 2019 to house its banknote operations and gold vaults on a temporary basis. The term of the agreement is until 1 October 2023. Annual rental charges are taken to the profit and loss account. The liability assumed is presented in the table below.

Several DNB staff members are entitled to a lease car on the basis of their positions. By default, the duration of car lease contracts is 4 or 5 years, with the option of renewal. The liability under the present car lease contracts is presented in the table below. Renewal at the current prices is assumed for staff members whose lease contracts expired in 2022.

Millions	Total	2023	2024 to 2027	2028 and beyond
	EUR	EUR	EUR	EUR
Rental agreements	**32**	13	19	-
Ground lease agreements	**16**	0	1	15
Lease contracts	**3**	1	2	-
Total	**51**	**14**	**22**	**15**

Subletting agreement

Since 1 November 2022, DNB has sublet part of the office space it rents in the Omval office building in Amsterdam. The subletting agreement runs until 31 August 2025, with one possibility of termination by tenant from 16 January 2024.

Millions	Total	2023	2024 to 2027	2028 and beyond
	EUR	EUR	EUR	EUR
Subletting agreement	**3**	1	2	-
Total	**3**	**1**	**2**	**-**

Tangible fixed assets

The contractual investment liabilities for tangible fixed assets are disclosed under asset item 9.2 'Tangible and intangible fixed assets' on page 135.

3. Notes to the profit and loss account

Operating income

1 and 2 Net interest income

This item includes interest income and interest expense in respect of the assets and liabilities denominated in euro.

Given the developments in policy rates, net interest income is specified and disclosed by category below:

Millions	2022 EUR	2021 EUR
Intra-Eurosystem claims	1,169	-
Monetary portfolios	340	79
Investments	20	(28)
Monetary lending	(894)	(1,423)
Liabilities to euro area credit institutions	(683)	1,270
Non-monetary deposits	(22)	144
Total	**(70)**	**42**

Interest income arises mainly on intra-Eurosystem claims, on which the main refinancing rate is paid. For 2021, the main refinancing rate stood at 0%, which is why income was nil. Since July 2022, the main refinancing rate has been positive. See the note to asset item 8 'Intra-Eurosystem claims' for further details.

Interest income on the monetary portfolios has increased as returns on the securities purchased under the reinvestments exceed those on the matured securities and owing to the change in accounting estimates that took place in 2022 (see the note under 'Comparison with preceding year' in the 'Accounting policies' section on page 110). See the note to asset item 7.1 'Securities held for monetary policy purposes' for further details of the monetary purchase programmes.

The decrease in interest expense on monetary lending (TLTRO) is caused by rising policy rates and the ECB Governing Council's decision of 27 October 2022 on the remuneration on TLTRO-III loans. See the note to asset item 5.2 'Long-term refinancing operations' for further details of the remuneration on the TLTRO loans.

The increased policy rates also caused interest income on liabilities to euro area credit institutions and non-monetary deposits to turn into interest expense in 2022. This has ended the unusual situation of the past few years involving interest income on liabilities to credit institutions.

The Financial overview section of the Accountability chapter provides a more detailed discussion of the movements in own investments.

3. Realised gains/(losses) from financial operations

Net realised gains from financial operations of EUR 285 million (2021: EUR 302 million) primarily arose from the sale of positions held in an equity fund. As a result, an amount of EUR 298 million in revaluation was realised. The Financial overview section of the Accountability chapter provides a more detailed discussion of the developments in own investments at a portfolio level.

Millions	2022	2021
	EUR	EUR
Net realised result on currency exchange rates	24	34
Net realised price result on fixed-income securities	(24)	5
Net realised price result on equity funds	285	263
Total	**285**	**302**

4. Write-downs on financial assets and positions

The write-downs of EUR 213 million (2021: EUR 25 million) consist predominantly of price revaluation losses on fixed-income securities and positions in equity funds and investment-grade bond funds for which the revaluation accounts were insufficient. The market value of DNB investment portfolios fell due to adverse market conditions in 2022. This has resulted in unrealised losses as at 31 December 2022.

Millions

	2022	2021
	EUR	EUR
Fixed-income securities	(122)	(16)
Equity funds	(64)	(8)
Investment-grade bond funds	(23)	-
Foreign currency	(4)	(1)
Total	**(213)**	**(25)**

5. Transfer to/from Provision for Financial Risks

In 2022, EUR 460 million was withdrawn from the Provision for Financial risks (2021: EUR 128 million added). As a result, the amount of the provision fell to EUR 2,346 million as at 31 December 2022 (31 December 2021: EUR 2,806 million).

The Financial overview section of the Accountability chapter provides a more detailed discussion on the withdrawal from the provision and the risks to which DNB is exposed.

8. Income from equity shares and participating interests

For 2022, this item amounts to EUR 13 million (2021: EUR 47 million). This includes the amount allocated to DNB in respect of the ECB's 2021 profit distributions of a total of EUR 2 million. Given the ECB's result for 2022, the Governing Council of the ECB decided not to distribute an interim profit (see the note under 'ECB profit distribution' in the 'Accounting policies' section on page 114).

Income from DNB's participating interest in the ECB can be broken down as follows:

Millions

	2022	2021
	EUR	EUR
Interim profit distribution in the financial year	-	9
Final profit distribution for the preceding financial year	2	22
Total	**2**	**31**

9. Net result of monetary income pooling

The net result of monetary income pooling can be broken down as follows:

Millions	2022	2021
	EUR	EUR
Monetary income accruing to DNB	418	69
Monetary income earned by DNB	(632)	98
Result of monetary income pooling	(214)	167
Adjustment of monetary income pooling from preceding years	2	(102)
Provision for monetary policy operations	-	-
Net result from monetary income pooling	**(212)**	**65**

The amount of each Eurosystem NCB's monetary income is determined by measuring the actual annual income that derives from the earmarkable assets held against its liability base. Where the value of DNB's earmarked asset exceeds or falls short of the value of its liability base, the difference is offset by applying the refinancing rate to the value of the difference. DNB's monetary income earned on earmarked assets is included under interest income, net of interest expense on the liability base.

Earmarked assets can be broken down as follows:

Earmarkable assets	Earmarkable assets
Amount of gold holdings in proportion to each NCB's capital key share	0%
Claims equivalent to the transfer of foreign reserves to the ECB (except gold)	Main refinancing operations rate
Lending to euro area credit institutions related to monetary policy operations denominated in euro	Rate of return
Securities held for monetary policy purposes from the CBPP, CBPP2, PSPP-government/agency bonds and PEPP – government securities programs	Main refinancing operations rate
Securities held for monetary policy purposes from the SMP, CBPP3, PSPP-Supra, CSPP and PEPP (excluding PEPP – government securities) programs	Rate of return
Claims on non-Eurosystem central banks that relate to liquidity-providing operations	Actual interest income (including accruals)
Accrued coupon interest related balances on impaired securities held for monetary policy purposes and for which full income/risk sharing applies	Not applicable
Net claims related to the allocation of euro banknotes within the Eurosystem	Main refinancing operations rate
Accrued interest relating to regular monetary policy operations with a maturity of over 1 year	Not applicable
Other intra-Eurosystem claims (net)	Main refinancing operations rate

The liability base can be broken down as follows:

Liability base	Remuneration rate
Banknotes in circulation	Not applicable
Liabilities to euro area credit institutions related to monetary policy operations denominated in euro	Rate of return

The monetary income pooled by the Eurosystem NCBs is to be allocated among the NCBs according to the subscribed ECB capital key. The pooling and reallocation of monetary income to NCBs leads to certain net reallocation effects. One reason is that the yields earned on certain earmarkable assets and the interest expense paid on certain liability base items may differ to a varying degree among the Eurosystem NCBs. In addition, usually each Eurosystem NCB's share of earmarkable assets and in the liability base deviates from its share in the subscribed capital of the ECB. For DNB, the result from monetary income pooling of EUR (214) million (2021: EUR 167 million) arises from the difference between the monetary income pooled by DNB, amounting to EUR 632 million, and the monetary income reallocated to DNB based on the Eurosystem capital key, amounting to EUR 418 million.

10. Other income

This item includes the fees raised from the supervised institutions to cover the costs of its activities as an independent public body, as well as the government contributions to the performance of these activities. In its capacity as an independent public body (ZBO), DNB exercises prudential supervision over financial institutions and is the national resolution authority.

Other income can be broken down as follows:

Millions	2022	2021
	EUR	EUR
Fees from supervised institutions	218	209
Government contribution	1	5
Other	3	3
Total	**222**	**217**

In accordance with supervision and resolution legislation, a more detailed account is given in a separate report.

Operating costs

11. Staff costs

The average number of employees, expressed as full-time equivalents, amounted to 2,060 in 2022, versus 1,987 on average in 2021.

The table below provides a breakdown of 'Staff costs'.

Millions

	2022	2021
	EUR	EUR
Wages and salaries	(184)	(175)
Social insurance contributions	(24)	(21)
Pension costs	(37)	(37)
Other staff costs	(13)	(23)
Total	**(258)**	**(256)**

The pension scheme costs of EUR 37 million for the year (2021: EUR 37 million) are included under 'Pension costs'. They equal total pension contributions paid (2022: EUR 45 million; 2021: EUR 44 million), less employee-paid contributions (2022: EUR 8 million; 2021: EUR 7 million).

The annual costs on account of the contribution to the healthcare insurance premiums of pensioners are included under 'Social insurance contributions'. The annual costs on account of other employee benefits are included under 'Wages and salaries' and 'Social insurance contributions'. In 2021, other personnel costs included the expense associated with the creation of the provision for surviving dependants' benefits in the event of death and the state pension bridging arrangement.

Remuneration

General

Under the Public and Semi-public Sector Executives Remuneration (Standards) Act (Wet normering topinkomens – WNT), DNB is required to disclose the remuneration of its senior executives and of officials other than senior executives exceeding the remuneration ceiling referred to in the WNT. DNB classifies the members of the Executive Board and the Supervisory Board as senior executives. The Minister of Finance and the Minister of the Interior and Kingdom Relations have decided that DNB is allowed to agree with Executive Board members on individual remuneration in excess of the ceiling referred to in the WNT.

