



# Financial Stability

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Number III, December 2023



# CONTENTS

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<b>1 Introduction.....</b>	<b>4</b>
<b>2 Macroeconomic environment .....</b>	<b>6</b>
<b>3 Financial markets .....</b>	<b>15</b>
<b>4 Pension funds .....</b>	<b>26</b>
<b>5 Investment funds.....</b>	<b>34</b>
<b>6 Insurance companies .....</b>	<b>41</b>
<b>7 Leasing companies.....</b>	<b>49</b>
<b>8 Other financial service providers .....</b>	<b>54</b>
<b>Box 1 Real estate investments: an alternative form of investment that significantly affects the stability of the financial services sector in Croatia? .....</b>	<b>59</b>
<b>Box 2 Financial services sector's exposure to climate risks .....</b>	<b>66</b>
<b>List of abbreviations.....</b>	<b>74</b>

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# 1 INTRODUCTION

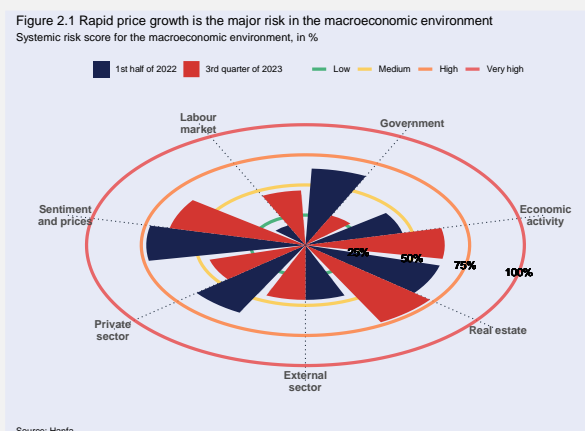
Along with the Croatian National Bank and the Ministry of Finance, the Croatian Financial Services Supervisory Agency (hereinafter: Hanfa) is responsible for the stability of the financial system in the Republic of Croatia; therefore, promoting and preserving financial stability, in accordance with the 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 or of 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 any of its parts, thus causing a serious negative impact on the real economy, represents a **systemic risk**.

Over the past few years, global progress has been made as regards the 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, an appropriate set of instruments and tools, i.e. policies aimed at ensuring the stability of the system as a whole, called **macroprudential policies** had to be developed. 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 intensifying, creating the need for a holistic approach, which views the system as an inseparable whole and which primarily involves monitoring and addressing vulnerabilities in a cross-sectoral, but also cross-border context.

Hanfa continuously supervises and monitors systemic risk exposure of the financial services sector and regularly publishes the conclusions of its process of identifying, analysing and assessing risk exposure in the publication **Macroprudential Risk Scanner**. While that publication focuses on horizontal exposures of the entire financial services sector to particular risks, such as market, interest rate or currency risk, the annual publication **Financial Stability** offers a detailed analysis of vertical developments and risks in individual segments of the financial services sector, that is, the industries of insurance, leasing, factoring, investment and pension funds, as well as financial markets, and provides an assessment of their exposure (and contribution) to systemic risks. Analysis and assessment of risks in each of these segments are viewed in the context of international and domestic macroeconomic, monetary and financial developments. The publication also contains an assessment of the overall exposure of the entire financial services sector to systemic risks, both those that are of short-term, i.e. cyclical nature, as well as long-term, structural risks. The publication also provides the results of stress testing of the financial services sector under highly unlikely but plausible macroeconomic and financial shocks. In this way, the publication **Financial Stability** provides a comprehensive and systematic insight into the risks to which the domestic financial services sector is exposed, analyses their nature and character in order to take timely and adequate macroprudential actions to prevent the materialisation of such risks and deterioration of the stability of the domestic financial system and to strengthen the system's resistance to shocks.

## 2 MACROECONOMIC ENVIRONMENT

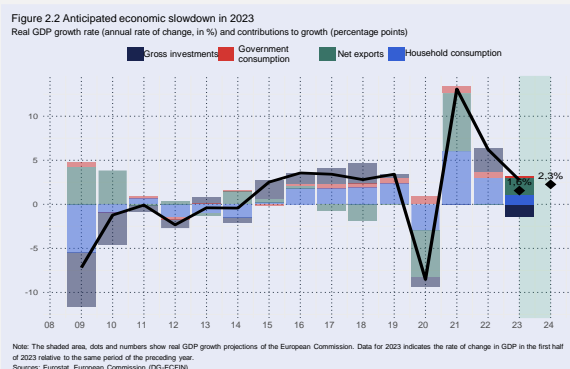


The assessed systemic risks arising from developments in the macroeconomic environment remained slightly elevated in 2022 and the first half of 2023 despite the growth of economic activity, mainly due to high inflation rates. Even though inflation is expected to moderate by the end of 2024, the projections are subject to significant downside risks, especially against the backdrop of a rather weak transmission of monetary policy in Croatia and the planned increase in budget expenditures in 2024.

### Growth continues, albeit at a slower pace

The short-term perception of economic recovery in the post-COVID-19 era was seriously undermined by the beginning of the war in Ukraine in early 2022.

However, the 2022 growth outturn exceeded projections<sup>1</sup> and domestic GDP grew by 6.3% in real terms from 2021. The largest contribution to growth came from personal consumption and gross investments, which increased by 5.1% and 5.8%, respectively, on an annual basis (Figure 2.2). The growth rate of economic activity fell by more than a half in the first half of 2023, with annual growth amounting to only 2.1% in the first half of the year. The modest growth in the first half of 2023 was driven by net exports and personal consumption, with a negative contribution from gross investments.



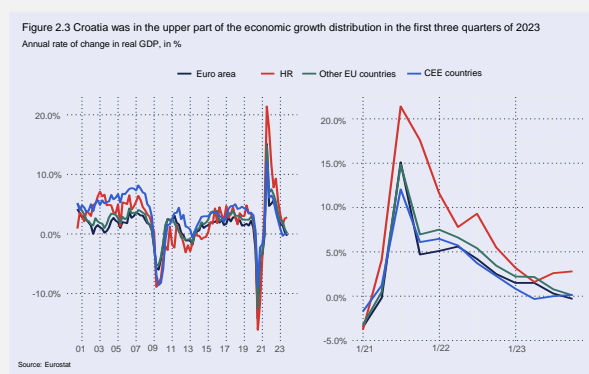
Although slow, the growth of the domestic economy was still more pronounced than in other European economies (Figure 2.3). Croatia's main trading partners recorded a drop or only a modest increase in economic activity in the second quarter<sup>2</sup>. Such negative trends did not curb foreign demand. Thus, the

<sup>1</sup> According to the European Commission's forecast of May 2022, the Croatian economy was projected to grow by 3.4% last year, while the autumn forecast of October 2021 projected a 5.6% growth.

<sup>2</sup> At end-June, the annual rates of change in quarterly GDP for Germany and Austria stood at -0.6% and -1.1%, respectively, while in Italy economic activity levelled off (0.1%).

successful tourist season<sup>3</sup> and personal domestic consumption supported economic growth in 2023.

In the current macroeconomic situation, the economic structure, which is predominantly focused on tourism and related activities, continues to support modest growth, at least in the short run. However, should the adverse recessionary trends in the neighbouring countries continue, dragging down foreign demand, this could inevitably weigh on economic activity. Recent economic projections suggest that Germany and Italy, Croatia's two most important trading partners, will record a modest or even negative economic growth this year and next year<sup>4</sup>.



Even though the economic slowdown would cushion inflationary pressures on the demand side, it would also cause a significant build-up of systemic risks. Recessionary periods are often accompanied by elevated volatility in financial markets and, in extreme cases, by a potential shortage of market liquidity. Against the backdrop of reduced debt servicing capacity of the real sector, this

<sup>3</sup> According to e-Visitor data, the number of arrivals and overnight stays in the first eight months of 2023 grew by 7.6% and 2.0%, respectively, from the same period in 2022.

<sup>4</sup> According to the European Commission's autumn projections, the domestic economy was expected to continue edging up in both 2023 and

might dampen demand for financial products and cause a spike in both credit risk and the costs of the financial sector. In such circumstances, the financial services sector would be exposed to sudden systemic shocks related to investor confidence.

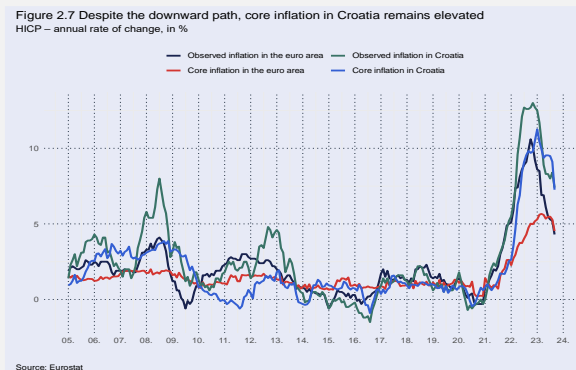
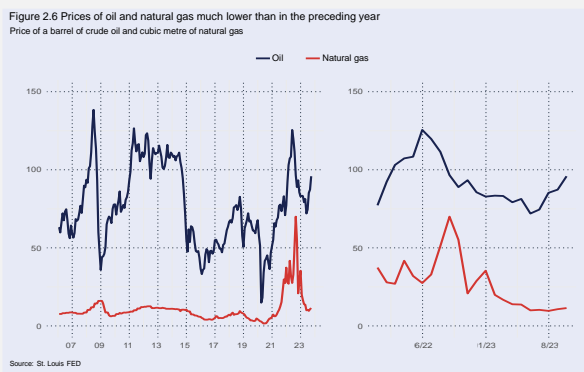
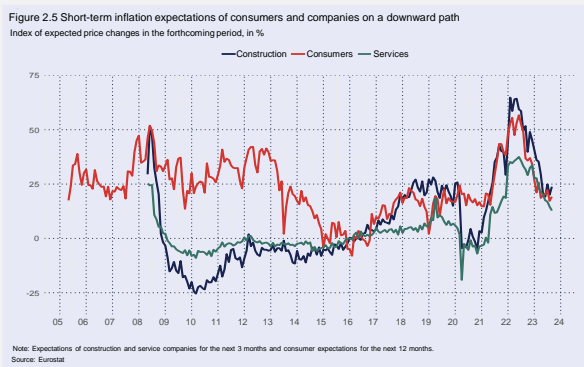
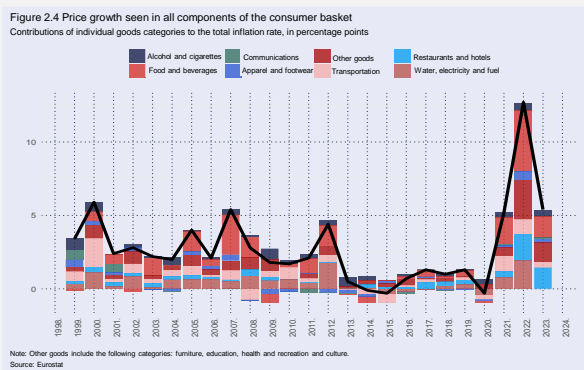
## The projected slowdown in inflation exposed to numerous risks

**The macroeconomic environment in 2022 was marked by high inflation rates that exceeded double-digit values in May 2022 (Figure 2.4). Price pressures persisted in the rest of the year and the inflation rate stood at 12.7% at end-December 2022. All components of the consumer basket added to this growth, with the largest contribution coming from food and energy (which grew by a high 18.8% and 15.3%, respectively, in 2022).**

The reasons behind price hikes last year were numerous, with pressures stemming from both the demand and the supply side. The rise in energy prices prompted by the reopening of economies and the increased demand in the post-pandemic period paired with the geopolitical shock caused by the war in Ukraine and the consequent imposition of sanctions against Russia were important drivers of the global surge in prices. In addition, the rise in global prices was also fuelled by supply chain disruptions, which

2024, by 2.6% and 2.53%, respectively. In the same period, much lower rates were projected for Germany and Italy, two of Croatia's major trading partners: economic activity in Germany was projected to fall by 0.34%, while Italian economy was expected to record only a modest growth of 0.78% in 2023.

gave an upward push to production costs, creating a gap between consumer and producer prices. Inflation was also driven up by increased inflationary expectations (Figure 2.5), especially in the second half of 2022.



All these factors led to strong monetary tightening by central banks. The FED raised its interest rates seven times last year, boosting its benchmark rates to a 4.25%-4.50% range at the end of last year, while the key ECB interest rate stood at 2.5% (Figure 3.2 in Chapter **3 Financial markets**).

Inflation slowdown in Croatia was only partly impacted by the restrictive monetary policy. It primarily influenced inflationary expectations, which improved considerably in 2023 (Figure 2.5), in the light of the fact that the transmission of monetary policy in Croatia to real developments is less intense than in other European countries, mainly due to ample liquidity of the domestic banking sector and the structure of banks' interest rates. Last year, as part of the preparations for the introduction of the euro and the harmonisation of the CNB's monetary policy instruments with those of the ECB, the CNB additionally increased the already high liquidity levels in the system by releasing reserve requirement funds and the minimum required foreign currency claims<sup>5</sup>. In such circumstances, the European monetary policy has had only a partial effect on the monetary situation and credit activity in Croatia.

<sup>5</sup> By cutting the reserve requirement rate to 1% and releasing the minimum required foreign

currency claims, the CNB released around EUR 10bn of additional liquidity to banks.

**Inflation remained elevated in the first half of 2023, standing at 8.4% at end-August 2023. The largest contribution to the slowdown in inflation came from the stabilisation of energy prices in global markets.**

In August 2023, crude oil prices fell by as much as 9.6% from the year before, when imports of gas coming from Russia diminished substantially. In late August 2023, these prices fell back to the levels last seen before the outbreak of the Russian-Ukrainian conflict (Figure 2.6). Natural gas prices closely followed this trend, being more than six times lower than in August of the previous year.

The slowdown in the inflation rate this year also partly stems from the waning of the base effect. The price dynamics, albeit slow, still reflects the broad-based growth in all components of the consumer basket. The largest contribution to growth in the first eight months of 2023 again came from food and beverages, the largest category in the consumer basket, with a share as large as 22%. The growth in food prices, which has been observed since July 2021, slowed down this year<sup>6</sup>.

With the aim of partially curbing inflationary pressures, in mid-August 2023 the Croatian government adopted [the fifth package of anti-inflation measures](#) worth EUR 464m, restricting the prices of 30 products until March 2024.

**Although inflation started to decline following the summer months, standing at 5.8% at end-October, service prices continued to trend up, as evident from the indicators of core inflation which stood at 6.5% at the end of October and exceeded the aggregate inflation rate.**

This points to the anchoring of inflationary expectations in Croatia, making it difficult to contain inflation in the short run (Figure 2.7). In contrast with Croatia, the indicators of core and headline inflation in the euro area held steady at end-November 2023.

According to the European Commission's autumn forecast, inflation rate in Croatia was projected to stand at 8.1% in 2023 and drop to 2.4% in 2024. The projections are exposed to negative risks and depend on a number of global factors, such as the trends in energy prices and further monetary tightening, but also on local conditions, such as the speed of the expected continued adjustment of domestic services prices to those in the euro area, and developments in budget expenditures that might spill over to personal consumption. Inflation developments will also largely depend on the trends in the domestic labour market, characterised by a structural shortage of labour, which puts strong pressures on wage growth and, indirectly, on price growth.

## **A stable labour market**

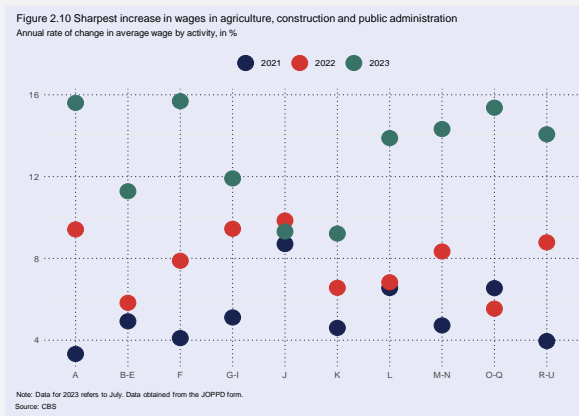
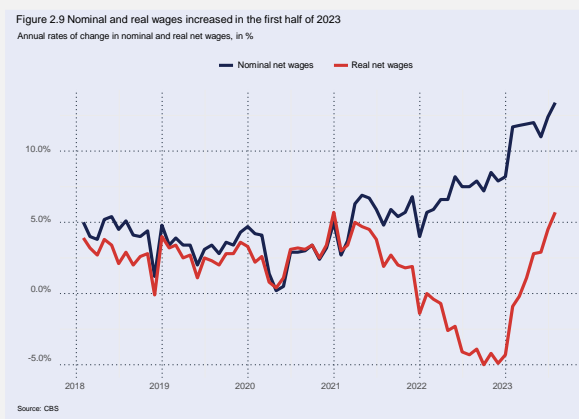
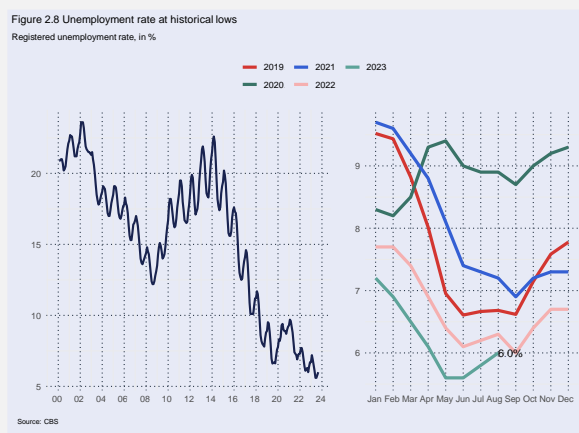
**In 2022, the labour market continued to be marked by a historically low unemployment rate. The unemployment rate stood at 6.7% at the end of 2022 and continued its downward trend in 2023 under the influence of usual seasonal fluctuations in the periods of intense tourism activities, dropping to 5.8% at the end of September (Figure 2.8).**

<sup>6</sup> At end-November, the prices of food and beverages rose by 7.9% on an annual basis.

The labour market is also characterised by persistently large labour shortages which could be cushioned in the upcoming period by the participation of a large number of foreign workers in the domestic market. According to the CES statistics, the number of job applications from foreign workers in Croatia almost doubled in 2022 from the year before, while it already exceeded the last year's levels in the first eight months of 2023<sup>7</sup>. Similar trends might continue in the coming years, with additional impetus potentially coming from the announced changes to the legislative framework, aiming to streamline and speed up the procedures for employing foreign workers and enable their longer and more permanent work in Croatia<sup>8</sup>. This should at least partially reduce pressures on the currently strong demand for labour. More specifically, according to the **OVI index**, which measures the number of online job advertisements, there is still a strong demand for labour, even though it has decreased somewhat due to economic slowdown.

**The described circumstances also impacted wages. Nominal wages rose sharply in 2022 (by 8.2% on an annual basis), continuing on an upward trend in the first nine months of 2023 (rising by 14.2%), while real wages grew at a somewhat slower pace due to inflation (up by 7.0% at end-September from the same period in 2022, Figure 2.9).** The new reform of the **Act on the Wages of Public and Civil Servants** and adjustments of

wages in the public sector, especially for employees with the lowest wages, should be introduced in early 2024.



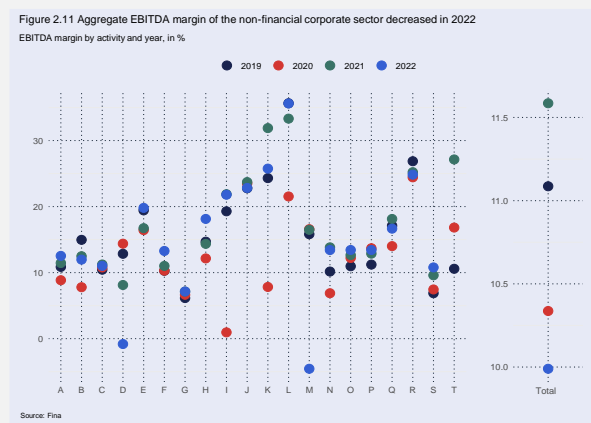
Wage developments could come under particular scrutiny in the upcoming period given their potential to fuel inflationary trends, especially in the

Interior, the validity of work permits should be extended from one to three years, while the validity of permits for seasonal employment in agriculture and tourism is to be prolonged from six to nine months.

<sup>7</sup> A total of 66,957 applications were received in 2021, followed by 129,339 applications in 2022 and 132,816 applications in the first eight months of 2023.

<sup>8</sup> More specifically, according to the announcements made by the Ministry of the

present conditions of diverging monetary and fiscal policies and not very effective monetary tightening in Croatia. Sharp wage increases might further hamper the stabilisation of inflation and its return to the medium-term target, especially in the absence of a decrease in profit margins of non-financial corporations which would absorb a part of wage cost pressures. According to data provided by FINA, the aggregate EBITDA margin of the non-financial corporate sector dropped by 1.6 pp in 2022 and stood at 10%. However, a detailed analysis by activity revealed that this indicator grew in almost half of the observed activities from 2021 to 2022 (Figure 2.11).

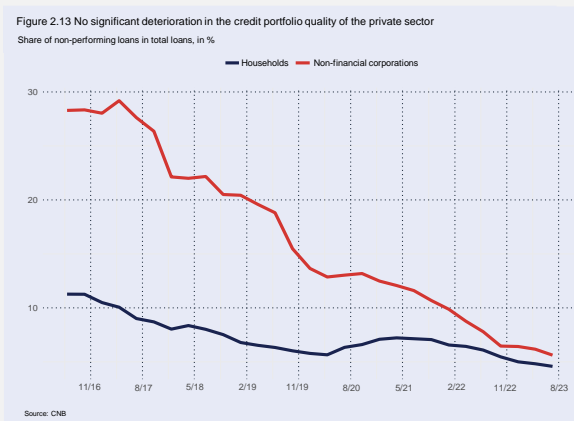
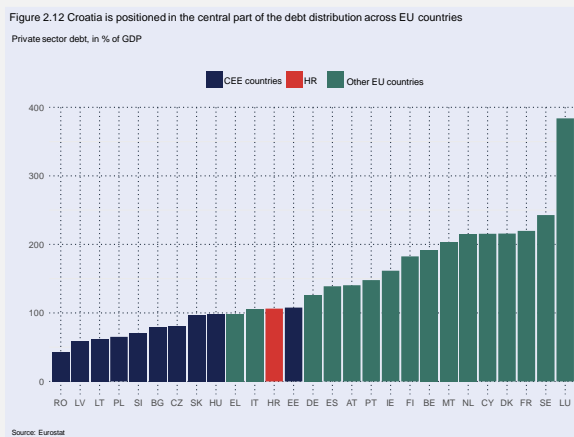


**The relative indicators of private sector indebtedness continued to improve in 2022, fuelled by sharp nominal GDP growth. However, debt of households and non-financial corporations increased in absolute terms (by 5.2% and 6.3%, respectively on an annual basis). The first half of 2023 saw a steady increase in absolute debt indicators and a decrease in relative debt indicators<sup>9</sup>, while Croatia remained at the central**

<sup>9</sup> Household debt increased by 6.0%, while debt of non-financial corporations went up by 7.4% in the first half of the year.

<sup>10</sup> Interest rates on new housing loans to households stood at 3.6% at end-October 2023, up by 1.3 pp from the levels recorded in June

**part of the debt distribution across EU countries (Figure 2.12).**



The increase in the interest rates on new debt, which puts a strain on the repayment of newly-granted loans<sup>10</sup>, was nevertheless considerably slower than in other EU countries. The effect of the ECB's monetary policy tightening has not been fully transmitted to domestic interest rates owing to the exceptionally high liquidity of the domestic banking system, which was further increased in early 2023 owing to the cut in the reserve requirement rate to 1%, as well as a large portion of loans granted at a fixed interest rate (with variable interest rates being predominantly linked to the national

2022. Interest rates on new loans to corporates exceeding EUR 1m rose by 3.6 pp in the same period, standing at 5.2% at the end of October 2023.

reference rate) and the legal restriction on the maximum permitted interest rate.

Owing to a limited increase in interest rates, stable labour market conditions and better debt performance due to increased hedging against interest rate risk<sup>11</sup>, private sector credit risk remained at low levels. The number of insolvent corporations declined further in the past twelve months<sup>12</sup>, while the share of non-performing loans of households and non-financial corporations dropped to a historical low (Figure 2.13). Therefore, having regard to the anticipated monetary developments in 2024 and the nature of the domestic financial sector, there should be no substantial materialisation of interest-rate and credit risks in the non-financial sector in the coming period. However, some private sector categories that are already endangered given their high levels of indebtedness<sup>13</sup>, which might become unsustainable even in the case of small changes in the cost of debt and/or source of income, might be faced with difficulties in debt servicing. Even though the level of indebtedness of the domestic real sector has been moderate and marked by a favourable interest-rate structure, with mostly fixed or partially fixed interest rates, the increase in credit risk would give rise to systemic risks in the banking system and, indirectly, in the non-banking sector over the medium term by way of

weaker demand for financial products and services.

## Public finances face new challenges

**The continued economic growth paired with strong inflationary pressures have had a positive short-term effect on the revenue side of the budget, leading to the improvement in relative fiscal indicators in 2022.** Although public debt rose by 1% in 2022 in absolute terms, it decreased by as much as 10 pp in terms of nominal GDP, amounting to 68.4% of GDP at the end of 2022. Public debt increased by a further 3.4% in the first half of 2023 from end-2022. However, according to the European Commission's autumn forecast, this indicator is expected to continue its downward trend in relative terms in the remaining part of 2023 and the next year, coming close to the Maastricht criterion of 60% of GDP by the end of 2024 (Figure 2.14). Public debt convergence according to the Maastricht criteria is important in the light of the publication of the European Commission's [Fiscal policy guidance for 2024](#) in early 2023, which emphasized the importance of promoting debt sustainability, as well as sustainable and inclusive growth. The guidance foresees the deactivation, at the end of 2023, of the general escape clause of the Stability and Growth Pact, which allows for a temporary deviation from the normal budgetary requirements in a situation of a

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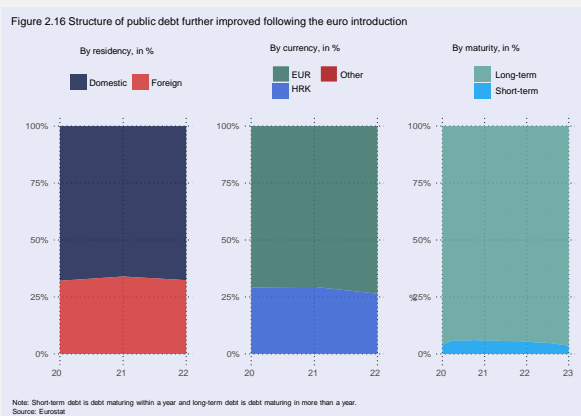
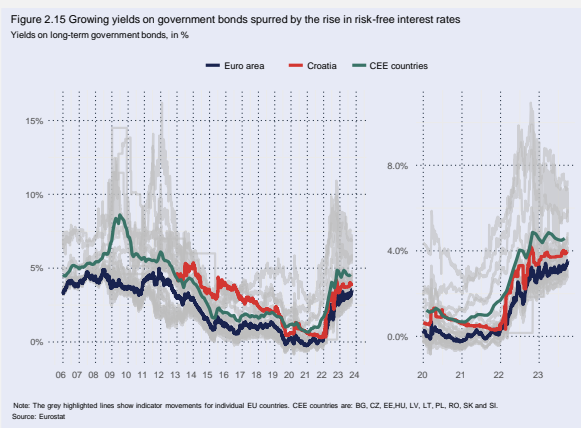
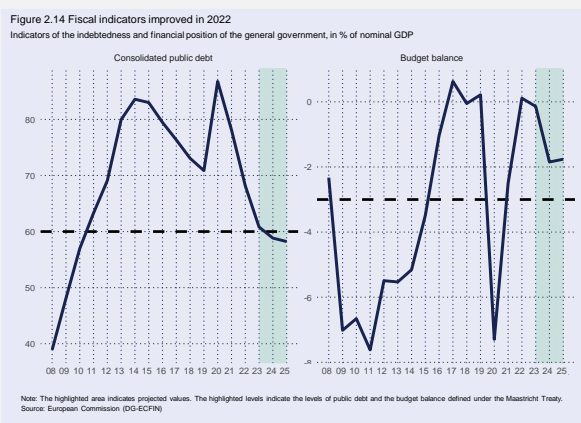
<sup>11</sup> A large share of households and non-financial corporations has been, at least temporarily, shielded from a substantial increase in the interest-rate burden on their outstanding debt since a little less than two-thirds of loans have been granted with longer periods in which interest rates are fixed.

