HANFA
CROATIAN FINANCIAL SERVICES
SUPERVISORY AGENCY

MACROPRUDENTIAL RISK SCANNER

NUMBER X August 2024

2024 – First Half

Macroprudential risk scanner

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1 INTRODUCTION

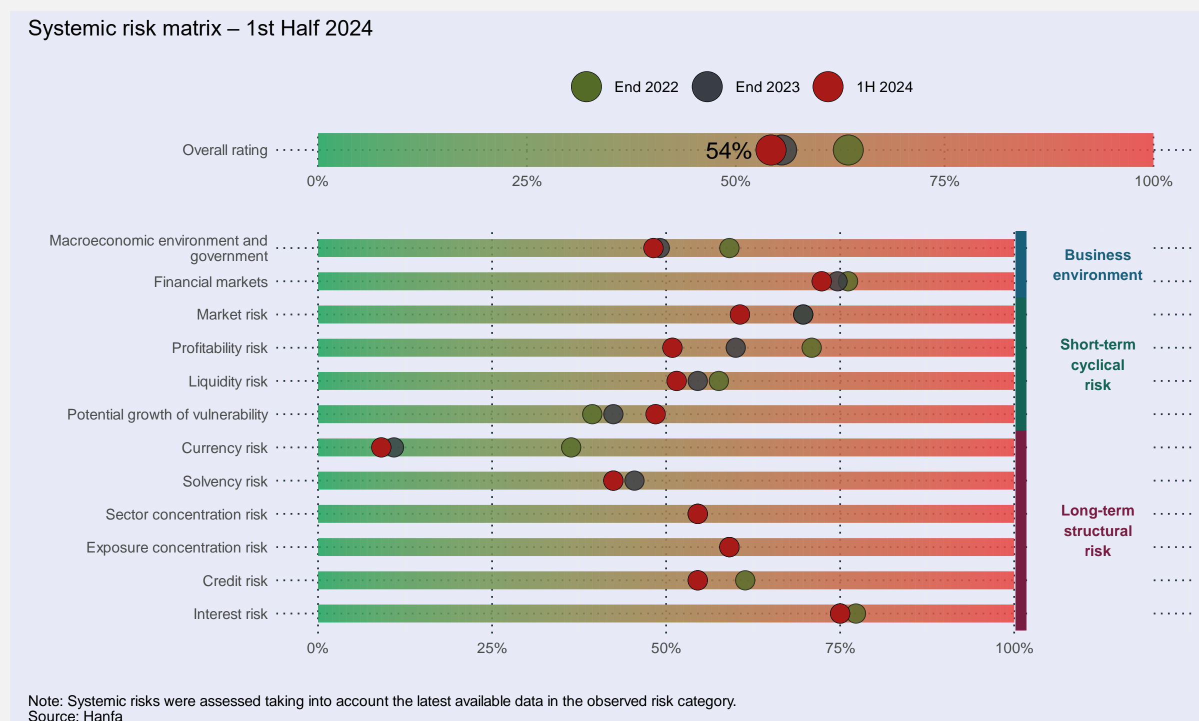
Together with the Croatian National Bank and the Ministry of Finance, the Croatian Financial Services Supervisory Agency (hereinafter: Hanfa) is responsible for the stability of the financial system in the Republic of Croatia; therefore, promoting and preserving financial stability, in accordance with the Act on the Croatian Financial Services Supervisory Agency, is one of the basic goals of its work. A ***stable financial system*** implies the smooth functioning of all its segments (financial institutions, markets, services and infrastructure) in the process of resource allocation, risk assessment and management, and carrying out payments, as well as its resistance to sudden shocks.

Financial stability can be disrupted by the processes that arise and develop within the system, creating vulnerabilities that may materialise in the event of certain shocks in the form of disturbed liquidity and capital positions of financial institutions, disabling the smooth functioning of a part of or the entire financial system. Such shocks can be external, i.e. transferred from the international environment, or idiosyncratic, i.e. generated by domestic macroeconomic and financial developments, economic policy or changes in the institutional environment. Therefore, any risk to which the system is exposed and which can have adverse effects on the functioning of the entire financial system or its part, thus causing a serious negative impact on the real economy, represents a ***systemic risk***.

Over the past few years, global progress has been made in the area of understanding and consequently identification, evaluation and monitoring of systemic risks of the financial sector. However, in order to prevent the identified risks in time, and to mitigate the effect of their materialisation, it is necessary to develop an appropriate set of instruments and tools, i.e. policies aimed at preservation of the stability of the system as a whole, called ***macroprudential policies***. Therefore, in the European Union (EU), bodies with macroprudential powers and mandates have been established at the national and international level after the global financial crisis, and frameworks for international cooperation have been developed along with macroprudential tools. Although the initial phase of macroprudential capacity development was primarily focused on the banking sector, the growing share and importance of the non-banking part of the financial system create structural changes and require further development of the macroprudential framework, as well as the expansion to the financial services sector in order to adequately address systemic risk and prevent regulatory arbitrage. In addition, financial integration is constantly deepening, creating the

need for a holistic approach, which views the system as an inseparable whole, the key part of which consists of monitoring and addressing vulnerabilities in a cross-sectoral, but also cross-border context.

The publication ***Macroprudential risk scanner*** therefore seeks to provide insight into the process of identifying, assessing and monitoring the evolution of systemic risks in the financial services sector under Hanfa's supervision in order to timely take appropriate measures to prevent their materialisation and the impairment of the financial system stability. This contributes to better understanding of systemic risks, particularly as regards the identification of vulnerabilities and risk transmission channels, encourages action planning and measures that provide adequate protection against the effects of the materialisation of such risks and contributes to greater confidence in the financial system and to the strengthening of the system's resistance to shocks.



The level of systemic risks in the financial services sector continued to decline in the first half of 2024. Resilient economic growth, coupled with more moderate inflationary pressures and stable labour market developments, reduced systemic risks stemming from the macroeconomic environment. Systemic risks were slightly reduced in the financial environment due to the increasingly likely shift in the monetary policy stance and optimistic investor sentiment that pushed up valuations in 2024 as well, thus mitigating the sector's profitability risk. Interest rate risk and the associated market risks remained the most prominent risks to which the domestic financial services sector was exposed at the end of the first half of 2024. Structural characteristics of the domestic financial services sector, primarily the concentration of institutional investors' exposure and low activity in the domestic capital market, improved slightly in the previous period, but could further exacerbate the sector's losses in a scenario that assumes the materialisation of unfavourable cyclical developments. The sector's liquidity and solvency buffers also improved in the first half of 2024, providing a hedge against systemic risks. Nevertheless, systemic risks in the financial services sector remain elevated due to pronounced cyclical risks in the financial environment, primarily geopolitical risk, financing conditions and relatively high market valuations that increase the probability and potential impact of a highly unlikely but plausible systemic shock.

2 MACROECONOMIC AND FINANCIAL ENVIRONMENT RISKS

2.1 Macroeconomic environment

Continued economic growth, combined with the moderation of inflation growth, is the main reason for the slight decrease in systemic risks arising from the macroeconomic environment. Given the close integration of the domestic economy with the European economy, any negative shock in the international environment, such as those observed in previous years, could erode optimistic short-term forecasts and significantly raise risks to financial stability. Although the European economy has avoided recession in the past period, its growth pace remains subdued, which, given continued high geopolitical tensions and still elevated financing costs, raises macroeconomic vulnerabilities. This is why systemic risks in the macroeconomic environment, though declining, remain at a slightly elevated level.

In early 2024, the domestic economy continued to record positive results, with the real annual GDP growth rate standing at 3.9% in the first quarter of this year. Personal consumption and gross investments[1] were the main components of domestic aggregate demand that gave the strongest boost to growth, while the contribution of net exports was negative[2] due to the smaller volume of services exports in that period. The growth in personal consumption reflects a resilient labour market, while gross investments grew on the back of the upturn in construction activity, partly financed by available EU funds.[3] The volume index of construction works remained on a strong upward trajectory and was 7.2% higher in March 2024 than in the same period of 2023[4].

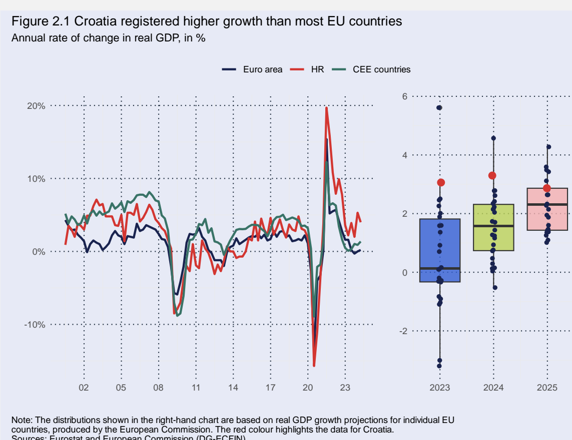


Figure 2.1 Croatia registered higher growth than most EU countries
Annual rate of change in real GDP, in %

Note: The distributions shown in the right-hand chart are based on real GDP growth projections for individual EU countries, produced by the European Commission. The red colour highlights the data for Croatia.
Sources: Eurostat and European Commission (DG-ECFIN)

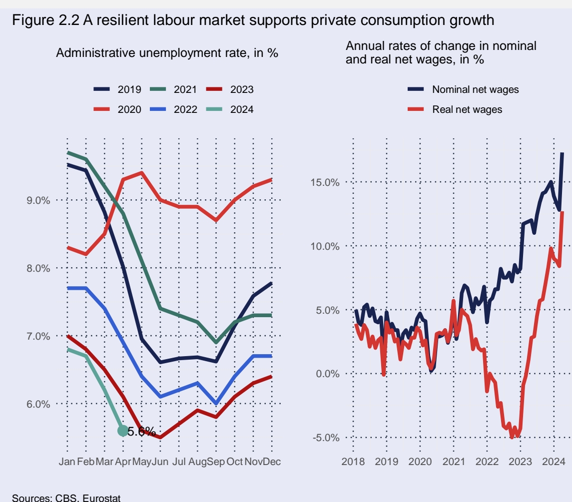
At the same time, real economic growth of euro area Member States and peer CEE countries was relatively lower than that of the domestic economy (Figure 2.1). According to the **European Commission's spring forecast,** domestic economic growth is expected to continue in the remainder of this year, propelled by

[1] According to preliminary CBS estimates, household consumption and gross investments rose by 6% and 10.8% respectively in the first quarter of 2024.
[2] Exports of services dropped by 8.2% annually in real terms in the first quarter of 2024.
[3] By the end of last year, Croatia had to use the funds from the Solidarity Fund, which had been earmarked for the reconstruction of earthquake hit areas.
[4] Data refer to the original index growth rates, without adjustments. The calendar adjusted index grew by 14.6% in the same period.

personal consumption, so that the annual real growth rate is expected to stand at 3.3% at the end of 2024, with similar dynamics expected to continue in 2025 (Figure 2.1). Vulnerabilities stemming from the international environment, in particular continued high geopolitical tensions and subdued euro area growth dynamics, are the main sources of risks that could negatively affect domestic economic growth and financial stability. An important impact on future economic growth will also come from the economic situation in Croatia's trading partners, notably Germany and Italy, which recorded either a fall or a modest increase in economic activity in the first quarter of this year[5].

