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

1.3 Housing market

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

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

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

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

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

Interest-only mortgages pose a financial risk to households and financial institutions. The lower monthly cost of an interest-only loan may prompt households to borrow closer to the maximum amount so as to have more spending capacity in the tight, expensive market. Households do not make regular mortgage repayments during the term and at maturity the entire mortgage amount may remain outstanding for refinancing or repayment. At that time, due to higher interest rates or lower income, households may no longer be able to afford the mortgage payments and may be forced to sell the home. Moreover, the lender often lacks sufficient information to properly monitor the customer's creditworthiness during the term of the loan. The customer only provides information on income or assets when the mortgage is taken out. The lender therefore relies heavily on the value of the collateral to repay or refinance the loan at the end of the term. Moreover, a large proportion of interest-only mortgages are set to mature at the same time. Between 2034 and 2039 and 2047 and 2051, 29% and 36% respectively of the interest-only debt will mature (Figure 8). Financial institutions have not had experience of large-scale maturity of interest-only mortgages and hence have hardly any data on the credit and refinancing risk. We are concerned that institutions have not sufficiently factored in the risks of potential losses in their risk management.

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

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

Energy prices have risen at an unprecedented rate in recent months, and that also has financial consequences for Dutch homeowners. The average variable consumer tariffs for gas and electricity had more than doubled by March 2022 compared to the end of 2021 and increased more than sixfold compared to a year earlier (based on preliminary figures for March 2022 from Statistics Netherlands).[3] The gas price has stabilised somewhat at pre-Ukraine war levels in recent months, but the future trend in consumer prices remains very uncertain and will depend on the course of the war and possible new sanctions. In March 2022, in response to the economic impact of the war, we released updated projections and simulations, with a negative scenario in which energy prices rise by almost 60% in 2022 compared to the average price level in 2021. Higher energy prices will increase homeowners' energy costs, leaving them with less disposable income to meet other expenses such as mortgage payments. An energy price rise of 60% results in an average of €900 of extra energy costs per year per homeowner.[4,5] These additional costs are equivalent to 2.1% of Dutch homeowners' average net disposable income. However, the actual impact of higher energy prices per individual household depends greatly on the energy contract and whether a fixed contract has expired recently or is due to expire soon.[6] Since, on average, the bulk of energy costs are spent on gas consumption to heat the home, the energy label and the heating method used in a home are also key determinants of the financial impact on households.

The financial impact of the higher energy prices is greatest for homeowners with relatively low incomes. Figure 10 shows the additional energy costs in 2022 with an energy price increase of 60% for different income groups. The poorest 20% of households have the lowest absolute rise in energy costs (€800), but this rise represents a larger share of their disposable income (3.8%). For the 20% of Dutch households with the highest incomes, the energy costs would rise by €1,000 per year, equivalent to 1.4% of their disposable income. The difference in impact on disposable income between income groups increases as energy prices rise. If energy prices were to rise by 85% in 2022 compared to the average price level in 2021, this would absorb 6.9% and 2.2% respectively of the disposable income of the lowest and highest income groups.

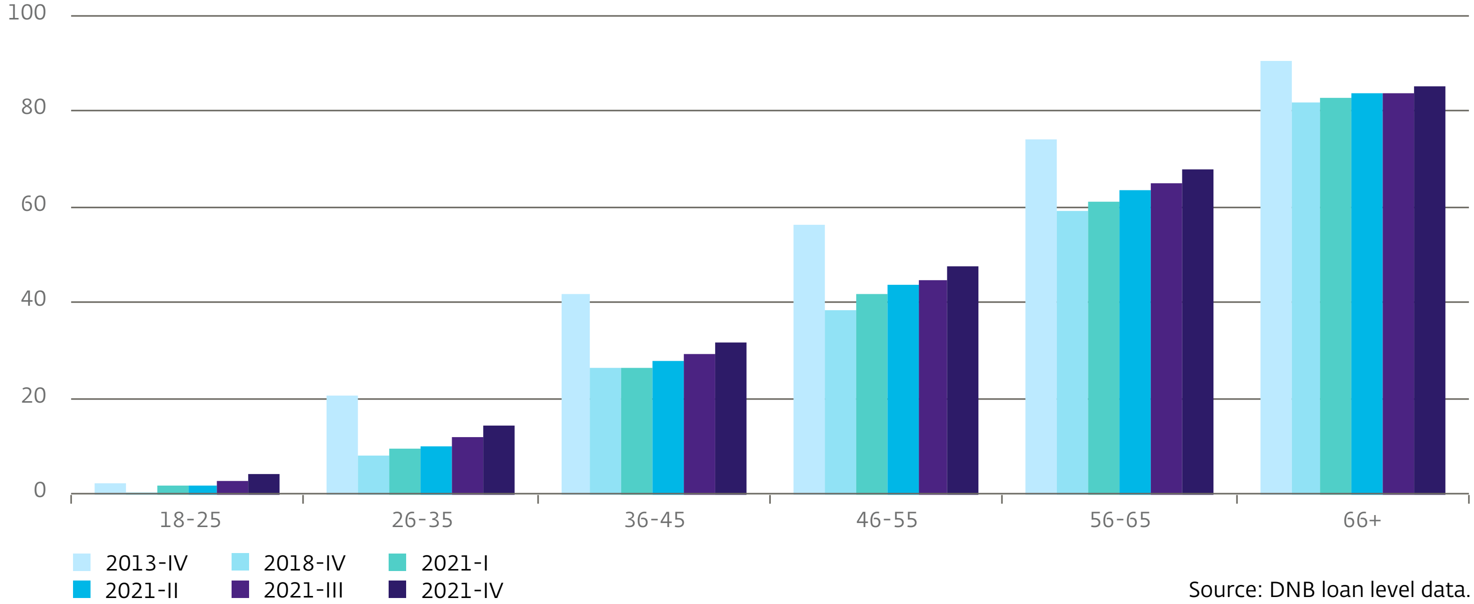
The higher energy costs also affect the credit risk of banks' mortgage portfolios. The higher energy costs mean that households have less income left to meet their mortgage obligations. Figure 11 shows the relationship between rising energy costs, households' debt service capacity (expressed in the debt-service-to-income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