<sup>12</sup> According to data provided by FINA, there were 13,659 insolvent corporations at end-August 2023, down 4% from the number recorded in August 2022.

<sup>13</sup> According to the CNB data, the share of the riskiest loans, that is, loans with a DSTI ratio exceeding 40% and an LTV ratio exceeding 90%, stood at 18% at the end of 2022.

severe economic downturn. After moving out of the period during which the general escape clause was in force, quantified and differentiated country-specific recommendations on fiscal policy will be reintroduced, while room for expansive fiscal policy will be substantially reduced.

**marked by a surplus of 0.4% of GDP. However, this indicator deteriorated slightly by the end of the first half of 2023 and stood at -0.4% of GDP.** The improvement in the fiscal balance in 2022 was largely due to an increase in VAT revenues, the main channel for replenishing the budget, which rose by 16.0% on an annual basis.



**In addition to public debt, the budget balance also improved in relative terms in 2022. Following a deficit for two consecutive years, the year 2022 was**

**The movements in yields on domestic government bonds were similar to yield trends recorded in other euro area countries. Spurred by the rise in ECB benchmark interest rates, yields on domestic bonds went up by 3 pp in 2022 and by a further 0.5 pp in the first eight months of 2023 (Figure 2.15).** Despite the ECB's monetary policy tightening and the rise in risk-free interest rates, Croatia's risk premium remained relatively low compared with CEE countries. This reflects the upgrading of Croatia's credit rating to investment grade by leading credit rating agencies in July 2022, against the backdrop of the successful introduction of the euro. In the forthcoming period, the differentiation in risk premia across countries will be particularly important, which will be significantly affected by the stability of fiscal indicators. This is important for Croatia as most of its short-term debt has been issued at much lower interest rates than the ones that currently apply, so that the refinancing of maturing bonds will have a disproportionately stronger impact on euro area countries with pronounced structural vulnerabilities which are perceived as more risky. A favourable maturity and geographical structure of public debt is extremely important in these circumstances, which did not change significantly last year (Figure

2.16)<sup>14</sup>. The currency structure of public debt was improved by the introduction of the euro in early 2023, so that other currencies (except the euro and the kuna) accounted for less than 1% of total debt at the end of 2022.

A significant step forward in the diversification of types of investors in government bonds and the implicit further improvement in the debt structure were seen in March 2023, when the government issued its first "national bond" with a coupon of 3.65%, in which more than 43 thousand citizens invested more than EUR 1.3bn. The end of 2023 saw the issuance of the first ever "national" treasury bills. The issue envisaged two rounds of subscription, with the first

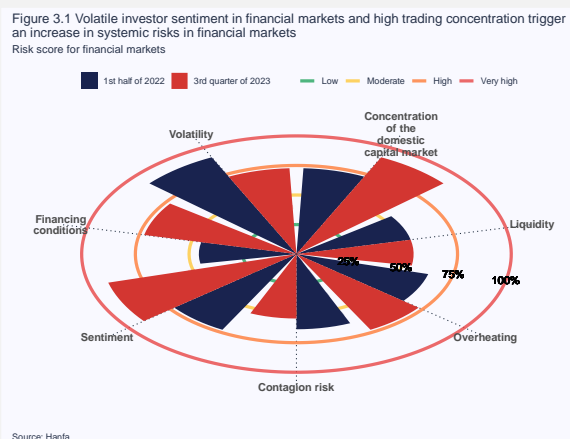
round intended for retail investors. A total of 37,229 citizen registrations were received for the subscription of treasury bills in the first round of subscription, of which 36,643 subscriptions were made, worth a total of EUR 1bn.

Despite relatively stable fiscal indicators and the maintenance of the risk premium at moderate levels, the negative risks prevail in the short run due to macroeconomic and geopolitical uncertainty, as well as the announced rise in fiscal expenditures in the coming year, which might trigger a rise in the risk premium, and indirectly also an increase in the yields on long-term bonds in the case of shocks and disturbances in financial markets.

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<sup>14</sup> Most debt is long term (96.4% at end-March 2023) and domestic (68% at end-2022).

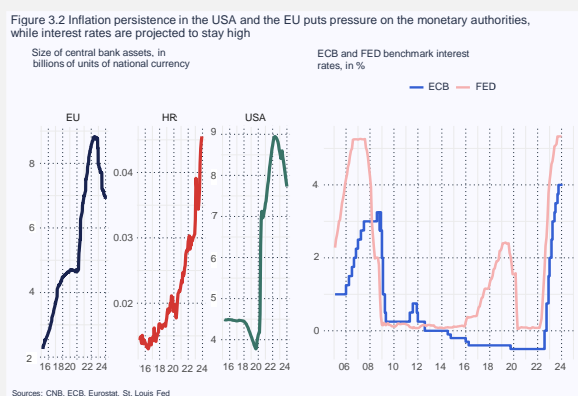
### 3 FINANCIAL MARKETS



The uncertainty stemming from monetary tightening, heightened geopolitical tensions and recessionary signals persisted into 2023. Nevertheless, financial markets recorded a sharp rise in the prices of almost all financial asset classes. The expected end of the upward interest rate cycle, the slowdown in inflation and the fact that global economy has so far managed to successfully avoid recession have fuelled global investor optimism. The delayed impact of high interest rates on macroeconomic indicators might reinforce a more pronounced slowdown in highly indebted economies over the coming period, with a potential to cause a sudden deterioration of investment sentiment. Elevated geopolitical risks decrease the probability of a "soft landing" which, paired with the subdued risk premium, exposes the global financial markets to downside risks in the short term.

### Monetary environment and financing conditions

The easing of supply-side inflationary pressures coupled with a growing fear of recession cushioned a more aggressive spike in benchmark interest rates in the first half of 2023. The remainder of the year was marked by a more cautious attitude of central banks which resulted in interest rates being kept at high levels. Considering the cumulative effects of monetary tightening and macroeconomic trends, monetary policy measures might be relaxed in the coming period, assuming a further decline in inflation.



Mounting inflationary pressures in an uncertain geopolitical environment triggered a cycle of interest rate increases by the FED in 2022, ending the long era of cheap money. The same monetary policy stance was maintained in the first half of 2023. However, signs of instability in the banking market and the gradual decline in inflation held back the intensity of the hike in interest rates, which ranged from

5.25% to 5.50% at the end of 2023 (Figure 3.2). In addition to monetary tightening<sup>15</sup>, in June 2022 the Federal Open Market Committee launched the process of asset contraction by way of quantitative tightening, that is, by ceasing to reinvest maturing principals in the bond market<sup>16</sup>.

The later start of the ECB's monetary tightening relative to the FED resulted in a relatively faster dynamics of interest rate increases in the second half of 2022. Key interest rates were raised by 450 basis points from July 2022 to September 2023, reflecting the ECB's commitment to meeting its 2% inflation target. The gradual easing of inflationary pressures resulting from the fall in energy prices reduced the intensity of interest rate hikes in mid-2023, with the interest rate on the main refinancing operations standing at 4.50% at the end of 2023.

A decade of the ECB's expansionary policy<sup>17</sup> through various asset purchase programmes created significant liquidity surpluses in the financial system, hampering the transmission of higher interest rates to the economy. Consequently, the ECB's Governing Council proceeded with balance sheet normalisation from March to June 2023 by reducing the portfolio of securities purchased under the Asset Purchase Programme (APP) by EUR 15bn per month. The decline in the APP portfolio and the repayments under the TLTRO (Targeted Longer-Term Refinancing

Operations)<sup>18</sup> resulted in a 19.2% decline in the ECB's assets from the peak levels reached in June 2022, with the ECB's portfolio likely continuing to decrease at a similar pace in the near term.

In addition to fostering price stability, as part of its dual mandate the FED is focused on preserving economic activity, also by ushering in the so-called "soft landing", aiming to reduce the inflation rate without causing a recession. This opened the possibility of tolerating inflation rates above the 2% inflation target in order to preserve employment, as evidenced by the decision to halt the rise in interest rates at the last meeting in December<sup>19</sup>. On the other hand, in the second half of 2023, the ECB's leadership highlighted that the primary goal was to maintain price stability in the euro area, indicating that interest rates are to remain high should inflationary pressures continue. The observed market developments suggest that interest rates on both sides of the Atlantic are generally expected to decrease over the medium term, albeit the dynamics of monetary easing remain uncertain.

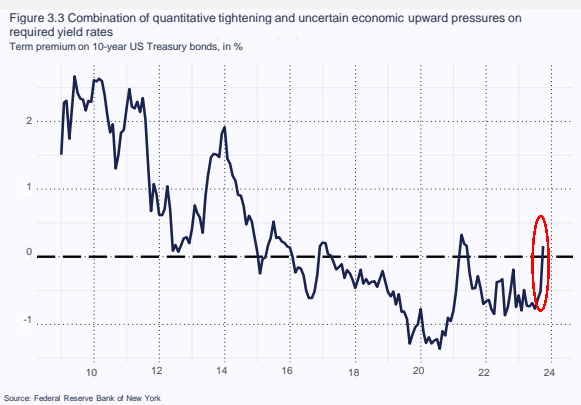
<sup>15</sup> From the beginning of 2022 to July 2023, the FED raised its benchmark interest rates 11 consecutive times, bringing their range to the highest level in 22 years.

<sup>16</sup> The FED's assets peaked at USD 8.9tn in April 2022 and then decreased by USD 0.9tn in the following period.

<sup>17</sup> In the course of 2022, the ECB's assets peaked at almost EUR 9tn or 70% of euro area GDP.

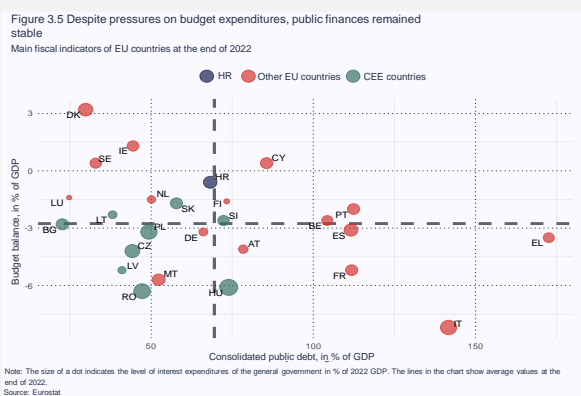
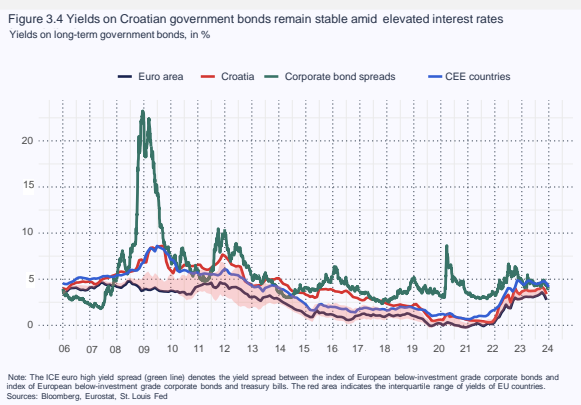
<sup>18</sup> The targeted longer-term refinancing operations (TLTROs) are long-term loans at low interest rates available to banks that meet certain criteria. The objective of this instrument was to increase credit volumes to non-financial corporations and households, thus supporting the transmission mechanism.

<sup>19</sup> The US annual inflation rate stood at 3.7% in August.



**developments and demand for riskier asset classes leave room for sudden and substantial yield corrections.**

Investor expectations regarding the shift from a restrictive towards an expansionary monetary policy had an impact on the movement of the average yield on euro area bonds, which fell by 16 basis points from the beginning of 2023, ending the year at 2.76%. Volatility in the European bond market was mitigated by the introduction of a new Transmission Protection Instrument, which, using a targeted approach to channelling funds, seeks to tackle the challenges of the impaired transmission of the ECB's monetary policy<sup>20</sup>. Even though yields were relatively stable in 2023, there is still a large potential for their substantial increase, given the rise in the term premium on the ten-year US bonds<sup>21</sup>, which turned positive for the first time after two years (standing at 0.16% at end-September, Figure 3.3). The recent shift in monetary policy and the end of quantitative easing give rise to the possibility of a stronger-than-expected deterioration in financing conditions through a likely increase in term premium in the forthcoming period.

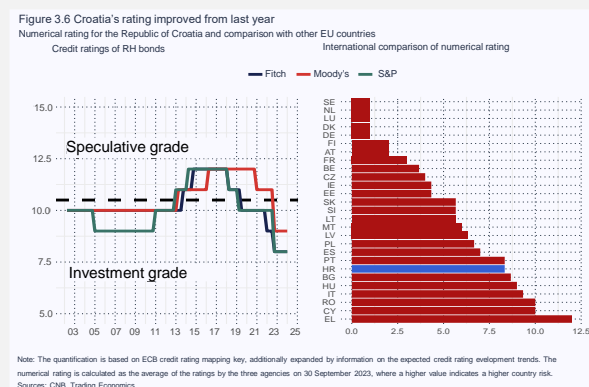


**Despite monetary tightening, rising geopolitical risks and the consequent slowdown of the global economy, yields on long-term government bonds grew at a slower pace in 2023 than in the year before due to market expectations about the beginning of the monetary relaxation cycle. However, uncertain economic**

<sup>20</sup> The Transmission Protection Instrument is a measure aimed at intervening in the market for government bonds whose yields do not reflect macroeconomic fundamentals in an adequate

manner, but are instead the result of disorderly market developments.

<sup>21</sup> Term premium means additional yield that investors demand for assuming the risk of interest rate changes in the long term.



Yields on government bonds of the Republic of Croatia reflect stable fiscal fundamentals and the benefits of joining the euro area, given that at end-2023 they were 78 basis points below the yields of riskier CEE countries (Figure 3.4) (more information in Chapter [2 Macroeconomic environment](#)). The risk premium on government bonds was mostly subdued in 2023, partly as a result of the favourable debt structure in terms of the low shares of short-term debt, foreign investors and foreign currency debt, as well as the confirmation of investment rating with a stable outlook by Fitch and Moody's in mid-2023 (Figure 3.6). Although this improved Croatia's rating relative to other EU countries, it still remained in the lower part of the yield distribution across EU countries, which makes yields vulnerable to sudden market shocks. By issuing national bonds in March and treasury bills in November 2023, additional steps were made in the development of the domestic bond market and the public financing strategy. In view of the relatively high demand of domestic retail investors for government bond issues, the large amount of accumulated savings in banks and the still relatively low yields on bank savings, public expenditures will likely continue to be partly financed through local market borrowing directly from retail investors in the forthcoming period.

## Investor sentiment

**Volatility in global financial markets declined in 2023 on the back of clear intentions of central banks to contain inflation and the normalisation of inflationary pressures (Figure 3.7), albeit with occasional leaps caused by various financial and geopolitical shocks. The recent escalation of the conflict in the Middle East caused renewed uncertainty on the global level.**

Central banks' monetary policy guidance and declining inflation rates helped to reduce global uncertainty in 2023 relative to the previous period. However, the episode of increased volatility of British bonds in late 2022, the global banking turmoil in March 2023 and the economic slowdown in the leading EU economies kept market uncertainty at a relatively high level, particularly in Europe. The uncertainty index for the Republic of Croatia decreased considerably in the first nine months of 2023, which is largely attributable to joining the euro area, the slowdown in inflation and the maintenance of solid macroeconomic fundamentals. The emergence of the new conflict in the Middle East in October created room for the materialisation of new shocks and more volatile market trends, which might have a negative impact on market expectations, especially in the segment of energy prices and supply.

Figure 3.7 Clearer central banks' guidance to contain inflation and normalisation of supply chains helped to reduce economic uncertainty in 2023

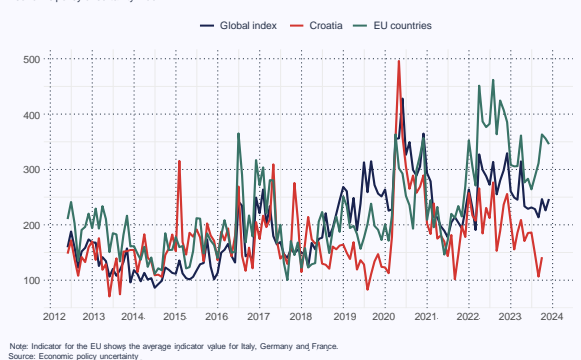


Figure 3.8 Investor sentiment soared in the context of an expected soft landing

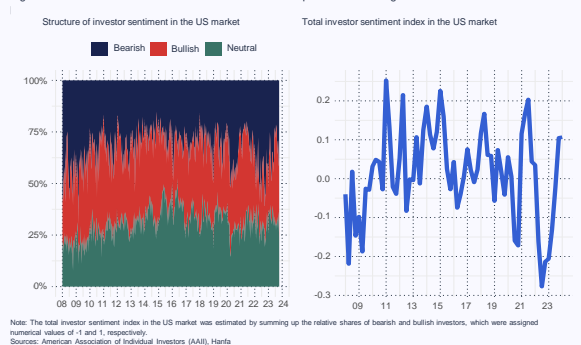
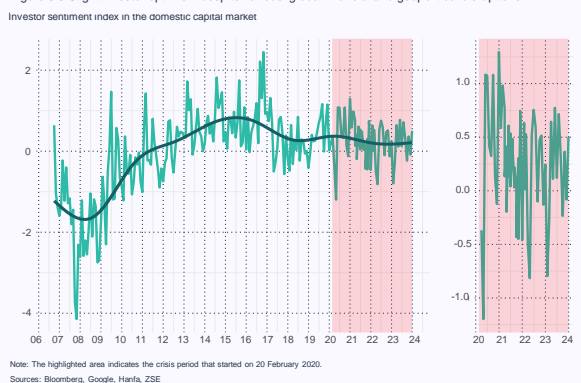


Figure 3.9 Slight investor optimism despite various global financial and geopolitical disruptions



**After the negative sentiment peaked in the first half of 2022, investor sentiment indices mostly reflected relatively optimistic expectations in 2023, despite some crisis episodes. The successive pauses in interest rate growth at the end of the year gave rise to market expectations of the approaching monetary policy easing and consequently a more positive market sentiment.**

Following a decline in energy prices in late 2022, encouraging developments continued into the first half of 2023, which

was marked by the end of zero-COVID policy in China, larger-than expected corporate profits in the USA, AI-related market euphoria and a larger probability of a "soft landing" of the US economy in view of declining inflation rates and moderate economic growth. The US investor sentiment index rebounded sharply from 2022, suggesting a potential underestimation of risk by investors amid persistently high systemic risks and elevated uncertainty. Market sentiment continued to improve in the second half of the year. However, the postponement of monetary easing by the FED might weigh on corporate earnings and put a strain on new project financing, which could lead to a more cautious investor attitude.

Domestic investor sentiment followed a similar trend (Figure 3.9). The macroeconomic indicators of the domestic economy have shown relative resilience compared to peer European countries. In addition to joining the euro area and Schengen, a successful tourist season and the relatively unchanged corporate profit margins, this was a prominent driver of sentiment growth in 2023.

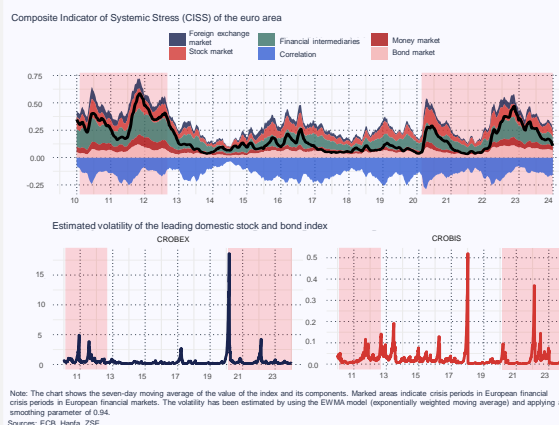
Future sentiment trends will depend not only on corporate capacities to maintain profits and indebtedness at stable levels, but also on the scale of geopolitical conflicts which might trigger the recurrence of supply chain bottlenecks and slow down the return of inflation to its target levels. Such a scenario might intensify investor pessimism and lead to more substantial valuation corrections in the financial markets in the short run, affecting also the stability of the financial services sector.

## Valuations and volatility in financial markets

**The systemic stress in financial markets abated in 2023 as the market participants adjusted to the uncertain economic and political environment and the restrictive monetary policy. However, it still remained elevated in relative terms (Figure 3.12).** Following a

very uncertain 2022, financial markets remained exposed to a number of shocks in 2023, which caused systemic stress to remain at a relatively high level. These shocks relate to the failure of three US regional banks after the rise in benchmark interest rates caused a downturn in their bond portfolio, provoking panic among depositors. A swift response by regulators prevented further instability. However, this crisis episode highlighted the exposure of financial institutions to significant losses in case of liquidity needs. Before the final agreement on the US debt ceiling, additional stress was caused by the speculation about the US defaulting on its debt, which caused turmoil among investors exposed to US bonds. In addition, the Japanese central bank was prompted to respond to the rise in the inflation rate in Japan. However, the announced loosening in the control of the ten-year bond yield curve means that Japanese investors might shift their investments towards domestic bonds.

Figure 3.10 Investors' adaptation to the uncertain environment reflected in reduced systemic stress in 2023



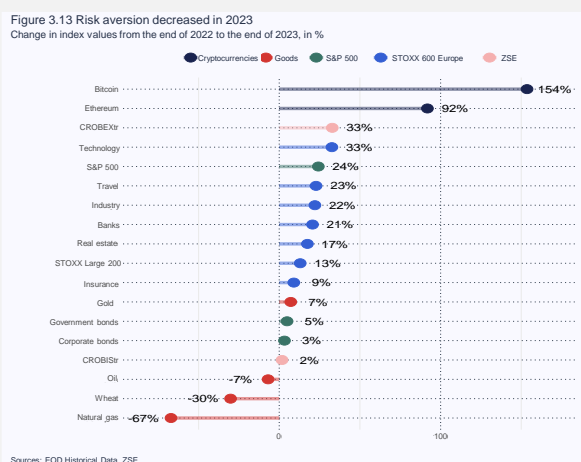
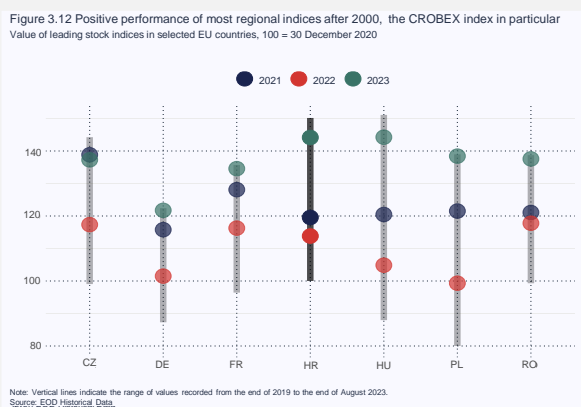
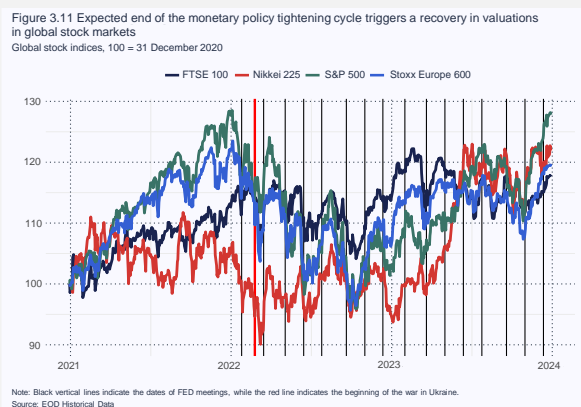
**Following the sharp fall in financial market prices in 2022, the gradual slowdown in inflation rates on both sides of the Atlantic and the avoidance of a sharp economic contraction paved the way for more optimistic investor expectations, which was reflected in the recovery of prices in 2023 (Figure 3.11).**

A noticeable slowdown in leading economies in late 2022 triggered by uncertainty and elevated systemic risks resulted in price corrections in most stock markets<sup>22</sup>. After an escalation of energy crisis in Europe and a large-scale recession have been avoided, stock market valuations started picking up in early 2023. The initial upswing in optimism was briefly interrupted by the turmoil in the US and Swiss banking markets. However, the rapid response by regulators and sufficient banking system capitalisation helped to preserve investor confidence and created room for further growth in value. In the first half of 2023, optimism was reinforced by resilient consumption, the robust labour market and the end of China's zero-COVID policy, which enabled firms to preserve their

<sup>22</sup> At end-2022, S&P 500 and Stoxx Europe 600 indices dropped by 19.4% and 12.9%, respectively, on an annual basis.

profit margins. The market consensus on the peak of the interest rate cycle and expectations regarding their imminent decrease further contributed to the recovery of market values in late 2023. The mentioned developments are reflected in the growth of S&P 500 and the European Stoxx 600 indices, which rose by 24.3% and 12.6%, respectively, by the end of 2023.

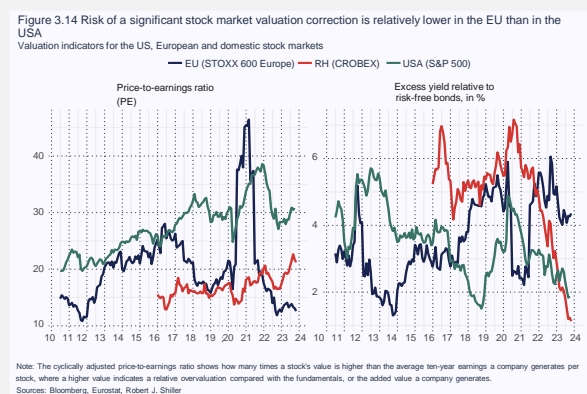
such as cryptocurrencies, with the most prominent cryptocurrencies such as Bitcoin recording a growth of 154%. Imbalances in the banking sector did not jeopardise the prices in capital markets, with the value increasing by 21% from the beginning of the year, which implies investor confidence in bank stability and resilience and the further growth in profit margins amid high interest rates. Similar returns have been recorded in the technology sector, driven by the rapid progress in the development of artificial intelligence and the expectations of a positive impact on the business environment. The industry sector was also among the classes which generated solid returns, especially due to the decrease in input prices induced by the gradual normalisation of supply chains. On the other hand, the successful diversification of natural gas sources and the slowdown in global demand contributed to the price fall in commodity markets, with the largest decrease of 67% recorded in the natural gas market. Following the weaker performance in the first half of the year, on the back of the expected fall in interest rates, bonds made up for negative performance at the end of the year and generated solid returns, which particularly holds true for government



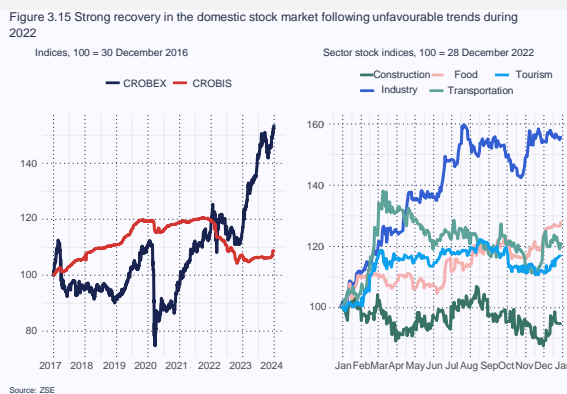
Abating risk aversion is evident in the higher value of speculative asset classes

bonds<sup>23</sup>, recording an annual growth in value of 5%.

Having peaked in late 2021, the valuations of US stocks against fundamentals decreased due to the higher-than-anticipated rise in the profits of US firms in the first three quarters<sup>24</sup>, but they still remained at very high levels (Figure 3.14). On the other hand, the European stock market has recorded a moderate increase in valuations since the beginning of 2023 thanks to the recovery in investment optimism spurred by strong corporate business indicators. In addition to signs of recession in the European economy, the absence of any significant growth in European valuations is also associated with a slowdown in the Chinese economy<sup>25</sup>, which is an important export market for European countries. This kept the overall level of valuation of European stocks in the moderate territory, with the price-to-earnings ratio of 12.6.