Growth in personal consumption and overall economic activity was supported by favourable labour market conditions in the first quarter of 2024 marked by a continued decrease in unemployment, growth in employment and active population and nominal and real growth in average gross and net wages. An important feature remains the labour shortage, which is only partly offset by the rise in the number of foreign workers[6], as well as the growing number of employed pensioners. The upward pressure on wages was further intensified against this background; amid persistent comparatively elevated inflation, wages rose by 17.3% in nominal terms and 12.7% in real terms[7] in the first quarter of this year. At the same time, the unemployment rate decreased further by 0.5 p.p., to 5.6% at the end of April 2024 (Figure 2.2). While real wage growth has a positive effect on economic growth and public revenues as it boosts consumption and contributions, it also increases the operating expenses of corporations, which in turn adds to the growth in consumer prices.

Figure 2.2 A resilient labour market supports private consumption growth



Sources: CBS, Eurostat

Inflationary pressures continued to slow down, with HICP inflation standing at 4.3% at the end of May 2024, its lowest level since October 2021. While inflationary pressures have eased to some extent, the price increase remains broadly based as all components of the consumer basket contribute positively to the rise in overall inflation (Figure 2.3). As in 2023, food and services prices (category restaurants and hotels) are at the forefront of growth. Core inflation stood at 4.9% at the end of May, remaining above the aggregate rate of inflation, which suggests that underlying upward pressures on prices are present and may

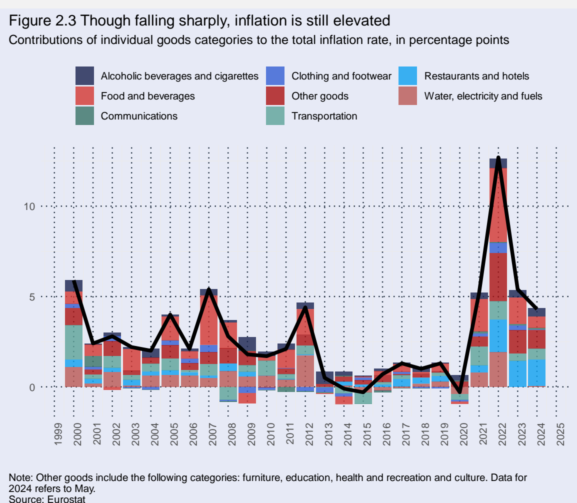
[5] The annual rates of change in quarterly GDP in Germany stood at –0.9% at the end of March, while the Italian economy recorded a slight growth (0.7%).

[6] According to the CES data, in the first five months of 2024, a total of 86434 positive opinions were issued for residence and work permits for foreign workers, the majority of which related to professions in the services sector.

[7] Data refer to net wages, while gross wages were 17.9% and 13.3% higher in nominal and real terms respectively on an annual level in the first quarter of this year.

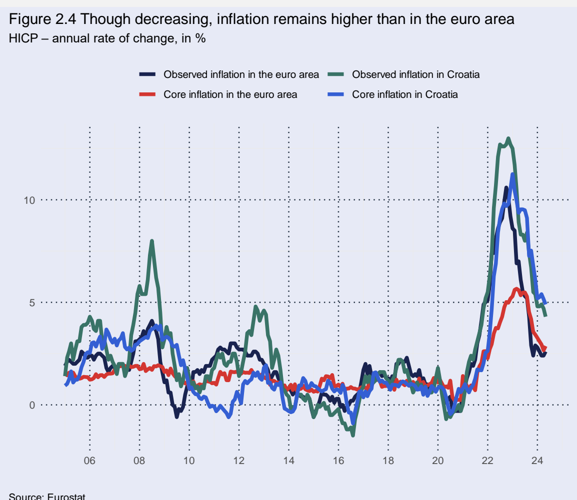
be longer-lasting than indicated by overall inflation. Croatia continues to record stronger growth in aggregate and core inflation than other EU countries (Figure 2.4), reflecting the difference in the structure of the average basket and a sharp increase in the prices of services in Croatia. This puts Croatia at the top of the distribution of EU countries in terms of the price growth recorded in May 2024.

Figure 2.3 Though falling sharply, inflation is still elevated
Contributions of individual goods categories to the total inflation rate, in percentage points



Note: Other goods include the following categories: furniture, education, health and recreation and culture. Data for 2024 refers to May.
Source: Eurostat

Figure 2.4 Though decreasing, inflation remains higher than in the euro area
HICP – annual rate of change, in %



Source: Eurostat

According to the European Commission, inflation is projected to stand at 3.5% in 2024 and to decline further to 2.2% in 2025. The continuation of the disinflationary process is exposed to numerous risks and will primarily depend on the successful containment of services prices. An important role will also be played by a traditionally strong foreign demand during the summer months and developments in the labour market experiencing labour shortages. Both these processes put strong upward pressures on wages and, indirectly, on prices. The general price level in the forthcoming period will also be influenced by the abolition of administrative prices set by the Government of the Republic of Croatia[8].

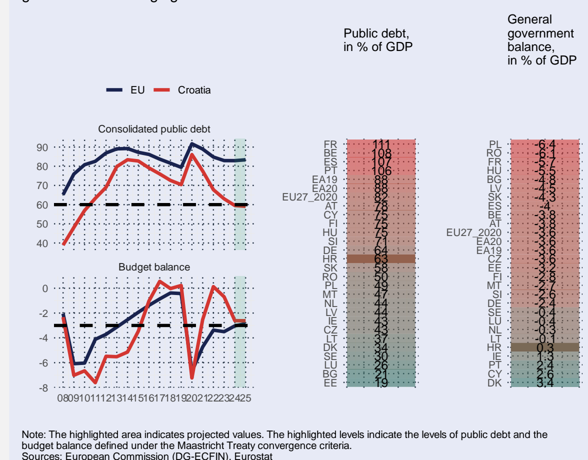
In addition to the mentioned local specificities, price developments are influenced by numerous external factors, such as the dynamics of energy prices, largely exposed to geopolitical risks, while trends in the prices of food and raw materials are vulnerable to possible disruptions in global supply chains and increasingly frequent extreme weather conditions. Apart from limiting the room for a further slowdown in price growth, these risks also make the inflationary and monetary environment uncertain and vulnerable to potential price shocks in the rest of the year.

Economic growth in the context of elevated inflation had a positive effect on public finances, sustaining the reduction in the general government debt-to-GDP ratio, which stood at 63.5% at the end of 2023 (Figure 2.5). Similar developments are expected in the rest of this year, with recent projections by the EC suggesting that debt might fall below the prescribed convergence threshold of

[8] Details on the sixth package of measures to protect households and the economy from price increases and prices that are currently limited are available at **link**.

60%[9] by the end of 2024. Public debt also decreased in other EU Member States, albeit at a much slower pace, primarily due to lower economic growth and inflation rates (Figure 2.5).

Figure 2.5 Indicators of the indebtedness and financial position of the general government converging towards the Maastricht criteria



Note: The highlighted area indicates projected values. The highlighted levels indicate the levels of public debt and the budget balance defined under the Maastricht Treaty convergence criteria.
Sources: European Commission (DG-ECFIN), Eurostat

While elevated inflation had a positive impact on budget revenues, which increased by 20.1% in 2023, this growth ran parallel to a rise in expenditures, of 20.9%, so that the budget balance stood at –0.7% of GDP at the end of last year (Figure 2.5). Similar dynamics were at work in the first quarter of 2024[10]; according to the recent EC projections the budget deficit is expected to widen to –2.6% by the end of this year and remain at the same level in 2025. Although Croatia currently has the highest credit rating in its history[11], interest expenses remain elevated[12] due to Croatia's previous, long-lasting, non-investment grade rating, while the new law on public sector wages and social assistance measures put additional pressure on expenditures. These developments, coupled with the expected decrease in the inflation rate and the ensuing slower growth in revenues, contribute to the widening of the budget deficit. At the same time, yields on domestic government bonds did not change much in the first half of 2024 and remained stable, reflecting continued positive market sentiment and investor perception (for more details, see Chapter 2.2 Financial environment). Therefore, the risks associated with fiscal developments are assessed to be moderate and do not currently pose a significant threat to financial stability.

Despite the still-tight financing conditions, the relative indicators of private sector indebtedness continued to improve in 2023 due to strong nominal GDP growth[13], with no increase in credit risk seen in the recent period (Figure 2.6). The household sector is supported by a robust labour market and an increase in real income (Figure 2.2), while the burden of existing loan repayments rose slightly in the previous period due to the high share of fixed-rate loans[14] and the regulatory limits on interest rates on consumer loans. The high share of fixed interest rates in the household debt structure absorbed the bulk of the impact of the recent increase in interest rates on debt service costs. However, in the scenario of a possible interest rate decrease, this interest rate structure will slow down the spillover of

[9] According to the EC spring forecast, public debt will stand at 59.5% of GDP at the end of 2024.
[10] In the first three months of 2024, general government revenues and expenditures increased by 12.9% and 21.7% respectively.
[11] According to Fitch and S&P, Croatia is currently rated BBB+ and according to Moody's Baa2, all with a positive outlook.
[12] They stood at 8.8% of GDP at the end of March 2024.
[13] At the end of 2023, the share of debt of households and non-financial corporations fell by 4.7 p.p. year-on-year, totalling 103.3%.
[14] At the end of March 2024, the share of fixed-rate loans for households was 48%.

lower financing costs to household annuities, which is particularly important for loans contracted at relatively higher interest rates. For the time being, non-financial corporate indicators do not point to any increase in credit risk in this sector, despite a significant share of loans with variable interest rates[15]. The number of insolvent corporations in late May 2024 was not much different from the year before (Figure 2.6), while the share of non-performing bank loans to corporates stood at 4.8% at the end of the first quarter of this year, the lowest value recorded in official statistics (Figure 2.6).

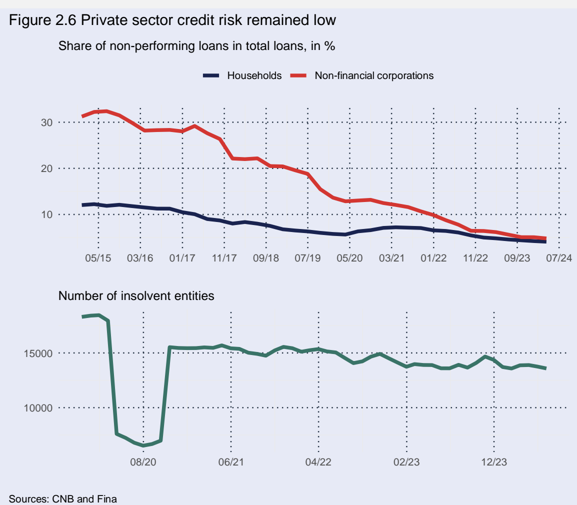


Figure 2.6 Private sector credit risk remained low

Sources: CNB and Fina

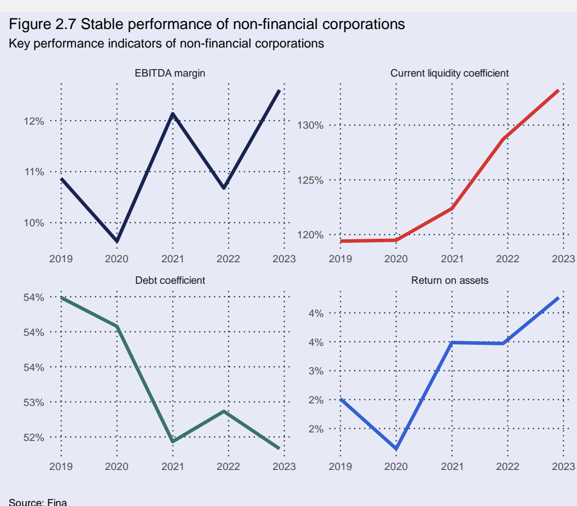


Figure 2.7 Stable performance of non-financial corporations

Source: Fina

Non-financial corporations recorded good business results in the past period (Figure 2.7), which helped to cushion the increase in operating expenses. Domestic non-financial corporations improved their liquidity and profitability indicators in 2023, while simultaneously reducing their indebtedness (Figure 2.7). The good business year has helped the sector's stability in the still-challenging macroeconomic conditions, keeping credit risk indicators at historically low levels. Such developments are also important for credit risk on the balance sheets of leasing companies as the structure of their active and new contracts is primarily related to non-financial corporations (for more details, see Chapter 3). These developments also had a positive impact on the domestic capital market (for more details, see Chapter 2.2) and on the profitability of institutional investors, which recorded strong growth in the first half of the year.