3 The gas and electricity costs are subdivided into fixed transmission and delivery costs that are set annually and variable rates for delivery, storage of sustainable energy and taxes (see Statistics Netherlands, 2022). The stated price increases of the average variable consumer gas and electricity tariffs relate only to the variable delivery tariff.
4 The calculations only include households in owner-occupied homes (4.3 million households). Tenants are not included in this analysis, which focuses on the impact of higher energy prices on the capacity to repay mortgage debts. The calculations assume that household energy consumption has remained unchanged despite the price increases, in accordance with the low short-term elasticity of household energy demand(CE Delft, 2021).
5 The government is temporarily compensating households for additional energy costs in part by reducing the tax on electricity and refunding the energy tax. These compensatory measures (an average of €400 per household) have been included in the calculations of the additional energy costs. Households with an income that is low or just above the social minimum will receive a one-off energy allowance in 2022 to cover rising energy costs. We have not included this because only 1% of homeowners are eligible for it.
6 As an illustration: in April 2021, 61% of Dutch households had an energy contract in which prices were fixed for up to one year (ACM, 2021).

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

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

Percentage of mortgage loan production by age bracket

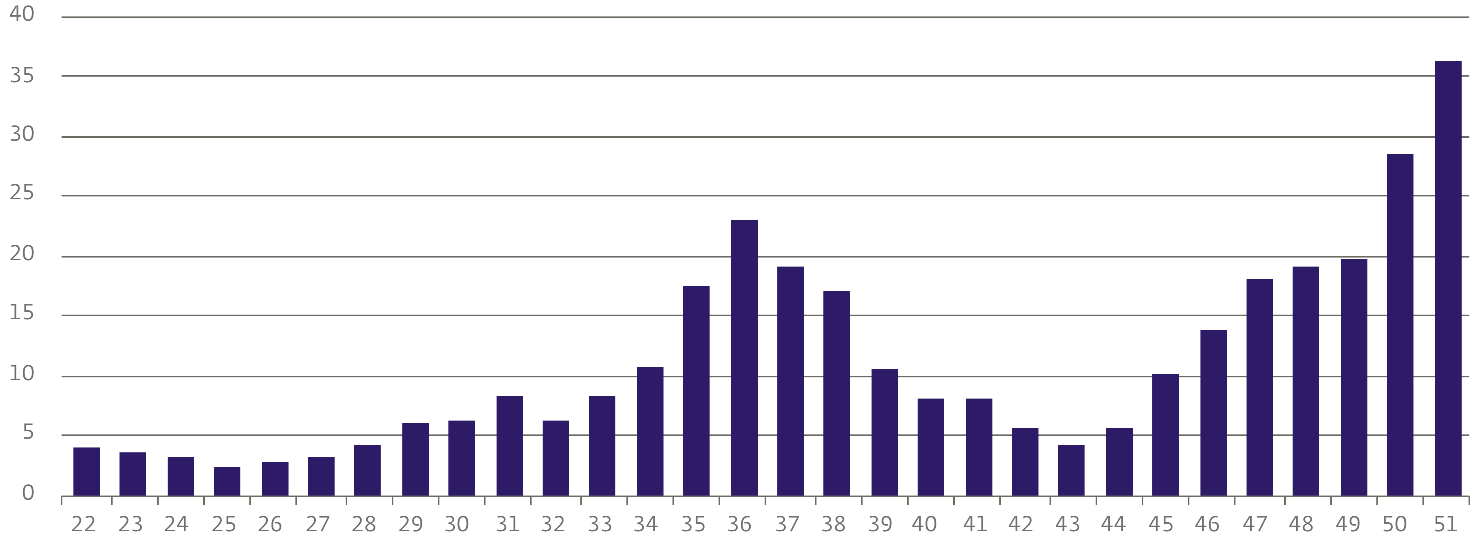


Source: DNB loan level data.