The remuneration ceiling under the WNT for the financial year 2022 amounts to EUR 216,000[26] (2021: EUR 209,000). Unless stated otherwise, all officials mentioned worked in full-time employment throughout the year.

Executive Board

The individual maximum remuneration of the Executive Board members in 2022, includes holiday allowance, an additional month's salary and other terms and conditions of employment, but has no performance-related component. The pension scheme for the members of the Executive Board is in accordance with the agreements made with the Minister of Finance in 2005, and has been aligned with the statutory provisions that have applied since 1 January 2015. Like other staff, the members of the Executive Board contribute to their pension premiums.

26 The increase in the remuneration ceiling under the WNT compared to 2021 is 3%, rounded up to the nearest thousand in euro (Official Gazette, 9 September 2021, No. 40077).

The table below specifies the remuneration, taxable expense allowances and deferred remuneration (employer's pension contributions) for each member of the Executive Board.

		Remuneration and taxable expense allowances		Deferred remuneration		Total remuneration		Individual maximum remuneration	
		2022	2021	2022	2021	2022	2021	2022	2021
Naam	Functie	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR
Klaas Knot	President	438,496	424,854	26,504	26,145	465,000	450,999	465,000	451,000
Else Bos	Executive Board Member	426,767	414,014	25,733	25,286	452,500	439,300	452,500	439,300
Nicole Stolk	Executive Board Member	236,267	218,713	25,733	25,286	262,000	243,999	262,000	244,000
Olaf Sleijpen	Executive Board Member	255,267	246,651	25,733	25,286	281,000	271,937	281,000	272,000
Steven Maijoor[1]	Executive Board Member	356,267	259,694	25,733	19,072	382,000	278,766	382,000	278,767
Job Swank[2]	Executive Board Member	-	156,886	-	12,943	-	169,829	-	177,529
	Total	**1,713,064**	**1,720,812**	**129,436**	**134,018**	**1,842,500**	**1,854,830**		

1 Steven Maijoor was appointed Executive Board Member with effect from 1 April 2021. His individual maximum remuneration covers the period from 1 April to 31 December 2021.

2 Job Swank stepped down with effect from 1 July 2021. His individual maximum remuneration covers the period from 1 January to 30 June 2021.

Remuneration paid to the members of the Supervisory Board

Members of the Supervisory Board are paid fees in line with the WNT, which stipulates maximum fees of 15% of the remuneration ceiling under the WNT for the Chair and 10% for members.

In 2022 and 2021, the members of the Supervisory Board were paid the following fees.

	2022	2021
	EUR	EUR
Wim Kuijken (Chair)	32,400	31,350
Margot Scheltema (Vice-Chair)	21,600	20,900
Feike Sijbesma	21,600	20,900
Annemieke Nijhof[1]	21,600	20,900
Marry de Gaay Fortman	21,600	20,900
Roger Dassen	21,600	20,900
Mirjam van Praag[1]	21,600	20,900
Peter Blom[2]	18,345	6,986
Total	**180,345**	**163,736**

1 Annemieke Nijhof and Mirjam van Praag were also members of the Bank Council throughout the year under review, for which they were each paid EUR 3,299 on an annual basis (2021: EUR 3,299). which is not included here.

2 Peter Blom was appointed with effect from 1 September 2021. He has voluntarily resigned his duties on a temporary basis with effect from 7 November 2022.

Officials with remuneration that exceeds the WNT ceiling

In compliance with the WNT, DNB also reports remuneration of officials other than executives that exceeds the remuneration ceiling under the WNT, which in 2022 was EUR 216,000 (2021: EUR 209,000). In respect of these officials the WNT does not impose a ceiling, but prescribes disclosure.

The remuneration of these officials exceeds the remuneration ceiling under the WNT as a result of DNB's package of employment conditions. The number of officials whose remuneration details we publish edged up from 16 to 17 in 2022.

Remuneration overview

The table below shows the non-senior executives, listed by position, whose remuneration exceeds the remuneration ceiling under the WNT.

	Average number of hours a week		Remuneration and taxable expense allowances		Deferred remuneration		Total remuneration	
	2022	2021	2022	2021	2022	2021	2022	2021
Position			EUR	EUR	EUR	EUR	EUR	EUR
Division Director	36	36	299,726	278,425	26,504	26,145	326,230	304,570
Division Director	36	36	261,937	241,778	26,504	26,145	288,441	267,923
Division Director	36	36	256,878	235,524	26,504	26,145	283,382	261,669
Division Director	36	36	250,964	229,976	26,504	26,145	277,468	256,121
Division Director	36	36	243,535	223,589	26,504	26,145	270,039	249,734
Division Director	36	36	238,556	215,157	26,504	26,145	265,060	241,302
Division Director	36	36	238,431	209,848	26,504	26,145	264,935	235,993
Division Director	36	36	237,379	209,337	25,733	25,286	263,112	234,623
Division Director	36	36	234,985	207,197	25,733	25,286	260,718	232,483
Division Director	36	36	232,962	217,414	26,504	26,145	259,466	243,559
Division Director	36	36	224,533	205,805	26,504	26,145	251,037	231,950
Division Director	36	36	225,220	199,800	25,733	25,286	250,953	225,086
Division Director	36	36	224,636	208,585	25,733	25,286	250,369	233,871
Division Director	36	36	223,094	199,199	25,733	25,286	248,827	224,485
Division Director	36	36	211,921	182,320	25,733	25,286	237,654	207,606
Division Director	36	36	195,622	170,544	26,504	26,145	222,126	196,689
Head of Department	36	36	233,135	205,396	25,733	25,286	258,868	230,682

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12. Other administrative costs

The table below specifies 'Other administrative costs'.

Millions	2022	2021
	EUR	EUR
Temporary staff and outsourcing	(111)	(108)
Travel and accommodation expenses	(2)	(1)
Accommodation	(23)	(30)
Office equipment, software and office expenses	(42)	(34)
General expenses	(18)	(9)
Total	**(196)**	**(182)**

General expenses went up mainly due to the creation of the EUR 10 million provision related to DNB's links to slavery. In addition, general expenses include the fees paid to the external auditor. The table below provides a breakdown of the fees into categories.

Whole amounts	KPMG Accountants N.V.	KPMG Accountants N.V.
	2022	2021
	EUR	EUR
Audit of the financial statements	(667,000)	(637,290)
Other audit services	(163,771)	(154,285)
Tax advisory services	-	-
Assurance-related services	(78,000)	(76,710)
Total	**(908,771)**	**(868,285)**

The total fees for the audit of the financial statements include VAT and are based on the fees paid during the financial year to which the audit relates.

17. Corporate income tax

DNB's corporate income tax liability is limited to duties not assigned to it by law. The corporate income tax payable for 2022 amounted to EUR 0 million (2021: EUR 0 million). No significant results were posted that are related to duties not assigned to DNB by law.

Executive Board and Supervisory Board

Amsterdam, 22 March 2023

Executive Board of De Nederlandsche Bank N.V.

Klaas Knot, *President*

Else Bos[27]

Nicole Stolk

Olaf Sleijpen

Steven Maijoor

Amsterdam, 22 March 2023

Adopted by the Supervisory Board of De Nederlandsche Bank N.V.

Wim Kuijken, *Chair*

Margot Scheltema, *Vice-Chair*

Feike Sijbesma

Annemieke Nijhof

Marry de Gaay Fortman

Roger Dassen

Mirjam van Praag

Peter Blom[28]

Frans Muller

27 Executive Board Member Else Bos did not sign the financial statements due to long-term illness.
28 Peter Blom has voluntarily resigned his duties on a temporary basis with effect from 7 November 2022, which is why he did not sign the financial statements.

4. Other information

KPMG

Independent auditor's report

To: the General Meeting and the Supervisory Board of De Nederlandsche Bank N.V.

Report on the audit of the accompanying financial statements

Our opinion

In our opinion the financial statements of De Nederlandsche Bank N.V. have been compiled, in all material respects, in accordance with the models and accounting policies applying to the European Central Bank (ECB/2016/34) and the amendments thereto as included in ECB/2019/34 and ECB/2021/51, complemented by the applicable provisions of Part 9 of Book 2 of the Dutch Civil Code, as well as the provisions of the Public and Semi-public Sector Executives Remuneration (Standards) Act Wet bezoldiging topfunctionarissen publieke en semipublieke sector (WNT).

What we audited

We have audited the 2022 financial statements of De Nederlandsche Bank N.V., based in Amsterdam.

The financial statements comprise:

1 the balance sheet as at 31 December 2022;

2 the profit and loss account for the year 2022; and

3 the notes comprising a summary of the accounting policies and other explanatory information.

Basis for our opinion

We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing and the Audit Protocol 2022 under the Public and Semi-public Sector Executives Remuneration (Standards) Act. Our responsibilities under those standards are further described in the 'Our responsibilities for the audit of the financial statements' section of our report.

We are independent of De Nederlandsche Bank N.V. in accordance with the Audit firms supervision act (Wet toezicht accountantsorganisaties), the 'Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten' (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence regulations in the Netherlands. Furthermore, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA, Dutch Code of Ethics).

KPMG

We determined our audit procedures in the context of the financial statements audit as a whole. Our findings on fraud and non-compliance with laws and regulations and the key audit matters should be viewed in that context and not as separate judgments or conclusions.

We believe the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Audit approach

Summary

Materiality

- Materiality of EUR 80 million.
- 1% of Capital and reserves.
- Lower materiality for WNT.

Continuity, Fraud and non-compliance with laws and regulations and climate-related risks

- Going concern: no going concern risks identified. Fraud and non-compliance with laws and regulations (Noclar): management override of internal controls and application of significant judgment in determining key input parameters for the calculation of interest rate risks disclosed in the notes.
- Climate-related risks: we considered the impact of climate-related risks on the financial statements and described our approach and observations in the section "Audit Approach to Climate-Related Risks.

Key matters

- Determination of the balance sheet-wide risks as included in the notes to the financial statements.

Opinion

Unqualified opinion: in all material respects in accordance with the accounting policies.