2.2 Financial environment

The continuation of promising economic indicators and a gradual decline in inflation contributed to positive financial market developments in the first half of 2024. Uncertainty and geopolitical risks remained at high levels at the same time, creating an environment that facilitates the materialisation of risks in the context of elevated stock market valuations. Such developments show that the risk premium has remained subdued and investor sentiment is relatively optimistic, particularly in the

[15] At the end of the year, the share of variable rate loans to non-financial corporations accounted for slightly more than a half of total corporate loans.

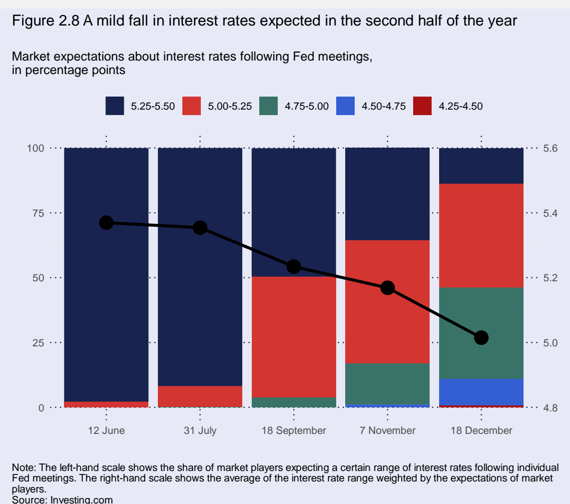
technological segment associated with the recent development and use of artificial intelligence. The rise in stock prices also continued in the domestic market, whose market capitalisation increased by 9.8% in the first six months of 2024. At the same time, the relatively subdued market activity additionally emphasises the risk of a sudden correction, which, if materialised, could have a considerable impact on the profitability of the financial services sector and potentially on overall financial stability.

Towards the end of last year, US financial market participants expected a relatively stronger shift in the monetary policy stance towards interest rate reduction. However, buoyant aggregate demand and inflation above 2% prompted Fed leaders to keep interest rates unchanged at 5.25–5.50%. The majority of market participants have changed their expectations greatly since the last meeting in June 2024, forecasting one to two decreases of 25 basis points in the second half of the year (Figure 2.8). This change in expectations reflects a slower decline in the inflation rate and signals somewhat more cautious expectations of investors than at the end of 2023, when they expected a fall in interest rates of 1.5 percentage points in 2024.

On the other side of the Atlantic, the ECB embarked on a cycle of interest rate cuts by 25 basis points in June 2024 in view of the relatively lower overheating of the labour market and the entrenchment of inflation, even though leaders initially announced the maintenance of a relatively restrictive monetary policy stance in the rest of the year. As in the US, markets predict one to two interest rate cuts of 25 basis points by the end of the year, especially if inflationary pressures continue to subside and economies enter a recession.

Figure 2.8 A mild fall in interest rates expected in the second half of the year

Market expectations about interest rates following Fed meetings, in percentage points



Note: The left-hand scale shows the share of market players expecting a certain range of interest rates following individual Fed meetings. The right-hand scale shows the average of the interest rate range weighted by the expectations of market players.
Source: Investing.com

The increasingly likely shift in the monetary policy stance and the avoidance of recession in the world's largest economies supported optimistic investor sentiment in the first half of 2024 as well (Figure 2.9). The good business performance of companies[16] in the first quarter of 2024 further supported a wave of market optimism in the first half of the year. In addition, despite high interest rates, the intensification of geopolitical tensions and uncertain trends in the leading economies, stock market volatility indicators point to reduced market activity on both sides of the Atlantic (Figure 2.10). This may partly be attributed to market expectations of imminent cuts in central bank interest rates, which induced the markets to temporarily postpone their investments.

[16] The components of the S&P 500 index recorded an annual increase in profits of 5.5% in the first quarter of 2024.

However, the absence of market volatility may also indicate subdued risk premiums and reduced liquidity in US and European stock markets, which in turn increases the probability of corrections in the event of sudden shocks.

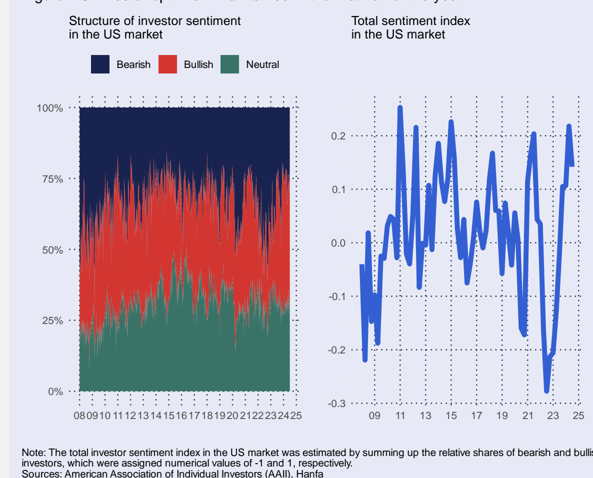
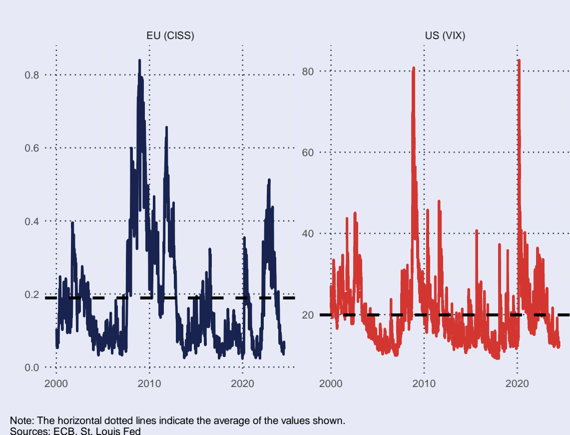


Figure 2.9 Investor optimism maintained in the first half of the year

Note: The total investor sentiment index in the US market was estimated by summing up the relative shares of bearish and bullish investors, which were assigned numerical values of -1 and 1, respectively.
Sources: American Association of Individual Investors (AAII), Hanfa

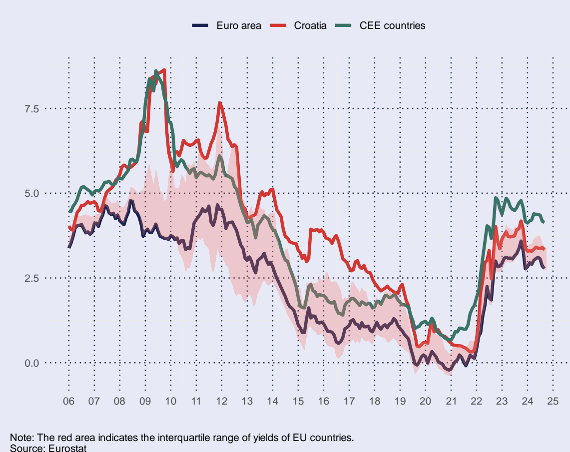
Against the background of positive sentiment and the absence of major oscillations, yields on Croatian government bonds remained stable in the first half of 2024 (3.4% in May), with the spread between yields on Croatian government bonds and the euro area average[17] declining by 28 basis points from the end of 2023 (Figure 2.11). The favourable market perception of Croatian public debt is primarily the result of strong economic growth in the first quarter of 2024 (the second largest, behind Malta), with an optimistic outlook for the remainder of the year, a decline in the public debt-to-GDP ratio[18] and the maintenance of an investment grade-rating with a stable outlook by all three leading rating agencies. In 2024, the Ministry of Finance continued to turn to households for government financing by issuing "national" T-bills in February and June[19], which further bolstered domestic public debt stability through greater investor diversification.

Figure 2.10 Financial markets on both sides of the Atlantic record below average volatility levels
EU and US financial market volatility indices



Note: The horizontal dotted lines indicate the average of the values shown.
Sources: ECB, St. Louis Fed

Figure 2.11 Stabilisation and convergence of yields towards euro area countries
Yields on long-term government bonds, in %



Note: The red area indicates the interquartile range of yields of EU countries.
Source: Eurostat

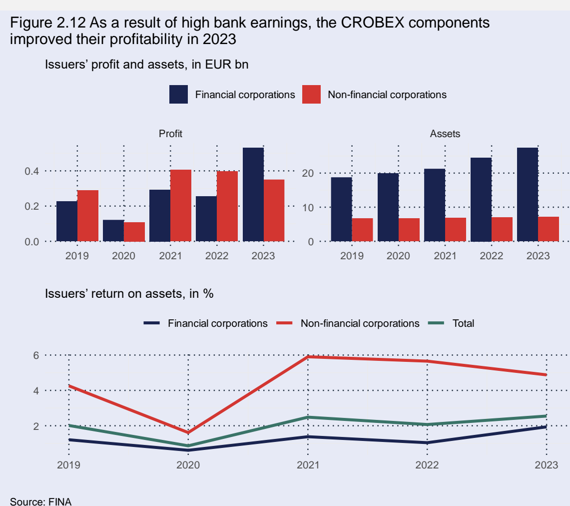
Optimistic market sentiment affected global financial market valuations in the first half of 2024, with some asset classes continuing their strong growth that started in 2023 (Figure 2.13). Banks' stocks brought a high return of 21%, maintaining a combination of high interest margins amid rising interest rates and still very low value adjustment costs,

[17] The three euro area countries with the highest yield increase since the beginning of the year are Estonia, Ireland and Germany, with an average increase of 46 basis points.
[18] Public debt stood at 63% of GDP at the end of 2023, down by 4.8 percentage points a year.
[19] T-bills maturing in 91 and 364 days were issued in both issues, with 38,118 individuals subscribing over EUR 1bn in February and 32,187 individuals subscribing EUR 827.6m in June.

which led to a spike in euro area banks' profitability. The technology sector also saw a steep 13% increase in valuations on the back of high optimism in terms of rapid progress and overall uptake of AI in the business environment. After solid growth of 5% in 2023, global bonds recorded a mild decline of 2% in the first five months of 2024, amid heightened uncertainty regarding the dynamics of the expected decrease in interest rates. The most speculative asset classes, such as cryptocurrencies, grew strongly (by more than 60%), implying a continued decline in risk aversion by investors. Noteworthy in the commodity market was the rise in the price of gold and other precious metals, driven by strong central bank demand[20] and signs of macroeconomic and geopolitical uncertainties. At the same time, natural gas prices in Europe dropped further due to high temperatures, reduced industrial activity and diversification of supply sources. As regards developments in the domestic market, noticeable was the growth in CROBEX, which remained at the highest levels in the past ten years. Driven by industry and construction sectors, growth was above 11% in the first half of the year.