<sup>23</sup> The developments in the value of government bonds were approximated by the S&P Global Developed Sovereign Bond Index, which tracks the performance of bonds issued by developed countries. The index includes bonds of different maturities issued in the domestic currency and in the domestic market.



**Higher valuations in international financial markets also impacted the domestic stock market, which saw a record high growth in 2023 (Figure 3.15).** Following the valuation correction in 2022, domestic stock indices recorded a sharp growth both historically and on the regional level, with CROBEX reaching 2530 points at end-2023, its highest value in the last 10 years. In 2023, CROBEX grew by 28%, fully compensating for the decrease of 4.8% last year, mirroring domestic investor optimism spurred by solid business performance in all of its components in the course of the year. In addition to positive business results, the growth in domestic stock valuations was also underpinned by the announced dividend payouts in some companies and the robust investor demand for the most liquid stocks. CROBIS did not change substantially in 2023 (-0.06%). The main reasons for the absence of recovery included interest rate rises and the decreased value of the previously issued long-term bonds, offering coupon returns which are increasingly less competitive.

<sup>24</sup> The share of the S&P 500 index components whose profit growth exceeded expectations stood at 82% in the third quarter.

<sup>25</sup> China recorded a 0.3% deflation in December 2023, which was the third consecutive month of decline in the general price level.

Since the beginning of 2023, all sector indices in the domestic capital market recovered. The only exception was the construction index given the slowdown in construction activity in mid-year under the influence of restrictive factors such as the lack of skilled labour, high construction costs and deterioration in financing conditions. The most significant increase of 56.1% was recorded in the industry sector owing to the growth in revenues and newly contracted business deals, followed by food (28.2%), transport (21.4%) and tourism (16.7%). This was due to a rebound in demand for shipping services, announcements of dividend payouts and increased investor demand in the food sector, as well as optimistic expectations regarding the tourist season.

Despite the increased investor activity in the domestic market, the rise in value exposes investors to sudden price corrections in case of emergence of new internal and external shocks. This also holds true for institutional investors who predominantly invest in stocks. In addition, the rise in price-to-earnings ratios and the increase in the risk-free interest rate led to a further fall in returns on stock investments and a decline in their relative attractiveness. However, although the level of overvaluation of the domestic market is higher than the EU average, it remains within a normal range<sup>26</sup>, which reduces the risk of a more substantial price correction (Figure 3.14).

<sup>26</sup> Under normal circumstances, a high level or overvaluation means a ratio of 25 or more, while a low level or undervaluation means a ratio of 15 or less.

<sup>27</sup> Natural persons invested a total of EUR 2.3bn in government bonds and treasury bills.

## Market liquidity and concentration

**The leap in optimism and valuations in the domestic market was accompanied by a significant increase in regular turnover, which reached EUR 323.4m in 2023, up by 27% from the year before (Figure 3.16).**

Stocks were the most traded class of financial assets with a share of 82.9%, while the share of traded bonds stood at 12.1%, up by 5.6 percentage points from the previous year. The increase in the benchmark interest rates and the absence of similar developments in the domestic deposit market gave a boost to investor demand for financial assets with a fixed maturity and bearing lower risk. Hence, there was solid interest for national bonds and treasury bills issued in March and November 2023, respectively<sup>27</sup>. In addition, growing interest in similar financial instruments is mirrored in the larger number and size of funds with a fixed maturity and in the return of money market funds to the domestic market (more information in Chapter [5 Investment funds](#)). Even though ETFs accounted for only 5% of regular turnover, their share grew by 1 percentage point at end-2023 from the year before, mostly due to the listing of a new ETF on the ZSE<sup>28</sup>, providing additional source of liquidity.

<sup>28</sup> The third equity ETF, which tracks the movements of the Romanian BET-TR index, and the first money market ETF, which replicates the developments in the euro area money market, were listed on the ZSE in 2023.

Figure 3.16 More dynamic trends in the domestic capital market in terms of rising turnover and market capitalisation

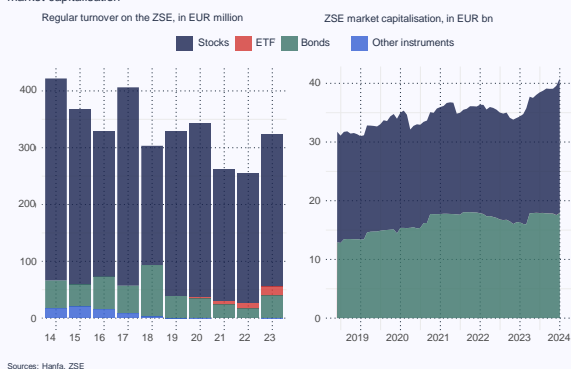


Figure 3.17 After a peak in market dynamics in mid-2023, liquidity conditions deteriorated towards the year-end

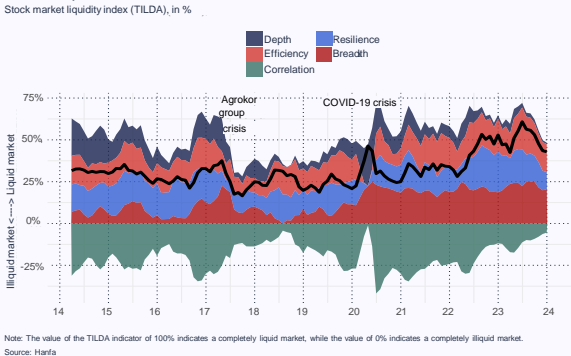


Figure 3.18 Low turnover ratio signals insufficient liquidity in the domestic market

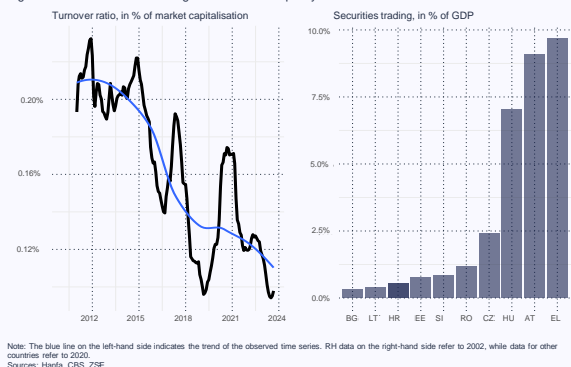
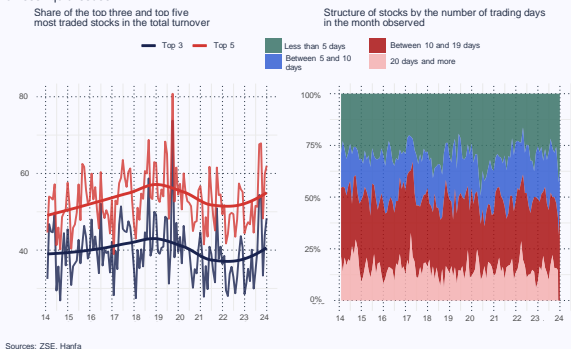


Figure 3.19 Surge in trading concentration increases the risk of a stronger price correction of less liquid issues



Although the number of issuers on the ZSE decreased from 92 to 87 from the beginning of the year, total market capitalisation too rose to EUR 40.8bn (an

increase of 18.8% from the year before). In the light of surging values of equity issues, market capitalisation of stocks rose by 27.2%, while a 9.5% growth in the capitalisation of debt securities is largely the result of the listing of new bond issues. ETFs also recorded a marked increase in capitalisation in 2023, which doubled by the end of the year (a rise of 215.2% from the end of 2022), although they still account for a small share of 0.06% of total market capitalisation.

**The stronger activity in the domestic market in 2023 was accompanied by an increase in market liquidity, which reached its nine-year high in June. However, the liquidity of the domestic market is still limited by a relatively small number of active investors and issuers on the stock exchange, whose number has been steadily decreasing (Figure 3.17).** The level of liquidity measured by the TILDA index (more information on the calculation methodology in [Macroprudential Risk Scanner, No 6](#)) peaked in the second quarter of 2023, before declining in the second half of the year. This halted the trend of improvement in liquidity conditions, with the largest contribution to this trend in recent years coming from the efficiency and resilience components. Also, the low turnover in the listed market implies a lack of depth and activity in the domestic market (Figure 3.18). Despite the relatively improved liquidity dynamics in recent years, the domestic market still faces low liquidity in structural terms, which accentuates its potential structural vulnerabilities in the current uncertain global environment.

**Although recent developments point to stronger activity in the domestic market, a considerable rise in the concentration of trading suggests that investors are focused on a smaller number of stocks, which put an end to the several-year-long slight downward trend in the concentration of trading.**

The concentration peaked in August and September, when more than two-thirds of trading on the ZSE was accounted for by five stocks, while more than half of the trading volume related to only three stocks, much above the several-year average (Figure 3.19). These developments are due to a high volume of trade in several of the most desirable issues with high market capitalisation<sup>29</sup>. If the structure of stocks is observed

through the number of trading days, there is a relatively large number of stocks traded over a smaller number of days. At the end of the year, more than one-third of the market was accounted for by stocks traded for less than 5 days in a month, while more than half of the stocks were traded on the market for less than 10 days per month. The number of highly liquid stocks traded for more than 20 days averaged only around 11 in 2023. The high trading concentration and relatively low liquidity accentuate the underlying limiting factors to the development of the domestic capital market, which is susceptible to significant fluctuations in the event of a systemic shock.

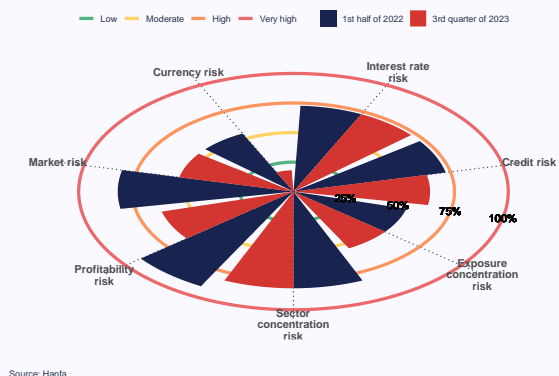
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<sup>29</sup> Five of the most-traded stocks in 2023 were those of Podravka, Span, Valamar Riviera, Zagrebačka banka and HT.

## 4 PENSION FUNDS

Figure 4.1 Subdued returns amid high interest rate and credit risk raise systemic risk exposure of pension funds

Systemic risk score for the pension funds sector, in %



The recovery in the prices of most classes of financial assets in 2023 led to an increase in the value of units in all categories of pension funds, compensating for the widespread fall in 2022. The most prominent source of systemic risk to which pension funds are exposed is still the impact of interest rate changes, which are expected to have reached their peak, on the value of the bond portfolio. It remains to be seen whether the anticipated decline in interest rates will affect the maturity structure of pension funds' investments over the coming period, especially in view of the new revised limits and investment options.

### Key cyclical trends

The wide array of shocks, including the surge in inflation, substantial tightening of monetary policy and intensified geopolitical tensions in 2022, caused a decline in the value of almost all financial asset classes, so that, despite

stable net payments, total net assets of pension funds went down by 0.5% in 2022 (Figure 4.2). However, the complete reversal of investor sentiment in the first half of 2023 led to a recovery in market values, and consequently to an increase in pension fund assets, which picked up by 10.3% in the first nine months of 2023 and stood at EUR 20.5bn at end-September. Owing to a relatively robust recovery in stock markets, but also to inflows of funds of new insured persons allocated to the category A pension funds, this mandatory pension fund (hereinafter: MPF) category recorded the largest growth in net assets of 43.2%. A relatively strong growth of 20.4% was recorded in net assets of the conservative category C MPFs, reflecting the gradual maturing of the domestic pension system. Balanced category B MPFs, which account for 89.2% of total assets of all MPFs, saw a 8.9% rise in net assets under management. Voluntary pension funds recorded a similar relative growth in net assets under management (an increase of 10.2%).

At end-September 2023, there were 2.2 million members of mandatory pension funds (an increase of 5.6% from the end of 2021), while voluntary pension funds had 435.2 thousand members (an

**increase of 9.5% from the end of 2021)<sup>30</sup>.** While a steady increase in the number of members of mandatory pension funds is a reflection of legal provisions and mirrors employment growth in the labour market, the accelerated rise in the number of members of voluntary pension funds suggests an increase in demand, that is, the awareness about the usefulness of an additional form of pension savings among both citizens and enterprises. Late 2022 saw the establishment of another closed-ended VPF<sup>31</sup>. Also, apart from additional pension savings within the scope of the domestic voluntary pension scheme, citizens were offered an option to save for retirement through the pan-European Personal Pension Product (PEPP)<sup>32</sup>. While VPFs were still relatively modest in size at the end of September 2023 (accounting for 5.7% of net assets), the long-term increase in voluntary pension savings could increasingly contribute to the stability of the financial system and the sustainability of the pension system. The relative flexibility of this form of pension savings in terms of accumulation and payments enables greater diversification benefits for beneficiaries and for the system in general, given that the system can be better calibrated to match the needs of individual members, but also more efficient in allocating beneficiaries' funds

to projects in the real sector that are sustainable in the long run.

Figure 4.2 After negative performance in 2022, assets of pension funds recovered in 2023  
Net assets of pension funds (in EUR bn) and annual rate of change (in %)

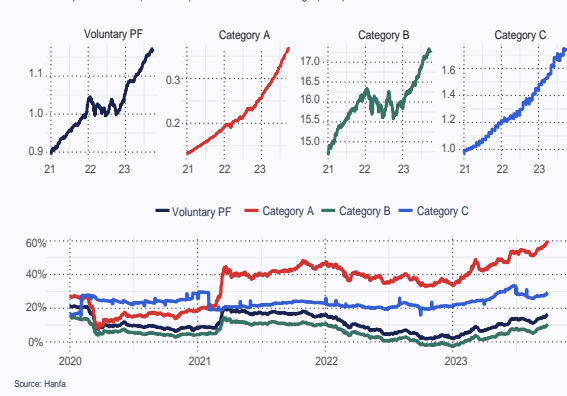
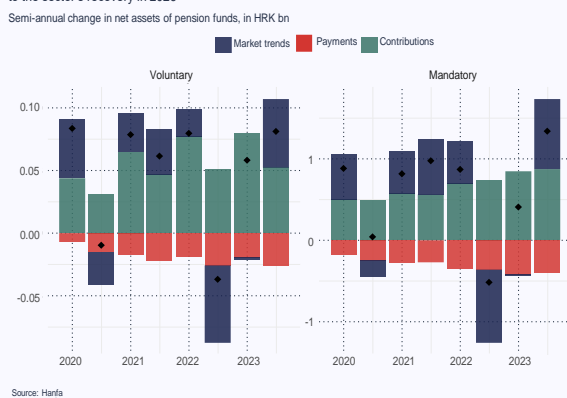


Figure 4.3 Positive market trends and stable net contributions gave a boost to the sector's recovery in 2023  
Semi-annual change in net assets of pension funds, in HRK bn



**Total assets of pension funds reached 30.7% of GDP at the end of September 2023<sup>33</sup>, which makes them the second most important segment of the domestic financial system after credit institutions.** In addition to the impact of pension funds on the system stemming from the volume of assets under management, their systemic importance also arises from their long-term investment horizon and their effect on the domestic capital market (e.g. by providing

more than one EU Member State given the possibility of transferring their pension rights from one EU Member State to another, but can also be useful to citizens who wish to subscribe to an alternative form of voluntary pension savings scheme. PEPP has been available in Croatia since 10 February 2023 and is offered by the Slovak investment firm Finax.

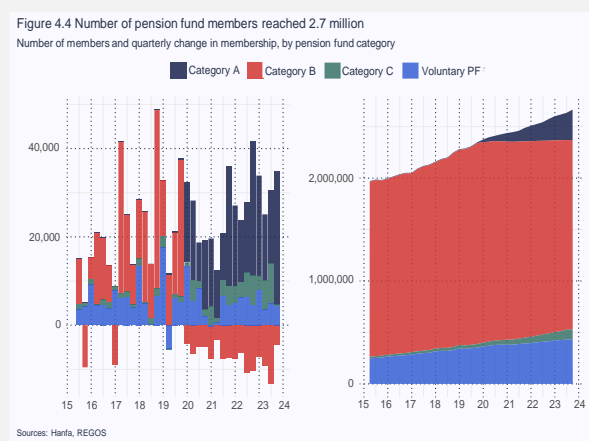
<sup>33</sup> Data refer to net assets of pension funds as at end-September 2023 in terms of 2022 GDP.

<sup>30</sup> The number of category A and C members increased by 145.1 thousand and 34.9 thousand respectively. The number of members of voluntary pension funds increased by 37.9 thousand, while the number of category B members declined by 61.1 thousand.

<sup>31</sup> The closed-ended voluntary pension fund Arena Mudra Mirovina became operational on 20 December 2022.

<sup>32</sup> PEPP is a voluntary pension savings scheme that can be beneficial for citizens working in

stability and liquidity). The legislative changes concerning the pension system which will enter into force in the course of 2024 should provide additional boost to supporting the development of the domestic capital market, as well as the overall economy, especially in the process of its green transformation (more information in [Box 2 Financial services sector's exposure to climate risks](#)), which provides pension funds with additional diversification and stabilisation options to preserve and create value for insured persons.



## Structural characteristics and risks

**Total assets of the 12 mandatory and 29 voluntary pension funds were still managed by only five pension companies, which exposes the overall pension system based on capitalised savings to an extremely high concentration risk (Figure 4.5).** Although the market structure of the pension sector is largely shaped by regulation and its relatively high level of concentration makes asset management more efficient

through advantages provided by economies of scale, which creates room for lower management fees and higher net returns for members, it may also have negative implications in the context of systemic risks to which the sector is exposed. Potential problems in the operation of one or several pension funds would thus have severe consequences for the operation of the domestic financial system as well as for the economy in general.

The structure of the sector's investments is, apart from market structure, very important for the propagation of systemic risk in the system. The investment concentration of pension funds edged down from the end of 2021 but still persisted given that the portfolio is mostly made of government bonds, which accounted for 60.7% of total assets under management at end-September 2023. A relatively high concentration is also observed in the stock portfolio. At the end of September 2023, the five largest exposures accounted for as much as 37.8% of the stock portfolio<sup>34</sup> (Figure 4.5). The current high level of investment concentration, especially at the level of individual asset classes, is significantly affected by legal limits. Therefore, the changes in investment options and limits which are to be introduced by the amendments to pension laws<sup>35</sup> at the beginning of 2024 should allow fund managers more flexibility to diversify investments, in addition to that already created in the segment of currency and

<sup>34</sup> This is an increase of 2.9 pp from the end of 2022 and an annual increase of 12.6 pp.

<sup>35</sup> Four acts on the second and the third pension pillar have been amended: the Act on Mandatory Pension Funds ([Official Gazette, No 156/2023 \(2392\)](#)), the Voluntary Pension Funds Act ([Official Gazette, No 156/23 \(2393\)](#)), the Act on Pension

Insurance Companies ([Official Gazette, No 156/2023, \(2394\)](#)) and the Act on Supplements to Pensions acquired according to the Pension Insurance Act ([Official Gazette, No 156/2023, \(2395\)](#)). The acts entered into force on 1 January 2024.

geographical allocation of funds by joining the euro area.

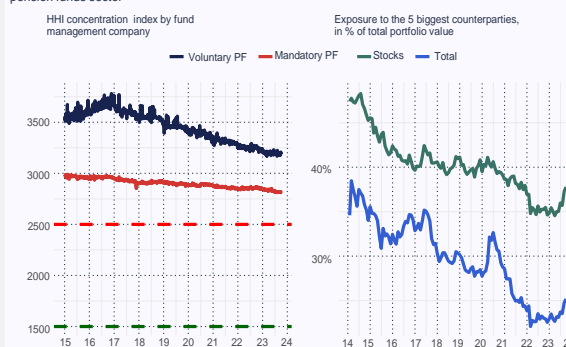
Systemic hazards stemming from the high concentration of pension fund investments were accentuated by the recent crisis in the United Kingdom in October 2022, when the highly concentrated and highly indebted pension system faced a liquidity spiral, which resulted in a sharp rise in yields on 30-year government bonds of 1.6 pp in just a few days. The crisis was successfully resolved only after the central bank intervened in the secondary bond market. Although the domestic pension system differs significantly from the UK system, where domestic funds are much less indebted and do not trade in financial derivatives, the mentioned episode illustrates the scope and speed of systemic risk propagation in the context of a systemically important and concentrated sector such as pension funds.

**Following a short-lived decline in 2022 caused by unfavourable market developments, investments in stocks and investment funds continued their upward trend in 2023, accounting for one-third of total pension fund investments at end-September 2023.**

The share of relatively risky investments in total net assets of pension funds decreased in 2022 due to negative market developments, with a growth recorded in highly liquid assets (money and deposits) and government bonds, which managed to preserve most of their nominal value

under extremely unfavourable circumstances<sup>36</sup>. Benchmark interest rate hikes in 2023 dragged down the value of the pension funds' bond portfolio. The share of bond investments was thus reduced in all three categories of mandatory funds and came close to the regulatory minimum (Figures 4.6 and 4.7). The share of government bond investments in total net assets of all MPFs stood at 61.3% at end-September (down by 0.9 pp from the end of 2022). The share of money and deposits also dropped, to 3.0% (down by 2.2 pp from the end of 2022), while the share of other, mostly risky, but also more profitable forms of investments increased.<sup>37</sup>

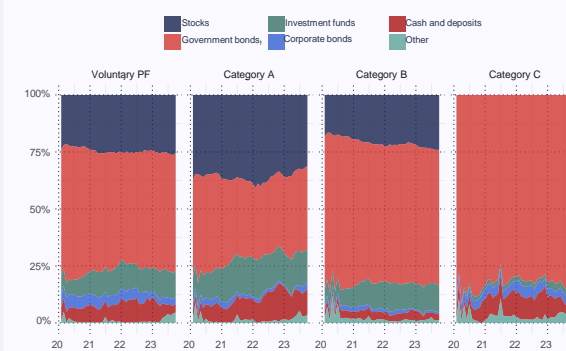
Figure 4.5 Further increase in market and investment concentration of the pension funds sector



Note: According to the classification made by the US Department of Justice, markets with an HHI of less than 1,500 are considered competitive, while markets with an HHI exceeding 2,500 are considered highly concentrated. Source: Hanfa

Figure 4.6 After interruption in 2022, the favourable trend in investments in stocks and investment fund units was resumed in 2023

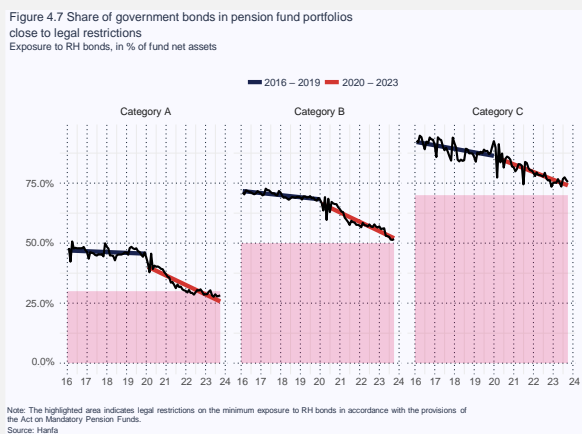
Structure of pension funds investments by type of investment, in % of total assets



Source: Hanfa

<sup>36</sup> Observed on an annual level, a decline was recorded in investments in stocks (-0.9 pp), investment funds (-1.1 pp), corporate bonds (-1.0 pp) and other investments (-0.5 pp), with an increase seen in investments in government bonds (+1.9 pp), money and deposits (+1.6 pp).

<sup>37</sup> Relative to end-2022, pension funds increased their investments in stocks (+1.8 pp), investment funds (+0.6 pp), corporate bonds (+0.3 pp) and other forms of investment (+0.7 pp).



**Further diversification of pension fund investments, which can have a stabilising effect in the event of market disturbances, can also be achieved within a particular class of financial assets, that is, at the level of individual issuers.**

At the end of September 2023, more than one-third of the pension fund stock portfolio was accounted for by only five domestic stocks (Figure 4.5). From the aspect of strategic allocation of funds across asset classes, room for further reallocation of funds from bonds to stocks and other investments has been created through the amendments of pension laws, whereby investment options of pension funds were expanded to include real estate, unlisted mortgage bonds and holdings in non-listed companies<sup>38</sup>. An obligation was also introduced for MPF categories A and B to invest 5.0% of net assets in alternative investment funds with state-guaranteed return of total

investment at the end of the investment fund's life<sup>39</sup>. More flexibility was introduced with respect to the limits on investments in individual asset classes and exposure to individual issuers. The introduction of the euro led to additional flexibilisation of investment opportunities and created potential for further diversification, as it implicitly removed the limits related to the currency mismatch between assets and liabilities in that currency.<sup>40</sup> Apart from eliminating exchange rate charges, this made room for the reallocation of pension funds' investment portfolios as euro investments are no longer subject to any currency restrictions, while it also expanded the offer of issuers of adequate quality<sup>41</sup>. In the course of 2023, 57.8% of investments in stocks and investment funds were directed towards foreign markets. This trend points to further strengthening of the international financial integration of pension funds (a growth of 0.7 pp from the end of 2022), whose further dynamics will depend on the investment strategy of corporations (Figure 4.8).

**The geographical and currency diversification of investments reduces concentration risk, but at the same time increases exposure to market risk and possible market instabilities.** Although it provides some diversification benefits, a larger share of foreign investments

<sup>38</sup> Article 125 Paragraph 9 of the Act on Mandatory Pension Funds ([Official Gazette, No 19/2014, 93/2015, 64/2018, 115/2018, 58/2020 and 156/2023](#)).

<sup>39</sup> Hitherto, category A mandatory pension funds were allowed to invest up to 15.0% of their net asset value, while category B mandatory pension funds could invest up to 10.0% of their net asset value in alternative investment funds, without any state guarantee and the minimum prescribed exposure.

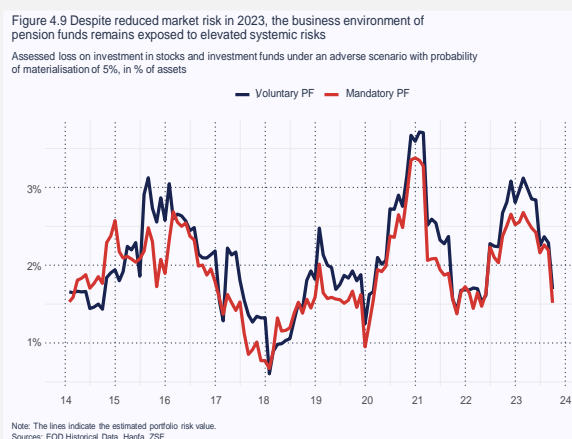
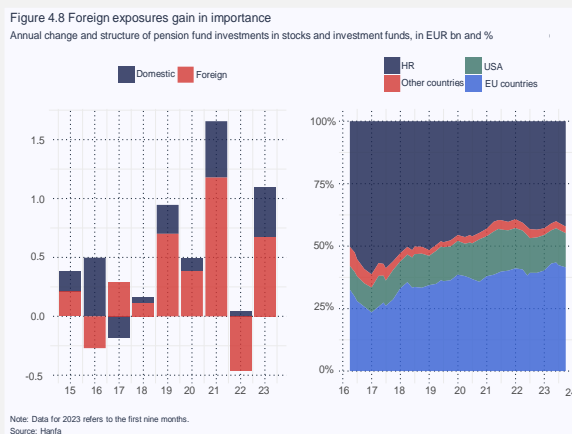
<sup>40</sup> Under Article 129 of the Act on Mandatory Pension Funds ([Official Gazette, No 19/2014,](#)

[93/2015, 64/2018, 115/2018 and 58/2020](#)), the maximum permitted net open foreign currency position (difference between assets and liabilities denominated in foreign currency) may amount to 60% of net assets of category A funds, 40% of category B funds and 10% of category C funds.