Materiality

Based on our professional judgement we determined that the materiality for the financial statements as a whole at EUR 80 million (2021: EUR 80 million). The materiality is determined with reference to the relevant benchmark Capital and Reserves in the amount of EUR 8,483 million as at 31 December 2022. The materiality as a percentage amounts to 1% (2021: 1%). We consider Capital and Reserves as the most appropriate benchmark due to the fact that it is a stable benchmark and because its size provides insight into the ability of DNB to ensure on an ongoing basis the stability of the financial sector in the Netherlands.

We have also considered alternative benchmarks, such as total profit for the financial year and the balance sheet total.

The balance sheet total is subject to more fluctuation and depends on changes in economic conditions in the Netherlands and the Eurozone. Based on this, we consider the balance sheet total less suitable as a benchmark for materiality.

With respect to the audit of the remuneration disclosure, we apply a lower materiality as prescribed in the 'Controleprotocol WNT 2022' as defined by the Ministry of Interior and Kingdom Relations. The materiality used to audit the accuracy of the disclosure is set at a range between EUR 5,000 and EUR 10,000 and for the audit of the completeness of the top executives remuneration disclosure at zero and for the audit of the completeness of other executives at 1%.

In addition, we take deviations and/or possible deviations into account that in our opinion can be considered material to the users of the financial statements due to qualitative reasons.

We agreed with the Supervisory Board that misstatements in excess of EUR 3.2 million, which are identified during the audit, would be reported to them, as well as smaller misstatements that in our view must be reported on qualitative grounds.

Audit response going concern - no going concern risks identified

Given DNB's role in the creation of money, based on the Banking Act, the Executive Board and we have considered that there are no going concern risks for the activities of DNB.

Audit response to the risks of fraud and non-compliance with laws and regulations

In the performance of its duties, the Executive Board pays close attention to the risks of fraud and non-compliance with laws and regulations and the Financial Committee of the Supervisory Board reflects on this. The Executive Board of DNB is aware that non-compliance with laws and regulations could result in a reputational risk.

As part of our audit, we have gained insights regarding the company and its business environment, and assessed the design and implementation and, where considered appropriate, tested the operating effectiveness of the company's risk management in relation to fraud and non-compliance. Our procedures included, among other things, assessing the company's code of conduct, whistleblowing procedures, incidents register and its procedures to investigate indications of possible fraud and non-compliance. Furthermore, we performed relevant inquiries with management, those charged with governance and other relevant functions, such as Internal Audit, Operational Risk Management, Finance, Legal Counsel and Compliance and Integrity. As part of our audit procedures, we:

— evaluated investigation reports on indications of possible fraud and non-compliance by the Internal Audit Department, Operational Risk Management and Compliance and Integrity;

— evaluated legal confirmation letters as requested by us.

In addition, we performed procedures to obtain an understanding of the legal and regulatory frameworks as applicable to the entity. Besides law and regulations which have a direct impact on the financial statements, such as the Banking Act, reporting regulations, tax legislation, the WNT, the Financial Supervision Act and the regulations governing a ZBO, we identified the following areas as those most likely to have a material effect on the financial statements:

— General Data Protection Regulation (GDPR);
— European public tendering rules; and
— International sanctions legislation.

In addition, there is legislation in the Netherlands, which is not applicable to DNB, but which from a reputational point of view will be applied when possible, such as the Money Laundering and Terrorist Financing (Prevention) Act (Wwft).

We evaluated the fraud and non-compliance risk factors to consider whether those factors indicate a risk of material misstatement in the financial statements.

Within DNB, physical values (gold, banknotes and coins) are present and large financial transactions are conducted that require internal control measures. The associated fraud risk factors were incorporated in our audit. This also applies to the fraud risk factor that we have identified with respect to the WNT disclosure.

Since the Executive Board of DNB does not receive any profit-related remuneration and the profit of the entity is not a goal in itself, we have not evaluated the assumed fraud risk related to revenue recognition. In addition, estimates in the financial statements are limited (refer to the section on accounting policies).

Based on the above and on the auditing standards, we identified the following fraud and non-compliance risks that are relevant to our audit, including the relevant presumed risks laid down in the auditing standards, and responded as follows:

Management override of controls (a presumed risk)

Risk:

— Management is in a unique position to manipulate accounting records and prepare fraudulent financial statements by overriding controls that otherwise appear to be operating effectively.

In addition, we identified a fraud risk related to the application of significant judgment in determining key input parameters for the calculation of interest rate risk, as included in the notes. For our work, we refer to the Key point of our audit.

Responses:

- We evaluated the design and the implementation and, where considered appropriate, tested the operating effectiveness of internal controls (including the design of the three lines of defence model) that mitigate fraud and non-compliance risks.

- We performed a data analysis of high-risk journal entries related to transactions concerning financial markets and monetary operations, personnel and operating expenses, property, plant and equipment, and gold. Where we identified instances of unexpected journal entries or other risks through our data analytics, we performed additional audit procedures to address each identified risk, including inquiring about the nature of the journal entry and testing of transactions back to source information.
- We incorporated elements of unpredictability into our audit approach, including the use of an interest rate specialist to test the plausibility of the assumptions in the interest rate risk model.

Our procedures for responding to identified risks of fraud and non-compliance with laws and regulations led to the key point of the audit.

We communicated our risk assessment, audit approach and results to management and the Finance Committee of the Supervisory Board.

Our audit procedures did not reveal any indications and/or other reasonable suspicions of fraud and non-compliance with laws and regulations that are material to the financial statements.

Audit approach to climate-related risks

The Executive Board has shown its activities and progress toward its climate goals in Figure 5 "Progress on COP26 pledge," as included on page 54 in the accountability section of the annual report. Climate change has a direct impact on the financial-economic system and therefore affects DNB's mission and mandate. DNB aims to respond adequately to these commitments within its mandate.

The Executive Board further assessed how climate-related risks, its own ambitions and legislative and regulatory developments impact DNB's financial statements. To assess the impact of these risks, The Executive Board conducted a climate stress test on the balance sheet and monetary exposures in 2021 and determined that no revision of this risk estimate was needed in 2022. In Figure 8 on page 80, based on the climate stress test, The Executive Board has outlined the potential future impact of climate risks on its results and balance sheet-wide risks (interest rate and credit risk) under three scenarios and in Figure 9 on page 80, the impact on the market risks of DNB's own investments. The Executive Board has presented the potential impact qualitatively (low, medium, high), as it cannot be measured with sufficient precision at this stage. For this reason, the potential financial impact is not included in Table 5 on page 79 'Our exposure, risk and buffers'.

As part of our risk assessment, we met with The Executive Board and performed the following procedures to identify and assess risks of material misstatement in the financial statements due to errors or fraud::

— took notice of DNB's activities on climate, as shown in Figure 5 "Progress on COP26 pledge" on page 54 and its accountability in this regard in the Annual Report.

— discussed the realisation and results of the climate stress test and took note of the described intended developments therein for the coming years; and

— discussed the progress of DNB's Socially Responsible Investment of its own investments, as included on page 80 of the annual report.

Based on an analysis of the financial statement line items and related accounting policies, DNB estimated that climate-related risks will not have a material impact on the 2022 financial statements. The proprietary investments have been valued at fair value, and the monetary portfolios have been valued at amortized cost, taking into account any impairments if they occur. We agree with this analysis. Therefore, based on the risk analysis performed, we have not identified any material climate-related risks due to error or fraud for DNB's 2022 financial statements.

We have read the information contained in the Annual Report with respect to climate risks and considered its material consistency with our knowledge obtained from the audit or otherwise, and in particular as described above. In our opinion, The Executive Board of DNB has provided a balanced explanation in the Accountability Chapter of the Annual Report of the impactful climate risks that could materialize in the future.

Our key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements. We have communicated the key audit matters to the Executive Board and the Supervisory Board. The key audit matters are not a comprehensive reflection of all matters discussed.

Due to the withdrawal from the Financial Risk Provision (VFR) as a result of the effectuate of financial risks in 2022, we paid less attention to auditing the VFR compared to 2021. For this reason, our core audit focus was more on the determination of the balance sheet-wide risks disclosed in the notes.

Determination of balance sheet-wide risks as disclosed in the notes

Description

The balance sheet-wide risks as explained on page 77 are calculated by DNB based on the results of internal models for interest rate, credit and market risk. The results of these models are largely determined by model design, parameterisation and the extent to which DNB faces certain risks over monetary policy operations. Among other things, DNB uses data on portfolios purchased and managed by other central banks under these programs, but for the account and risk of the Eurosystem as a whole.

Due to, in particular, the development of (expected) interest rates, the balance sheet-wide risks have increased substantially. Due to the model-based calculation of the balance sheet-wide risks and the inherently present subjective judgment and estimates of interest rate risk, this is a key point of our audit.

Our approach

We have taken notice of the relevant controls that are implemented to ensure the operating effectiveness of the models and the completeness and accuracy of the input of parameters and data. We have reviewed, with the assistance of KPMG specialists, the key assumptions in the risk models for determining interest rate, credit and market risk.

We reviewed the validation of the models performed by DNB with the assistance of our own specialists based on the validation guidelines and the validation reports.

To verify the accuracy and completeness of the source data used in the models, we reconciled them, among other things, with internal data and data as received from the ECB or external data suppliers.

We performed procedures and took notice of monetary developments and decisions as taken by the ECB Governing Council. Based on the aforementioned and the analysis performed by DNB's Risk Management Department, we have determined that this has been correctly and fully incorporated into the assumptions of the models used to determine balance sheet-wide risks.

We have taken note of the interest rate scenario used by DNB and the subjective assumptions made in this regard. Given the complexity and error-prone nature of the determination of interest rate risk in the balance sheet-wide risks, we have reviewed the calculation of interest rate risk in detail. We also engaged a KPMG interest rate specialist to test DNB's assumption regarding the development of interest rates in an extreme but plausible scenario. This involved comparing the interest rate scenario established by DNB's experts with scenarios used by other (central) banks and historical information.

We verified whether the results of the models were correctly reflected in the notes to the financial statements. We verified whether the disclosures in the financial statements (including the disclosure Risks and buffers in the risk section as included in the Accountability 2022 chapter of the Annual Report) are adequate.

Our observation

We determined that the balance sheet-wide risks were calculated in accordance with internal accounting policies, and adequately disclosed in the 2022 financial statements.

As shown in the Financial Notes section of the Annual Report, a withdrawal from the VFR took place in 2022 and at December 31, 2022, the balance sheet-wide risks exceeded the available buffers.