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

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

EUR billion

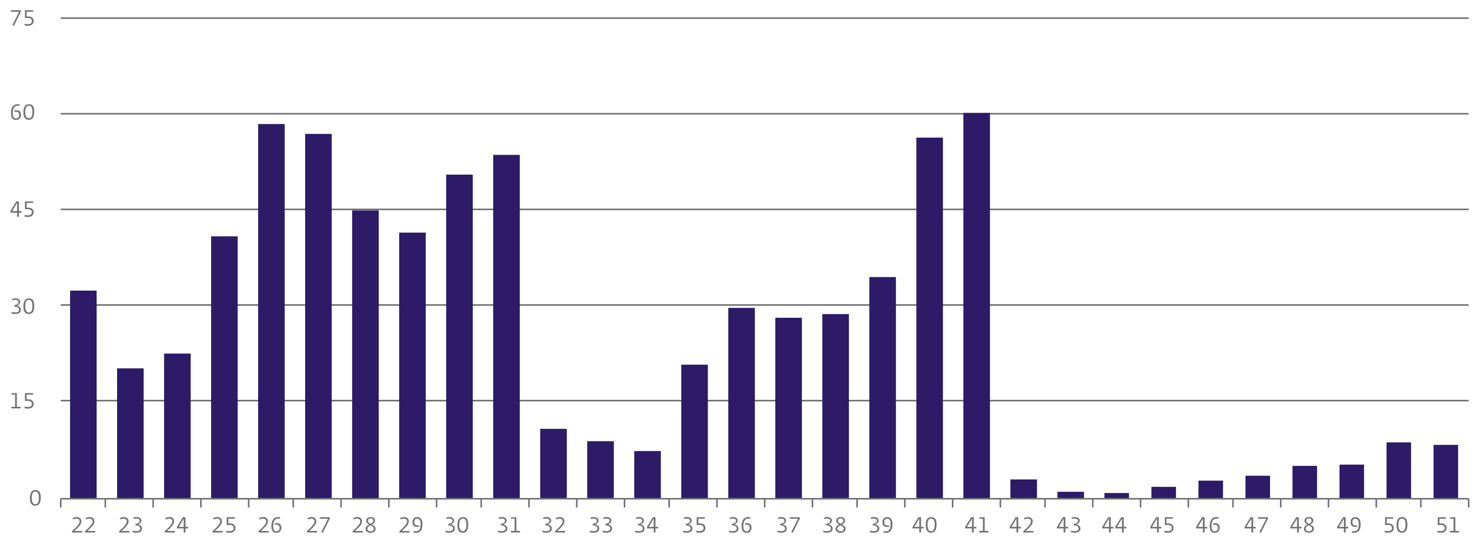


Sources: Statistics Netherlands and DNB loan level data.