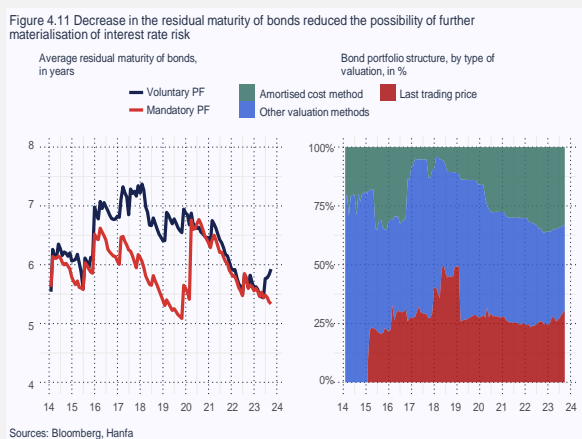
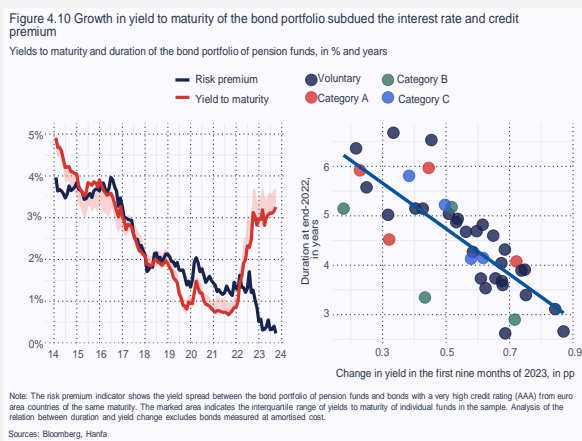
<sup>41</sup> Following the entry into the euro area, the net open foreign currency position of pension funds fell from 45.7% to 12.4% at end-June 2023.

increases the exposure of domestic pension funds to market risks and potential cross-border shocks (Figure 4.9) which, due to their international nature, are more difficult to monitor and address from the perspective of domestic regulators and economic decision-makers.

**Given the predominance of bond investments in the asset structure and long-term investment strategy of pension funds, the exposure to interest rate risk is one of the key risks in their operations, the significance of which has been particularly prominent in recent years.** More specifically, a sharp rise in benchmark interest rates in response to inflation led to a fall in the value of the existing bond issues in portfolios, which, in addition to the fall in value and other forms of investment, led to a widespread decrease in fund assets in 2022. This effect would have been more pronounced if pension funds had not reduced the remaining maturity of bond investments in recent years. The same trend continued in 2023, so that the duration of the bond portfolio came to 5.6 years at the end of September (Figure 4.11), which is almost one year less than at the end of 2021. However, the mentioned potential impact of interest rate changes on the value of assets is even smaller since one-third of the pension funds' bond portfolio is valued at amortised cost, where short-term market fluctuations do not affect bond values.



The probability of further materialisation of interest rate risk remains elevated, primarily due to the subdued risk premium, which could increase sharply in the event of certain shocks (Figure 4.10). On the other hand, the expected change in the monetary policy cycle and the decline in interest rates which increases the value of the bond portfolio could further induce funds to increase their interest rate risk exposure, as evidenced by the recent increase in duration of VPFs (Figure 4.11).



## Returns

**Extremely negative global trends that affected all financial market segments in 2022 led to a fall in net assets and, consequently, a drop in unit prices of all pension funds. However, the subsequent market recovery in 2023 allowed pension funds to largely make up for all the losses realised in the previous year (Figure 4.13).** The average weighted annual return of mandatory pension funds stood at  $-4.8\%$ <sup>42</sup> in 2022, with a negative market impact affecting all three MPF categories equally (category A, B and C funds recorded an average annual return of  $-4.1\%$ ,  $-5.0\%$  and  $-5.3\%$ , respectively). The market recovery in 2023 was diversified so that a spike in the prices of stock investments relative to other financial assets was also reflected in the

<sup>42</sup> Returns ranged from  $-10.5\%$  to  $-2.1\%$  in 2022.

sharper increases in unit prices of the riskier category A MPFs and VPFs. Even though not all financial market segments recovered at the same pace, returns were such that all pension fund categories managed to compensate for last year's losses (Figure 4.12). Short-term market fluctuations, which can be violent, such as those in 2022 and 2023, stress the importance of monitoring the profitability performance of pension funds over a longer period and in comparison with alternative investment options (Figures 4.14 and 4.15).

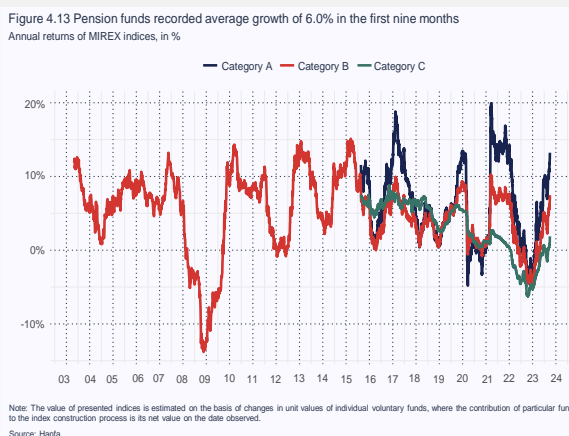
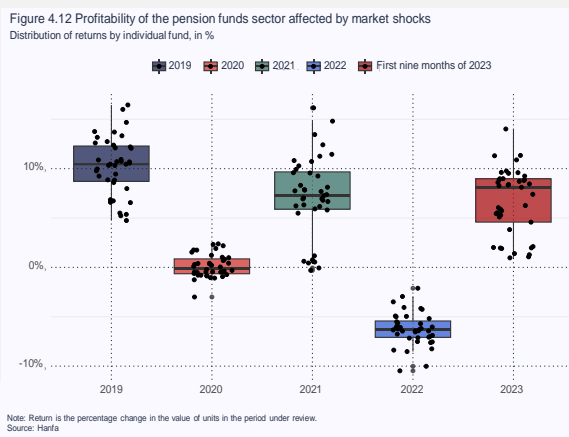
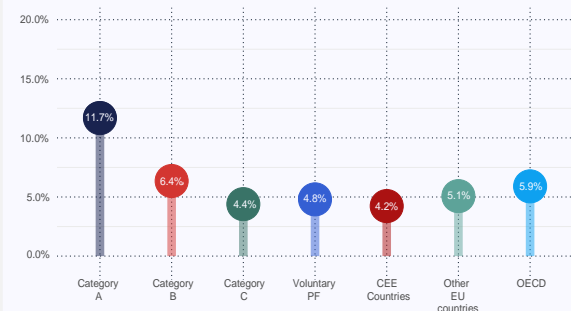
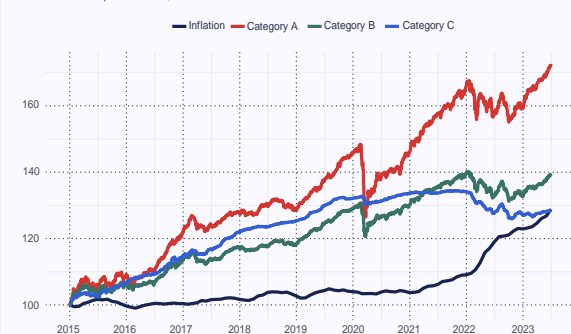


Figure 4.14 Pension funds have made competitive returns in the last nine years  
Average annual return on selected categories of financial assets from the end of 2014 to the end of September 2023, in %



Note: Return is the percentage change in the value of units in the period under review. The data for CEE countries, other EU countries and OECD cover the period from end-2014 to end-2021. CEE countries are: Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovakia and Slovenia. Other EU countries are the remaining EU member states, while the OECD covers all member states with the exception of the United Kingdom. Sources: Hanfa, OECD

Figure 4.15 Performance of pension funds should be interpreted in terms of the time horizon of their investment  
Unit value indices of pension funds, 31 December 2014 = 100



Note: The value of presented indices is estimated on the basis of changes in unit values of individual voluntary funds, where the contribution of particular fund to the index construction process is its net value on the date observed. Sources: Hanfa, Eurostat

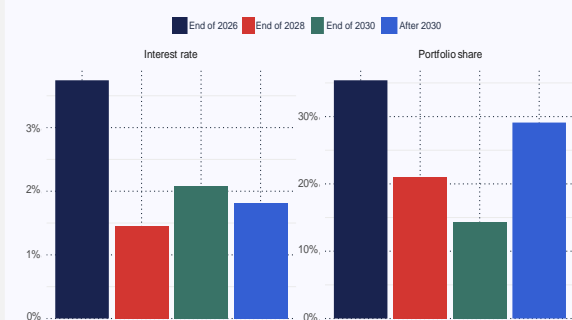
**Pension funds' returns in the forthcoming period will largely depend on the impact of investor sentiment on the developments in equity markets (some of them are showing signs of overvaluation) as well as on the possible impact of the expected decline in interest rates on the existing bond investments and realised locking-in of the currently still high interest rate returns by reinvesting the maturing bond issues.** However, optimism and the recovery of global financial markets in 2023 should be viewed with caution given the divergent movements in stock prices relative to present and future profit and business fundamentals of companies, which increases the potential risk of a stronger price correction should certain shocks arise. Against such a backdrop, the

relatively moderate exposure of domestic pension funds to global stock markets, particularly the US stock markets, is positive and supports the stability of the value of units even in the case of materialisation of a highly unlikely but plausible scenario of a sharp price correction in financial markets.

Despite a short-lived negative impact on the value of bond investments, benchmark interest rate increases provided a boost to interest yields of new bond investments in the medium run. However, the expected decline in interest rates over the coming period accentuates reinvestment risk, as more than 35.4% bond issues with an average coupon of around 3.7% will mature by the end of 2026 (Figure 4.16).

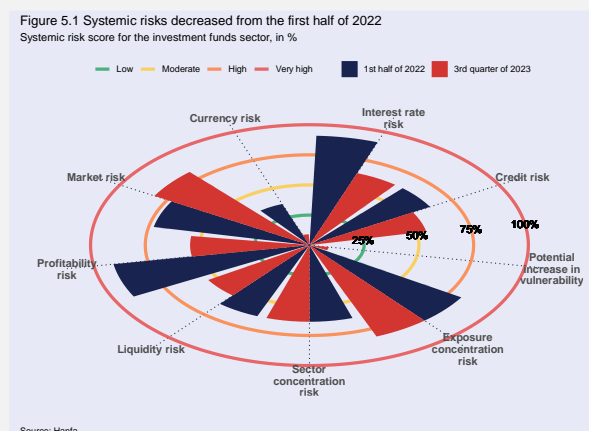
Structural changes in the context of joining the euro area and the upgrading of Croatia's credit rating to record highs make the domestic bond market more resilient to sudden changes in market perception of credit risk, especially in the event of a revision of the currently subdued global risk premium, with a favourable effect on the stability of pension funds in the long run.

Figure 4.16 Completion of the cycle of interest rate increase has given prominence to reinvestment risk  
Average interest rate and the portfolio share of bonds maturing by the specific date, in %



Note: End of 2026 refers to bonds maturing after 2024 and up to the end of 2026, while end of 2028 refers to bonds maturing after 2026 and up to the end of 2028. Source: Hanfa

## 5 INVESTMENT FUNDS



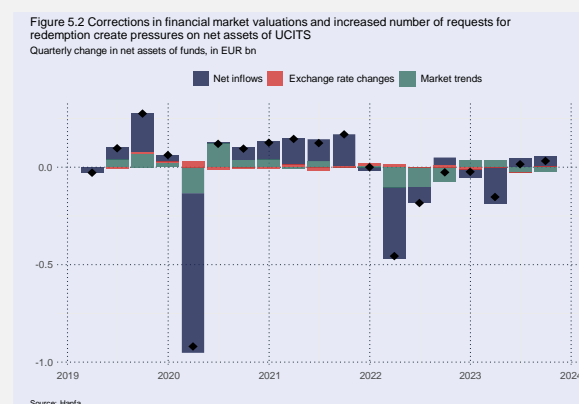
**Net assets managed by investment funds decreased substantially in 2022 and 2023 due to negative market developments and the outflow of a portion of investor funds. Market risks associated with changes in the prices of equity and bond investments remain the most important systemic risks to which this segment of the financial system is exposed, especially given the high concentration of both assets and investors. The expected decline in interest rates might give a short-term upward push to returns, especially those of bond funds.**

### Key cyclical trends

**The tightening of the monetary and macroeconomic environment, which resulted in broad-based price corrections and increased volatility in international financial markets, led to a 24.1% fall in assets of domestic UCITS in 2022. Similar trend continued in the**

<sup>43</sup> In the course of 2022 and the first nine months of 2023, bond and balanced UCITS recorded cumulative net outflows of EUR 774m and EUR

**course of 2023, so that net assets of domestic UCITS stood at EUR 2.1bn at end-September 2023, the lowest level since 2016** (Figures 5.2 and 5.3). This decrease was largely due to recorded losses and net outflows of investor funds, especially from bond funds, given the increased number of requests for redemption from investors in response to the deteriorated financial environment<sup>43</sup> (Figure 5.4). At the same time, the several-year long growth in the segment of alternative funds came to a halt, as their net assets under management decreased by 21.6% from the end of 2021 and amounted to EUR 517.5m at the end of June 2023.

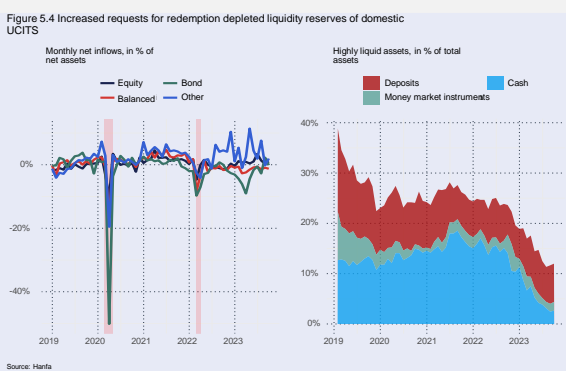
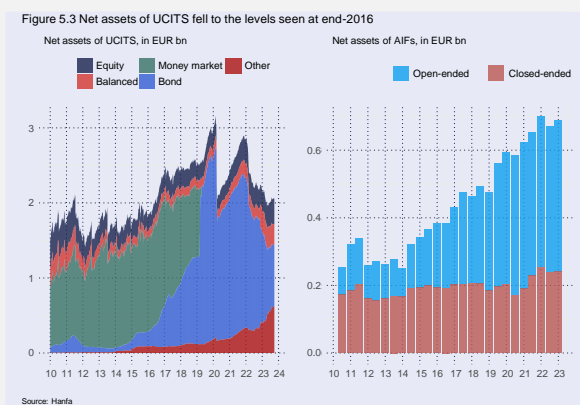


The global market recovery in 2023, driven by a slowdown in inflation and a positive investor sentiment, was briefly interrupted by the sudden banking crisis in the USA (more information in Chapter [3 Financial markets](#)). Although this banking turmoil has been relatively quickly resolved and had no impact on the domestic market, it still had a modest

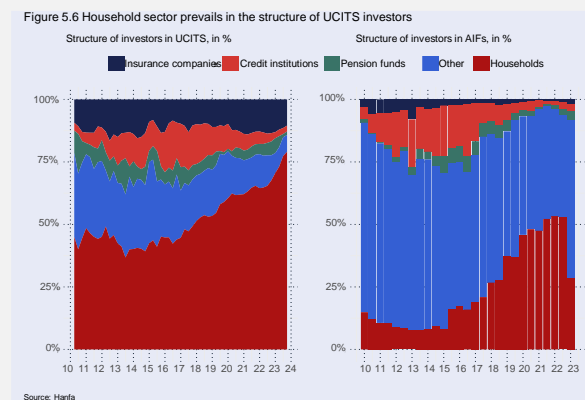
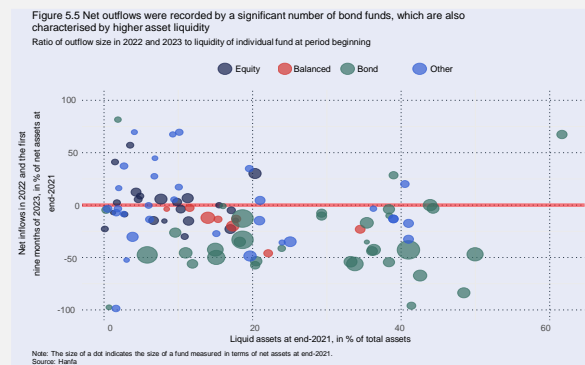
65m, respectively, while equity and other funds recorded net inflows of EUR 14m and EUR 280m, respectively.

effect on the increase in net outflows from domestic investment funds. In addition to the mentioned disturbance, which again showed that investments in UCITS, particularly in bond UCITS, are mostly regarded as an alternative to bank deposits and a kind of liquidity buffer and not as a long-term investment, the withdrawal of a portion of funds was also substantially influenced by the announced issue of the first national bond and the gradual rise in interest rates on bank deposits.

was largely the result of structural changes in the market, that is, the rise in the number of the so-called fixed maturity funds. As such funds are of a fixed, mostly medium-term duration, with early exits being discouraged by relatively high fees, their liquidity risk is not so pronounced.



While pressures on the disbursement of funds in recent years had no significant impact on the liquidity of UCITS, the recent episode contributed to a substantial decrease in their liquid assets in 2023. The liquid-to-total assets ratio of UCITS stood at 12.0% of total UCITS assets at end-September 2023 (a decrease of 12.4 pp from the end of 2021 – Figure 5.4). However, it should be noted that the reduced UCITS liquidity in 2022 and 2023



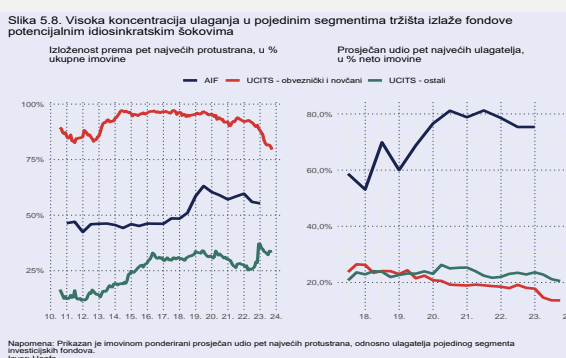
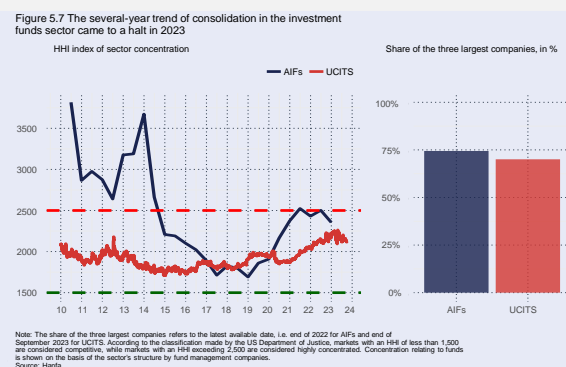
**Although the size of the domestic investment fund sector shrank considerably over the past two years, the options to invest in investment funds have been extended and diversified.** This could be particularly

interesting to the traditionally most widely represented category of retail investors (Figure 5.6), whose investment interest in 2023 was also aroused by the direct offer of government debt securities with a market-competitive yield. Thus, a significant number of domestic management companies expanded their offer to include investment funds that integrate sustainability principles in their

investment policies<sup>44</sup>, as well as target-date funds structured to preserve invested assets. In view of the relatively high returns on fixed-return investments, even in the short run, after a number of years, the domestic market saw the listing of a money market fund suitable for investors who prioritise liquidity. The number of ETFs rose from two to four in 2023, which contributes positively to market flexibility and liquidity, and expands investment options.

### Structural characteristics and risks

**The growth in the breadth (type of funds) and depth (number of funds) of the domestic investment fund market helped to reduce the degree of market concentration in 2022 and 2023 (Figure 5.7).** The number of AIFs rose by 6 from end-2021 to September 2023 (to a total of 44 funds), while the number of UCITS increased by 14 (to a total of 107 funds). Despite the increased supply in the investment fund market, the concentration of assets under management remained elevated in the light of the fact that 70.1% of net assets of UCITS and 74.4% of net assets of AIFs were managed by the three largest companies at end-September 2023 and end-2022, respectively. This high management concentration raises systemic risk exposure of investment funds in terms of possible emergence of similar or identical investor behaviour, liquidity risk and increased likelihood of contagion from potential shocks.



**In addition to management concentration, the investment fund sector is also exposed to a relatively high concentration of both its investments and liabilities (Figure 5.8).**

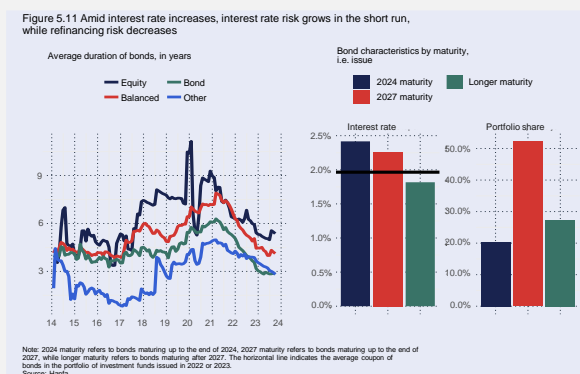
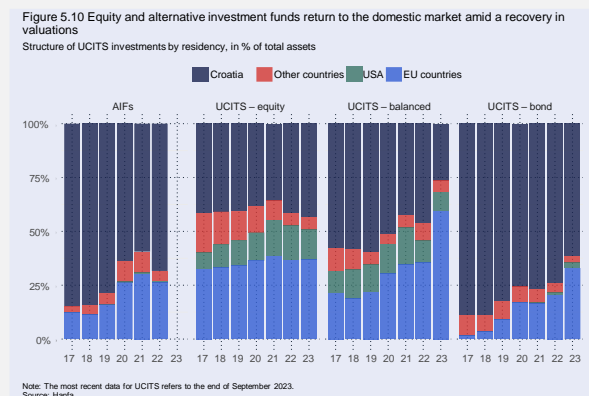
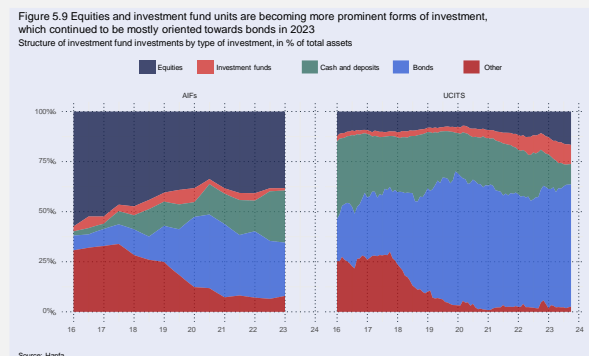
Investment concentration of UCITS, especially bond UCITS, has recently decreased, partly due to the passive effect of valuation, that is, the fall in the value of bond investments, as well as due to the active redirection of a portion of funds to stocks (Figure 5.9). Investments in stocks and investment funds accounted for 16.7% of total UCITS investments at end-September 2023 (an increase of 5 pp from the end of 2021). Two trends stand out in this process of investment diversification. On the one hand, equity funds, which are relatively more diversified across borders, increased the share of domestic investments in their portfolios in 2022 and 2023, while, on the other hand, bond funds, characterised by a high

<sup>44</sup> There were 39 UCITS of this type in the domestic market at end-November 2023, which

managed around 38.5% of total assets of all UCITS.

concentration of investment in domestic government bonds, increased their cross-border exposures (Figure 5.10). Cross-border exposures of balanced funds also soared, which is potentially associated with reduced currency costs in the context of the euro changeover, but also with the potentially greater attractiveness of bond investments in other EU Member States bearing higher interest rates under the current circumstances.

Alternative investment funds, which are traditionally mostly oriented towards domestic investments, increased further their domestic exposures in 2022, seeking to monetise their competitive advantages in terms of access to local information and greater control over management processes in invested enterprises (Figure 5.10).



**In the course of 2023, investment funds continued to reduce the remaining maturity of bond investments and consequently their exposure to interest-rate risk (Figure 5.11).** At end-September 2023, the average duration of the bond portfolio was 3.0 years (a decrease of 2.1 pp from the end of 2021). However, the share of portfolios valued at market price<sup>45</sup> went up (88.4% of total UCITS assets at the end of November 2023, an increase of 25.5 pp from the end of 2022). This means that a potential additional rise in the general level of interest rates of 1 pp would result in losses amounting to 1.6% of net assets. In view of market expectations about a decrease in benchmark interest rates in 2024, this trend of declining duration might be halted, which is likely already the case with equity and balanced funds.

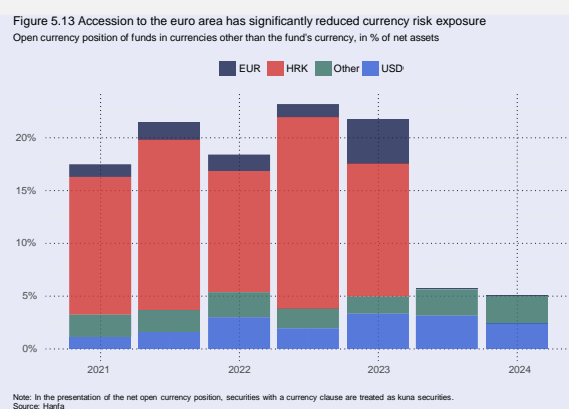
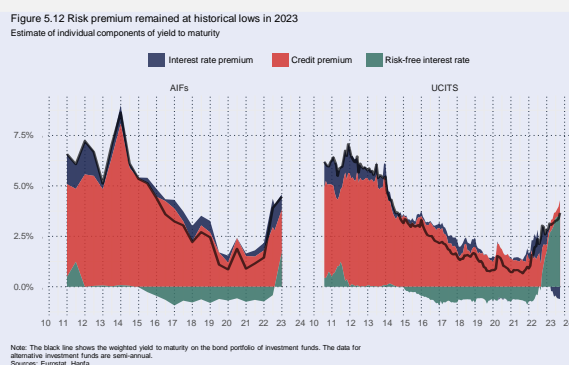
Although extending duration in the monetary easing phase is understandable from investment and management perspectives, it should be noted that the level of risk premium currently hovers at historical lows, leaving room for its correction in the event of unexpected economic and financial disturbances (Figure 5.12). In the light of historical systemic stress episodes (such as the global financial crisis in 2008 or the 2011

<sup>45</sup> The category includes all securities valued at the last trading price or by applying valuation techniques such as the average weighted price.

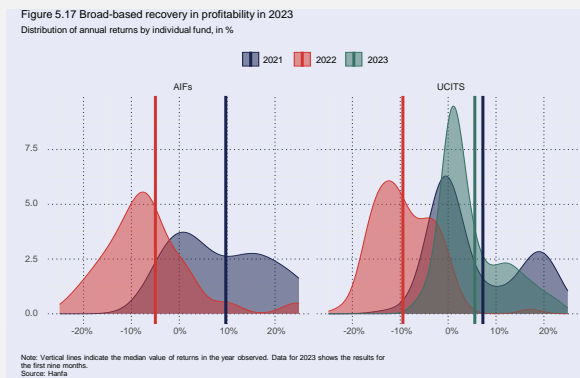
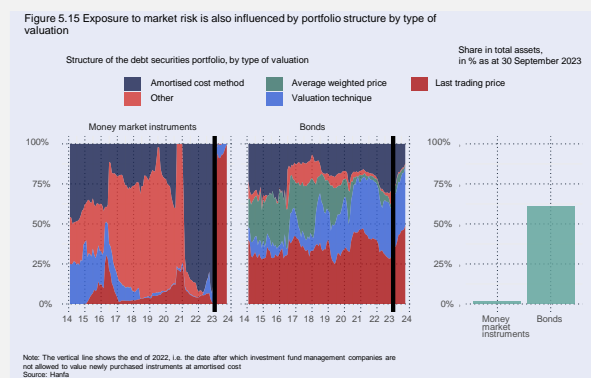
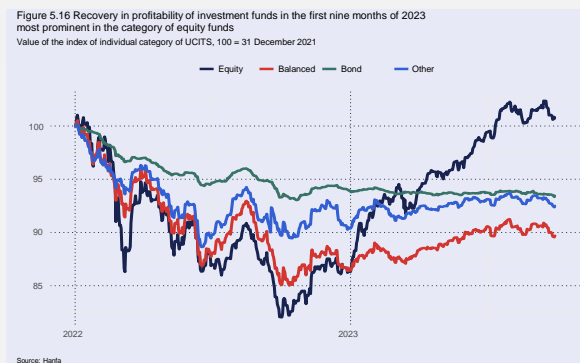
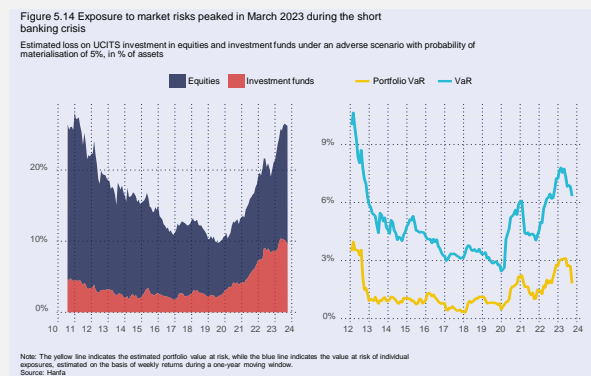
European debt crisis), which have shown the potential and speed of risk premium corrections in response to possible signs of weaknesses in the domestic or European economy, the exposure of domestic investment fund sector to interest rate risk remains elevated.