Paragraph to emphasize the applied accounting principles for valuation and determination of results

We draw attention to paragraph 1 'Accounting Policies' as included in the notes to the financial statements. The financial statements of DNB are, in accordance with the Bank Act 1998, prepared in accordance with the accounting guidelines of the European Central Bank (ECB/2016/34) and the amendments contained in ECB/2019/34 and ECB/2021/51, on accounting and financial reporting in the ESCB and its harmonized disclosures to the balance sheet and profit and loss account.

In addition, the Executive Board of DNB has decided on a number of specific deviations from these principles in order to improve reporting, as well as to comply with the additional specific requirements as included in Part 9 of Book 2 of the Dutch Civil Code and the WNT and or the Guidelines of the Dutch Council for Annual Reporting (RJ), where the ESCB accounting policies do not cover the subject. This is consistent with the unique character of a central bank. For a proper understanding of the financial statements, users should become familiar with the accounting policies as these differ from the more widely known accounting standards, such as IFRS and Part 9 of Book 2 of the Dutch Civil Code.

Our opinion is not modified in respect of this matter.

Unaudited compliance with the anti-cumulation clause in the WNT

In accordance with the 'Controleprotocol WNT 2021', we did not audit the anti-cumulation clause referred to in Section 1.6a of the WNT and Section 5 subsection 1j of the 'Uitvoeringsregeling WNT'.

Consequently, we did not verify whether or not the maximum salary norm has been exceeded by a 'leidinggevende topfunctionaris' (managing senior official) due to possible employment at other institutions subject to the WNT, and whether the WNT-disclosure as required in relation to this clause is accurate and complete.

Report on the other information included in the annual report

In addition to the financial statements and our auditor's report thereon, the Annual Report contains other information.

Based on the following procedures performed, we conclude that the other information:

- is consistent with the financial statements and does not contain material misstatements;
- contains the information as required by Part 9 of Book 2 of the Dutch Civil Code regarding the management report and the other information.

We have read the other information. Based on our knowledge and understanding obtained through our audit of the financial statements or otherwise, we have considered whether the other information contains material misstatements.

By performing these procedures, we comply with the requirements of Part 9 of Book 2 of the Dutch Civil Code and the Dutch Standard 720. The scope of the procedures performed is less than the scope of those performed in our audit of the financial statements.

The Executive Board is responsible for the preparation of the other information, including the management report, in accordance with Part 9 of Book 2 of the Dutch Civil Code, and other information pursuant to Part 9 of Book 2 of the Dutch Civil Code.

Description of the responsibilities for the financial statements

Responsibilities of the Executive Board and the Supervisory Board for the financial statements

The Executive Board is responsible for the preparation and fair presentation of the financial statements in accordance with the accounting principles of guidance ECB/2016/34 and the amendments as included in ECB/2019/34 and ECB/2021/51, supplemented with the applicable standards of Part 9 of Book 2 of the Dutch Civil Code pursuant to Section 17 of the Banking Act (Bankwet) 1998 and also the Standard Remuneration Act (Wet normering topinkomens). In this respect, the Executive Board is responsible for such internal control as the Executive Board determines is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to errors or fraud.

As part of the preparation of the financial statements, the Executive Board is responsible for assessing the company's ability to continue as a going concern. Based on the financial reporting framework mentioned, the Executive Board must prepare the financial statements using the going concern basis of accounting.

The Supervisory Board is responsible for overseeing the company's financial reporting process.

Our responsibilities for the audit of the financial statements

Our objective is to plan and perform the audit engagement in a manner that allows us to obtain sufficient and appropriate audit evidence for our opinion.

Our audit has been performed with a high, but not absolute, level of assurance, which means we may not have detected all material errors and fraud during our audit.

Misstatements can arise from fraud or errors and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements. The materiality affects the nature, timing and extent of our audit procedures and the evaluation of the effect of identified misstatements on our opinion.

We have exercised professional judgement and have maintained professional scepticism throughout the audit, in accordance with Dutch Standards on Auditing, the 'Controleprotocol WNT 2022', the 'Controleprotocol financiële verantwoording Autoriteit Financiële Markten en De Nederlandsche Bank' and the ethical requirements and independence requirements.

Our audit included among others:

- identifying and assessing the risks of material misstatement of the financial statements, whether due to errors or fraud, designing and performing audit procedures responsive to those risks, and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from errors, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtaining an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control;
- evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Executive Board;
- concluding on the appropriateness of the Executive Board's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the company ceasing to continue as a going concern;
- evaluating the overall presentation, structure and content of the financial statements, including the disclosures; and
- evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the Supervisory Board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant findings in internal control that we identify during our audit.

From the matters communicated with the Supervisory Board, we determine the key audit matters: those matters that were of most significance in the audit of the financial statements. We describe these matters in our auditor's report unless laws and regulations preclude public disclosure about the matter or when, in extremely rare circumstances, not communicating the matter is in the public interest.

Amstelveen, 22 maart 2023

KPMG Accountants N.V.

M.A. Huiskers RA

2371642/23W00186710AVN

Provisions governing the appropriation of profit

These provisions are set out in Article 22(2) of the Articles of Association of De Nederlandsche Bank N.V. and read as follows:

The profit, as shown in the adopted financial statements, is at the disposal of the general meeting.

Annexes

Annex 1 Additional information

This annex provides information and data as background to the Accountability chapter. First, we take a closer look at compliance and integrity at DNB, as discussed in the Trust section. This is followed by key HR figures, which offer context for the Staff section. Lastly, to complement the section on our CSR ambition, we provide additional information on our operational management. This includes donations, contract and supplier management, and our environmental care and carbon footprint.

Compliance and integrity

During the year under review, Compliance & Integrity promoted integrity awareness among staff by providing 33 integrity workshops for new employees and managers, making integrity a topic of discussion in work meetings and organising various activities during Integrity Week around the theme "If something doesn't feel right, talk about it". Furthermore, Compliance & Integrity and HR encouraged discussion on the topic of transgressive behaviour in various ways, including through the "Where do you draw the line?" campaign and by organising bystander training courses. Compliance & Integrity also developed a new e-learning module on how to handle information in collaboration with other departments. Moreover, the division worked together with two other central banks on further professionalising its internal compliance function.

During the year under review, Compliance & Integrity conducted an integrity perception survey among all DNB employees. This revealed a slightly more positive perception of integrity at DNB compared to 2018. Employees are more likely to point out potential integrity violations to one another and are more open to discussing integrity issues in their daily work. Furthermore, employees are generally satisfied with how internal reports of potential integrity violations are handled. However, the survey also showed that it needs to become easier to address mistakes, as this is a cause of stress for about a quarter of employees.

Five special integrity investigations took place in the year under review. Two of these concerned indications of transgressive behaviour by an employee. The third investigation concerned a possible failure to comply with internal procedures, while the fourth dealt with a potential leak of confidential information. The fifth investigation was related to a suspicion of unauthorised access to confidential information. The investigations revealed no malpractices or breaches of integrity.

The number of integrity incidents reported in 2022 fell slightly compared to 2021. Apart from the incidents below relating to notifiable data breaches, there were no incidents of non-compliance with laws and regulations. The decrease in the number of incident reports received by Compliance & Integrity regarding the handling of information without due care may be related to the extra attention given to the confidentiality classification of emails. There was an uptick in the number of violations of the Regulation on private investment transactions in 2022. Given the fact that these violations were mainly attributable to an apparent lack of awareness of the ban on day trading, employees have been reminded of this policy. The number of reports labelled "other incidents" decreased. There were two incidents in this category: one involved an employee's screening process, the other an item sent by post.

There was also a decrease in the number of complaints received by the Complaints Committee compared to 2021 (while the number of internal complaints increased). Seven of the 17 complaints were processed. In line with the complaints procedure, this eventually led to a decision on their validity, in some cases by the Executive Board. The Executive Board and Finance Committee receive quarterly reports on complaints and how they are handled.

Table 1 Integrity incidents and complaints

	2022	2021
Integrity incidents (total), of which:	51	64
Handling information without due care	30	47
Data leaks	37	43
Notifiable to the Dutch Data Protection Authority	6	7
Regulation on private investment transactions	16	9
Regulation on independence*	2	0
Handling DNB property without due care	1	3
Other incidents	2	5
Complaints		
Internal	3	2
External	14	20

* This category was added in 2022 and covers incidents where the independence of employees is compromised, for instance due to a failure to report conflicts of interest or the improper implementation of cooling-off provisions when transferring to a new job. There were no incidents in this category in 2021.

Key HR figures

We employ 2,244 internal and 823 external staff members. The increase in the number of staff in supervision is the result of understaffing at the beginning of the year under review, which was remedied later in the year, and of staff expansion due to pension system transition. The increase in the average number of FTEs is partly due to our digital proficiency ambition and the accommodation programme. External staff work mainly in the area of ICT support. The number of external and insourced employees decreased as a result of the Data & Information Technology division's ambition to replace a large part of the insourced staff with permanent employees. Actual training costs grew due to an increase in the number of on-site multi-day training courses after the pandemic measures were lifted. There was a rise in turnover, with inflow exceeding outflow despite the tight labour market. Most outflow was voluntary, which can be explained by the labour shortage's catalysing effect on job mobility.

Table 2 Key HR figures (31 December 2022)

General

	2022	2021
Workforce (regular employment and Executive Board)*	2,244	2,142
Average number of FTEs	2,060	1,987
Ratio total annual compensation** of President/median total annual compensation of staff		
Ratio increase in total annual compensation of the President/median increase in total annual compensation of staff		-
Actual training costs (EUR)	6,451,810	4,426,674
Budgeted training costs (EUR)	7,301,858	6,802,244
% of employees covered by collective labour agreement	100%	100%
Number of external staff***	822	981

* Number of employees is calculated excluding interns, external staff and Supervisory Board members. With the exception of a small number of secondments, all employees are based in the Netherlands.

** The President is the highest-earning employee at DNB. This indicator is being reported for the first time this year. For more background, see Annex 2 Definitions and assumptions.