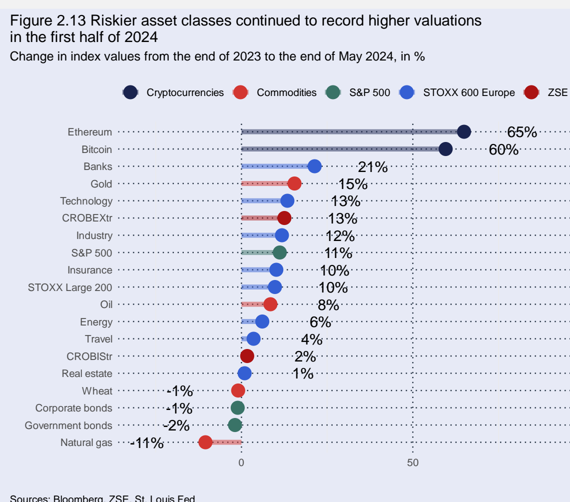
Optimistic investor sentiment is also evident in the rise in the price-to-earnings ratio, which was particularly pronounced in the US (Figure 2.14). Optimistic investor sentiment supported by positive business performance and a high share of technological stocks[21] in the S&P 500 index contributed to persistent overvaluation, increasing the risk of a sudden correction. On the other hand, European companies recorded a fall in profitability. However, the rise in valuations on European stock exchanges led to a slight increase in the price-to-earnings ratio, staying within the limits of the moderate valuation level.

Figure 2.12 As a result of high bank earnings, the CROBEX components improved their profitability in 2023



Source: FINA

Figure 2.13 Riskier asset classes continued to record higher valuations in the first half of 2024



Sources: Bloomberg, ZSE, St. Louis Fed

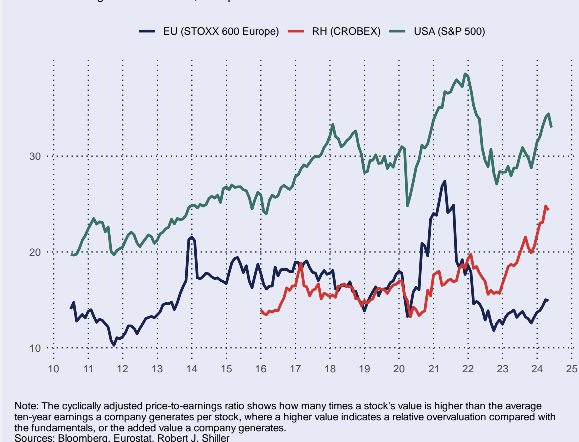
Despite the fall in profits, the CROBEX components enhanced the profitability of assets in 2023, by 2.5%, which is an improvement of 0.4 p.p. from 2022 (Figure 2.12). The banking sector was at the forefront of profitability growth in the

[20] Net purchases of gold by central banks amounted to 290 tonnes in the first quarter, the highest level recorded in the first quarters of the last 20 years. Central banks of Eastern and Central Asia accounted for most of the demand at the beginning of the year.

[21] The leading technology companies, also known as the Magnificent Seven, account for around 30% of the S&P 500 market capitalisation.

domestic market as well, as the profits of two banks exceeded the profits of other index components by 50% in 2023. Taking into account above-average growth in market valuations and reduced earnings, the long-term price-to-earnings ratio in the domestic market has shown signs of mild overvaluation (a ratio above 25). While elevated valuations are often associated with increased risk of a price correction and thus profitability risk for investors dominantly positioned in stocks, current valuations potentially reflect optimistic investor expectations regarding the future earnings of issuers, which, after a decade of stagnation, have finally started spilling over to market valuations, suggesting that investors are willing to pay a premium on stocks in anticipation of a surge in company earnings in the future.

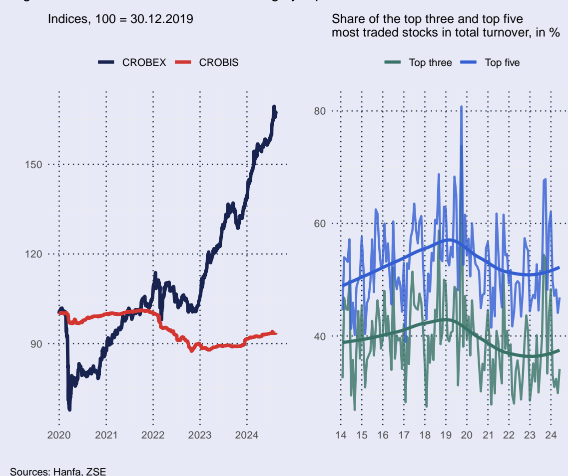
Figure 2.14 Subdued risk premium is reflected in higher overvaluation in international and domestic markets
Price-to-earnings ratio in the US, European and domestic stock markets



Note: The cyclically adjusted price-to-earnings ratio shows how many times a stock's value is higher than the average ten-year earnings a company generates per stock, where a higher value indicates a relative overvaluation compared with the fundamentals, or the added value a company generates.
Sources: Bloomberg, Eurostat, Robert J. Shiller

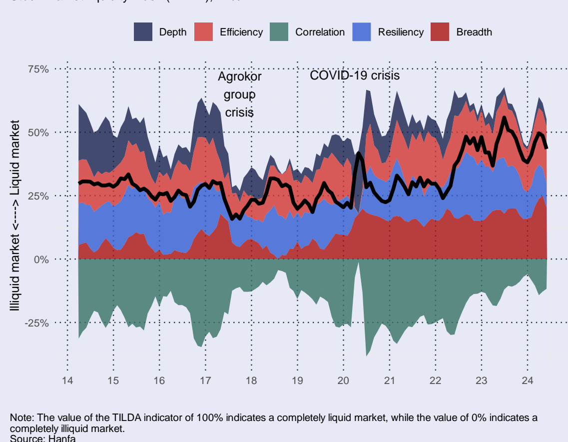
Although recent developments point to stronger activity in the domestic market, investors continue to focus on several more liquid stock issues with high market capitalisation (Figure 2.15). After its peak at the end of 2023, the share of the top three and the top five most traded stocks in the total turnover dropped to 34% and 47%, respectively, in May 2024 (a decrease of 14 p.p. and 15 p.p. respectively). While below the years-long average, the concentration of stock trading remains elevated.

Figure 2.15 Investors still focused on highly liquid issues



Sources: Hanfa, ZSE

Figure 2.16 Despite the positive performance of the domestic market, liquidity conditions have deteriorated
Stock market liquidity index (TILDA), in %



Note: The value of the TILDA indicator of 100% indicates a completely liquid market, while the value of 0% indicates a completely illiquid market.
Source: Hanfa

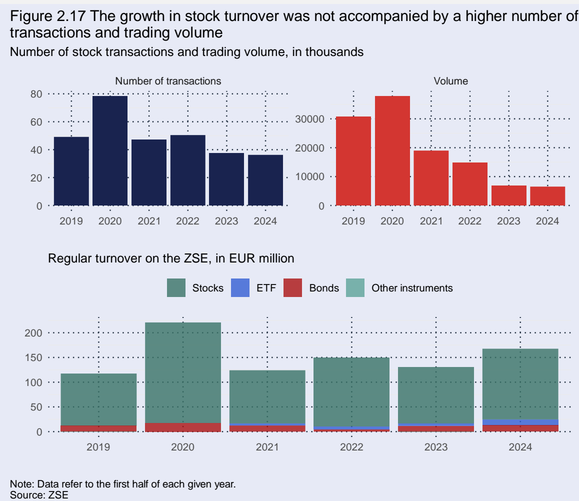
Market liquidity, which peaked in mid-2023, was on a downward path, with a severe decline recorded by the components of depth and resilience[22] (Figure 2.16). Despite an annual increase of 26% in the stock turnover in the first half of the year, the number of transactions and trading volumes recorded an annual decline of 3.2% and 5.4% respectively

[22] For more details on the structure of the market liquidity index and the calculation methodology, see **Box 1 Measuring capital market liquidity** in the publication Macroprudential risk scanner No 6.

(Figure 2.17), implying the growing significance of a small number of large transactions and poorer liquidity conditions for the rest of the market. Domestic market supply was further expanded in mid-year by a new ETF that replicates the movements of Romanian government bonds, providing new investment options for investors.[23] Structural characteristics of the domestic market in terms of high trading concentration and low liquidity highlight the elevated cyclical risk of possible price corrections given the relatively optimistic valuations, which keeps systemic risks in the financial environment at an elevated level.

Figure 2.17 The growth in stock turnover was not accompanied by a higher number of transactions and trading volume

Number of stock transactions and trading volume, in thousands



Note: Data refer to the first half of each given year.
Source: ZSE

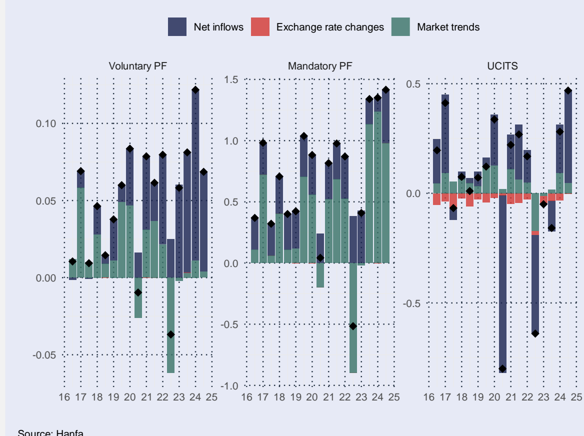
[23] The fifth ETF named InterCapital EUR Romania Govt Bond 5-10yr UCITS ETF, which tracks the movements of Romanian government bonds with maturities between five and ten years, was listed on the ZSE at the beginning of June.

3 FINANCIAL SERVICES SECTOR RISKS

3.1 Short-term risks

The exposure of the financial services sector to short-term systemic risks arising from its operations decreased slightly from the end of 2023. Positive market developments and larger fund inflows had a favourable impact on net assets and returns of pension and investment funds. The profitability of leasing companies and insurance companies remained stable in the first quarter of 2024 thanks to a strong inflow of new contracts.

Figure 3.1 Positive market trends and higher inflows led to an increase in net assets of funds in late 2023 and early 2024
Quarterly change in net assets of funds, in EUR bn



Source: Hanfa

Net assets of pension funds increased, driven by positive market and economic developments in 2023 and early 2024, as well as higher inflows of funds. The growth in payments to pension funds was due to employment and nominal wage growth (for more details, see Chapter 2.1 Macroeconomic environment). A positive contribution to larger payments to pension funds came from the increase in the number of beneficiaries of mandatory and voluntary pension funds. The number of members of voluntary pension funds went up 8.1% from the end of 2022 and 2.7% in the first five months of 2024, while the number of members of mandatory pension funds grew at a slower pace, by 4.3% from the end of 2022 and 1.0% in the first five months of 2024. In addition to positive macroeconomic developments, the growth in net assets was also spurred by favourable market developments, which gave a further boost to assets and supported the recovery of returns for all categories of pension funds (more details in the remainder of this chapter). As a result, net assets of pension funds stood at EUR 23.0bn at the end of June 2024, an increase of 6.9% from the end of 2023.

Net assets of UCITS stood at EUR 2.8bn at the end of June 2024, up by 20.3% from the beginning of the year. Higher inflows are a result of the establishment of new funds, particularly noteworthy being the expanded offer in terms of the establishment and return of individual types of funds. In October 2023, Hanfa approved the establishment of two new money market funds. They were the first new money market funds in the Croatian market after the last such fund was discontinued in January 2021. Although these funds managed only 13.9% of the total net assets of UCITS at the end of June 2024, their presence is a positive contribution to market liquidity as they offer investors with an additional short-term investment channel, while providing conservative investors an additional form

of low-risk investment, together with existing bond and target-date funds.