**Reinvestment risk associated with bond portfolios was significantly reduced during the upward trend in interest rates, as the coupons for new bonds subscribed by the funds surpassed the coupons of bonds with the longest maturities in their portfolios (Figure 5.11).** However, with the likely reversal of the monetary cycle, coupon yields of new issues are likely to decline, unless there is an unexpected jump in the risk premium.

**The entry into the euro area led to a reduction in currency risk, given that it was largely associated with euro/kuna currency mismatches between assets and liabilities of investment funds (Figure 5.13).** Currency risk, which was substantially minimised in nominal terms in 2023, was predominantly linked to the trends in US dollar and several other currencies even before 2023 due to the relative stability of the exchange rate of the kuna against the euro. Owing to the relatively high euro liquidity, the changeover to the euro paved the way for easier assumption of currency risk in the future, as well as easier access to instruments for hedging against currency risk should companies decide to intensify their search for cross-border yields.



**As investment funds have increased their equity investments, their exposure to market risks has recently increased (Figure 5.14).** This was also driven by increased market volatility, which peaked in March 2023 during the US banking crisis. In addition, asset valuation methods also have a significant impact on the time dimension of market risk materialisation, while from the beginning of 2023, investment funds have valued all new debt investments at market price (Figure 5.15). This effectively strengthened the transmission channel of potential market shocks to investment fund returns, while it also ensured high transparency of investment fund operations, which ultimately supports timely risk management and enables investors to make informed investment decisions in a timely manner.



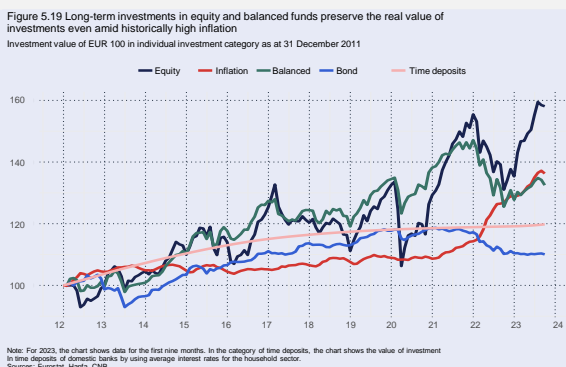
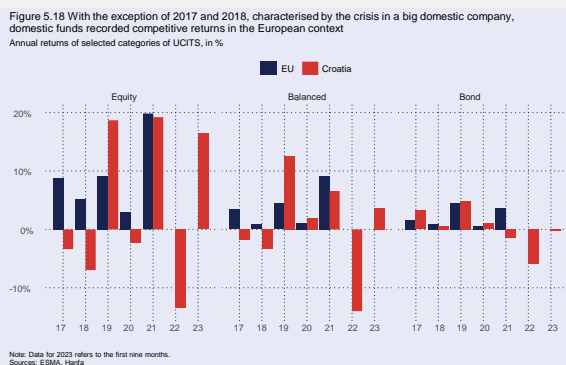
## Returns

**The year 2022, which was very unfavourable in terms of return on investment, was followed by a better-than-expected performance in 2023, when almost all categories of investment funds made up for losses generated in the year before.** Global conditions in 2022 were extremely adverse, which resulted in an almost universal fall in financial asset prices. Amid scorching inflation, historically rapid growth in interest rates and a spike in geopolitical risk, unit prices of all categories of domestic investment funds were subject to corrections (Figures 5.16 and 5.17). The extent of corrections depended on the strategic allocation of fund assets across investment categories. Equity and balanced funds recorded a loss of value of 13.5% and 14.0%, respectively, while losses of relatively conservative bond funds stood at 5.9%.

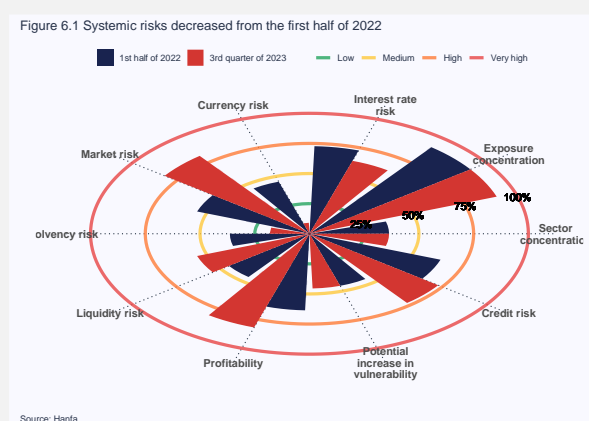
The easing of inflationary pressures and the toning down of the rhetoric of the heads of central banks cleared the way for the return of investment optimism in 2023. Against such a backdrop, the domestic capital market recorded above-average results, so that by the end of the third quarter of 2023, equity UCITS fully made up for the previous year's losses (generating a return of 16.4% in the first nine months of 2023). Balanced UCITS saw a modest recovery of 3.6%, while the value of units in bond funds dropped by 0.2% in the same period. A potential decrease in interest rates would boost the recovery of investment funds' returns in the coming period, directly through the rise in the prices of bond investments and indirectly through an additional stimulation of a relatively optimistic investment sentiment at the end of 2023.

If observed over a longer period, it is evident that, even in the context of historically high rates of inflation,

domestic balanced and equity UCITS managed to preserve the real value of investments, albeit with a relatively high volatility (Figure 5.19). In view of the high degree of harmonisation of regulations and economic conditions at the EU level, the returns of domestic investment funds in recent times are relatively comparable to those of EU funds (Figure 5.18). This is primarily the result of the global convergence of macroeconomic and financial developments. However, the currently high uncertainty and systemic risks, especially in view of the subdued risk premium, increase the probability of the emergence of divergent trends in some investment fund market segments in the coming period.



## 6 INSURANCE COMPANIES



The upward trend in total premium income of insurance companies continued into 2023, despite a significant fall in premiums collected in the segment of life insurance. The surge in risk-free interest rates triggered an improvement in the capital position of insurance companies regardless of the gloomy forecasts of the previous year. Notwithstanding the improvement in profitability and solvency indicators in the first part of 2023, insurance companies remained exposed to elevated cyclical systemic risks which, if materialised, could underscore structural vulnerabilities of some companies and deplete the currently high liquidity and capital buffers of the sector.

### Key cyclical trends

While the rise in total insurance premium seen in 2022 continued into 2023, trends in life and non-life

insurance segments became increasingly divergent. The new International Financial Reporting Standard 17 (hereinafter: IFRS 17) – Insurance contracts came into effect in January 2023 (more information on the new standard in the relevant box in the publication [Macroprudential Risk Scanner, No 6](#)), which introduced many changes to the insurance sector. Among the key changes is the obligation to report on collected insurance premiums, which harmonised premium reporting requirements in non-life insurance with that in the life insurance segment, which reported gross written premium based on collection even before the enforcement of IFRS 17.

Total premium collected increased steadily throughout 2023, growing annually by 7.2% in the first nine months of the year. The trends were particularly favourable in the non-life insurance segment, where collected premium amounted to EUR 1.1bn at the end of the third quarter of 2023, growing annually by 16.7% (Figure 6.2). The largest contribution to growth came from motor vehicle insurance, in particular, motor vehicle liability insurance and comprehensive insurance, which rose by 24.8% and 26.1%, respectively, from 2022, mostly due to the sharp increase in prices and the growing number of vehicles on roads.

The amount of premium collected in the segment of credit insurance dropped

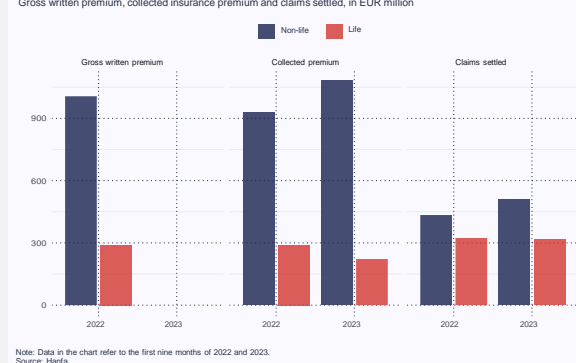
considerably in 2023 after growing sharply for several years amid elevated uncertainty and instability in financial markets, as well as the rise in the volume of bank loans.<sup>46</sup> This type of insurance dropped by almost 60% on an annual basis<sup>47</sup> in the first nine months of 2023, which reduced its share in total collected non-life insurance premium to only 1.3%, down from 3.9% at the end of 2022.

In terms of the share in total premium, an important contribution to collected non-life insurance premium came from property insurance, where insurance against fire and elementary disasters and other property insurance account together for 19.3% of total non-life insurance premium<sup>48</sup>. The upward trend in these types of insurance will certainly continue in the future against the background of constantly growing risks associated with increasing climate change and its implications for the assets of policyholders, as well as the experience of the recent earthquakes in Zagreb and the Sisak-Moslavina County.

By contrast, the sharp decline in new life-insurance contracts registered by several large companies significantly reduced the premium collected in that segment in 2023. Total life insurance premium collected in the first nine months of 2023 came to EUR 222.3m, which is a decrease of 23.4% on an annual basis. Premium collected in traditional life insurance went down 17.1%, mostly due to the base effect of larger inflows of one-off premium payments in previous years, which were absent in 2023. Collected premium on

unit-linked contracts plunged by as much as 54.2% on an annual basis as a result of extremely large tranches contracted in 2022 (Figure 6.2). These developments contribute to the growing decline in the share of life insurance in total premium income of insurance companies. At the end of September 2023, it stood at 17.0%, which is a decrease of as much as 6.8 pp on an annual level and an additional widening of the gap relative to the European average, which stood at 53.8% at the end of June 2023. This confirms the ongoing need to enhance the awareness about the importance and benefits of life insurance. The recent hike in interest rates also indirectly contributes to the appeal of life insurance contracts through the increased attractiveness of alternative financial products with a savings component, such as time deposits in credit institutions, national bonds and treasury bills or target-date investment funds that implicitly guarantee specific rates of return on initial investment.

Figure 6.2 Significant drop in life insurance premium collected in 2023. Gross written premium, collected insurance premium and claims settled, in EUR million



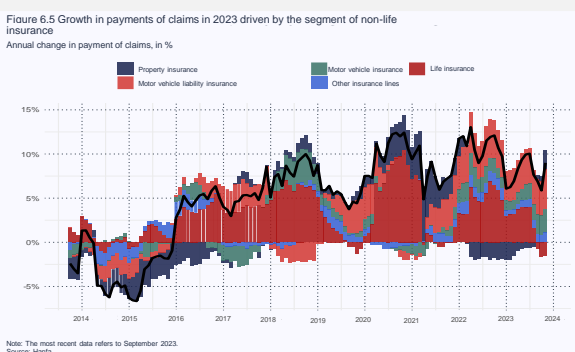
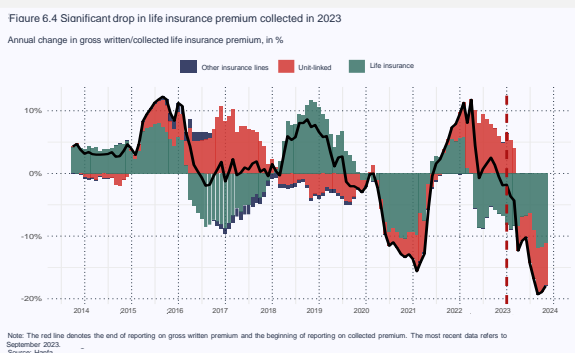
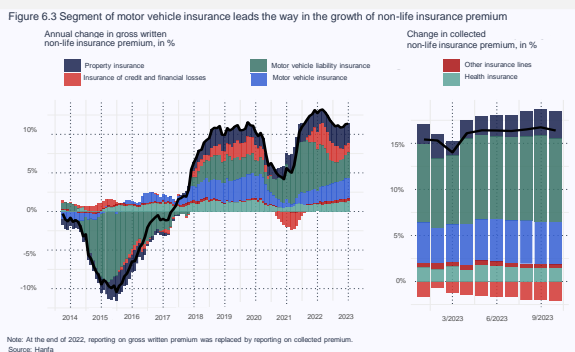
**Total claims settled amounted to EUR 813.4m in the first nine months of 2023, growing annually by 7.8%.** Traditional life insurance remained on the path seen in previous years, with claims settled being

<sup>46</sup>At the end of 2022, the annual growth rate stood at 26.3%, while annual growth at end-2021 was 43.6%.

<sup>47</sup> The company with the largest share in premium has transferred the entire portfolio to the life insurance segment.

<sup>48</sup> These types of insurance rose by 14.7% and 13.3%, respectively, on an annual basis.

5.6% higher on an annual basis at the end of the third quarter, due to portfolio maturing and regular expiry of contracts (Figure 6.5). As with premium on unit-linked contracts, there was a significant fall in the amount of claims, which were 35.7% lower on an annual level.



The effects of persistently elevated inflation are most visible in the amounts of settled claims in the non-life insurance segment, which rose by 17.4% year-on-

year at the end of the third quarter of 2023. By far the largest contribution to the rise in claims traditionally comes from the vehicle insurance segment, where the double effect of higher inflation, influencing vehicle repairs (services inflation) and the rise in the prices of spare parts, was particularly pronounced<sup>49</sup>. The amount of claims arising from insurance against fire and elementary disasters also grew sharply (by more than 30% a year). Similar trends can be expected in the future periods given the increasing frequency and severity of elementary disasters, as well as an evident increase in the awareness of the benefits of this insurance line, as reflected in the steady increase in its share in total premium collected (7.7% at the end of the third quarter of 2023).

### Structural characteristics and risks

**The domestic insurance sector is relatively competitive, but the high concentration of some market segments underlines the systemic importance of particular companies.** A high concentration of the market share according to the collected premium is present in all three most widely represented types of non-life insurance, while concentration in the life insurance segment<sup>50</sup> is slightly smaller (Figure 6.6).

### The growth in interest rates in 2022 did not significantly change the structure of the investment portfolio of insurance

collected for property insurance was realised in the three most represented companies. In the life insurance segment, three companies accounted for a high 56.5% of the premium collected in 2022. These four types of insurance together accounted for as much as 63.2% of total gross written premium of the sector in 2022.

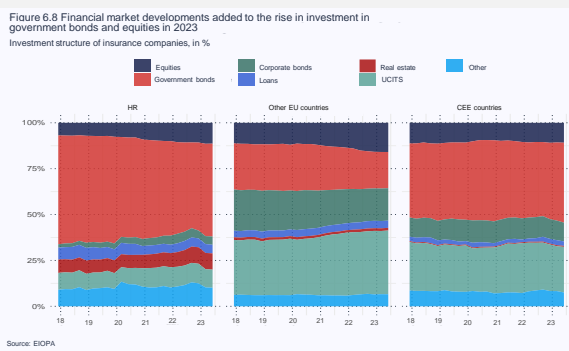
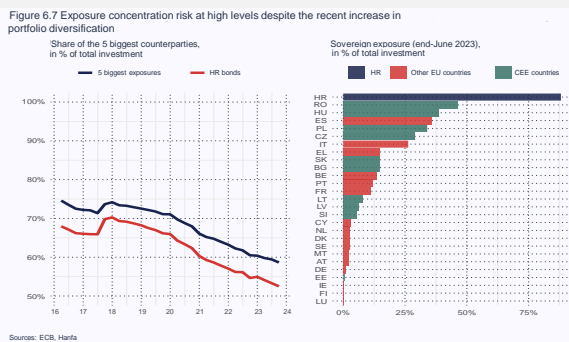
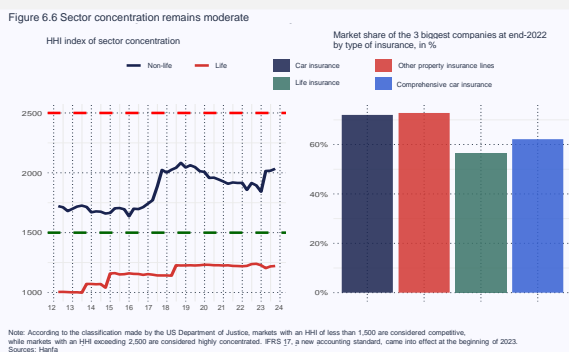
<sup>49</sup> Claims settled in the segment of motor vehicle liability insurance and comprehensive insurance grew annually by 21.6% and 20.7%, respectively.

<sup>50</sup> For example, the three biggest companies account for 72% of total premium collected in 2022 for compulsory motor vehicle liability insurance, their share in the comprehensive insurance segment amounting to 62.2%. At the same time, as much as 73.0% of the premium

companies, and was reflected only in the lower portfolio value. Although the value of investments of insurance companies recovered significantly in the first nine months of 2023, their exposure to market and interest rate risks remained elevated. At the end of the third quarter of 2023, investments in government bonds accounted for a dominant 55.3% share in total investments, growing by 3.3 pp on an annual basis<sup>51</sup>. The share of equity investments also increased, reaching 12.8% of total investments of insurance companies at the end of September 2023 (Figure 6.8). These changes were due to the increase in risk-free interest rate in 2022 and 2023, prompting companies to channel some of their liquid assets to government bonds, as well as a simultaneous rise in stock market prices amid the revived investor sentiment and subdued risk aversion (more information in Chapter [3 Financial markets](#)).

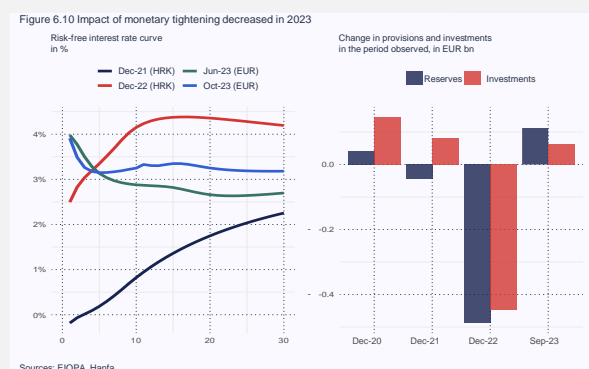
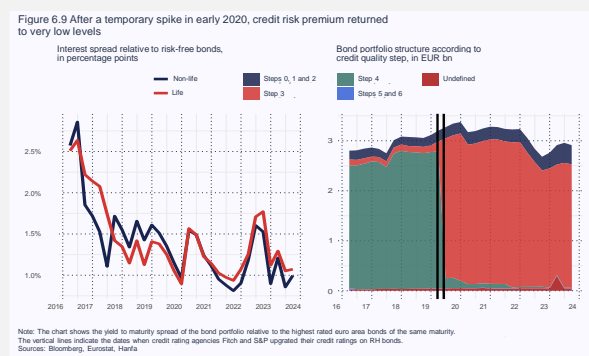
The value of real estate investments did not change much over the course of 2023, accounting for 9.8% of total investments at the end of the third quarter of 2023. Although investment in real estate is not the dominant investment class at system level, in a certain number of companies its share exceeds 30% by a large margin, rendering them much more vulnerable to potential adverse market developments and possible systemic shocks in conditions of elevated inflation and interest rates and reduced disposable income of households (more information on the characteristics and risks arising from the real estate sector in [Box 1 Real estate investments: an alternative form of investment that significantly affects](#)

**the stability of the financial services sector in Croatia?).**



Cash held by insurance companies recorded a marked annual decrease of as much as 56.5% (at the end of September 2023 it accounted for 2.3% of total investments – a fall of 3.2 pp), reflecting the significant growth in interest rates that led to an increase in investments in other forms of assets.

<sup>51</sup> The share of corporate bonds dropped by 0.6 pp (to 5.0% of total investments).



**The growth in interest rates did not much affect the level of liquid assets held by insurance companies in 2022 and 2023, but it underscored potential vulnerabilities of individual companies characterised by higher exposure to less liquid asset classes.** Liquidity risk is more pronounced in the life insurance segment, which may be additionally exposed to the risk of an increase in the number of redemptions of existing insurance policies amid the decline in real income and growing profitability of alternative investment forms, as well as lower inflows of funds through smaller volumes of newly concluded contracts. Despite the rise in interest rates, no significant pressures on early payments of funds were recorded in 2023, which kept the sector's liquidity (in terms of the share of liquid assets in total assets) at the end of September 2023 at a high level of 62.8% (Figure 6.13).

**Credit risk exposure was further reduced in mid-2022 owing to the upgrading of Croatia's credit rating ahead of the country's joining the euro area. However, the growing macroeconomic and geopolitical uncertainty underscores the risk of correction of the historically low risk premium.** The decrease in credit risk exposure is reflected in changes in the credit quality<sup>52</sup> of the entire bond portfolio, showing clear trends over the past two years (Figure 6.9). Looking at the investment part of the portfolio alone<sup>53</sup>, the share of the highest quality bonds grew steadily<sup>54</sup> (from 8.0% at the end of 2021 to 13.2% at the end of the third quarter of 2023), accompanied by a parallel drop in the share of bonds rated BBB+ to BBB-, including Croatian government bonds (a decrease from 89.6% at end-2021 to 84.8% at end-September 2023). This suggests that elevated inflation and interest rate growth had no major effect on the credit quality of investment portfolios in the short run. This was certainly also due to the fact that the portfolio of domestic insurers predominantly consists of the perceived safer government bonds whose fundamentals remained relatively stable despite the worsening in financing conditions, as well as the fact that no significant deterioration in the credit quality was seen in the European public debt market. Materialisation of credit risk in the future will primarily depend on the delayed impact of high interest rates on private sector operations, to which domestic insurance companies are not significantly exposed.

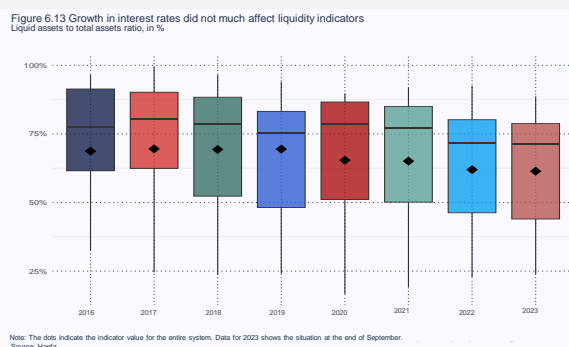
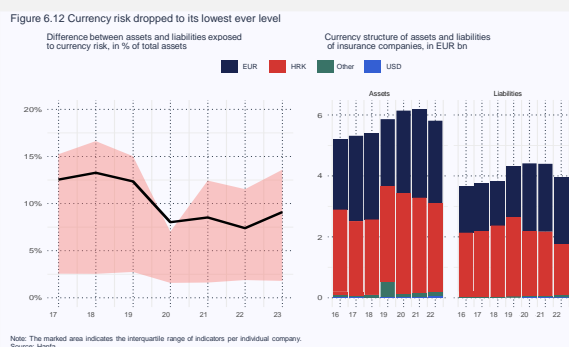
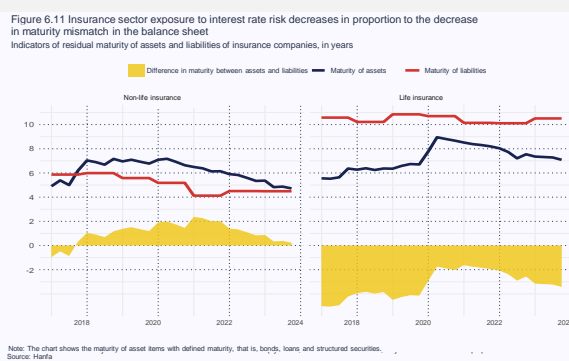
<sup>52</sup> In terms of credit quality step (CQS).

<sup>53</sup> The bonds are at least CQS 3.

<sup>54</sup> CQS 1 and 2 (credit rating from AAA to A-).

**Following the surge in interest rates and significant losses arising from devaluation of available-for-sale financial assets in 2022, expectations of monetary easing led to a reduction in interest rates in 2023.** Driven by the rapid growth in the risk-free interest rate curve in 2022 amid elevated inflation (Figure 6.10), the value of insurance companies' investments, particularly in bonds, dropped significantly (by 8.0% from the end of 2021). With the first indications of stabilisation of the interest rate cycle, the decline in the value of investments of almost all asset classes came to a halt in 2023.

Interest rate risk exposure of insurance companies is largely determined by the maturity (mis)match between their assets and liabilities. Non-life insurance companies are relatively shielded from significant changes in interest rates given the low maturity mismatch of only 0.4 years at the end of June 2023. By contrast, the life insurance segment is much more exposed to market changes driven by interest rate developments because of the maturity mismatch between assets and liabilities of 3.3 years (Figure 6.11). Against the background of subdued monetary expectations, the longer maturity of liabilities than assets caused liabilities to rise more than assets in 2023, albeit they remained at considerably lower levels than at end-2021. However, market expectations of monetary easing and interest rate cuts might have the opposite effect, depending on the extent to which insurance companies will increase the duration of their investments.



**After Croatia's entry into the euro area at the beginning of 2023, currency risk faced by insurance companies fell to very low levels.** The average net open currency position fell from 21.8% (end of 2022) to 5.5% in early 2023 (Figure 6.12). The major part of the remaining net open position 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. Apart from lower currency exposure, Croatia's euro area accession has influenced solvency indicators of insurance companies. The positive effect is reflected in lower capital requirements as Croatian euro-denominated bonds have become domestic currency-denominated bonds,

which are subject to lower capital requirements than those denominated in foreign currencies<sup>55</sup>. On the other hand, the adoption of the euro marked the beginning of the use of the euro risk-free curve in the process of discounting liabilities of insurance companies. The euro curve is lower than the risk-free kuna interest rate, which contributes to the growth in the present value of liabilities and, consequently, to the decrease in the own funds and the solvency indicator of insurance companies. However, the environment of rising interest rates, which peaked at end-2022, triggered a sharp increase in the euro curve (which was particularly pronounced in initial years) and the drop in the value of liabilities which offset the concurrent decrease in the value of assets and had a positive net effect on solvency indicators at end-September 2023.

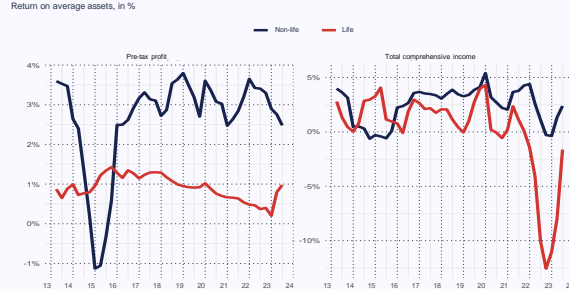
### Profitability and capitalisation

**The inflationary environment and interest rate growth in 2022 depleted the capital buffers of the insurance sector in that year. The fading out of the effect of monetary tightening in 2023 and growing expectations of an imminent decline in interest rates have brought companies' profitability back to normal levels.**

The operating profitability of insurance companies decreased slightly in 2022 due to an increase in the amount of claims in both business segments<sup>56</sup> and an annual

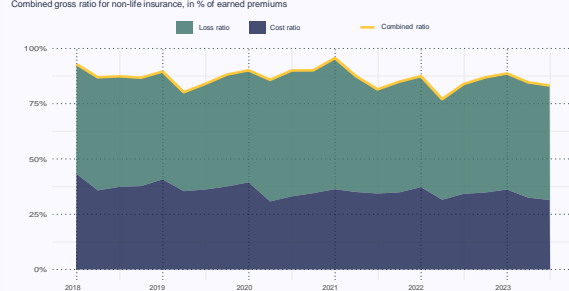
fall in investment income of 4.6%. The annual return on average assets in the non-life insurance segment and the life insurance segment thus stood at 2.9% and 0.2%, respectively<sup>57</sup>. The overall impact of interest rate growth and unfavourable market developments is, however, evident in comprehensive income, which includes revaluation of available-for-sale financial assets, decreasing by EUR 424.0m in 2022 (Figure 6.14).<sup>58</sup> Consequently, taking into account comprehensive income, non-life insurance companies did not make significant profits (0.4%), while life insurance companies generated considerable losses (of as much as -12.6%).