*** External staff are not employed by DNB but do use our systems and/or work under our direction.

Gender distribution

	2022	2021
Supervisory Board		
women	50.0%	50.0%
men	50.0%	50.0%
other	0.0%	0.0%
Executive Board		
women	40.0%	40.0%
men	60.0%	60.0%
other	0.0%	0.0%
Division directors		
women	30.0%	31.6%
men	70.0%	68.4%
other	0.0%	0.0%

	2022	2021
Heads of department		
women	38.0%	35.2%
men	62.0%	64.8%
other	0.0%	0.0%
Heads of section		
women	42.9%	42.9%
men	57.1%	57.1%
other	0.0%	0.0%
DNB-wide (staff members and Executive Board)		
women	40.2%	40.4%
men	59.8%	59.5%
other	0.04%	0.05%

Percentage with a non-Western migration background

	2022	2021
Staff % non-Western migration background*	-	11.0%
Managers % non-Western migration background**	1.6%	-

* According to CBS Barometer figures (May 2022), based on previous definitions. In autumn 2022, CBS introduced new definitions. The new Barometer based on these definitions will be published in 2023.

** Based on a voluntary survey of heads of section, heads of department including programme managers, division directors including programme directors, and members of the Executive Board (response rate: 89%).

Number of employees with a disability

	2022	2021
- in participation FTEs (25.5 hours per week)	25	23

Age distribution

	2022	2021
Supervisory Board		
% <30 years	0%	0%
30-50 years	0%	0%
>50 years	100%	100%
Executive Board		
<30 years	0%	0%
30-50 years	0%	0%
>50 years	100%	100%
Division directors		
<30 years	0%	0%
30-50 years	30%	26%
>50 years	70%	74%

	2022	2021
Heads of department		
<30 years	0%	0%
30-50 years	66%	62,5%
>50 years	34%	37.5%
Heads of section		
<30 years	0%	0%
30-50 years	61%	67%
>50 years	39%	33%
Employees (regular and Executive Board)		
<30 years	13%	10%
30-50 years	52%	51%
>50 years	35%	39%

Employees with permanent or temporary contracts by gender

	2022	2021
Permanent - total	**1,917**	**1,867**
women	762	741
men	1,154	1,126
other	1	0
Temporary - total	**327**	**275**
women	140	125
men	187	149
other	0	1

Employees on full-time and part-time contracts by gender

	2022	2021
Full-time (36 hours or more per week) - total	**1,999**	**1,882**
women	718	667
men	1,280	1,214
other	1	1
Part-time (5 to 36 hours per week) - total	**245**	**260**
women	184	199
men	61	61
other	0	0

Number and ratio* inflow and outflow by gender

	2022 (number)	2022 (ratio)	2021 (number)	2021 (ratio)
Inflow number and ratio - total	**358**	**0.16**	**250**	**0.12**
women	144	0.06	105	0.12
men	214	0.10	144	0.11
other	0	0.00	1	1.00
Outflow number and ratio - total	**256**	**0.11**	**196**	**0.09**
women	108	0.05	85	0.10
men	148	0.07	111	0.09
other	0	0.00	0	0.00

* Inflow ratio is the inflow (total/women/men/other) per number of employees (total/women/men/other)

Number and ratio of inflow and outflow by age bracket

	2022 (number)	2022 (ratio)	2021 (number)	2021 (ratio)
Inflow number and ratio - total	**358**	**0.16**	**250**	**0.12**
<30 years	120	0.05	89	0.04
30-50 years	192	0.09	119	0.06
>50 years	46	0.02	42	0.02
Outflow number and ratio - total	**256**	**0.11**	**196**	**0.09**
<30 years	50	0.02	19	0.01
30-50 years	122	0.05	90	0.04
> 50 years	84	0.04	87	0.04

* Inflow ratio is the inflow (total/<30/30-50/>50 years) per number of employees (total/<30/30-50/>50 years)

Reason for outflow

	2022	2021
Own request	147	98
Termination of contract	25	15
End of temporary employment contract	22	33
Retirement and early retirement	48	35
Restructuring	9	4
Occupational disability	4	8
Death	1	3

Absence due to illness

The illness absence rate continued to rise to almost 4%. The reporting frequency is close to 1, comparable to the frequency before the pandemic. Short- and medium-term absenteeism have increased, mainly due to COVID-19 and other viral infections. There is no single explanation for the increase in the absence rate, but there are no conspicuously prominent work-related factors.

Table 3 Absence due to illness

	2022	2021
Total illness absence rate	**3.97%**	**3.50%**
Short-term absence (<7 days)	0.81%	0.37%
Medium-term absence (1-6 weeks)	1.02%	0.43%
Long-term absence (6-52 weeks)	1.78%	1.99%
1 to 2 years	0.36%	0.70%
Notification frequency	0.96	0.57

Donations

We express our social commitment through financial contributions and donations. We give financial support to organisations and activities that are related to our core tasks, such as the Money Wise platform for financial education. We also donate to charitable organisations that are active in the areas of culture, healthcare and society. In 2021, the Executive Board established that our donations policy should put a slightly stronger emphasis on initiatives fostering sustainability and diversity. Our financial support and donations totalled €452,000 in the year under review.

Contract and supplier management

Of all spending on products and services, 87% went to buildings, banknotes, professional services, insourcing, software and hardware. Spending on products and services accounted for 60% of total spending in the year under review. Until autumn 2022, we had a framework agreement with two parties for the insourcing of ICT professionals. We now use a Dynamic Procurement System instead, giving some 120 parties a chance to compete for insourced assignments. To be admitted to this pool, parties must demonstrate compliance with requirements set by DNB. There is also Eurosystem cooperation within the European Procurement Coordination Office (EPCO) and within the Joint European Tender regarding the procurement of banknotes. In addition, we participate in government tenders in certain cases.

We conduct due diligence to determine whether parties whose services we use comply with legislation and standards regarding integrity and sustainability. For example, new suppliers are asked to provide documentary evidence that they have not been convicted of membership of a criminal organisation, corruption, fraud, terrorism, terrorist financing, money laundering, offences related to child labour or human trafficking in the past five years. Supplier agreements also include terms stipulating that suppliers must behave in accordance with standards set by DNB. If a supplier is unable to submit a clean criminal record, no contract will be concluded. We do not accept products or services that are in any way connected to unacceptable working conditions, such as child labour, forced labour, worker discrimination or non-living wages. Where legally permitted and deemed appropriate, we apply the Public Administration (Integrity Assessment) Act (*Wet bevordering integriteitsbeoordelingen door het openbaar bestuur – Wet Bibob*).

We are committed to Socially Responsible Procurement as defined by PIANOo (the Public Procurement Expertise Centre of the Ministry of Economic Affairs and Climate). As a government organisation, we conduct European tenders for all procurement above the European threshold (€215,000 excluding VAT in 2022). Often, these tenders culminate in a multi-year framework agreement, within which further agreements are concluded. As part of the standard tender process, we determine criteria against which bidders are assessed. In many cases, the inclusion of environmental and social criteria leads to demonstrable returns in these areas, in addition to "general returns".

We carried out 37 European and multiple private tenders in the year under review, 14 of which included sustainability criteria. In 2022, we updated the DNB procurement policy to place more emphasis on sustainability and social return in our contract and supplier management. The amended policy will be adopted and implemented in 2023.

Environmental care and carbon footprint of operational management

The Facilities Management, Cash Operations and Security departments use an Environmental Management System certified according to the ISO 14001 standard, which is valid until 2025. We use green energy from Dutch wind farms and offset unavoidable carbon emissions, ensuring that our operations are climate neutral. In absolute terms, our carbon emissions before offsets were lower in 2022 compared to 2021. This decrease can be attributed primarily to a decline in natural gas consumption due to the switch to district heating and cooling in our temporary accommodation in Amsterdam, and a reduction in goods transport. There was a small uptick in commuting and business travel. At our Wassenaar location, we started using green gas in the year under review, which also reduced emissions. The opening of the Cash Centre in Zeist will boost the overall sustainability of our premises. Thanks to energy neutral building installations, the Cash Centre will not be reliant on fossil fuels other than for emergency power. It will use a heat and cold storage system, as well as solar panels to generate electricity.

Table 4 Carbon footprint of operational management

Carbon footprint (in tonnes)

	2022[2]	2021[3]
Measured data[1]	CO_2 (ton)	CO_2 (ton)
Scope 1		
Energy for heating	159	877
Transportation (private and leased vehicles)	208	201
Refrigerants	81	19
Scope 2		
Electricity	392	407
District heating and cooling	208	27
Scope 3		
Business travel, air travel	532	54
Business travel, international rail travel	19	0
Business travel, passenger cars	115	81
Business travel, goods transport	392	956
Commuting, passenger cars	310	294
Commuting, public transport	60	13
Total CO_2	**2,476**	**2,929**[4]
Natural gas already offset	23	706
Offset through purchase of carbon credits[5]	2,453	2,210
Total CO_2 emissions	0	0

1 Where possible, we use the emission conversion factors published at www.co2emissiefactoren.nl (in Dutch) and the Milieubarometer (well-to-wheel) to determine our material CO_2 emissions.

2 The 2022 reporting period runs from 1 October 2021 to 30 September 2022. Figures subject to minor rounding differences.

3 The 2021 reporting period runs from 1 October 2020 to 30 September 2021. Figures subject to minor rounding differences.

4 Correction of +13 tonnes based on a recalculation as a result of a methodology change to distinguish between different air travel classes.

5 The number of carbon credits purchased was determined based on actual CO_2 emissions during the reporting period, which runs from the fourth quarter of one calendar year to the end of the third quarter of the next year.

Annex 2 About this report

The President's Report describes the main developments and outlook relating to our core tasks. In the Accountability chapter, we look back on the year under review, reporting on our interaction with the outside world as well as on our internal organisation. We continually strive towards more transparency. The dialogue with our stakeholders helps us to do our work as effectively as possible and enables us to increase our impact on society. If you would like to respond to this Annual Report or if you have other comments, please email us at info@dnb.nl.

Reporting guidelines

The Accountability chapter has been prepared in accordance with the 2021 Global Reporting Initiative standards (see GRI 2022 content index). We use GRI- and DNB-specific indicators for material themes. For our reporting on material financial and economic climate risks and opportunities, we follow the recommendations of the Task Force on Climate-related Financial Disclosures (see Climate-related risks, monetary policy and balance sheet management and Sustainable and responsible investment policy in our own investments in the CSR and Financial overview sections). We apply the Partnership for Carbon Accounting Financials (PCAF) measurement methodology to calculate the carbon footprint of our own investments. For more details on the reporting guidelines applied, see Definitions and assumptions for reported indicators and Method and data collection in this annex.