Target-date funds also became increasingly popular in 2023. In the first six months of 2024, their value and number increased by 13.8% and 10.8% respectively. At the end of May 2024, net assets of target-date funds stood at EUR 638.9m, or 30.1% of the total value of UCITS net assets.

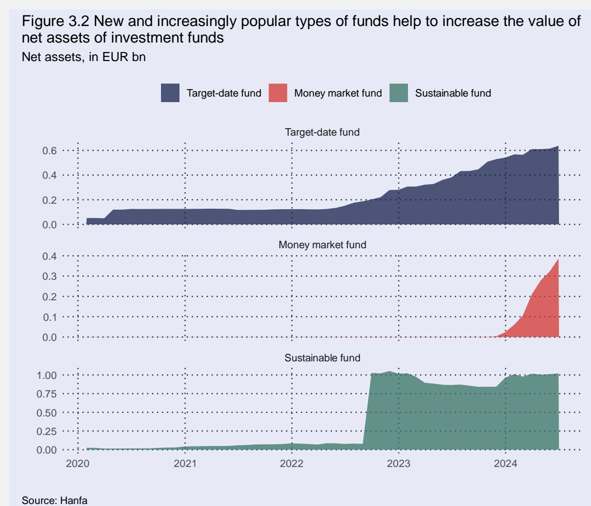


Figure 3.2 New and increasingly popular types of funds help to increase the value of net assets of investment funds
Net assets, in EUR bn

Source: Hanfa

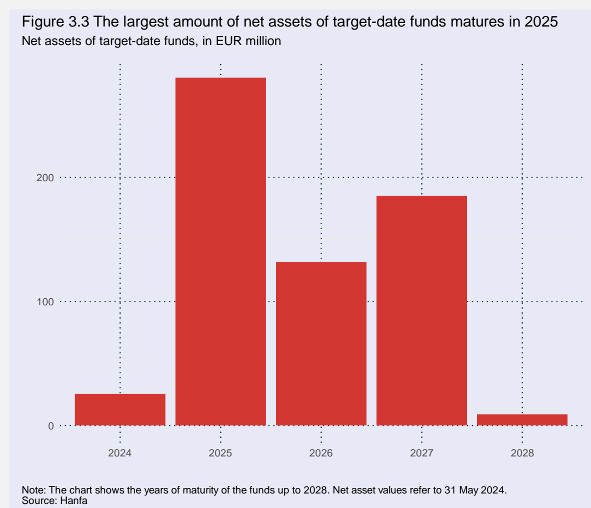


Figure 3.3 The largest amount of net assets of target-date funds matures in 2025
Net assets of target-date funds, in EUR million

Note: The chart shows the years of maturity of the funds up to 2028. Net asset values refer to 31 May 2024.
Source: Hanfa

In addition to new types of funds, it should be noted that the growing number of funds is classified as 'green', i.e. those promoting environmental or social characteristics (SFDR Article 8, 'light green') or funds aiming at sustainable investment (SFDR Article 9, 'dark green'). At the end of June 2024, 40 such funds were active in Croatia, managing net assets worth EUR 1.04bn, which is 8.0% of total net assets of all UCITS funds.

The liquidity of UCITS decreased in 2023 owing to higher inflows of funds with less liquid assets, notably other funds, at the expense of those with more liquid assets. However, due to growing inflows of more liquid assets, primarily from newly established MMFs at the end of 2023, the share of highly liquid assets in total assets started to recover in the first six months of 2024. In June 2024, the share of liquid assets in total assets stood at 22.3%, an increase of 6.9 p.p. from the end of 2023. The bulk of net outflows in that period was limited to bond funds, characterised by pronounced investor risk aversion, which were substituted by increasingly popular target-date funds. The latter funds are characterised by relatively short maturity of assets aligned with the short maturity of the fund, which, combined with high exit charges, reduces their liquidity risk and the possibility of sudden fund outflows. Target-date funds had total net assets of EUR 68.8m in 2023; this amount dropped in 2024 to date, to EUR 25.5m. Currently, the largest amount of net assets of target-date funds matures in 2025; at the end of June 2024, their net assets stood at EUR 279.8m (Figure 3.3). Although the liquidity of funds has improved recently, it is important to note that UCITS are inherently vulnerable to potential new liquidity pressures in the form of possible sudden, large outflows, particularly in the event of a severe systemic shock. Proactive liquidity risk management is therefore essential to preserve the sector's resilience and overall system stability.

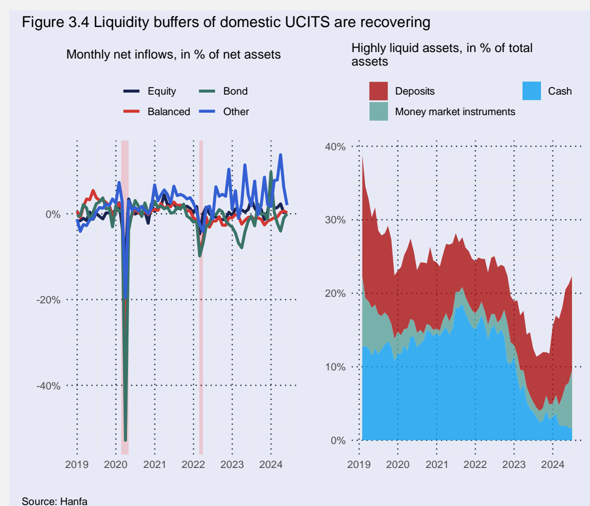


Figure 3.4 Liquidity buffers of domestic UCITS are recovering

Source: Hanfa

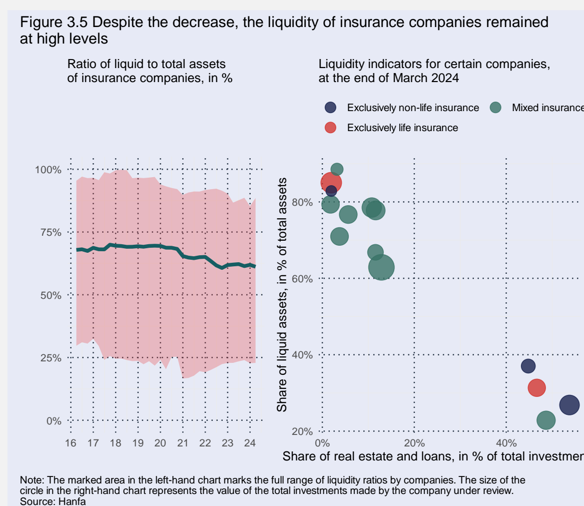


Figure 3.5 Despite the decrease, the liquidity of insurance companies remained at high levels

Note: The marked area in the left-hand chart marks the full range of liquidity ratios by companies. The size of the circle in the right-hand chart represents the value of the total investments made by the company under review.
Source: Hanfa

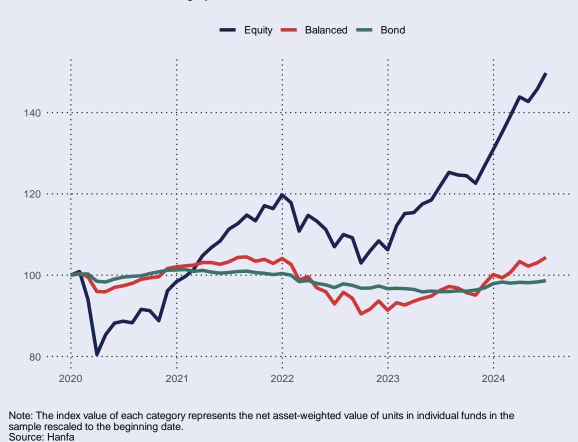
Liquidity buffers of insurance companies remained at high levels even in an environment of high interest rates, with no systemically significant pressures on early disbursement of funds in the life insurance segment. The share of liquid assets in total assets stood at 61.2% at the end of March 2024, down by 0.9 p.p. from the same period of 2023. Although overall system liquidity is high, the range of liquidity levels across companies is very wide. Some companies are less liquid due to their exposure to real estate and loans, characterised by relatively low liquidity. Real estate investments expose companies to various risks and transmission channels of potential shocks from the real estate market, which underlines the importance of adequate valuation of real estate investments. Potential real estate price corrections could lead to a decrease in assets and capitalisation of insurance companies (more details on the characteristics and risks arising from the real estate sector are available in the publication **Financial stability, No 3**), with unfavourable consequences for their operations, particularly in companies characterised by high exposure to this relatively illiquid form of assets.

The returns of pension and investment funds remained in positive territory in 2024 to date. All pension fund categories recorded positive returns in the first six months of 2024, with the highest returns being generated by category A pension funds, 6.0%, followed by category B funds, 4.5%, and the smallest category C funds, 1.0%. This is due to the share of relatively more conservative investments, notably bonds, whose returns in 2024 lag behind other types of assets. This is also reflected in the value of the domestic bond index CROBIS and the stock index CROBEX, which grew by 0.8% and 11.7% respectively in the first six months of 2024 (for more details, see Chapter 2.2 Financial environment). Greater flexibility in investment opportunities is provided by the recent amendments to the Mandatory Pension Funds Act, which provide pension companies with more diversification possibilities and thus increase long-term stability of returns (for more details on long-term challenges of pension systems and implications for financial stability, see **Box 1 Strengthening pension systems for future generations: the path to long-term resilience**).

Figure 3.6 The rise in the value of units in mandatory pension funds of all categories continues into 2024
Mirex values, per category

Source: Hanfa

Figure 3.7 Profitability of investment funds continues to record good results, particularly in the category of equity funds
Index value of each UCITS category, 100 = 31.12.2019



Note: The index value of each category represents the net asset-weighted value of units in individual funds in the sample rescaled to the beginning date.
Source: Hanfa

The returns of UCITS have continued to grow in 2024 so far. In the first six months of 2024, the highest average returns were generated by equity funds, of 12.6%, while lower average returns were made by balanced funds, 4.3%, other funds, 1.4%, and bond funds, with the smallest return of 0.5%. Developments in the returns of UCITS reflect market developments characterised by higher growth in relatively riskier asset classes and stagnation in bond investments, which are, despite positive macroeconomic developments, still surrounded by high uncertainty about the monetary policy course in the forthcoming period (for more details, see Chapter 2.2 Financial environment).

At the beginning of 2024, the volume of leasing companies' business continued to increase, both in terms of value and the number of new contracts. In the first three months of 2024, the number of new contracts increased by 18.5% and their value by 20.8% from the same period of the previous year. The growth was mostly driven by the rise in the finance leasing segment, which accounts for 86.3% of the value of active contracts. Leasing companies' operations are closely linked to the operations of non-financial corporations[24], which have recently performed well (for more details, see Chapter 2.1 Macroeconomic environment). The business of leasing companies associated with the financing of car and freight vehicle leasing relies mainly on activities related to the tourist season, which is again seeing record highs in 2024. Therefore, business is likely to continue growing in the remainder of the year. In addition to the increase in the business volume, inflationary pressures continued to contribute positively to the value of leased assets and thus to the value of newly concluded contracts.