Figure 6.14 Increase in financial asset valuations gave a boost to comprehensive income



Source: Hanfa

Figure 6.15 Sharp decrease in the combined ratio



Note: The indicators were calculated based on Solvency II reports.  
Source: EIOPA

The slower pace of the monetary tightening and market expectations of an imminent decline in interest rates led to a decrease in the risk-free interest rate,

<sup>55</sup> The reduction in overall requirements is mostly reflected in the treatment of Croatian euro-denominated bonds as bonds issued in the domestic currency, implicitly reducing the requirements for yield and concentration risks.

<sup>56</sup> In the non-life insurance segment, the annual increase was 9.9%, while in the life insurance segment it stood at 6.5%.

<sup>57</sup> A decline of 0.8 pp and 0.3 pp, respectively, on an annual basis.

<sup>58</sup> Of which as much as 76.8% related to life insurance.

consequently causing an increase in the value of assets of insurance companies and the recovery of profitability relative to the previous year. At the end of June 2023, profitability in the non-life insurance segment stood at 2.4%, while in the life insurance segment it stood at a slightly negative level of -1.6%. At the same time, the gross combined ratio in the non-life insurance segment also improved given the more significant increase in premiums collected when compared to the amount of settled claims (Figure 6.15).

**The capitalisation of insurance companies measured by the SCR ratio increased in the first nine months of 2023 by 8.3 pp, driven by a recovery in the value of investments and a reduction in capital requirements.** The decrease in capital requirements resulting from the introduction of the euro and the increase in the risk-free interest rate resulted in a net increase in the SCR ratio in 2023. As early as the end of the first quarter of 2023, the SCR ratio was as much as 17.1 pp higher than at the end of the previous year, reaching 238.2% (Figure 6.16), but it edged down to 229.4 % by the end of the third quarter of 2023.

The recent interest rate increase improved insurance companies' capital

buffers. However, given that this rise in rates resulted primarily from an increase in the risk-free interest rate, while the risk premium fell to a historical low, in the context of heightened uncertainty that will prevail again in 2024, unexpected macroeconomic or financial disturbances could, through a rise in risk premium, significantly erode insurers' asset values, but with a limited impact on liabilities. Consequently, such a scenario could undermine the currently very high relative capitalisation of companies.

Figure 6.16 Solvency of insurance companies still well above the regulatory minimum  
Total and median SCR ratio, in %

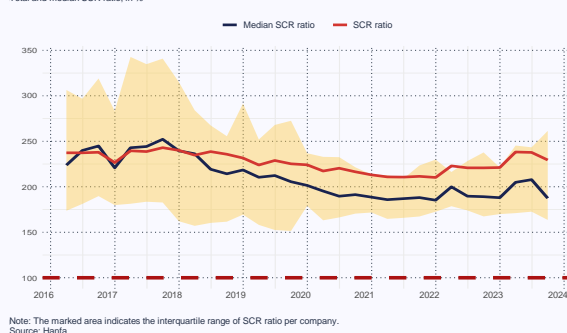
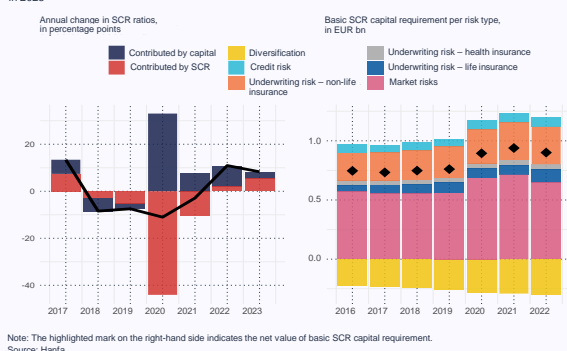
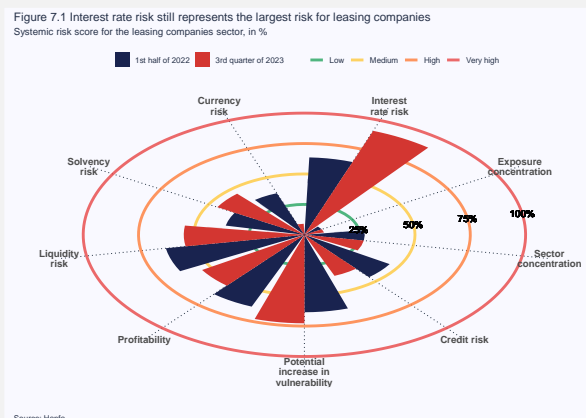


Figure 6.17 Growth in interest rates triggered a rise in the capitalisation indicator in 2023



## 7 LEASING COMPANIES



**Leasing companies continued to perform well in 2022 and the first half of 2023 on the basis of the strong growth in the number and value of newly concluded contracts. Although developments in leasing companies' operations are positive and credit risk on their balance sheets is at historically low levels, the tightening of financing conditions increases interest rate risk and reduces the net interest margin, adversely affecting the profitability of leasing companies.**

### Key cyclical trends

**Thanks to positive economic developments and the strong tourist season, leasing companies continued to perform extremely well in 2022 and 2023.** Despite the growth in interest rates and financing costs, favourable economic conditions boosted demand in the period under review. The number of active leasing contracts stood at 175.4 thousand

at the end of September 2023, an increase of 15.1% from the end of 2021. High inflationary pressures and the growth in the prices of leased assets further raised the value of active contracts, so that at the end of September it was 32.5% higher than at the end of 2021. Although the value of both operating and finance lease contracts increased, as much as 86.5 % of the total value of active contracts at the end of September 2023 related to finance leasing. The growing significance of finance leasing contributes positively to the stability of the operations of leasing companies, since finance leasing is characterised by a relatively higher value of individual contracts, as well as longer maturity<sup>59</sup>, which ultimately reduces liquidity pressures and results in more stable sources of income for companies. In addition, financial lease contracts are relatively more diversified than operating lease contracts in terms of the type of leased assets, which increases companies' resilience to idiosyncratic shocks that may arise in specific segments of the economy or in the operations of individual clients.

The total assets of leasing companies rose by 11.9% in 2022, while the growth of 17.3% in the first nine months of 2023 resulted in assets worth EUR 3.5 billion at the end of September 2023. The number of new contracts increased by 21.3% in 2022 and the first nine months of 2023 from 2021, with their value increasing even more, by 55.3%. This was also due to a significant

<sup>59</sup> At the end of September 2023, in the finance lease segment, 29.1% of the value of active contracts was contracted with a maturity

exceeding 5 years, while in the operating lease segment this value was 11.6%.

increase in the purchase prices of commercial vehicles and passenger cars vehicles (Figure 7.4),<sup>60</sup> whose financing traditionally accounts for the bulk of newly concluded contracts (84.9% of the value of newly concluded contracts, with the largest share of financing being associated with tourism and tourism-related services,<sup>61</sup> accounting for 29.0% of the value of newly concluded contracts).

Figure 7.2 Vehicles continue to account for the bulk of newly concluded and active contracts

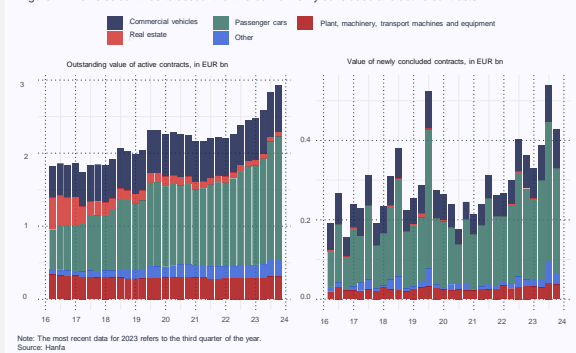


Figure 7.3 Most contracts are associated with tourism activities

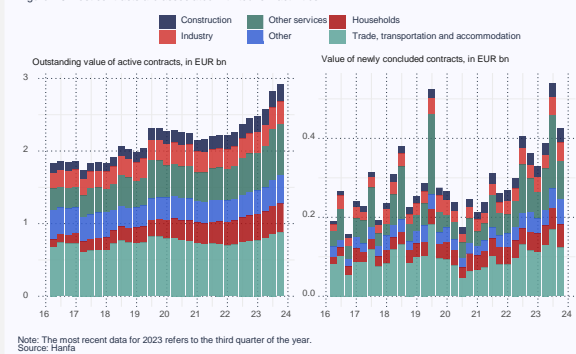


Figure 7.4 Growing prices of motor vehicles added to the rise in the value of newly concluded contracts

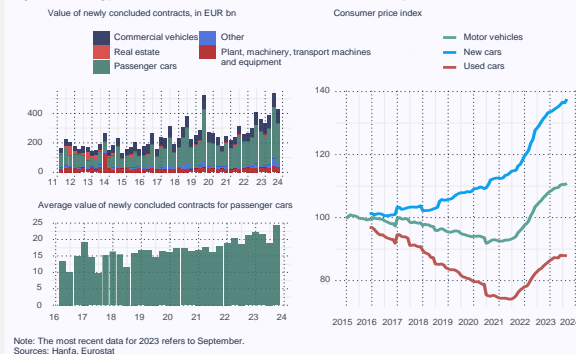
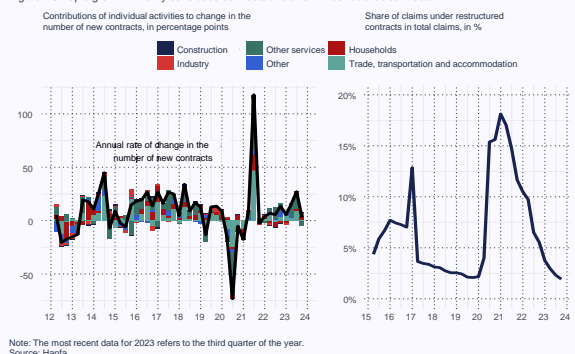


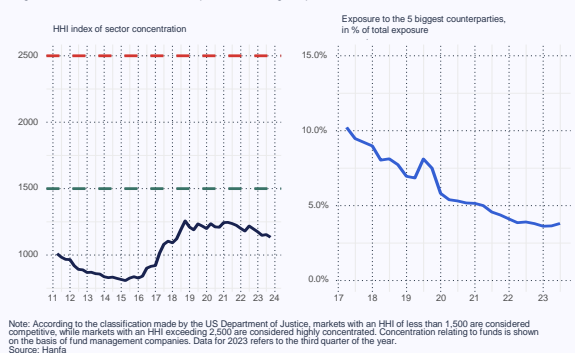
Figure 7.5 Rapid growth in newly concluded contracts and a fall in restructured contracts



## Structural characteristics and risks

**The concentration of the leasing sector remained low in 2023, thanks to relatively stable market conditions and an unchanged number of leasing companies.** The exposure of leasing companies to individual lessees was also low during the period under review. The five biggest clients thus accounted for only 3.6% of total exposure at end-2022 and 4.0% in September 2023.

Figure 7.6 Sector concentration and exposure of leasing companies remain at low levels



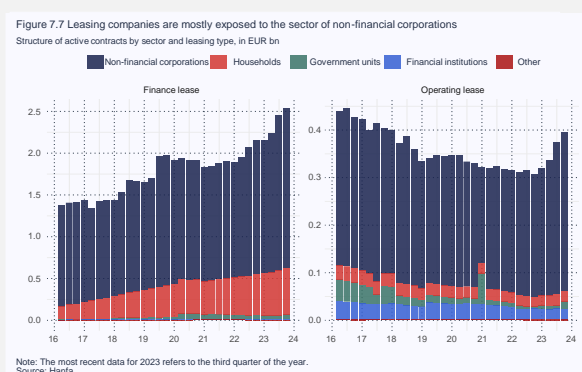
Even though the portfolio of leasing companies is diversified according to individual lessees, their operations are relatively concentrated by type of leased assets. At the end of September 2023, passenger cars and commercial vehicles accounted for 79.3% of the value of active contracts<sup>62</sup>, of which tourism-related

<sup>60</sup> At the end of 2022, the price of motor vehicles in Croatia grew by 11.5% and the price of new cars went up by 12.8% on an annual basis. The increase in prices continued into 2023, albeit at a somewhat slower pace than in 2022.

<sup>61</sup> Tourism and-related services relate to NCA categories of Wholesale and retail trade (G), Transportation and storage (H) and Accommodation and food service activities (I).

<sup>62</sup> 84.9% of the value of new contracts.

activities accounted for as much as 30.0%. Given the high exposure to the tourism sector, noteworthy are the interdependency and correlation of leasing companies' operations with cyclical movements in tourism that are to a significant extent dependent on foreign demand, which is in the context of the economic slowdown in the euro area (more information in Chapter [2 Macroeconomic environment](#)) exposed to significant risk of a negative correction.



**Interest rate risk and interest rate-induced credit risk are still the most prominent risks to which leasing companies are exposed given the mismatched interest rate and maturity structure of their balance sheets.** The raising of benchmark interest rates and the tightening of financing conditions in 2022 and 2023 led to an increase in the financing costs of leasing companies (Figure 7.9). Interest expenses grew annually by 44.3% in 2022 and by another 158.3% in the first nine months of 2023. At the same time, interest income grew at a much slower pace (its annual growth stood at 7.6% in 2022 and at 23.2% in the first nine months of 2023) as 72.6% of total placements at the end of September 2023 were granted with a fixed interest rate (Figure 7.10). As a result, the net interest

margin decreased by 1.1 pp over the period under review and stood at 2.5% at the end of September 2023, putting pressure on the profitability of leasing companies.

Despite a considerable increase in the costs of funding sources against a background of interest rate growth, a high share of intra-group financing<sup>63</sup> ensures the relative funding stability in terms of availability. In the medium term, a possible shift in the interest rate policy of central banks would reduce perceived interest pressures on the operations of leasing companies and, indirectly, the upward pressures on credit risk in the forthcoming period.

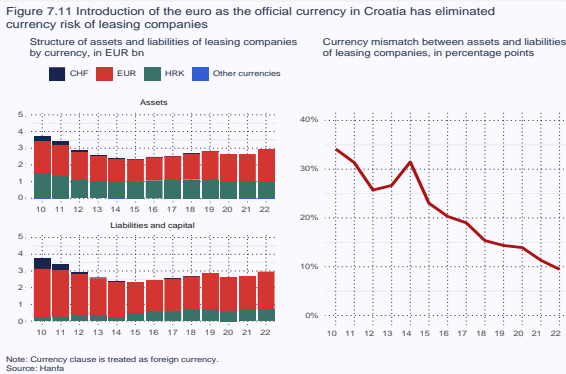
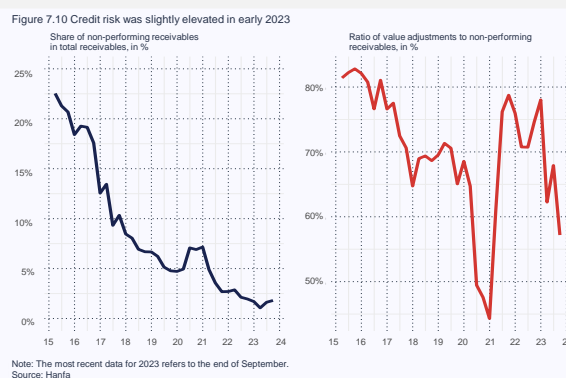
**The credit risk exposure of leasing companies did not change significantly in 2022 and 2023 given the relatively favourable macroeconomic circumstances and strong growth in the volume of new business.** Despite a slight deterioration in the credit quality of placements, the share of non-performing receivables in total receivables continued to decrease, standing at 1.8% at the end of September 2023, while the coverage of non-performing placements remained at a relatively high level of 57.2% at the end of September 2023.

The observed improvement in the credit quality was achieved in the context of strong inflows of newly concluded contracts, which prevented a significant impact on value adjustments by leasing companies. Although not seen in 2023, a possible deterioration in the repayment capacity of lessees in conditions of interest rate growth and a potential economic slowdown might increase the

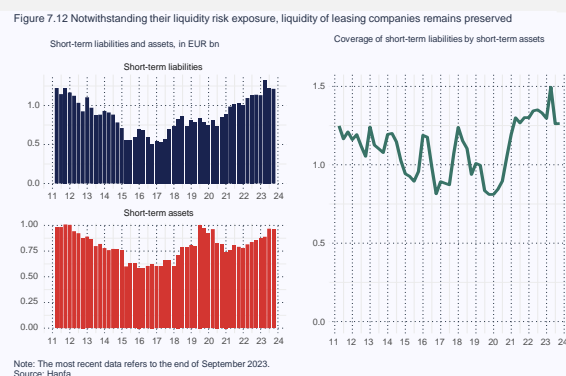
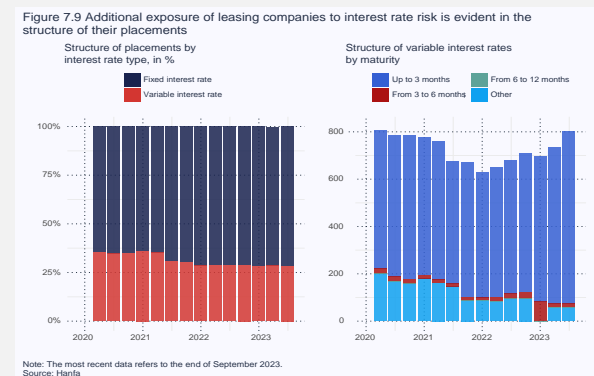
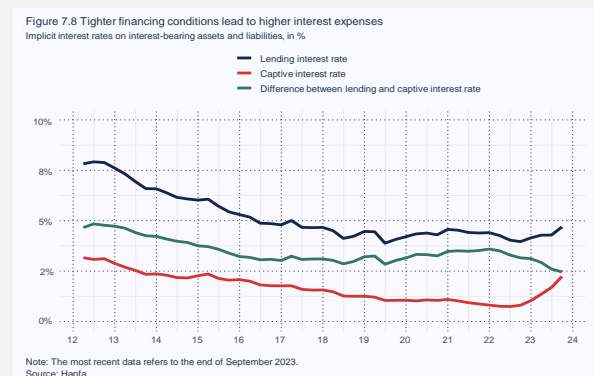
<sup>63</sup> At the end of 2022, 57.6 % of total sources of financing were parent bank loans.

probability of credit risk materialisation in balance sheets and considerably jeopardise the operations of leasing companies. However, the favourable interest rate structure (Figure 7.10) and the relatively low concentration of placements (Figure 7.6) reduce the probability and impact of the potential materialisation of credit risk.

**The exposure of leasing companies to currency risk almost completely disappeared following the introduction of the euro as the official currency of the Republic of Croatia.** At the end of 2022, the currency mismatch between assets and liabilities stood at 9.5%. With the introduction of the euro, it was eliminated as in the last few years assets and liabilities in kuna and euro accounted for almost 100% of the currency structure of the leasing companies' balance sheet.



**Liquidity of leasing companies remained stable in 2022 and 2023 despite the fact that their assets have relatively longer maturity than their liabilities.** The sharp growth in short-term liabilities in early 2023 was spurred by the 15.2% rise in loans of foreign banks from the end of 2022. The liquidity of leasing companies increased in June 2023 due to an 8.8% increase in short-term assets from the previous quarter.



## Profitability and capitalisation

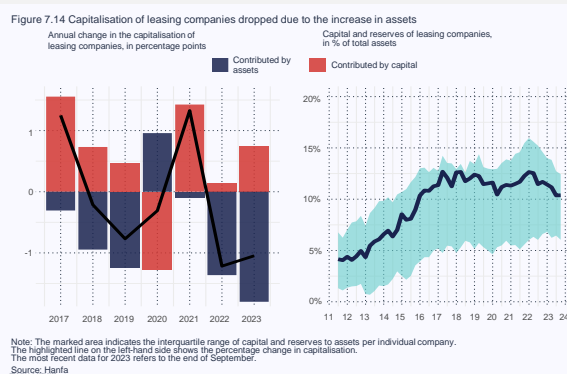
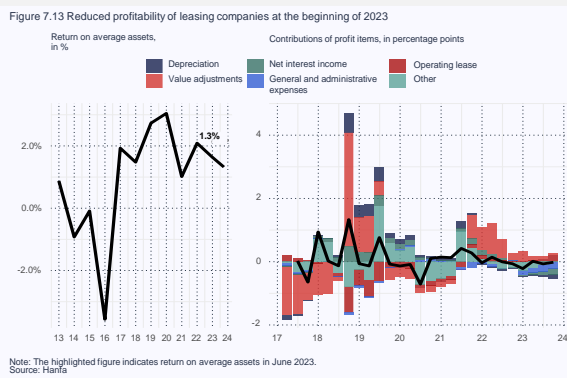
**The rise in financing costs adversely affected the profitability of leasing**

**companies in the period under review.**

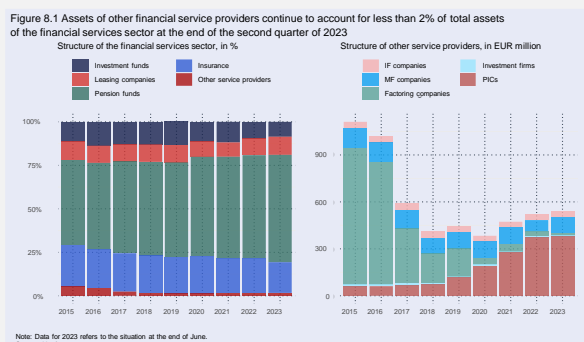
While business volumes increased in 2022 and 2023, profitability decreased, with return on average assets standing at 1.3% in September 2023 (Figure 7.15). The fall in profitability is attributable to the existing maturity and interest rate structure of the balance sheet of leasing companies and a fall in net interest income of 17.0% in the first nine months of 2023 from the same period of the previous year.

**The capitalisation of leasing companies, measured as the share of capital and reserves in total assets, steadily decreased in 2022 and the first three quarters of 2023.** More specifically, the 7.8% increase in leasing companies' capital and reserves in that period was paired with a much sharper increase in their assets, of 31.3% (Figure 7.16). As a result, the capitalisation of leasing companies stood at 10.4% at the end of September 2023, 1.1 pp less than at the

end of 2022. Smaller relative capital stocks of leasing companies reduce the sector's resilience to a possible scenario of an economic slowdown and subsequent credit risk growth.



## 8 OTHER FINANCIAL SERVICE PROVIDERS



**Despite the fall in assets of the most dominant segments (in terms of their size) of the financial services sector in 2022, sector structure remained largely unchanged, with factoring companies, pension insurance companies, pension companies and investment firms and management companies accounting for only 1.7% of the sector's assets at the end of June 2023 (Figure 8.1). In the context of heightened systemic risks, these financial service providers, whose stable operation is extremely important for the smooth functioning of the financial services sector, are facing increased business challenges.**

### Key cyclical trends

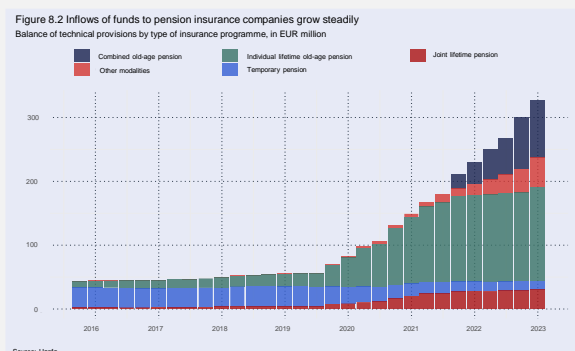
Pension fund management companies are responsible for setting up and managing pension funds. Although their assets account for only 0.3% of the assets of the financial services sector, they managed EUR 21,4bn at the end of June 2023, or 61.7% of total financial services

sector assets. Two pension insurance companies are responsible for the post-retirement payout phase, with assets reaching EUR 377.4m at the end of June 2023. Investment firms, the most modest part of the financial services sector in terms of size (accounting for only 0.03% of the sector's assets) are indispensable intermediaries in financial transactions in the market, participating in half of all transactions in the domestic capital market, the same as credit institutions. Also worth noting are investment fund management companies and factoring companies (Figure 8.1), which perform specific and irreplaceable functions in the domestic financial system.<sup>64</sup>

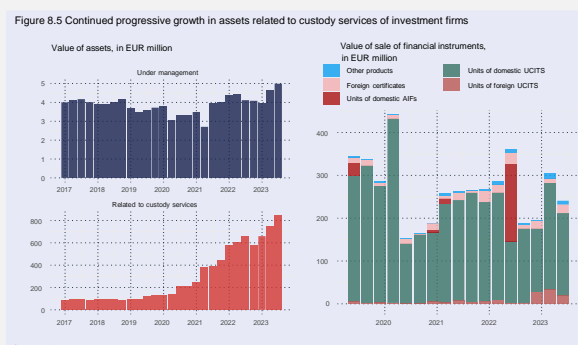
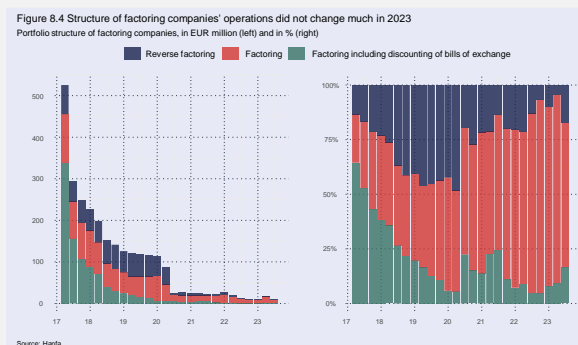
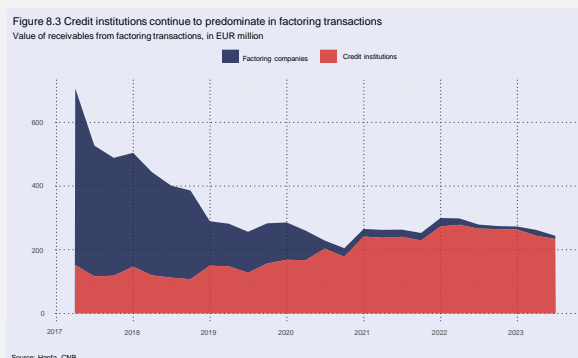
The systemic importance of pension insurance companies stems from their indispensable role in the context of pension insurance based on individual capitalised savings, which will continue to grow in the coming period, due to the maturing of the pension system, which gradually moves from the dominant accumulation phase to the payout phase. Inflows to pension insurance companies (Figure 8.2) might also grow in the upcoming period given the equalisation of supplements to pensions paid from both the 1st and the 2nd pillar, and other legislative amendments that enter into force in 2024, which could enhance the attractiveness of combined pensions for a large number of insured persons. Technical provisions of pension insurance

<sup>64</sup> More information on the role of particular categories of financial service providers can be found at [Hanfa's website for consumers](#).

companies rose by EUR 91.5m in 2022, up by 38.3% from 2021. The growth was much lower in the following year (EUR 5.4m, or 1.6% at the end of June compared to the end of 2022), due to the entry into force of the new international accounting standard IFRS 17, which fundamentally changed the calculation of technical provisions.



The several-year process of consolidation in the factoring sector continued into 2023, reducing the number of active factoring companies to three (four factoring companies were active in 2022). The total volume of factoring business also decreased in 2022 and 2023, primarily due to lower demand for factoring products by non-financial corporations. As a result, total receivables from factoring transactions in Croatia stood at EUR 243.8m at the end of June 2023, which is a decrease of EUR 55.8m or 18.6% from the end of 2021. The bulk of factoring operations took place in credit institutions (96.0% of receivables, Figure 8.3). As regards the portfolio structure of factoring companies, classic factoring, accounting for 66.2%, continued to be the dominant type of receivables at the end of June 2023 (Figure 8.4).