Materiality analysis

The Accountability chapter focuses on themes where DNB can have a positive or negative impact on the economy, environment and people that is relevant to our stakeholders, as well as on themes that have a material impact on DNB and our ability to perform our duties. Based on feedback from an internal focus group representing managers from different divisions, we amended the list of material themes for 2021 and 2022. The Executive Board then revised and adopted the themes (including descriptions) for 2022, after which they were approved by the Supervisory Board.

In the materiality analysis, the focus group and the Executive Board took into account input obtained during interactions with stakeholder in 2022, for instance through public outreach to young people (who, within the Balanced relationships theme, are particularly interested in the housing market), roundtable sessions and networks such as the iForum and the Sustainable Finance Platform, but also through the divisions' dialogues with stakeholders. Furthermore, 388 stakeholders filled in our DNB-wide 2022 stakeholder survey, indicating which themes they considered most important in terms of our social impact. They could choose from last year's themes and provide their own answers. Upon examination, the latter show a large degree of overlap with the former. In many cases, they were specifications of existing themes, such as the "transition to a new pension system" (1. Solidity and future resilience of Dutch financial institutions), "illegal trust services and sanctions legislation" (3. Integrity risks in the financial sector) and "cybersecurity and cryptos" (1. Solidity and future resilience of Dutch financial institutions and 7. Smooth operation of payment systems). A notable percentage of stakeholders' own responses were related to the proportionality of DNB's integrity supervision; as a result, this has received extra attention in our accountability for 3. Integrity risks in the Dutch financial sector.

Compared to 2021, two material themes are no longer explicitly included. In 2022, "Compliance and integrity of DNB" was included in theme 3. Integrity risks in the Dutch financial sector. "The recovery of the Dutch economy after the coronavirus crisis" was subsumed under theme 6. Balanced economic relationships. The same applied to other relevant events with implications for the financial and economic system, such as the war in Ukraine and the rise in energy prices. This year, digitalisation and innovation in the Dutch financial sector and payment system and the impact of failing financial institutions are incorporated in the descriptions of themes 1. Solidity and future resilience of Dutch financial institutions, 7. Smooth operation of payment systems, and 2. Public trust in the Dutch financial sector. The Executive Board decided to add "DNB and the labour market" as a material theme, due to the expected impact of the tight labour market on our ability to perform our tasks.

Table 5 shows the results of the materiality analysis. It also provides an overview of the sections in the Accountability chapter that discuss our role in these themes and lists indicators and target values that can be directly or indirectly influenced by DNB. The value creation model offers an overview of direct results and indirect effects in relation to the material themes (see Figure 1 in this chapter).

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Table 5 Material themes for 2022

	Material theme	Description	Approach and progress - indicators (target value)	Sustainable Development Goals (subgoals)
1.	Solidity and future resilience of Dutch financial institutions	The soundness and liquidity of Dutch banks, insurers, pension funds and other financial institutions and the extent to which their business models are future-proof (including through innovation and appropriate responses to digital challenges), also from a macroprudential perspective.	See Balanced relationships, Trust and CSR ■ On average, the supervised institutions are in good shape in prudential terms	
2.	Public trust in the Dutch financial sector	Trust that people in the Netherlands have in financial institutions, based on (i) the extent to which they are able to meet their obligations (and the extent to which there is an orderly resolution should this not be the case) (ii) the extent to which their behaviour is in accordance with laws, regulations and social propriety standards.	See Trust ■ 70% of the public are mostly or fully confident that banks are able to meet their obligations ■ 61% of the public indicate that DNB's supervision increases their confidence in financial institutions' ability to meet their obligations ■ 73% of the public have fairly high or very high confidence in DNB ■ DNB's public reputation score is 56	
3.	Integrity risks in the Dutch financial sector	Compliance with laws, regulations and corporate governance codes by the financial sector, including prevention of involvement in financial crime.	See Trust, Cost-consciousness, Annex 1 Additional information Compliance and integrity (DNB) ■ Risk impact scores according to redesigned supervisory approach require additional integrity supervision actions for certain institutions	
4.	Sustainability challenges	The economic and financial consequences of ecological and societal challenges such as climate change, biodiversity loss and human rights controversies.	See CSR, Financial overview ■ around 12% green bonds from own investments (target value: 20% by 2023) ■ Carbon footprint (scopes 1 and 2) of own investments in companies, supranational institutions and agencies is 44 tonnes CO_2/million euro and weighted average carbon intensity is 111 tonnes CO_2/million euro	 (incl. 8.10 Access to financial services, 12.6 Encourage Corporate Social Responsibility, 13.2 Climate policy and reduction of greenhouse gas emissions, 17.16 Enhance global partnership for sustainable development)

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Material theme	Description	Approach and progress - indicators (target value)	Sustainable Development Goals (subgoals)
5. Price stability in the euro area and changing interest rate environment	Prices that do not rise or fall too quickly. In other words: an annual inflation target of 2% over the medium term in the euro area. The impact of the changing interest rate environment on investor behaviour, financial institutions and monetary and fiscal policy.	See Balanced relationships ■ Inflation 11.6% (target: 2%).	(incl. 17.13 Enhance global macroeconomic stability)
6. Balanced economic relationships in the Netherlands and the euro area	1. A financial system and economic sectors capable of absorbing shocks, reflected in adequate buffers and the ability to provide services to the economy on a sustainable basis. 2. Markets that operate efficiently and government policies that remove any distortions from these markets, including the housing market. 3. Economic growth that is inclusive and sustainable.	See Balanced relationships	(incl. 8.1 Sustainable economic growth, 8.5 Income and employment, 17.13 Enhance global macroeconomic stability)
7. Smooth operation of payment systems	Payment systems that are efficient, secure, reliable and accessible to all, now and in the future.	See Balanced relationships, Trust, CSR ■ 72% of the public have high or very high confidence in payment systems ■ 100% availability of TARGET2	(8.10 Access to financial services)
8. DNB and the labour market	Attracting and retaining diverse staff in an inclusive organisation, aided by digital and other developments to support DNB in performing its tasks.	See Staff, Operational risk management, Annex 1 Additional information *Key HR figures* ■ Staff inflow of 358 and staff outflow of 250 ■ 37.9% women per management level (target: 40% female managers by 2023) ■ 1.6% of managers have a non-Western migration background (target: 10% of managers by 2030) ■ Number of permanent/ temporary and full-time/ part-time contracts by gender ■ 25 employees have a disability (target: 45 participation FTEs of 25.5 hours per week in 2025) ■ actual training costs €6,451,810 (budget €7,301,858)	(incl. 8.5 Income and employment)

Sustainable Development Goals

We endorse the UN's Sustainable Development Goals (SDGs). By subscribing to these 17 global goals, organisations, businesses and governments make a commitment to substantially improve the state of our world by 2030. In consultation with our stakeholders, we have decided to focus on the following goals: 8. Decent work and economic growth, 12. Responsible consumption and production, 13. Action on climate change and 17. Partnerships to achieve the goals. Table 5 shows the relationship between approach and progress on our material themes and the SDG goals and subgoals.

Organisational structure

DNB is a public limited company incorporated under Dutch law whose sole shareholder is the Dutch State. We are part of the European System of Central Banks (ESCB) and the Eurosystem, collaborating with our European counterparts in the areas of monetary policy, payment systems and foreign exchange operations. DNB is also part of the Single Supervisory Mechanism (SSM), which is responsible for European banking supervision, and the Single Resolution Mechanism (SRM), which oversees the proper resolution of failing banks in the euro area. We are an independent public body with a mandate for supervision, resolution and the deposit guarantee scheme (DGS). Our temporary head office is located at Spaklerweg 4 in Amsterdam.

The Executive Board is in charge of governance (see Executive Board, Supervisory Board, Bank Council and Employees Council, and governance). Within DNB, divisions and staff departments such as the Internal Audit Department (IAD) and the Executive Secretariat (DS) each report directly to a member of the Executive Board (see our website). In addition, we manage some activities in the form of programmes, for instance in relation to our accommodation, the digital agenda and sustainability. In these cases, a steering group or programme director coordinates the activities and reports to one or several members of the Executive Board. The Supervisory Board monitors the general course of business at DNB and the Executive Board's policy regarding the implementation of our national tasks (see the Report of the Supervisory Board).

Management, evaluation and accountability methods

The Executive Board is responsible for managing and evaluating our work and strategy. This includes overseeing the management of developments that can impact the economy, the environment and people. Until the 2022 reporting year, annual priorities were set for each DNB2025 ambition. These supplemented the general objectives and were further elaborated in divisional plans. Starting in the 2023 reporting year, we will apply the OGSM methodology (objectives, goals, strategies, measures) to enhance strategic management in relation to achieving our plans and ambitions. The four domains of Monetary Affairs, Supervision, Resolution, and Internal Operations, under the supervision of the line directors, prepare annual summary OGSMs listing short-, medium- and long-term goals. These are translated into divisional OGSMs and ultimately into staff performance targets, anchoring strategic management in the assessment methodology. Progress on the domain and divisional OGSMs (formerly divisional plans) is monitored by the Finance & Risk Management division and reported to the Executive Board on a quarterly basis.

In 2021, the Strategic Sustainability Programme and the Sustainable Finance Strategy (SFS) were established to accelerate the realisation of our CSR ambition. The Sustainable Finance Office manages the implementation of the SFS, working closely with the divisions involved in implementing the strategy. Because relevant sustainability aspects must be embedded in all our core tasks, this ambition requires collective responsibility and commitment, not least from management. Acquiring knowledge and skills in this area is essential if we are to achieve results. For members of the Executive Board, this happens in part through dialogue with stakeholders and while preparing for consultations with the various national and international bodies they belong to such as the ECB, the FSB and the NGFS.