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

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

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

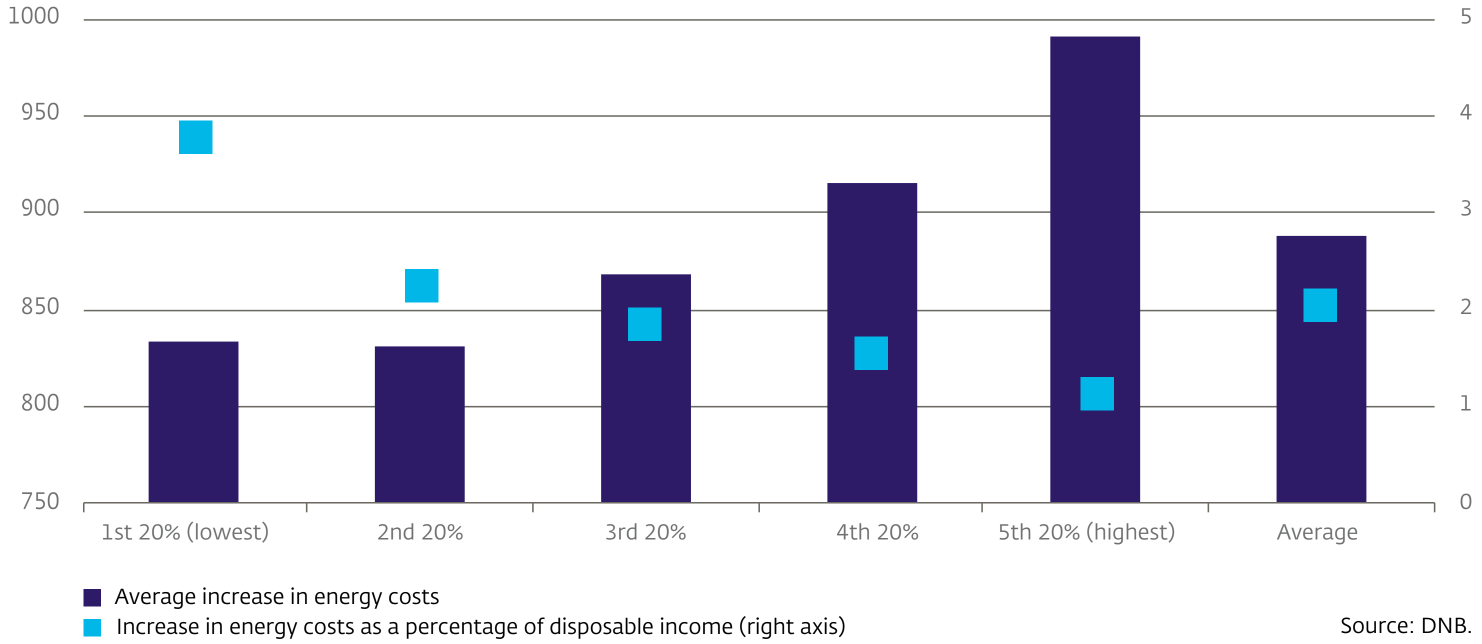


Sources: Statistics Netherlands and DNB loan level data.

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

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

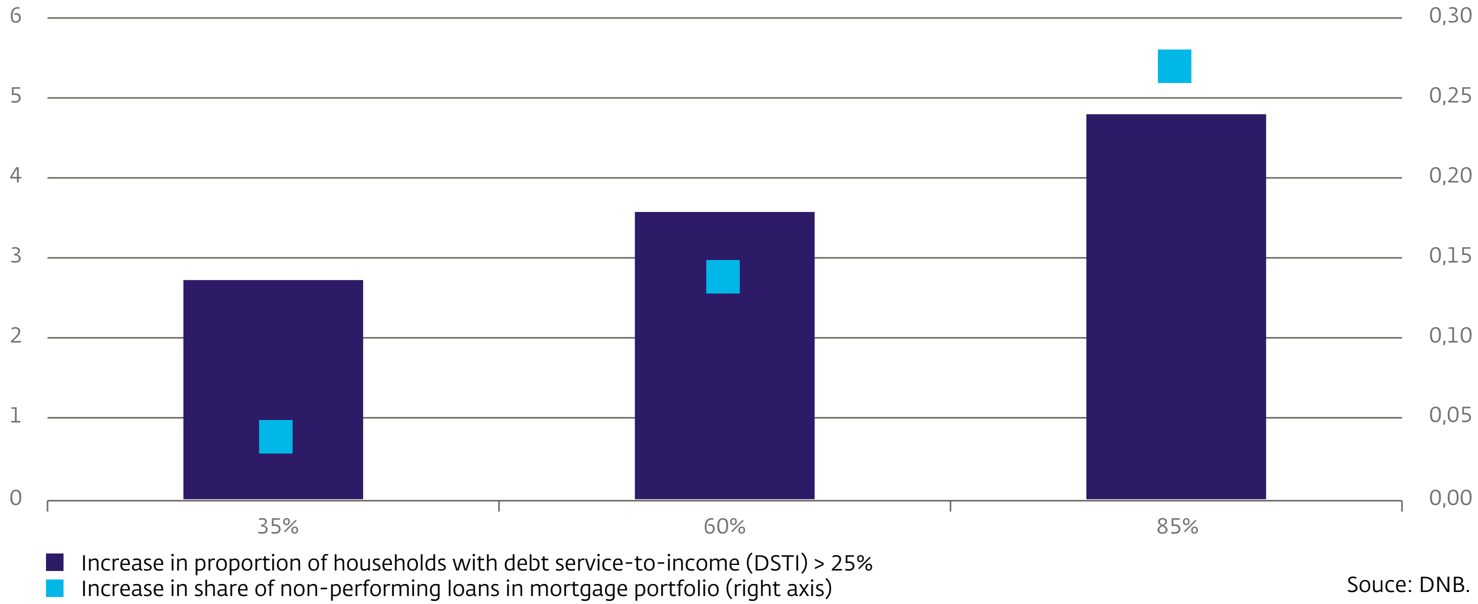
In euro, percentages



Source: DNB.

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

Percentage points



Souce: DNB.