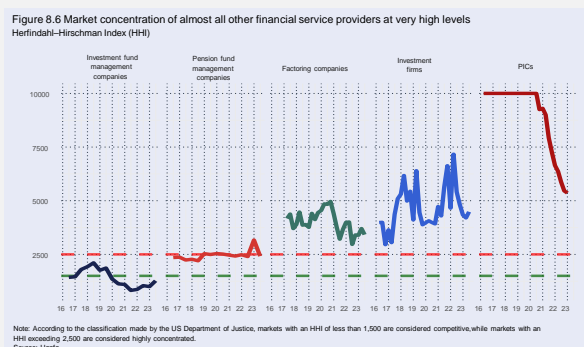


In the segment of financial instruments sales of investment firms, the sale of UCITS units, which accounted for 73.5% of total sales between the end of 2021 and the end of the second quarter of 2023, continued to be the most represented activity, of which 92.7% related to domestic UCITS (Figure 8.5). In 2022 and the first half of 2023, assets related to custody services continued to grow progressively, reaching EUR 843.5 m at the end of June 2023, up by EUR 262.4m or 45.2% from the end of 2021.

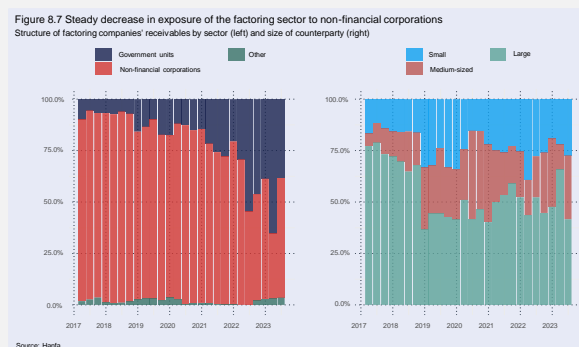
## Structural characteristics and risks

**The specificity of other financial service providers' operations is reflected in the**

**high concentration of this segment of the financial services sector as, because of their pronounced specialisation and specific business model, a small number of companies offer such services (Figure 8.6).** Concentration is moderate only in the segment of investment fund management companies due to the larger number of companies than in other industries and the relatively equal distribution of their assets. A slight increase in concentration was observed in 2022 and 2023 due to an additional accumulation of net assets with the largest company.

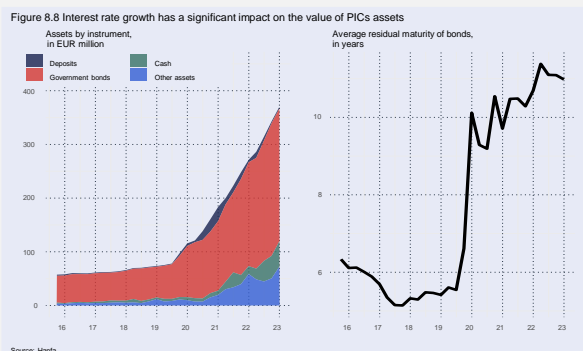


By the nature of their operations, factoring companies predominantly operate with the non-financial corporate sector, so that their **credit risk** exposure is largely determined by developments in the corporate sector. This exposure has been falling in recent years, so that non-financial corporations accounted for 58.1% of factoring companies' receivables at the end of June 2023 (Figure 8.7). Given the historically lowest levels of non-performing loans to non-financial corporations (Figure 2.13), the sector's credit risk is currently not significant, which is also reflected in the lower exposure of factoring companies to this risk.

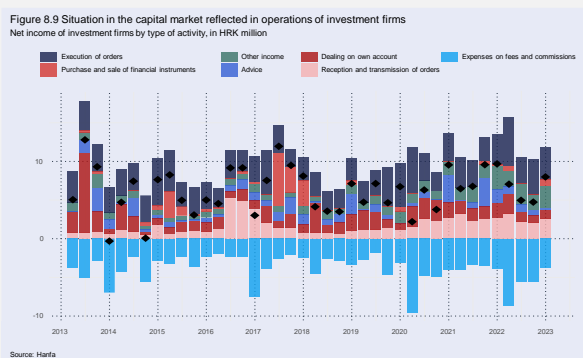


The most prominent risk in the pension insurance sector is **interest rate risk** because of the high exposure to government bonds (66.8% at the end of 2022) and their relatively long maturity (Figure 8.8). Interest rate growth in 2022 adversely affected the value of the bond portfolio, with rising inflation putting additional pressure on the companies' capitalisation through an increase in technical provisions associated with the legal adjustment of pensions. Unlike the previous accounting standard, according to which the technical provisions of pension insurance companies were discounted at fixed interest rates, with the entry into effect of the new international accounting standard IFRS 17 at the beginning of 2023, the discount rate applied to technical provisions is based on a risk-free yield curve with an adjustment for an illiquidity premium. Through an implicit increase in the discount rate and the consequent decrease in the value of liabilities, this partly offset the fall in investment value on the asset side in the context of monetary tightening. Although benchmark interest rates of central banks are expected to increase at a slower pace in the forthcoming period, the globally subdued risk premium exposes pension insurance companies to heightened market risks, which are, together with interest rate risks, the most prominent

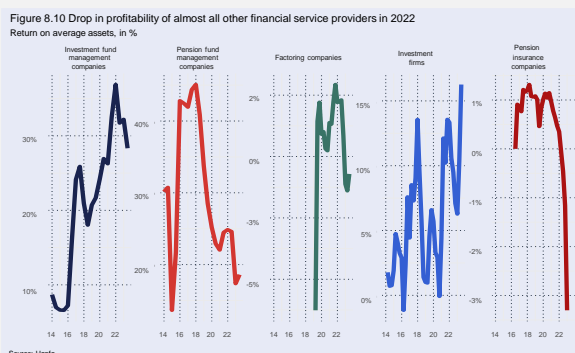
systemic risks these companies face in 2023.



As the bulk of their income comes from execution, reception and transmission of orders (Figure 8.9), investment firms are highly exposed to **market risk** and vulnerable to a sudden deterioration in investor sentiment. Pension and investment fund management companies are also significantly exposed to these risks as asset management fees, which are the dominant source of their income, depend on the asset net value. This exposure is more pronounced in investment fund management companies due to the possibility of additional impairment of profitability through net outflows, which was highlighted in the context of elevated market uncertainties throughout 2022 and 2023 (more information in Chapter 5 **Investment funds**).



## Profitability and solvency



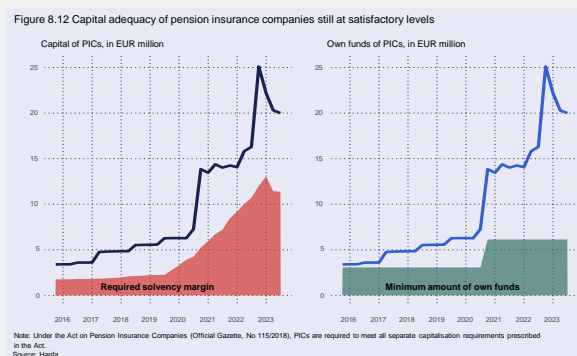
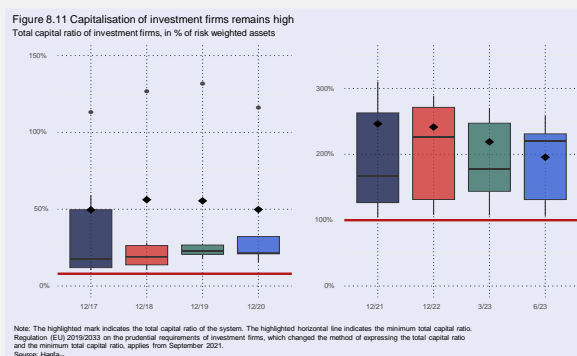
The profitability of investment fund management companies was impaired in 2022 due to the decline in investment funds' assets caused by unfavourable market developments and undermined investment sentiment (more information in Chapter 5 **Investment funds**). The fall in net assets resulted in a decrease in income from management fees of 7.4 % at the end of 2022 from the previous year. Despite the increase in returns in 2023, negative net outflows further reduced the net assets of UCITS in the first half of the year. This resulted in a 5.5% decrease in management fee income in the first half of 2023 compared to the same period of the previous year. Nevertheless, the profitability of investment fund management companies remained at high levels as return on their assets stood at 28.3% at the end of June 2023 (Figure 8.10).

The profitability of pension fund management companies also decreased in 2022, largely due to a drop in management fee income in 2022, which was 28.5% smaller than in 2021, as a result of a fall in assets under management (more information in Chapter 4 **Pension funds**). The increase in the net assets of pension funds driven by positive market developments in the first half of 2023

paired with stable payments led to a rise in the profitability of pension fund management companies, with return on assets reaching 18.6% at the end of June 2023.

The decline in factoring companies' profitability in 2022 and 2023 (return on assets stood at -0.7% at the end of June 2023) was mostly driven by the results of a company that ceased operations in 2023. The return on the assets of the remaining factoring companies was 4.2% at the end of June 2023, which is an increase of 0.2 pp compared to the operating results of these companies in 2021.

Negative market developments and deterioration of investment sentiment in 2022 significantly undermined investment firms' profitability through an increase in realised losses on financial assets. Although pre-tax profits of investment firms stood at EUR 0.8m at the end of 2022, decreasing by 52.1% from the end of the previous year, return on assets remained relatively high, at 6.3%. Driven up by the recovery in financial market valuations in 2023 as well as a reduction in their assets, the profitability of investment firms in terms of return on assets reached a several-year high of 16.3%. Owing to the maintenance of profitability at relatively high rates and the consequent maintenance of capital stocks, the capital adequacy ratio of the investment firms' sector has continuously been at levels much above the regulatory minimum (Figure 8.11), which enables investment firms to absorb potential additional systemic shocks.



Due to volatile market conditions and rising inflation, pre-tax profits of pension insurance companies stood at EUR -10.9m in 2022. This loss was largely generated by an increase in the other expenses of one of the companies as a result of the transfer of funds to the account of assets covering technical provisions because of the identified shortfall arising from inflation indexation of pensions. Semi-annual pre-tax profit at the end of June 2023, valued under the new accounting standard IFRS 17, stood at EUR 0.1m. Thanks to active management of capital adequacy risks, the capitalisation of pension insurance companies remained above regulatory requirements despite unfavourable business results, contributing to their resilience to potential systemic shocks amid elevated interest rate and market risks (Figure 8.12).

## **BOX 1 REAL ESTATE INVESTMENTS: AN ALTERNATIVE FORM OF INVESTMENT THAT SIGNIFICANTLY AFFECTS THE STABILITY OF THE FINANCIAL SERVICES SECTOR IN CROATIA?**

### **Introduction**

Developments in the real estate sector play a key role in the stability of the financial system. Real estate cycles are part of a more comprehensive financial cycle that, in the interaction with the credit cycle and the capital market cycle, significantly affect the financial system's exposure to systemic risk. According to economic theory, financial cycles last longer and have larger amplitudes than conventional economic cycles. The same is true for real estate cycles due to inelastic supply and relatively heterogeneous demand. Therefore, monitoring and understanding developments in this sector is key for maintaining the stability of the financial system, especially if the real estate sector, i.e. construction and related activities, is also an essential factor in economic growth.

Stress in the commercial real estate market can have a negative impact on the overall economy through various channels. Corrections in that market have an adverse effect on the operations of the construction sector and related activities. Through a decrease in the value of collateral and an increase in credit risk, they negatively affect the credit cycle and contribute to economic contraction. Following the global financial crisis of 2008, which was triggered by the collapse of the US real estate market, such a scenario also materialised in the domestic

real estate market, which recorded a cumulative fall in prices of 18.7% over eight years and a significant drop in liquidity. Banks, i.e. financial institutions most exposed to that market through the credit channel, suffered considerable losses. However, contractions in the real estate market affect strongly other financial institutions that are primarily exposed to that market through direct or indirect financial investments, which may lead to contagion and shock spillovers to other segments of the financial market and system in general.

### **Recommendations of the European Systemic Risk Board**

Previous analyses of systemic risks arising from the real estate sector mostly focused on residential properties that have a significant impact on banks' operations, and the prices of which are regularly released and analysed. The quality and scope of data collected within the commercial real estate statistics in Croatia are relatively fragmented and insufficient. The availability of detailed statistics on price trends in the commercial real estate market is a necessary precondition for the timely monitoring of risks to financial stability.

The importance of real estate market monitoring in the context of financial stability has also been recognised by the European Systemic Risk Board, which has in recent years issued a number of recommendations aimed at better

monitoring and addressing systemic risks arising from this market. The purpose of these recommendations is to recognise the real estate market as a possible source and/or catalyst of systemic disruptions in the financial system. Therefore, it is

necessary to set up a system for identification and monitoring of developments and trends in real estate markets at both the national and EU level (Table 1).

Table 1 ESRB recommendations related to the real estate market

Recommendation	Year of issue	Objective of the recommendation
<b>Recommendation on closing real estate data gaps (ESRB/2016/14)</b>	2016	focuses on the <b>harmonisation of definitions and indicators</b> used for monitoring residential and commercial real estate (CRE) markets and addressing existing gaps in the availability and comparability of data in the European Union
<b>Recommendation amending Recommendation ESRB/2016/14 on closing real estate data gaps (ESRB/2019/3)</b>	2019	requires the Member States to <b>collect physical CRE market indicators</b> whose development falls within the scope of the European Commission and make a detailed breakdown of collected data to fully cover the heterogeneity of the CRE market, the database on investors and sources of financing
<b>Recommendation on vulnerabilities in the commercial real estate sector in the European Economic Area (ESRB/2022/9)</b>	2022	focuses on <b>improving the monitoring of systemic risks</b> stemming from the CRE market, ensuring sound CRE financing practices, increasing resilience of financial institutions, and development of activity-based tools for commercial real estate in the Union

Source: Hanfa

## Commercial real estate market in Croatia

An important feature of the commercial real estate market is a high degree of heterogeneity as the market is influenced by many factors, the most important of which are the location, designated use and size of the property. In terms of designated use, commercial real estate is most often divided into several categories: offices or business space, industrial and logistics real estate, retail and hotels, while locational distribution is based on the categorisation of micro location attractiveness. As there is still no official statistics on the volume indicators for commercial real estate in Croatia, market monitoring is based on the data of several commercial real estate agencies

operating in the country<sup>65</sup>. These data are not comprehensive and relate to individual market segments, and often only to the city of Zagreb and the surrounding area, where market activity is relatively highly concentrated.

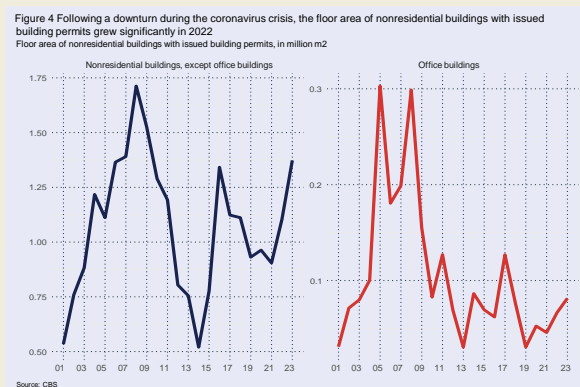
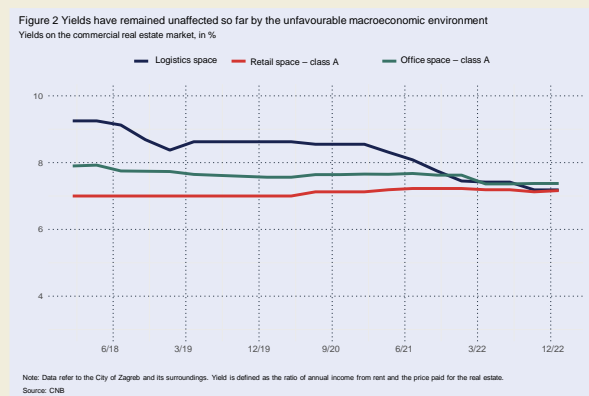
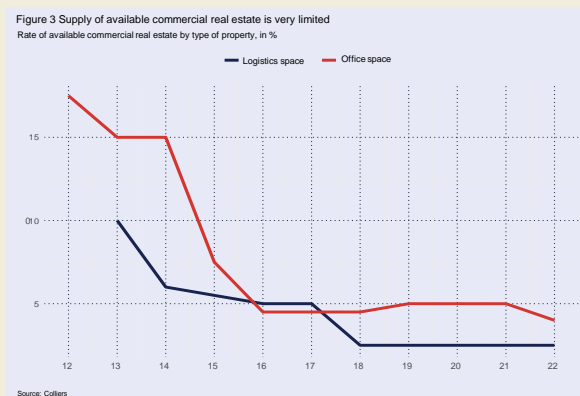
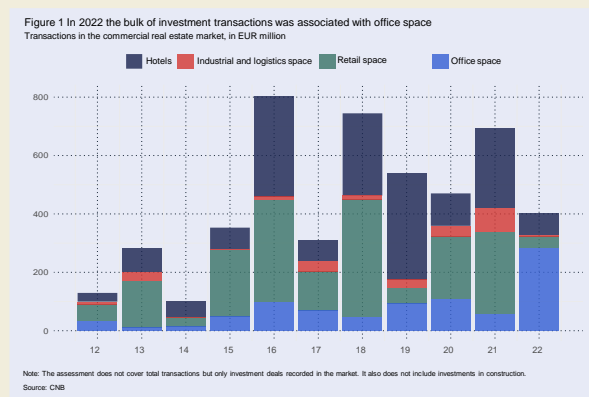
An important characteristic of the office market in Croatia is the lack of adequate space due to the lack of new projects to compensate for the strong demand, which was only temporarily reduced by the COVID-19 pandemic. After a slight slowdown in investment transactions in the office segment in 2021 (Figure 1), investments increased significantly in 2022, partly due to the reconstruction of buildings damaged in the earthquakes. Nevertheless, the demand-supply gap did not narrow significantly, so that the rate of

<sup>65</sup> In late 2019, the Croatian National Bank started collecting physical data on the commercial real estate market from several agencies engaged in

this activity in Croatia; based on such data, it analyses the risks associated with that market.

available office space stood at around 4%<sup>66</sup> at the end of 2022, remaining close to historical lows (Figure 3). Despite very high occupancy of space available in the market, return on investment in office space has not changed significantly in recent years, remaining anchored at 7.4% at the end of 2022. A possible increase in the supply of office space in the coming period is suggested by an increase in the floor area of office buildings for which building permits were issued in 2022. Nevertheless, this level was still several times lower than the highest recorded during the real estate market expansion in 2007 (Figure 4). Looking at other types of non-residential real estate, the floor area of buildings for which building permits were issued also increased, reaching its highest level since 2008.

In 2022, the logistics and storage segment was characterised by a low rate of available logistic and industrial space (Figure 3), a slight fall in return (Figure 2) and a modest volume of investment transactions (Figure 1). At the same time, investment transactions in retail space decreased significantly, while the return on the top-class retail space did not change significantly.



### Financial services sector's exposure to the commercial real estate market

The financial services sector in Croatia is not significantly exposed to the commercial real estate market as only 2.6% of total sector investment was directed to that market at the end of June 2023 (Figure 5). Insurance companies are the main investors in the real estate

<sup>66</sup> According to the Colliers data available at the following [link](#).

market, while other sectors are only marginally exposed to it.

The reasons for (non-)investment in real estate are different and depend on a number of factors: from legal restrictions on investment to the lack of attractiveness of this market due to the limited supply and liquidity of properties in Croatia. Traditionally, leasing companies in Croatia are oriented towards passenger cars and commercial vehicles, whereas real estate properties are not often used as leased assets<sup>67</sup>. The crisis in the domestic real estate market after 2009 and weak investor interest resulted in the liquidation of real estate investment funds,<sup>68</sup> which have not been operating in the domestic market since April 2019. On the other hand, direct investment options for mandatory pension funds in real estate did not exist prior legislative changes that entered into force in 2024.<sup>69</sup> Under the relevant act, direct investment in real estate is permitted for the first time for category A and B funds, while for category C funds such investments are still prohibited. Category A funds may initially invest no more than 5% of their net assets in real estate<sup>70</sup>, and if the fund reaches this threshold after five years from the entry into force of these amendments, it may increase the investments up to 10%, provided that the pension company has

experts to monitor the evolution of the real estate portfolio value. For category B funds, the limits are somewhat more restrictive and amount to 4% for the first five years and 7% after five years have elapsed.

Insurance companies alone have significant exposure to the real estate market, which also distinguishes them from companies in other EU countries. At end-June 2023, 12.5% of investment by insurance companies in Croatia was allocated to real estate not used for own purposes, while such real estate investments at the EU level amounted to 8.4%. The concentration of these investments is extremely high in some companies (at the end of 2022, almost half of the total number of real properties belonged to one company). The high concentration is also reflected in the HHI index based on the number of properties in the portfolio<sup>71</sup> (Figure 6). Of total real estate investments, at the end of the first half of 2023, half of the investments were direct investments, slightly less than one third related to investments in real estate for own use, and 17% related to indirect investments, i.e. mortgages. Various forms of real estate investment expose companies to different risks and transmission channels of potential real estate market shocks to their performance indicators. On the one hand,

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<sup>67</sup> At the end of June 2023, less than 1% of the number of leasing companies' active contracts related to immovable property, while the outstanding value of active contracts involving real property as the leased asset amounted to only 2.1% of the total value of all active contracts.

<sup>68</sup> Seven closed-ended investment funds with a public offering for real estate investment operated in Croatia at the end of 2008.

<sup>69</sup> Act on Mandatory Pension Funds (Official Gazette, No 19/2014, 93/2015, 64/2018, 115/2018, 58/2020 and 156/2023), available at the following [link](#).

<sup>70</sup> The characteristics of real estate in which pension funds may invest are laid down in Article 125, paragraph (19) of the Act on Mandatory Pension Funds.

<sup>71</sup> The HHI index was calculated using the number of real estate properties and not the value of investments so as to offset the effect of real estate price growth on the calculation of the concentration indicator.

direct investments expose them to the risk of a fall in return, while in indirect investments, where companies do not own the real estate in question but hold it under a mortgage, the most important risks are credit risk and the risk of insufficient collateral in the event of a fall in real estate prices.

Figure 5 Real estate investments account for a small share in total investments of the financial services sector

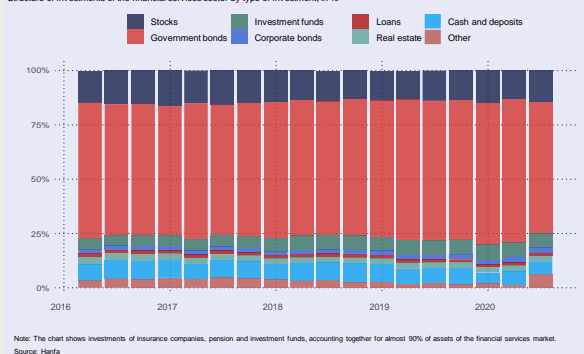


Figure 6 Real estate portfolio of insurance companies is highly concentrated



Figure 7 Insurance companies in Croatia are generally not active investors in the real estate market

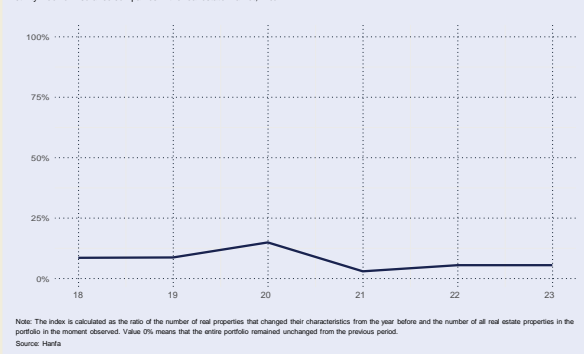
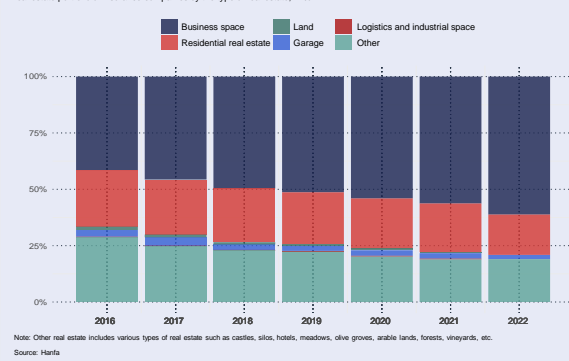


Figure 8 Real estate portfolio of insurance companies is predominated by business space



At the end of 2022, the real estate portfolio of insurance companies was dominated by business space with a share of around 60%, while residential property accounted for around 18% of the portfolio (Figure 8). Other real estate properties in insurance companies' portfolios (accounting for around 20% of the portfolio) include extremely heterogeneous sub-types of real estate,<sup>72</sup> which further underlines the importance of systematising definitions and monitoring a broad set of indicators in order to accurately detect market-wide developments.

What is perceptible is the relative staticity, i.e. inactivity of the real estate portfolio. The share of real estate entering the portfolio for the first time was very low throughout the observed period (Figure 7), standing at 5.5% at the end of 2022. In the seven-year period from the beginning of 2016 to the end of 2022, a high 65% of real estate properties were present in the portfolio throughout the observed period. This is reflected in the average age of the portfolio,<sup>73</sup> which grew approximately linearly over time and stood at 18.5 years at the end of 2022 (compared with 11.5 in early 2016).

Staticity of the portfolio reflects its structure and purpose as the bulk of real

<sup>72</sup> Such as, for example: garage and parking space, testing centres, fields and arable lands, castles, silos, forests, etc.

<sup>73</sup> The average age of the portfolio is calculated as the average difference between a certain point in time and the date of acquisition of real estate.

estate investments is accounted for by direct investment in business space, which as a rule generates to companies a stable cash inflow through leasing. This is particularly relevant in terms of profitability during periods of low interest rates given the relatively high rental yields in comparison with returns on alternative forms of investment. According to available data, the return on real estate investments has not changed significantly in recent years despite the general growth in residential real estate prices. Given the positive correlation between the residential and commercial real estate markets, it is clear that values of commercial real estate also increased over that period. The average price in the real estate portfolio of insurance companies rose by 11.9% between early 2016 and the end of 2022 (Figure 9), i.e. much less than the residential property index, which rose by 59.2% during that period. The price of the most divergent category "other" increased the most, while the price of individual categories (e.g. garage) even decreased, which is in contrast with general market developments (Figure 9).

An adequate valuation of real estate investments has a direct impact on basic performance and stability indicators of insurance companies. With regard to signs of a gradual decline in activity in the domestic housing market,<sup>74</sup> possible corrections in residential prices and the related commercial real estate prices could be reflected in a decrease in assets and capitalisation of insurance companies. The simulated shocks of a decrease in the value of commercial real

estate of 8% and 30% would reduce median capital reserves of domestic insurers from end-December 2022 by 6.64 pp and 24.70 pp, respectively. However, at the system level they would remain sufficient to absorb these shocks and well above the legally prescribed minimum requirements (Figure 10). The impact of a potential correction of commercial real estate prices on profitability will depend on changes in prices relative to changes in rent. However, given the general scarcity of high-quality business space in Croatia, the yield on real estate investments could remain relatively stable. The profit attractiveness of real estate investments will thus primarily depend on the relation between return on such investments and return on other investment options, which, as a rule, offer a higher degree of liquidity.

Given that real estate investments in the financial services sector have been the most widely represented alternative type of investment for a long time and that, with the recent legislative changes in investment options, it is certain that they will remain so in the next period, it is necessary to systematically and comprehensively monitor developments in that market, particularly in the segment of commercial real estate. Although exposure to real estate properties offers certain stabilisation effects (relative stability of yields, lower capital volatility), it is necessary to assess them adequately, which is not possible without a thorough monitoring of both the real estate market and the systemic risks that may arise in this sector. Continuous and systematic risk monitoring is the first step in a

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<sup>74</sup> In the first half of 2023, the number of purchase and sale transactions of residential real estate decreased by around 12% on an annual level.

comprehensive process of addressing systemic risks associated with the commercial real estate market, which, at the level of the EEA as a whole, have been assessed as high and require increased attention by economic policy makers. Addressing systemic risks arising from the residential and commercial real estate sector goes beyond the domain of the financial system and requires comprehensive inter-institutional cooperation.