This Annual Report was produced under the direction of an editorial committee and a central team from the Economic Policy & Research division, the Finance & Risk Management division, the Executive Secretariat and the Communications department, with input from division directors and other relevant staff. Before publication, the Annual Report – including the Accountability chapter – was submitted to the Executive Board for consultation and approval. The Executive Board discusses the complete text of the Annual Report with the Supervisory Board.

Stakeholder engagement

The usefulness and necessity of interacting with our stakeholders is embedded in our strategy. We aim to be an organisation that is aware of its environment and that seeks a connection with the outside world, in the knowledge that we cannot achieve financial stability and sustainable prosperity alone. We have a wide range of stakeholders, including the general public, supervised institutions, industry associations, government and public sector organisations, social partners, universities, research institutes, media, suppliers and NGOs, as well as international organisations to which we are affiliated, such as the Eurosystem/ECB, SSM, BIS, IMF, FSB, SRB, EIOPA and EBA.

We interact with our stakeholders in several ways for the purpose of our mission and strategy. The nature, intensity and frequency of these interactions vary. There are various institutionalised forms of stakeholder interaction. The Bank Council, a diverse group of stakeholders from academia, the financial sector and social partners, serves as a focus group for the Executive Board. Besides participating in bodies that serve our daily tasks – some 50 in number – we take part in dialogue sessions where material themes such as trust and integrity are discussed. We update our CSR strategy and policy partly based on roundtables, in which the SFO and members of the Executive Board gather insights from external stakeholders.

Scope of accountability

The information in this chapter, like the rest of the Annual Report, relates to De Nederlandsche Bank N.V. during the 2022 calendar year. The carbon footprint of our internal operations, however, pertains to the period from Q4 2021 to Q3 2022.

Definitions and assumptions for reported indicators

Total annual compensation

Total annual compensation is calculated based on column 3 of the payroll statement for the relevant calendar year and the net annual pension contribution. Column 3 of the payroll statement consists of salary, 13th month, holiday bonus and all other gross benefits and allowances paid to individual employees. The sale of hours is not included. We exclude life-course savings scheme and life-course credit payments in 2021, as well as one-off holiday bonuses in 2022. Adjustments have been made for gross deductions related to the applied 30% facility for employees who move to the Netherlands from abroad. Staff who were employed on 31 December of the relevant year are included in the calculation of total annual compensation, using annual salaries for staff who entered employment during the course of the year. To calculate the increase in total annual compensation, we only include staff who were employed both on 31 December of the reporting year and on 31 December of the previous year. We also take into account part-time and full-time employment in calculating the value of column 3. For seconded staff, we include the compensation they would have received if they were employed by DNB. We calculate the attributable pension costs based on full-time pensionable earnings, factoring in the maximum allowable fiscal pension accrual, and apply the recalculated employer percentage less the unweighted average employee contribution.

Carbon footprint of own investments

All greenhouse gas emissions are measured and converted to CO2 equivalents. For companies, supranational institutions and agencies, we calculate scope 1, 2 and 3 emissions. Scope 1 includes direct emissions (e.g. from heating systems, vehicles and generators). Scope 2 includes indirect emissions caused by energy consumption for own use and production (e.g. electricity generated elsewhere). Scope 3 emissions include all other indirect emissions produced as a result of activities that take place outside the production phase (e.g. during the production of purchased raw materials and during the use and waste phases). Three different measures are used for governments: consumption, production and government emissions. Consumption emissions are linked to demand within a country, production emissions to all activities within a country and government emissions only to government activities. We use three metrics to calculate emissions:

Total carbon emissions from investments – By this we mean the sum of all greenhouse gas emissions in the portfolio. We report these for both the sum of scopes 1 and 2 and for the sum of scopes 1, 2 and 3. To calculate these emissions, we use Enterprise Value including Cash (EVIC) for companies, supranational institutions and agencies, and GDP (purchasing power parity, PPP) for governments (both in millions of euro). The calculation uses the following formula:

$$\textit{Total emissions} = \sum_{i=1}^{n} \left(\frac{\textit{value of investments}_i}{\textit{EVIC or GDP}_i} \ x \ \textit{emisions}_i \right)$$

In this formula, i represents the individual issuer.

Carbon emissions per million euro invested (carbon footprint) – In this indicator, total emissions are adjusted for portfolio size, making it easier to compare emissions from different portfolios. The calculation uses the following formula:

$$\text{Carbon Footprint} = \frac{\sum_{i=1}^{n}\left(\frac{\text{value of investments}_i}{\text{EVIC or GDP}_i} \ x \ \text{emisions}_i\right)}{\text{portfolio value}}$$

Turnover-weighted carbon emissions (weighted average carbon intensity; WACI) – This indicator denotes a portfolio's exposure to enterprises with relatively high emissions. For companies, supranational institutions and agencies, carbon emissions are weighted by turnover in millions of euro. For governments, carbon emissions are weighted by population size (consumption), GDP (PPP) (production) and government consumption (government). The calculation uses the following formula:

$$\text{WACI} = \sum_{i=1}^{n}\left(\frac{\text{value of investments}_i}{\text{portfolio value}}\right) x \left(\frac{\text{emisions}_i}{\text{'Turnover'}_i}\right)$$

Method and data collection

Carbon footprint of own investments

Due to highly limited data availability, the Eurosystem has decided to use national carbon emissions and financial data for lower-tier governments. Only 1% of government bonds held by DNB in 2022 were lower-tier government bonds. Carbon emissions from governments and semi-government bodies and carbon emissions from companies, supranational institutions and agencies are reported separately and not added up to avoid double counting. This would happen if we were to invest in companies registered in countries for which we also hold government bonds.

The carbon emissions calculation for our investments is based on the composition of our portfolios on 31 December of the reporting year. However, data for both financial indicators (EVIC, GDP and "turnover") and carbon emissions were not yet available for 2022 at the time of writing. For the 2022 reporting period, we use the most recent carbon emissions data currently available: this is mainly from 2021 for companies and from 2020 for governments (a one- and two-year delay, respectively). To calculate historical and relative emissions, we also use financial data from previous years (one-year delay for both companies and governments). We apply the same delays to previous years to ensure consistency across years.

Starting this reporting year, carbon emissions data will be provided by ISS and C4F, which are preferred suppliers within the Eurosystem. Using the same methodology and data providers ensures comparability of publications within the Eurosystem. We also rely on ISS and Bloomberg for financial data, and World Bank data for population size, GDP (PPP) and government consumption. Previously, we exclusively used data from MSCI.

The changed methodology means that the figures are presented in a different way from 2020 and 2021. Whereas in the past we aggregated emissions from governments, supranational institutions and agencies, we now report them separately. For these asset classes, it is therefore uncertain what the percentage change is compared to previous years. For corporate bonds and equities, the changes in dates and denomination in euro mean that the 2021 emissions figures are different from the ones we reported last year. The differences are i) -3% and -9% for total absolute emissions, ii) +4% and +6.5% for carbon footprint and iii) +18% and +15% for WACI, respectively. It should be noted that there was also a slight change in terms of data availability: +5% and -3% for total absolute emissions and carbon footprint and +1% and -3% for WACI, respectively.

For governments, we use production emissions figures reported by countries to the United Nations Framework Convention on Climate Change (UNFCCC). All countries we invest in report this data. Consumption and government emissions are estimated by our data providers based on information from public sources such as the European Commission's Emissions Database for Global Atmospheric Research (EDGAR). Carbon emissions data for companies, supranational institutions and agencies is often inconsistent between different data providers, as many of the emissions have to be estimated. Carbon emissions from a large proportion of our investments are also based on estimates: 18% for scopes 1 and 2, and 68% for scope 3.

External assurance

The independent auditor reviewed the non-financial information in the Accountability chapter of this Annual Report. The assurance report is included in Annex 3.

Benchmarks

The Transparency Benchmark of the Ministry of Economic Affairs and Climate assesses DNB's reporting on corporate social responsibility every two years. This is done for all large enterprises and organisations based in the Netherlands. There was no benchmark assessment in 2022.

Table 6 DNB's score and ranking in the Transparency Benchmark

Year	Number of points	Position (total number of organisations)
2021 (2020 annual report)	78.1	21 (685)
2019 (2018 annual report)*	63.5	42 (487)
2017 (2016 annual report)	186	26 (477)
2016 (2015 annual report)	170	53 (483)
2015 (2014 annual report)	174	22 (461)
2014 (2013 annual report)	150	57 (242)

* Frequency changed to biennial and scale was adjusted in 2018.

We were the first central bank in the world to sign the UN's Principles for Responsible Investment (PRI) in 2019, after which we prepared a Transparency Report for the 2020 reporting year. In the autumn of 2022, the PRI score for this report was published, which showed that we scored above the median on all applicable components of the benchmark.

Glossary

Terms	Definition
Asset purchase programme (APP)	ECB programme for purchasing assets, including public-sector securities (PSPP), covered bonds (CBPP3), investment grade corporate bonds (CSPP) and asset-backed securities (ABSPP).
Bank for International Settlements (BIS)	Organisation pursuing international monetary and financial cooperation and acting as a bank for the national central banks.
Capital Markets Union	EU aim to improve the functioning of cross-border capital markets in the euro area.
Capital policy	The capital policy sets out the rules for the buffers DNB holds, how large they must be and how they are to be used.
Cash and payment systems	We actively promote accessible, secure and reliable cash and payment systems. As a member of the Eurosystem, we issue banknotes and are responsible for the circulation of coins and banknotes in the Netherlands. We also manage payment systems, and we are responsible for oversight (payment supervision) of institutions and systems that process payment transactions.
CO_2 compensation	Offset of carbon emissions by investing in a reduction elsewhere.
Crypto	A digital asset managed by cryptographic algorithms, usually based on blockchain technology. A crypto does not have a physical manifestation like a euro coin. Rather, it is an encrypted code, like a password, that can be transferred and stored electronically.
Dutch Deposit Guarantee	Statutory protection of savings in a Dutch bank account of up to €100,000 per person per bank.
ESG	Environmental, social and governance (ESG) issues.
European Banking Authority (EBA)	European banking authority.