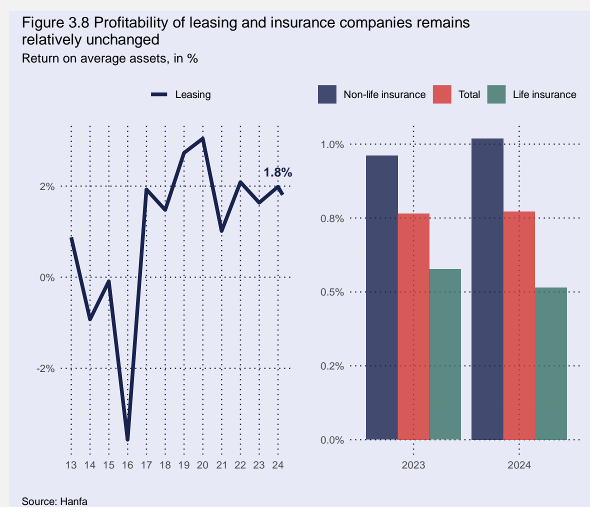
The profitability of leasing and insurance companies has been broadly stable in 2024 so far. The profitability of leasing companies stood at 1.8% in March 2024. The rise in lending rates (of 1.1 p.p. from the same period of the previous year) largely offset the increase in financing costs (the captive interest rate rose by 1.7 p.p. from the same period in the previous year). Interest rate risk remains a

[24] In the first quarter of 2024, contracts with non-financial corporations accounted for 76.1% of the value of all active contracts and for 76.3% of the value of new contracts.

challenge for leasing companies, because an increase in the price of a product may dampen demand and slow down the current increase in the value of new contracts (for more details on interest rate risk, see Chapter 3.2 Long-term risks). The quality of leasing companies' portfolio remains favourable and does not put any significant pressure on profitability.

The profitability of insurance companies improved slightly from 2023, reaching 1.0% in March 2024. Despite a slight increase in overall profitability, the profitability of the life insurance segment fell by 0.1 p.p. as a result of a 34.5% fall in its profits from the same period of the previous year. The fall in the profits of the life insurance line was mostly due to an increase in net financial expenses on insurance contracts, which rose by 143.2% from the same period in the previous year.

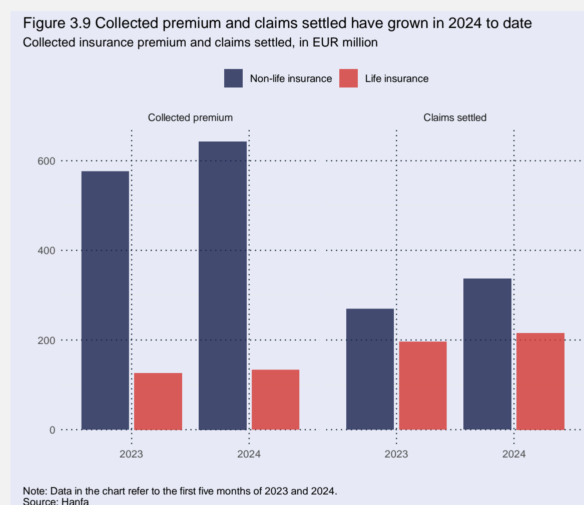
Figure 3.8 Profitability of leasing and insurance companies remains relatively unchanged
Return on average assets, in %



Source: Hanfa

The collected premium of insurance companies increased by 10.5% in the first five months of 2024 from the same period of the previous year, of which non-life insurance premium rose by 11.5%. This growth was mostly due to an increase in the number of insurance contracts and the value of premium collected for compulsory motor vehicle liability insurance (the number grew by 2.8%, while premium rose by 16.8%) and comprehensive car insurance (the number and premium went up by 2.6% and 20.6% respectively). Demand for life insurance also increased, by 6.1%, while the number of life insurance contracts fell by 2.0%. In addition to the premium collected, the value of claims settled also increased, by 18.5% in the first five months of 2024 from the same period in the previous year. This growth was mostly driven by an increase in the claims settled in non-life insurance business, which stood at 24.8% (the number of claims rose by 24.9%), while claims settled in life insurance business rose by 9.9% (with an increase of 5.7% in the number of claims). The sharpest increase in claims settled in non-life insurance business was generated by compulsory car insurance (an increase of 18.8%), comprehensive car insurance (a growth of 19.2%) and insurance against fire and natural disasters (a growth of 94.5%).

Figure 3.9 Collected premium and claims settled have grown in 2024 to date
Collected insurance premium and claims settled, in EUR million



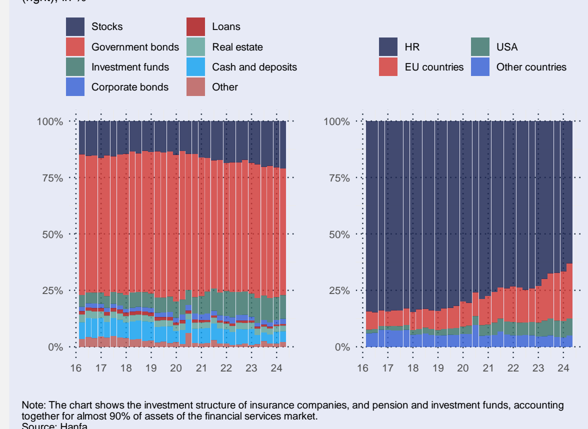
Note: Data in the chart refer to the first five months of 2023 and 2024.
Source: Hanfa

3.2 Long-term risks

As a result of the reduction of risks stemming from the macroeconomic environment, the exposure of the financial services sector to long-term systemic risks also decreased slightly in the first quarter of 2024. Interest rate and market risks remain the most prominent risks to which the domestic financial services sector is exposed. In an environment of heightened monetary and geopolitical uncertainties, the high valuation in international stock markets (Figure 2.12) increases the probability of market corrections and keeps systemic risks at a slightly elevated level.

Figure 3.10 High concentration of financial services sector investments in government bonds

Investment structure of the financial services sector by investment type (left) and residency (right), in %



Note: The chart shows the investment structure of insurance companies, and pension and investment funds, accounting together for almost 90% of assets of the financial services market.
Source: Hanfa

The exposure of the financial services sector to long-term systemic risks is to a large extent determined by the high concentration of investments in government bonds, which, despite a noticeable several-year trend of diversification through an increase in stock and investment fund investments, still account for the bulk of the sector's portfolio. At the end of the first quarter of 2024, government bonds accounted for 56.3% of total investments (Figure 3.10), of which 77.4% was accounted for by domestic government bonds. The share of stocks in total investments has increased by 4.8 p.p. since the end of 2020, with the bulk of these investments being channelled into stocks of European companies (Figure 3.10). The changed investment opportunities and limits introduced by the amendments to the pension acts in early 2024, which allow for greater flexibility in diversifying investments (for more details, see Box 1 **Strengthening pension systems for future generations: the path to long-term resilience**), will certainly contribute to the likely continuation of the diversification trend in the long run. Additional flexibilisation of investment options was also brought by Croatia's accession to the euro area, which, in addition to the virtual elimination of exchange rate costs, significantly reduced the currency exposure of the sector, leaving more room for diversification through cross-border investments. The process of investment diversification, particularly across borders, increases the sector's exposure to international market risks; at the same time, it reduces the significance of potential idiosyncratic shocks as it lowers the sector's exposure to concentration risk.

Over the past few years, domestic institutional investors have shortened the duration of the bond segment of their portfolios by two to three years (Figure 3.11), thereby reducing their exposure to interest rate risk. Taking into account market expectations of monetary easing and the cuts in reference interest rates in 2024, the trend of reduction in portfolio duration may come to an end, as already evident in pension

funds and some types of investment funds[25]. Interest rate risk exposure of insurance companies is largely determined by the maturity mismatch between their assets and liabilities. Companies engaged in non-life insurance are relatively protected from significant changes in the level of interest rates given the low maturity mismatch between assets and liabilities of 0.9 years at the end of March 2024, while those dealing in life insurance are significantly more exposed in view of their maturity mismatch of 3.4 years.

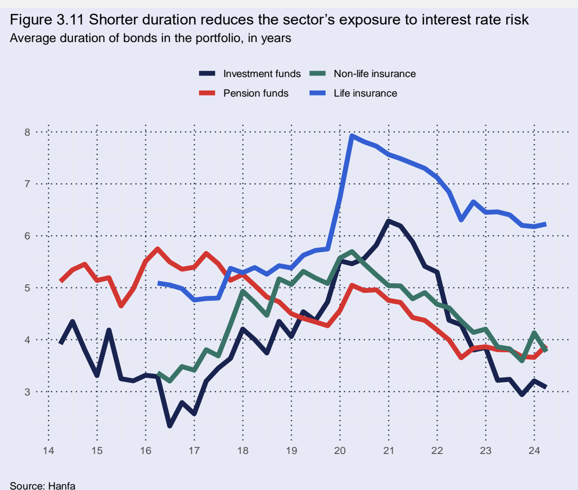


Figure 3.11 Shorter duration reduces the sector's exposure to interest rate risk
Average duration of bonds in the portfolio, in years

Source: Hanfa

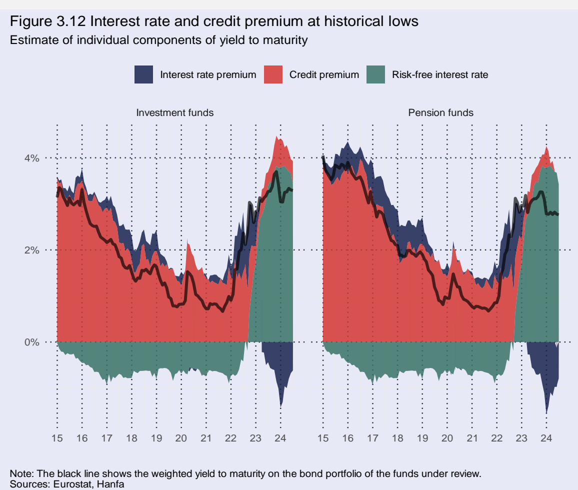


Figure 3.12 Interest rate and credit premium at historical lows
Estimate of individual components of yield to maturity

Note: The black line shows the weighted yield to maturity on the bond portfolio of the funds under review.
Sources: Eurostat, Hanfa

Ongoing positive developments in financial markets in 2024 so far, driven by solid macroeconomic indicators and the gradual subsiding in inflation (for more details, see Chapter 2.2 Financial environment) have helped to reduce the financial services sector's exposure to market risks. Despite this decline, market risks are elevated, primarily due to the subdued risk premium, which, due to high levels of economic uncertainty and geopolitical risks, is at historical lows (Figure 3.12), leaving room for a sudden correction in the event of certain disturbances. The probability of market risk materialisation is additionally heightened by the existing global high valuations of financial assets, in particular stocks, which raise the probability of future price corrections in global financial markets. This would also lead to significant corrections on the domestic market, which itself has recorded relatively high stock prices (for more details, see Chapter 2.2 Financial environment), increasing the level of market risks in the domestic financial services sector.

Considerable macroeconomic uncertainty and geopolitical risks have kept credit risk in the financial services sector at a slightly elevated level in the first quarter of 2024 despite the currently favourable credit perception. Due to the high exposure to domestic sovereign bonds, credit risk of the financial services sector is determined by the rating of the domestic fiscal sector, which is currently at its historical best. The maintenance of the investment-grade rating, combined with the entry into the euro area, makes the domestic bond market more resilient to a possible sudden shift in the market perception of

[25] The duration of pension funds lengthened by 0.2 years, while the duration of equity and bond funds grew by 0.3 years in the first quarter of 2024.