Figure 9 Valuation of real estate in the portfolio of insurance companies is extremely heterogeneous  
Price index of real estate in the portfolio of insurance companies, 100 = 31 March 2016

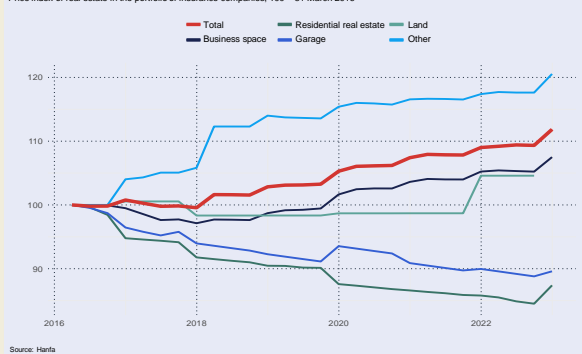
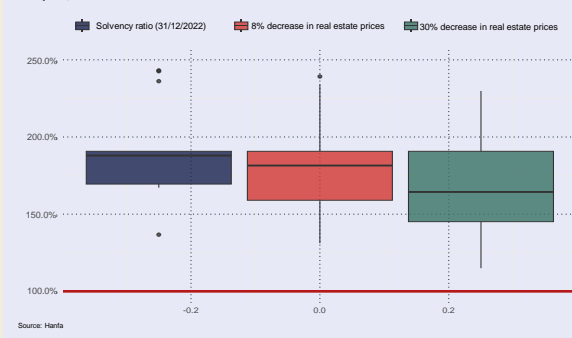


Figure 10 Simulation of the impact of a fall in real estate prices confirms that the capital reserves of insurance companies are sufficient to absorb simulated shocks



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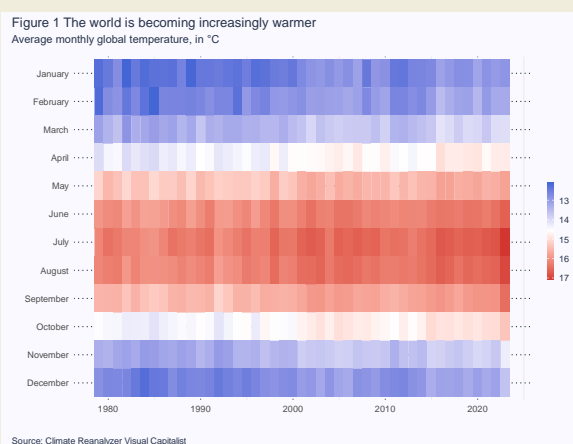
## BOX 2 FINANCIAL SERVICES SECTOR'S EXPOSURE TO CLIMATE RISKS

### Introduction

Continuous emissions of greenhouse gases in the atmosphere since the beginning of the industrial revolution have resulted in warming of the atmosphere and seas through the greenhouse effect. The numerous negative consequences of this, which have become increasingly visible on a daily basis, are known under an umbrella term – **climate change**. The observed increase in the global average air temperature of more than 1 °C compared to pre-industrial levels (a period from 1850 to 1900) raises a number of problems such as unstable weather conditions (long-term droughts, heavy rainfall and growing storms), biodiversity loss and threats to the global economy. The European Commission estimates <sup>75</sup> that climate-related economic losses in the last decade cost the European Union more than EUR 145 bn, which is about 2.5% of the EU's average GDP over the past ten years.

Climate change has a significant impact on the financial system as well, directly, due to physical risks caused by extreme weather events, but also indirectly through the so-called transition risks that may arise from the transition to a low-carbon economy. The financial system can play a key role in addressing climate risks and act as a catalyst for the green transition of economies by incorporating sustainability factors in investment

decision-making, promoting a green financial initiative and supporting a smooth transition towards a sustainable and resilient economy. Therefore, in order to preserve the stability of the financial system in the face of growing systemic risks related to climate change and to enable the financial system to actively participate in the sustainable transition of the economy, it is necessary to recognise climate risks in a timely manner and address potential systemic vulnerabilities to those risks.



### Legislative framework

While the fight against climate change started as early as the 1970s<sup>76</sup>, efforts to reduce greenhouse gas emissions have yielded limited results. However, in view of the increasing awareness of climate change and its growing presence, the **Paris Agreement** was signed in December 2015. It is the first global, binding international agreement focused on tackling climate change that aims to

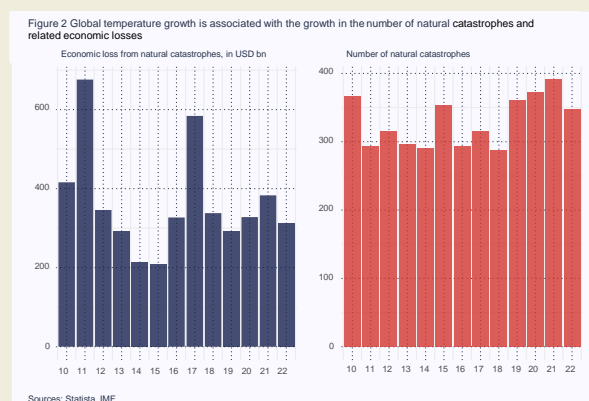
(the so-called First Earth Summit), highlighting the need for international cooperation in tackling climate change.

<sup>75</sup> More information is available at the following [link](#).

<sup>76</sup> In 1972, the United Nations held the first major conference on environmental issues in Sweden

keep the global average temperature rise to well below 2 °C compared to pre-industrial levels, and to pursue efforts to limit it to 1.5 °C.

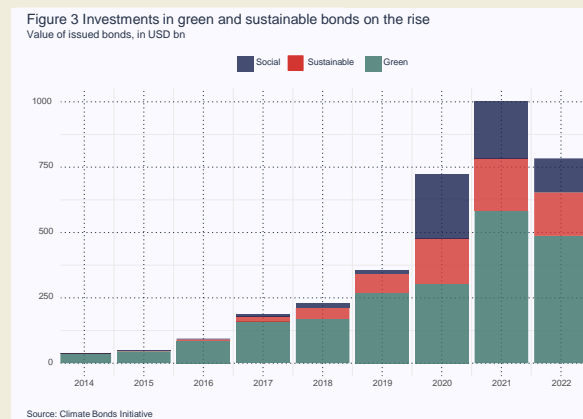
Achievement of the agreed transition targets implies comprehensive and substantive changes such as the transition to renewable energy sources as the main energy products for the economy, the adoption of new low-carbon technologies, construction of projects for carbon removal from the atmosphere and many minor changes in daily lifestyles.



In December 2019, the European Parliament adopted the **European Green Deal**, under which Member States commit to reducing greenhouse gas emissions by 55% by 2030 and becoming energy-neutral by 2050. In June 2021, the European Climate Law **(EU)2021/1119** entered into force, under which Member States are legally obliged to meet the climate targets adopted as part of the European Green Deal. To successfully reach the EU’s medium-term emission reduction target of at least 55% by 2030, European countries are working to develop a “Fit for 55” package containing a series of proposals to revise and update

<sup>77</sup> **Regulation (EU) 2020/852** of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate

EU legislation and launch new initiatives to ensure that climate targets are met.



Funding for the set climate targets implies significant resources, with **NextGenerationEU (NGEU)**, which is part of the seven-year EU budget, accounting for 30% of the total green investment funding, reaching the projected EUR 1tn of public funding up to 2028. Moreover, the financial system is recognised as a key sector that can make a significant contribution to the achievement of climate targets through efficient allocation of private and financial resources, the effectiveness of which is based on regulation that promotes sustainable investment and encourages the transition to a green economy.

The EU legislation relating to sustainable finance is based on three key documents: (1) the Taxonomy Regulation<sup>77</sup> creating a uniform classification system at the EU level aimed at determining whether an economic activity is environmentally sustainable;

sustainable investment, and amending Regulation (EU) 2019/2088, OJ L 198/13

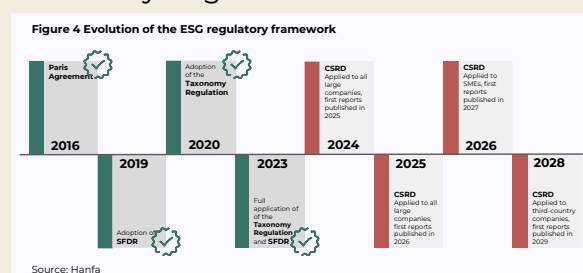
(2) the Corporate Sustainability Reporting Directive (CSRD)<sup>78</sup>, imposing an obligation on companies to publish standardised and verified sustainability reports;

(3) Regulation on sustainability-related disclosures in the financial services sector<sup>79</sup> (SFDR) laying down the obligation to publish sustainability-related information with respect to financial products to improve transparency towards investors and prevent greenwashing.

Hanfa, as a national supervisor, is also carrying out activities in relation to the green transition. In its **Climate Declaration**, Hanfa sets out its objectives and actions and commits to contribute to reducing the negative effects of global warming. In addition to the obligation to apply the EU legislation, Hanfa also published **Guidelines for the preparation and disclosure of ESG relevant issuer information** to enable uniform actions and reporting, aiming to make issuers' information comparable, reliable and understandable. A large part of the activities also focuses on the education of supervised entities, academic community and the general public. The aggregate results of the published reports can be found in the **Annual Report on Corporate Governance**.

Green and sustainable financial markets are evolving rapidly, although their

importance for the overall financial market remains low (Figure 3). The fastest development of the green market took place in Europe, as at the end of 2022 European bonds accounted for 46.9% of the total value of green bonds issued. For these reasons, the EU has adopted a new regulation governing European green bonds,<sup>80</sup> which will become applicable as of December 2024. The regulation introduces a voluntary designation 'European green bond' or 'EuGB', which highlights bonds as 'green', i.e. those that commit to using the bond proceeds in a green way. Issuers are allowed to allocate bond proceeds to directly or indirectly finance environmentally sustainable activities within the meaning of the Taxonomy Regulation.



Whereas it is clearly necessary to address climate change while also making the transition to sustainable finance, the structural changes that this transition brings also entail certain risks for the financial sector. Therefore, in 2020, the Network for Greening the Financial System (NGFS) published the **Guide for Supervisors** providing recommendations on the integration of climate-related and environmental risks into supervisory

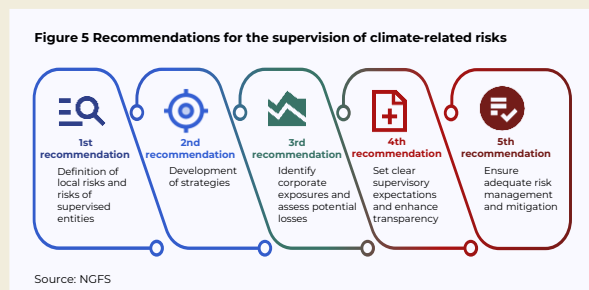
<sup>78</sup> **Directive (EU) 2022/2464** of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting, OJ L 322

<sup>79</sup> **Regulation (EU) 2019/2088** of the European Parliament and of the Council of 27 November

2019 on sustainability-related disclosures in the financial services sector, OJ L 317

<sup>80</sup> **Regulation (EU) 2023/2631** of the European Parliament and of the Council of 22 November 2023 on European Green Bonds and optional disclosures for bonds marketed as environmentally sustainable and for sustainability-linked bonds, OJ L 2023/2631

frameworks, covering all stages of the process, from the definition of climate risks to ensuring that climate risks are adequately managed by supervised entities.



## Transmission mechanisms of climate risks

The main sources of climate risks in the financial services sector can generally be divided into two groups, i.e. physical and transition risks. *Physical risks* represent financial costs and losses incurred as a direct result of climate change. They can be either acute – if they arise from climate or weather-related events such as floods, storms, droughts and fires – or chronic – if they arise from progressive shifts in climate and weather patterns, such as rising sea and air temperatures and rising ocean levels and acidity. *Environmental risks*, which are highly linked to climate change, relating to water, air and land pollution, deforestation and biodiversity reduction, should also be highlighted.

Another type of risk are *transition risks*, which arise as a result of the process of transition from a traditional economy to a low-carbon economy<sup>81</sup>. In this context,

<sup>81</sup> A low-carbon economy is a model of an economy which uses energy sources that produce low greenhouse gas emissions. This type of economy aims to become a net zero greenhouse gas economy.

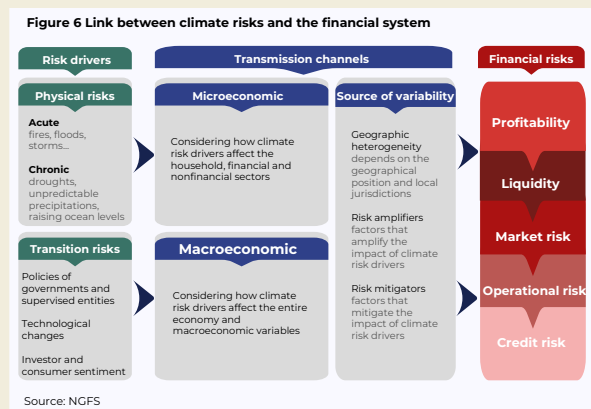
‘transition’ implies changes in regulations, reporting methods, existing and affordable technology and changes in investor sentiment regarding green investments.

The realisation of any of the mentioned climate risks can easily spill over to the financial services sector through numerous direct or indirect transmission channels. In general, these channels can be divided into microeconomic channels, which arise from difficulties in the operations of counterparties or through price corrections related to direct exposures of financial corporations,<sup>82</sup> and macroeconomic channels of climate risk manifestation through the impact on e.g. reduced labour productivity, inflationary pressures, rising financing costs and numerous other economic consequences.

Through these direct and indirect channels, climate risks may affect individual segments of the financial market. For example, a decrease in household disposable income raises the possibility of generating systemically significant outflows from investment funds. In addition, the physical manifestation of climate change, such as drought, may lead to increased damage claims against insurance companies and affect their liquidity, while transition risks associated with higher greenhouse gas taxes may affect the profitability of corporations. Given the high inherent interconnectedness of almost all financial

<sup>82</sup> The spillover of risks to the financial services sector through microeconomic channels occurs through the household, corporate and government sectors since the realisation of physical climate risks has a direct impact on their disposable income, reduces asset value and may affect corporate profitability.

system segments, particularly through indirect joint exposures in the capital markets, such disturbances, through the materialisation of market risks, can be transmitted very quickly, easily and in a multiplying manner to other parts of the global financial system.

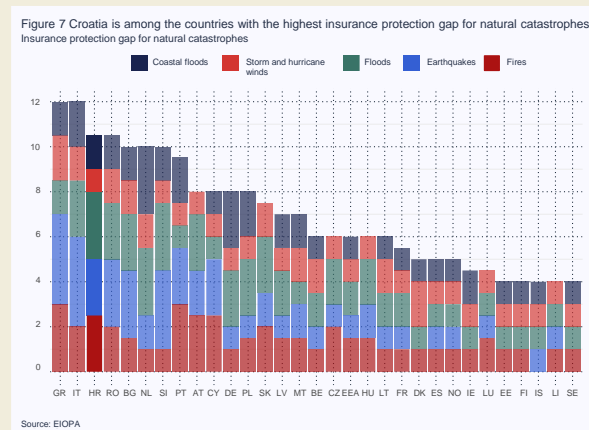


### Transmission mechanisms in the insurance sector

Insurance companies because of their business model, which is based on protecting the insured against the consequences of future adverse events, including natural disasters, insurance of tangible assets, liability insurance<sup>83</sup> and many other types of insurance, are highly exposed to climate risks. More frequent and more devastating climate disasters expose insurance companies to increased pressures to pay damages. A change in the risk profile of individual types of insurance creates upward pressures on insurance prices (premiums) and makes the conclusion of insurance contracts more difficult. On the other hand, more financially unavailable products increase

<sup>83</sup> Liability risks include the risk of climate-related claims under liability policies and direct actions against insurers for failing to manage climate risks. Liability risks could arise if insurance companies fail to take into account or respond to the impacts of climate change or to adequately

the insurance protection gap, which, if physical risks occur, creates a spiral of larger financial losses for households and businesses and, in turn, further reduces the financial availability of insurance.



It is precisely the large insurance protection gap for natural catastrophes that is one of the more prominent risks to which all segments of the economy are exposed. According to [EIOPA's dashboard on insurance protection gap](#), Croatia is among the four countries with the largest insurance protection gap for natural catastrophes in the EU, particularly as regards the risks of flood and earthquakes. The profitability of insurance companies is therefore subject to double pressure in case risks materialise – through increased claims for damages on the expenditure side and through reduced premium payments on the revenue side.

In addition to being directly affected by physical climate risk events, insurance companies are also exposed to the transition risk of the climate transformation of the economy through

detect current and future risks (including litigation involving claims for damages and compensation). This type of risk leaves insurance companies exposed to climate-related litigation, which has been on the rise in recent years.

their financial investments, which may also threaten their profitability and consequently their solvency. While investments by domestic insurance companies remained highly concentrated in government bonds at the end of September 2023 (more information in Chapter **6 Insurance companies**), some parts of the portfolio are nevertheless allocated to individual classes of financial assets or issuers exposed to high physical and transition risks (more information on systemic risks arising from the commercial real estate sector in **Box 1 Real estate investments: an alternative form of investment that significantly affects the stability of the financial services sector in Croatia?**)

### Exposure of the domestic financial services sector to climate risks

The relatively poor availability, fragmentation and unevenness of data on ESG factors currently hampers a detailed analysis of the exposure of domestic institutional investors to climate risks on an individual exposure basis. Therefore, the exposure of the financial services sector to these risks is estimated on the basis of publicly available aggregate data on ESG scores<sup>84</sup> at the level of individual economic activity<sup>85</sup> and individual countries (Figure 8).

Investments of pension and investment funds and insurance companies in Croatia are highly concentrated in the

government, finance and insurance sectors and manufacturing. At the end of June 2023, as much as 62.1% of the total value of net assets of institutional investors<sup>86</sup> was related to exposures to the government, 17.4% to the financial and insurance sector and 5.8% to manufacturing. Together with mining and quarrying and electricity supply (according to the NACE classification), the government sector has one of the worst scores in the segment of environmental risk management. While institutional investors are oriented towards the government sector, leasing companies are most exposed to tourism-related sectors (more information about exposures of leasing companies in Chapter **7 Leasing companies**).

The geographical distribution shows a very high concentration of domestic exposures (pension funds 72.8%, investment funds 36.7%, insurance companies 63.7%), while exposures to the USA, Ireland, Slovenia and France are the most represented among foreign countries. The average environmental scores at the level of individual countries do not show significant variations if groups of countries similar in economic and political terms are observed. Differences are observed only among individual groups, with less developed countries and transition economies having worse ESG ratings, while EU Member States mostly have low to

<sup>84</sup> ESG risk ratings look at the quality of a company's management, i.e. activities, in the segment of environmental (E), social (S) and governance (G) issues. The final ESG risk ratings are a measure of unmanaged risk on a scale from 0 to 100, where a lower score indicates lower unmanaged ESG risk, i.e. a better ESG rating.

<sup>85</sup> Scores for individual activities are taken from Yahoo Finance, which refers to aggregate ratings

of global corporations by peer groups, which are then mapped and aggregated by NACE activities.

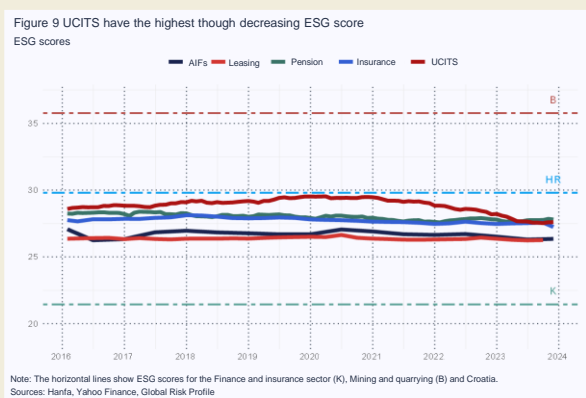
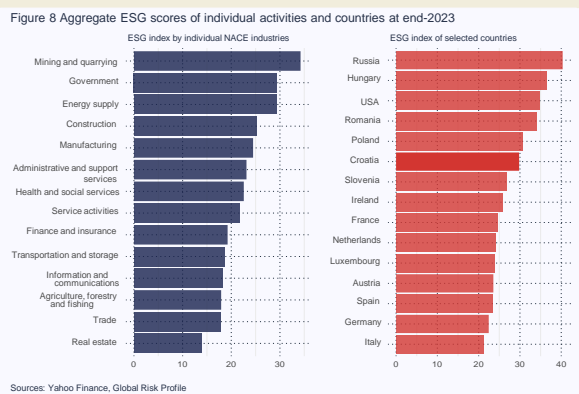
<sup>86</sup> Institutional investors are investment funds, pension funds and insurance companies.

moderate exposure to environmental risks. Therefore, the current geographical structure of exposures of domestic institutional investors does not have a significant impact on the variability of their exposure to environmental risks.

At the end of September 2023, total exposure of domestic institutional investors and leasing companies to climate risks<sup>87</sup> was moderate, with very low variability across individual segments of the financial services sector (Figure 9). Leasing companies and AIFs have somewhat better ESG scores than funds and insurance companies because of their relatively lower exposure to the government sector, i.e. a more diversified portfolio by individual activities.

The results of the analysis of exposures to climate risks are highly dependent on the source of ESG scores used and should be interpreted with great caution, especially with regard to levels. Bearing this in mind, the several-year slow pace of reduction in exposure to climate risks in all the observed segments of the financial services sector is certainly encouraging, which suggests that domestic institutional investors have been gradually directing their investments towards sustainable projects.

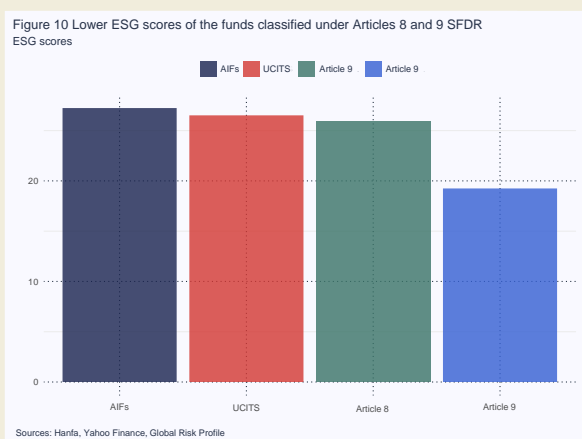
Investment funds are at the forefront of the shift towards sustainable investments in terms of the SFDR, under which funds had to be classified, at the latest by the beginning of 2023, according to degrees of sustainability depending on their characteristics and the sustainability of their investments<sup>88</sup>. This is reflected in the improvement of the ESG score for the whole segment of UCITS over the last two years, as well as a better ESG score of “green” funds when compared with the industry average (Figure 10). At the end of November 2023, there were 38 such “green” funds operating in Croatia, with total net assets of EUR 820.7m, representing 37.0% of the total value of investment funds. Funds that comply with Article 8 of the SFDR are required to disclose how they integrate environmental or social characteristics into their investment decisions, as well as possible adverse impacts of their investment decisions on sustainability



<sup>87</sup> The exposure of the domestic financial sector to climate risks is approximated by the weighted average ESG score of individual exposures, with the weight equal to the share of exposure in total investments. For each individual exposure, an average ESG score is assigned based on a cross-section of counterparty activity and country.

<sup>88</sup> ‘Green’ funds are funds that promote environmental or social characteristics (Article 8 SFDR, light green) and funds aiming at sustainable investment (Article 9 SFDR, dark green). Funds that deem sustainability risks not to be relevant are classified in Article 6 SFDR.

factors. The funds compliant with Article 9, on the other hand, have more extensive regulatory requirements to disclose how they integrate sustainability risks into their investment decisions, as well as how they consider the main negative effects of their investment decisions on sustainability factors.



Due to their frequency and scope, as well as potential to grow more prominent, climate risks have become systemic risks. It is therefore necessary to include their impact on the financial system through the devastating effect of climate change (physical risks) and through the transition of society to a low-carbon economy model (transition risks) in the usual tools for assessing the exposure of financial systems to systemic risks. An important step in this regard is to assess, as credibly as possible, the degree of environmental risk management at the level of individual institutional investors' investments. Such assessment is currently hampered by non-standardised and unregulated ESG rating methodologies, both with respect to financial institutions as well as regulators in the part of verifying the proclaimed investment policies of asset managers. This is essential for securing

the trust and interest of, in particular, small investors in such investments in the long run and for preventing greenwashing. For this reason, in June 2023, the European Commission published a proposal for a regulation on transparency and integrity of environmental, social and governance rating activities.<sup>89</sup>

## Conclusion

Climate change-related systemic risks are a growing long-term source of risks for the financial system. They imply a variety of forms of risk, such as physical risks triggered by extreme weather events, and transition risks arising from the transition to a low-carbon economy. While climate change poses a systemic risk to the financial system, the system itself can play a key role in the green transition of the economy and contribute significantly to mitigating the effects of the climate transition. The importance of green and sustainable finance in the overall market remains relatively modest, but the accelerated evolution of sustainable regulation (Taxonomy Regulation, CSRD, SFDR) and awareness of the importance of addressing climate risks in a timely manner contribute positively to the development of sustainable forms of investment. The green transition, with many new investment opportunities, also poses new challenges that should be monitored on an ongoing basis and addressed in a timely manner to ensure the stability of the financial system in this necessary transition.

<sup>89</sup> More information is available at the following [link](#).

## LIST OF ABBREVIATIONS

<b>AAI</b> – American Association of Individual Investors	<b>ESG</b> – environmental, social and governance
<b>AIF</b> – alternative investment fund	<b>ESRB</b> – European Systemic Risk Board
<b>APP</b> – Asset Purchase Programme	<b>ETF</b> – exchange-traded fund
<b>BET-TR</b> – Bursa de Valori București Traded Index	<b>EU</b> – European Union
<b>bn</b> – billion	<b>EuGB</b> – European green bond
<b>CBS</b> – Central Bureau of Statistics	<b>EUR</b> – euro
<b>CEE</b> – Central and Eastern Europe	<b>FED</b> – Federal Reserve System
<b>CES</b> – Croatian Employment Service	<b>Fina</b> – Financial Agency
<b>CNB</b> – Croatian National Bank	<b>GDP</b> – gross domestic product
<b>CQS</b> – credit quality step	<b>HANFA</b> – Croatian Financial Services Supervisory Agency
<b>CSRD</b> – Corporate Sustainability Reporting Directive	<b>HHI</b> – Herfindahl-Hirschman Index
<b>DG-ECFIN</b> – Directorate-General for Economic and Financial Affairs	<b>HRK</b> – Croatian kuna
<b>DSTI</b> – debt service-to-income	<b>HT</b> – Hrvatski Telekom (Croatian telecommunications company)
<b>EBITDA</b> – earnings before interest, taxes, depreciation and amortisation	<b>IFRS</b> – International Financial Reporting Standards
<b>ECB</b> – European Central Bank	<b>IMF</b> – International Monetary Fund
<b>EIOPA</b> – European Insurance and Occupational Pensions Authority	<b>LTV</b> – loan-to-value
<b>EOD</b> – end of day (value of financial instrument)	<b>m</b> – million
	<b>MPF</b> – mandatory pension fund

**NACE** – classification of economic activities in the European Community (Nomenclature of Economic Activities)

**NGEU** – NextGenEU

**NGFS** – Network for Greening the Financial System

**OVI** – Online Vacancy Index

**PEPP** – pan-European Personal Pension Product

**PIC** – pension insurance company

**pp** – percentage point

**REGOS** – Central Registry of Affiliates

**S&P** – Standard & Poor's

**SCR** – solvency capital requirement

**SFDR** – Sustainable Finance Disclosure Regulation

**TILDA** – stock liquidity market index

**TLTRO** – targeted longer-term refinancing operations

**tn** – trillion

**UCITS** – undertakings for collective investment in transferable securities

**USA** – United States of America

**USD** – US dollar

**VAT** – value added tax

**VPF** – voluntary pension fund

**ZSE** – Zagreb Stock Exchange

The logo for HANFA features the word "HANFA" in a bold, white, sans-serif font. Above the text is a thin, red, curved line that arches over the letters, resembling a stylized wave or a bridge.

**HANFA**