Terms	Definition
European Central Bank (ECB)	The central bank of the 20 European member states that have adopted the euro, forming the Economic and Monetary Union (EMU). The ECB's primary objective is to maintain price stability in the euro area. Price stability is defined as medium-term inflation of 2%.
European Insurance and Occupational Pensions Authority (EIOPA)	European authority for insurance and occupational pensions.
European Stability Mechanism (ESM)	Permanent European fund that can lend to euro area countries facing financial difficulties, subject to certain conditions.
Eurosystem	The European Central Bank and the national central banks of the EU Member States that use the euro as their single currency.
Financial Action Task Force FATF)	Inter-governmental body that combats money laundering and terrorist financing. It has 39 members, including the Netherlands, the European Commission and the Gulf Cooperation Council.
Financial stability	We are committed to a stable financial system that ensures an efficient allocation of resources and that is capable of absorbing shocks so that these do not have a disruptive effect on the real economy.
Financial Stability Board (FSB)	Global network that promotes international financial stability by coordinating and monitoring the work of supervisory authorities and international regulators in the area of financial supervision and regulation.
Governing Council	The main decision-making body of the ECB. It consists of the six members of the Executive Board, plus the governors of the national central banks of the 20 euro area countries.
iForum	In the iForum, DNB works together with the sector to create more opportunities for technological innovation in the financial system.
ISO 14001:2015	An international standard that specifies requirements for environmental management systems that organisations use to gain insight into their environmental impact.

Terms	**Definition**
Monetary tasks	As a member of the Eurosystem, we contribute to decision-making on monetary policy and its implementation. Monetary policy is aimed at price stability, which is defined as an inflation rate of 2% over the medium term.
Money Wise (*Wijzer in geldzaken*)	Initiative of the Ministry of Finance. Partners from the financial sector, academia, government, education and consumer organisations join forces in this platform to promote financial literacy in the Netherlands.
National Forum on the Payment System (NFPS)	A group of 15 civil society organisations, chaired by DNB, which focuses on improving the efficiency of the retail payment system.
Network of Central Banks and Supervisors for Greening the Financial System (NGFS)	Network of central banks, supervisory authorities and international organisations that aims to green the financial system and strengthen the efforts being put forth by the financial sector to achieve the Paris climate agreement goals
Open market operations (OMOs)	These are transactions through which the ECB provides financing to banks in order to satisfy their liquidity needs or to absorb excess liquidity from the system. Lending to banks is collateralised.
Pandemic Emergency Purchase Programme (PEPP)	The ECB's emergency purchase programme was launched in March 2020 with the aim of mitigating the impact of the COVID-19 pandemic by promoting the transmission of monetary policy and by making financing conditions more accommodative. Both public and private debt certificates are purchased under the programme.
Provision for financial risks (VFR)	Buffer in our balance sheet to cover temporary risks.
Resolution	As the Dutch resolution authority, we seek to ensure that the critical functions of banks, insurers and central clearing parties are safeguarded to the greatest extent possible, while non-viable institutions or parts of institutions are wound up in an orderly manner.
RVO criteria	Criteria established by the Netherlands Enterprise Agency (RVO) and the Dutch public authorities for sustainable procurement.

Terms	Definition
Socially responsible investment	The policy through which DNB considers environmental, social and governance (ESG) aspects, in addition to financial and economic aspects, when making investment decisions.
Stablecoin	A crypto whose value is kept as stable as possible in relation to fiat currencies such as the euro and the US dollar thanks to specific mechanisms. Some stablecoins are backed by gold or another commodity rather than by fiat money. The aim of stablecoins is to make cryptos suitable as a day-to-day means of payment.
Statistics	DNB collects statistical information and compiles statistics in close cooperation with partners such as Statistics Netherlands (CBS), the European System of Central Banks (ESCB) and the International Monetary Fund (IMF).
Statistics Netherlands (CBS)	National institute that collects data and compiles statistics on Dutch society. It produces statistical information on a wide range of social and economic themes.
Supervision	We exercise prudential supervision of banks, pension funds, insurers and other financial institutions by checking whether they are financially sound and are able to meet their obligations, and by conducting fit and proper assessments of board members, issuing licenses and combating financial crime. Whereas prudential supervision focuses on the soundness of individual institutions, macroprudential supervision focuses on the interaction between financial institutions, financial markets and the macroeconomic environment.
Sustainable Finance Platform	A group consisting of supervisory authorities, sector associations, ministries and the Sustainable Finance Lab that seeks to promote and increase awareness of sustainable finance in the financial sector by coming together to consider ways to avoid or overcome obstacles to sustainable finance
TARGET2	A payment system for banks in the EU. It is managed by the Eurosystem and used by more than 1,700 banks.

Terms	**Definition**
Targeted Longer-Term Refinancing Operations (TLTRO)	Targeted refinancing operations offered by the Eurosystem aimed at stimulating lending to enterprises and consumers in the euro area.
Task Force on Climate-related Financial Disclosures (TCFD)	The FSB established the TCFD to develop effective disclosures on climate-related risks.
TIBER	An acronym that stands for Threat Intelligence-Based Ethical Red teaming. TIBER is a framework and programme for cybersecurity tests and involves carrying out controlled attacks on participating institutions, including DNB, based on current threat data. The aim is to jointly learn from the results of the cybersecurity tests in order to boost resilience to advanced cyberattacks.
UN Global Compact	The United Nations Global Compact encourages enterprises all over the world to implement sustainable and responsible policies. It encapsulates principles in the areas of human rights, labour, the environment and the fight against corruption.

Annex 3 Assurance Report of the Independent Auditor

To: the shareholder and the supervisory board of De Nederlandsche Bank N.V.

Our conclusion

We have reviewed the non-financial information in the Accountability Chapter and in 'Appendix 1 Supplementary Information' of the Annual Report (hereinafter referred to as 'the non-financial information') of De Nederlandsche Bank N.V. (hereinafter referred to as 'DNB'), Amsterdam, for the year 2022. A review is focused on obtaining limited assurance.

Based on our procedures, nothing has come to our attention that causes us to believe that the non-financial information is not prepared, in all material respects, in accordance with the reporting criteria as disclosed in the 'Reporting Criteria' section of our report.

Basis for our conclusion

We conducted our review of the non-financial information in accordance with Dutch law, including Dutch Standard 3000A 'Assurance-opdrachten anders dan opdrachten tot controle of beoordeling van historische financiële informatie (attest-opdrachten)' (Assurance engagements other than audits or reviews of historical financial information (attestation engagements))'. Our responsibilities in this regard are further described in the 'Our responsibilities for the review of the non-financial information' section of our report.

We are independent of DNB as required by the 'Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten' (ViO) and other relevant independence rules in the Netherlands. In addition, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA).

We believe the assurance evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Reporting criteria

The non-financial information should be read and understood in conjunction with the reporting criteria. DNB is responsible for selecting and applying these reporting criteria, taking into account relevant laws and regulations with respect to reporting.

The applied reporting criteria for the preparation of the non-financial information are the Sustainability Reporting Standards of the Global Reporting Initiative (GRI) in combination with DNB's own reporting criteria. The reporting criteria are further detailed in Appendix 2 About this report.

Materiality

Based on our professional judgment, we have determined materiality levels for each relevant component of the non-financial information. In evaluating our materiality levels, we considered quantitative and qualitative aspects as well as the relevance of information to both stakeholders and the entity.

Limitations to the scope of our review

The non-financial information includes forward-looking information such as ambitions, strategy, plans, expectations, estimates and risk assessments. Inherent to forward-looking information the actual future results are uncertain. We do not provide any assurance on the assumptions and achievability of forward-looking information in the non-financial information.

References to external sources or websites in the non-financial information are not part of the non-financial information itself as reviewed by us. Therefore, we do not provide assurance on this information.

Responsibility of the Executive Board and Supervisory Board.

The Executive Board is responsible for preparing the non-financial information in accordance with the applicable Reporting Criteria, including identification of stakeholders and the definition of material matters. The choices made by the Executive Board regarding the scope of the non-financial information and reporting policy are summarized in the 'Reporting Guidelines' section of 'Appendix 2 About this Report'.

The Executive Board is also responsible for such internal control as it determines is necessary to enable the preparation, measurement or evaluation of the non-financial information that is free from material misstatement, whether due to fraud or error.

The supervisory board is responsible for supervising DNB's reporting process.

Our responsibilities for the review of the non-financial information

Our responsibility is to plan and perform a review in such a manner that allow us to obtain sufficient and appropriate assurance evidence for the conclusion.

Procedures performed to obtain a limited level of assurance are aimed to determine the plausibility of information and vary in nature and timing, and are less in extent, compared to a reasonable assurance engagement. Therefore, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

We apply the 'Nadere Voorschriften Kwaliteitssystemen' (NVKS, Regulations for Quality management systems). Based on this we maintain a comprehensive system of quality control including defined guidelines and procedures on compliance with ethical requirements, professional standards and other relevant legal and regulatory requirements.

We have performed this review professionally and applied professional judgment where relevant in accordance with Dutch Standard 3000A, ethical requirements and independence requirements.

Our review included among others:

- Performing an analysis of the external environment and obtaining an understanding of relevant societal themes and issues, and the characteristics of the entity.
- Evaluating the appropriateness of the reporting criteria used, their consistent application and related disclosures in the non-financial information. This includes the evaluation of the results of stakeholder dialogue and the reasonableness of estimates made by the Executive Board.
- Obtaining an understanding of the reporting processes for the non-financial information, including obtaining a general understanding of internal control relevant to our review.
- Identifying areas of the non-financial information where a material misstatement, whether due to fraud or error, are most likely to occur, designing and performing assurance procedures responsive to these areas, and obtaining assurance information that is sufficient and appropriate to provide a basis for our conclusion. These procedures included, amongst others:
  - interviewing management and relevant staff at corporate level responsible for the strategy, policy and results;
  - interviewing relevant staff responsible for providing the information for, carrying out internal control procedures over, and consolidating the data in the non-financial information;
  - obtaining assurance information that the non-financial information reconciles with underlying records of the entity; and
  - reviewing, on a limited test basis, relevant internal and external documentation
- Evaluating the overall presentation, structure and content of the non-financial information.
- Considering whether the non-financial information as a whole, including the disclosures, reflects the purpose of the reporting criteria used.

We have communicated with the Executive Board, among other matters, the planned scope and timing of the review and any significant findings that we identify during our review.

Amstelveen, 22 March 2023
KPMG Accountants N.V.
M.A. Huiskers RA