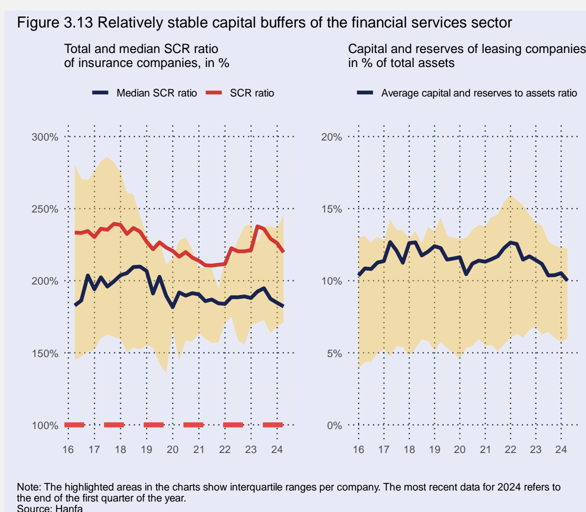
credit risk, which could potentially occur should the currently subdued global risk premium be revised.

The credit risk exposure of leasing companies is largely determined by operations of non-financial corporations, whose share in the value of active leasing contracts stood at 72.1% at the end of the first quarter of 2024. Non-financial corporations have recorded good business results in the recent past, with the historically lowest ratio of non-performing loans (for more details, see Chapter **2.1 Macroeconomic environment**), which, coupled with a strong inflow of new contracts, kept the credit risk of leasing companies at a low level. The share of non-performing receivables in total receivables thus remained at low levels, standing at 1.4% at the end of the first quarter, while the coverage of non-performing placements was at a relatively high level of 72.0%.

Given that currency risk in the financial services sector was mainly a result of the euro-kuna currency mismatch between assets and liabilities, this risk was brought to a very low level after Croatia's accession to the euro area at the beginning of 2023. The major part of the remaining currency mismatch is accounted for by the exposure to the US dollar, which has become the predominant source of currency risk for the entire financial services sector.

The capitalisation level of the financial services sector remained high in early 2024 as well. Solvency indicators of the insurance sector were relatively stable at the end of the first quarter of 2024, with the median SCR ratio decreasing by 2.5 p.p. from the end of the previous year, to 182.1%, still exceeding the regulatory minimum by a large margin (Figure 3.13). At the aggregate level, the SCR ratio stood at 219.7% at the end of the first quarter of 2024, down by 6.4 p.p. from the end of 2023. This fall was driven by an increase in capital requirements, primarily as a result of the rise in equity risk requirements (mostly due to the increase in the symmetric adjustment for the calculation of equity capital requirements).

Figure 3.13 Relatively stable capital buffers of the financial services sector



Note: The highlighted areas in the charts show interquartile ranges per company. The most recent data for 2024 refers to the end of the first quarter of the year.
Source: Hanfa

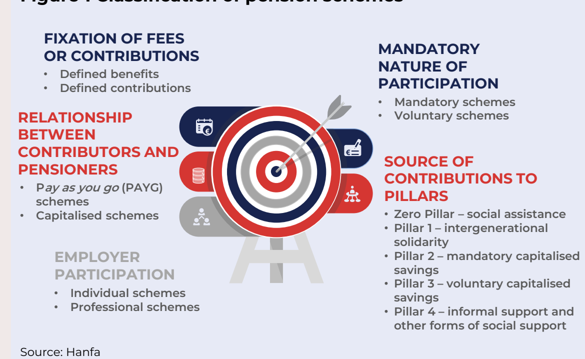
The capitalisation of leasing companies, measured as the ratio of capital and reserves to total assets, has been steadily decreasing since the end of 2021 due to a much stronger growth in their assets than in capital and reserves. The capitalisation stood at 10.0% at the end of the first quarter of 2024, down 0.5 p.p. from the end of 2023 and 2.6 p.p. lower than at the end of 2021. While the aggregate capitalisation of leasing companies is relatively satisfactory, a high degree of distribution dispersion of capitalisation indicators across companies (with one quarter of companies having an indicator below 6%) suggests that any further decline in relative capital stocks could significantly erode the sector's resilience to a possible scenario of an economic slowdown and growth in credit risk on the companies' balance sheets.

BOX 1 STRENGTHENING PENSION SYSTEMS FOR FUTURE GENERATIONS: THE PATH TO LONG-TERM RESILIENCE

Importance of pension systems

Different forms of pension systems are currently present in many EU countries and there is no universal approach to defining and building this essential element of social policy. According to the European Parliament, the pension system is a key element of social protection for older people. It is meant to provide older citizens beyond working age with a stable and sufficient income in the future[26]. This mechanism mostly involves intergenerational transfers of funds through government transfers, supplemented by individualised savings in financial institutions.

Figure 1 Classification of pension schemes



Source: Hanfa

Irrespective of the pension model (Figure 1), the underlying objectives for which all pension systems should strive are primarily to protect against the risk of old-age poverty and to smooth the consumption curve during the transition from working to retirement age[27].

There are five basic channels through which pension systems affect the economy:

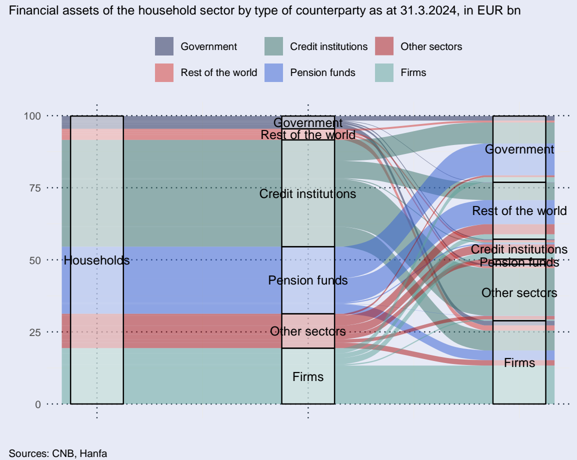
1. impact on the level and type of spending by individuals during working life and in retirement;[28]
2. impact on participation in the labour market, i.e. on employment and wages;[29]
3. impact on public finances in view of a large share of pension outlays in the budgets of most developed countries;
4. impact on long-term savings and investments;[30]
5. impact on the development and stability of the financial system and capital markets through long-term investments[31].

The importance of pension funds for the financial position of the overall economy is also reflected in their direct interconnectedness with major institutional sectors (Figure 2). After credit institutions, pension funds are the largest managers of household financial assets in Croatia, managing as much as EUR 23.4bn at the end of March 2024, or a quarter of total household financial assets. Pension funds primarily channel these financial assets to domestic government bonds (47.8% of assets). The rest of assets is primarily invested abroad, through stocks,

[26] More information is available at the following **link**.
[27] For more details on the classification of pension schemes in the EU and the challenges and implications for financial stability, see the ESRB paper at **link**.
[28] Anders (2010)
[29] Bodnar and Nerlich (2020)
[30] Ertugrul and Gebesoglu (2019)
[31] Peksevim and Ercan (2023), Bijlsma, Erwijk and Haaijen (2014)

investment funds and foreign bonds (35.8%) and domestic enterprises (14.4%), while the remaining funds are deposited with credit institutions (1.7%) and other financial institutions (0.3%).

Figure 2 Pension funds manage a significant portion of household financial assets and then channel them into different parts of the economy
Financial assets of the household sector by type of counterparty as at 31.3.2024, in EUR bn

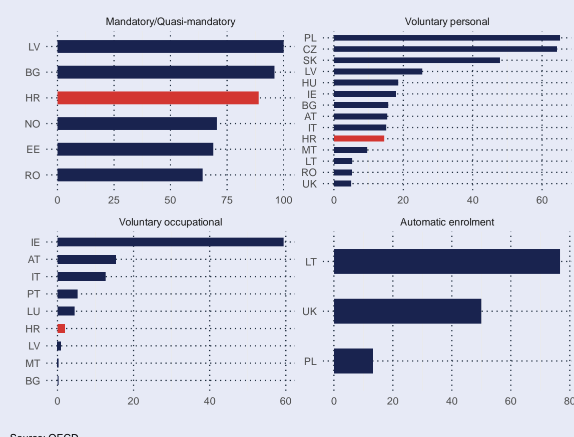


Sources: CNB, Hanfa

Although pension funds make up an important part of the total economy, the financial system as well as financial plans of individuals, the rates of voluntary participation are still not high, with large differences across jurisdictions (Figure 3).

The prevailing lack of awareness of the benefits of pension plans is evidenced by relatively low participation rates in voluntary plans, in which, with the exception of several countries (e.g. the Czech Republic, Ireland, Poland and Slovakia among the EEA countries under review), only every fifth person of working-age participates (Figure 3). According to the OECD, the causes of lower participation rates in voluntary plans range from lack of access and affordability, lack of awareness and trust in the system, various behavioural and cultural factors that affect the population's propensity for long-term savings to adverse macroeconomic trends, such as the recent elevated inflation and rising interest rates[32].

Figure 3 Significant differences in participation rates in pension plans
Participation rate in pension plans, by type of plan and jurisdiction, for individual EEA members in 2022, as a percentage of working age population



Source: OECD

Figure 4 Fees charged to pension fund members in Croatia are among the lowest in the observed sample of EEA countries
As a percentage of total assets in the plans

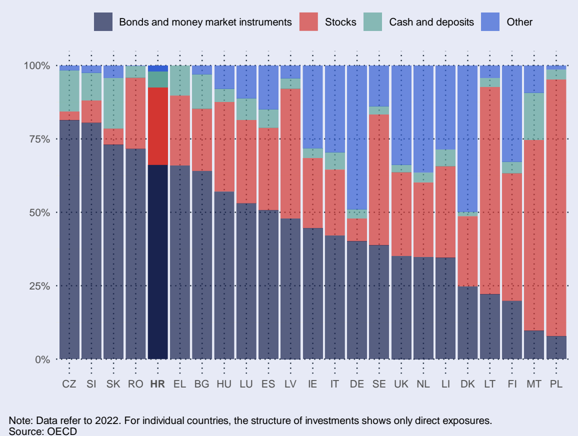
Note: Data refer to 2022.
Source: OECD

From the perspective of pension fund members, fees charged by pension plan providers also play a significant role in the participation and value of their assets. The nature of the fees depends on the characteristics of the plan, with management fees predominating, followed by contributions fees (Figure 4). The fees charged by domestic pension plan providers are among the smallest in the observed sample of EEA countries, and some of them have been repealed or additionally reduced by legal amendments that entered into force at

[32] OECD (2023), Pension Markets in Focus 2023, OECD Publishing, Paris, https://doi.org/10.1787/28970baf-en

the beginning of 2024. The amendments also provide for further gradual reduction in management fees charged by mandatory pension funds.[33]

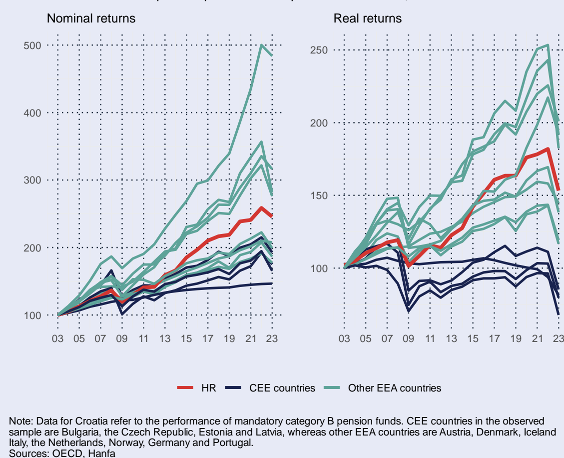
Figure 5 Pension scheme assets are mostly invested in bonds and stocks
Structure of investments of individual EEA countries' pension scheme assets, instrumenta, by type of instrument, in % of total assets



Note: Data refer to 2022. For individual countries, the structure of investments shows only direct exposures.
Source: OECD

Differences in the characteristics of pension systems, together with their different development stages, are also reflected in different investment strategies (Figure 5). The high exposure to bonds, especially to government bonds, reflects the predictability of interest income, primarily the perceived lower level of risk compared with other investment instruments, which introduces a long-term stabilisation element into investment portfolios. Another reason for the high share of government bonds may be the lack of alternative investment options in the country, which is particularly evident in systems where the size of the pension fund sector exceeds domestic capital market capacity. The stability of investment income is particularly important in the pay-out phase, where poor investment performance, such as in 2022, can lead to significant impairments of assets earmarked for future retirements. Investment performance of pension plan providers should be observed over a longer period of time as, given the nature of their business, they aim to achieve long-term profitability.

Figure 6 Domestic pension funds generate competitive returns
Performance indicators of pension plans for a sample of EEA countries, 31.12.2002 = 100



Note: Data for Croatia refer to the performance of mandatory category B pension funds. CEE countries in the observed sample are Bulgaria, the Czech Republic, Estonia and Latvia, whereas other EEA countries are Austria, Denmark, Iceland Italy, the Netherlands, Norway, Germany and Portugal.
Sources: OECD, Hanfa

Most EEA countries in the observed sample recorded positive cumulative returns above inflation over the past 20 years. Domestic pension funds made competitive and above-average returns, particularly when compared to CEE countries in the sample (Figure 6).

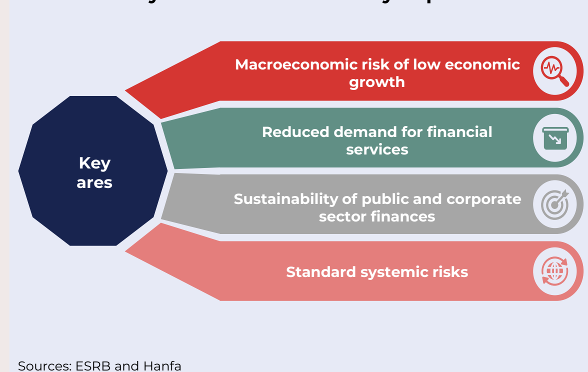
Long-term challenges to pension systems

One of the most important characteristics of pension systems is a very long horizon in which their performance in achieving the final objective, i.e. ensuring sufficient funds for insured persons in the retirement period, is observed. Accordingly, the systems face a number of long-term challenges that the ESRB (2020) classifies in two categories:

[33] For mandatory pension funds, the entry fee of 0.5% of the contributions paid was abolished and the fee for the management of mandatory pension funds was reduced from 0.27% annually to 0.25% annually in 2024; it will be further reduced gradually by 0.01% annually, to 0.20 % from 2029 onwards. As for voluntary pension funds, the exit fee, which is only paid in the case of a transfer of a personal account to another voluntary pension fund managed by another pension company, has been reduced from a maximum of 2.5% to a maximum of 1.75%.

demographic and macroeconomic. **Demographic challenges** relate to the higher proportion of the elderly population overall, a decrease in birth rates and an increase in life expectancy. On the other hand, **macroeconomic challenges** stem from the difficulties regarding the capacity of pension systems to achieve competitive returns amid low interest rates and/or weak economic growth. All EU pension systems face these challenges to some extent. According to the ESRB (2020), there are four key areas where pension system vulnerabilities may have implications for financial stability (Figure 7).

Figure 7 Areas where vulnerability of pension schemes may have financial stability implications



Sources: ESRB and Hanfa

Macroeconomic risk arises from the fact that smaller pensions may lead to lower consumption and investment and thus act as a disincentive to economic growth. **Reduced demand for financial services** implies that an increase in contributions or a decrease in pension payments (including even expectations of such changes) may affect household savings and consumption patterns, i.e. reduce demand for loans or other financial products and services. An increase in pension costs may also have an impact on the **sustainability of public and corporate sector finances**, i.e. it may lead to an increase in public debt and a deterioration in solvency of corporations with insufficiently funded pension plans. **Standard systemic risks** relate to the normal investment risks that may arise from risky management of pension plans. An example of such risk is a search for returns through investments in relatively riskier assets, which may result in higher volatility and potential losses.

Better protection of pensioners and the positive contribution of the pension system to overall financial stability[34] can be achieved through:

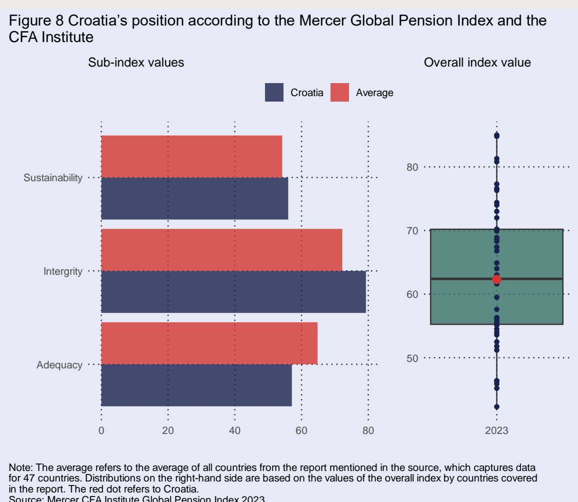
1. ongoing and detailed monitoring and assessment of the risks in the system and focused regulatory supervision;
2. encouraging greater participation in Pillar 2 and 3 schemes;
3. strengthening financial literacy, which is necessary to increase members' activity and raise awareness about the importance of their timely individual decisions;
4. increasing the transparency of pension systems to strengthen trust in the system by making it more stable in the long term.

While any comparison of pension systems is suboptimal and partially incorrect due to their intrinsic diversities, there are certain features of the system that positively contribute to its long-term sustainability and increase the likelihood of the system achieving its ultimate goal – a more dignified life in old age. In order to measure these features, Mercer has developed, in cooperation with the CFA Institute, a **Global Pension Index** (hereinafter: the general index), consisting of more than 50 indicators, on the basis of which the Croatian pension system was

[34] For more details on the actions recommended by the ESRB, see **link**.

assessed for the first time in 2023, together with other 46 pension systems (Figure 8).

Figure 8 Croatia's position according to the Mercer Global Pension Index and the CFA Institute



Note: The average refers to the average of all countries from the report mentioned in the source, which captures data for 47 countries. Distributions on the right-hand side are based on the values of the overall index by countries covered in the report. The red dot refers to Croatia.
Source: Mercer CFA Institute Global Pension Index 2023

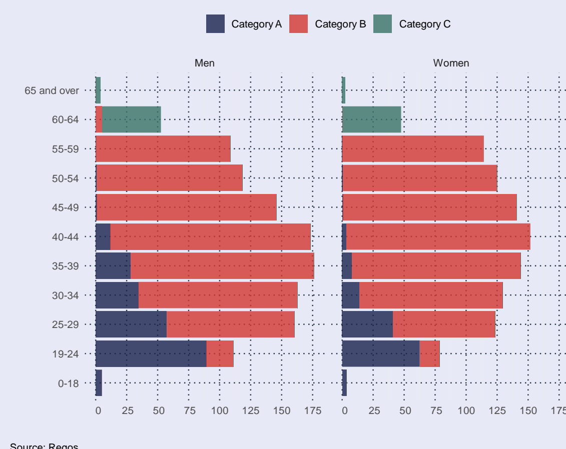
The rating is assigned based on the general index made up of three sub-indices: adequacy, sustainability and integrity[35]. Adequacy measures the capacity of the pension system to provide sufficient retirement benefits, sustainability reflects the long-term future viability of the pension system, while integrity includes many regulatory requirements that affect the overall management and operability of the pension system and thus the level of trust that beneficiaries have in the system. According to all three criteria, the Croatian pension system is close to the average of the countries under review.

Calibration instead of reform

Although 22 years have passed since its establishment, the Croatian pension system is only "half way to retirement" if observed as an average individual participating in the pension scheme and expecting retirement at the age of 65. This is also illustrated by the age structure of mandatory pension funds, with the majority of their members being in the 35 to 45 age group (Figure 9).

In the "first half" of its working life, the pension system successfully overcame a number of obstacles, including the 2008 global financial crisis, the European debt crisis in 2011 and the period of historically low interest rates that was interrupted by the outbreak of the COVID-19 crisis in 2019 and the subsequent inflation rise. During this period, pension funds achieved relatively competitive returns[36].

Figure 9 Age structure of mandatory pension funds' members
Number of members as at 30.6.2024, in thousands



Source: Regos

In the second half of its working life, the pension system faces a number of known long-term threats: the unfavourable demographic structure threatening the sustainability of schemes based on intergenerational solidarity, the growing risks associated with climate change, and the structural challenges of the European and domestic economies as reflected in reduced productivity indicators.

In view of the fact that the domestic pension system is still in the accumulation

[35] The adequacy sub-index has been assigned a 40% weight, the sustainability sub-index a 35% weight and the integrity sub-index a 25% weight.

[36] Annualised returns from the start of operation of the MPFs to June 2024 were 7.5% for Mirex A, 5.3% for Mirex B and 3.3% for Mirex C.

phase, with an increased emphasis on creating added value for its members, the recent legislative changes[37] paving the way for liberalisation of investment and greater options for members provide a greater opportunity for pension companies to address the currently known and many unknown challenges, while allowing members to better match their individual needs with optimal pension plans.

In order for these changes to bring the desired results, it is necessary to raise awareness of long-term risks and continue to improve financial literacy. Although there is no perfectly designed pension system capable of solving all the challenges, increasing the relevance and resilience of Pillar 2 and 3 schemes can help address some of the identified vulnerabilities if individual capitalised savings schemes are flexible enough in terms of both investment and users.

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[37] These were amendments to the Act on Mandatory Pension Funds (**Official Gazette, No 156/23**), the Act on Voluntary Pension Funds (**Official Gazette, No 156/23**) and the Act on Pension Insurance Companies (**Official Gazette, No 156/23**), of which some provisions entered into force on 1 January 2024, and some entered into force on 1 April 2024.

LIST OF ABBREVIATIONS

bn – billion

CBS – Croatian Bureau of Statistics

CEE – Central and Eastern Europe

CES – Croatian Employment Service

CISS – Composite Indicator of Systemic Stress

CNB – Croatian National Bank

CPII – Croatian Pension Insurance Institute

DB – defined benefits

DC – defined contribution

DG ECFIN – Directorate-General for Economic and Financial Affairs

EC – European Commission

ECB – European Central Bank

EEA – European Economic Area

ESRB – European Systemic Risk Board

EU – European Union

EUR – euro

Fed – Federal Reserve System

GDP – gross domestic product

Hanfa – Croatian Financial Services Supervisory Agency

HICP – Harmonised Index of Consumer Prices

m – million

MPF – mandatory pension fund

OECD – Organisation for Economic Co-operation and Development

p.p. – percentage point

PAYG – Pay As You Go

PF – pension funds

SCR – Solvency Capital Requirement

TILDA – stock liquidity market index

UCITS – undertakings for collective investment in transferable securities

USA – United States of America

USD – US dollar

VAT – value added tax

ZSE – Zagreb Stock Exchange

Country codes: AT – Austria; BE – Belgium; BG – Bulgaria; CY – Cyprus; CZ – Czech Republic; DE – Germany; EE – Estonia; EL – Greece; ES – Spain; FI – Finland; FR – France; HR – Croatia; HU – Hungary; IE – Ireland; IT – Italy; LT – Lithuania; LV – Latvia; MT – Malta; NL – Netherlands; PT – Portugal; PL – Poland; RO – Romania; USA – United States of America; SE – Sweden; SI – Slovenia; SK – Slovakia

HANFA