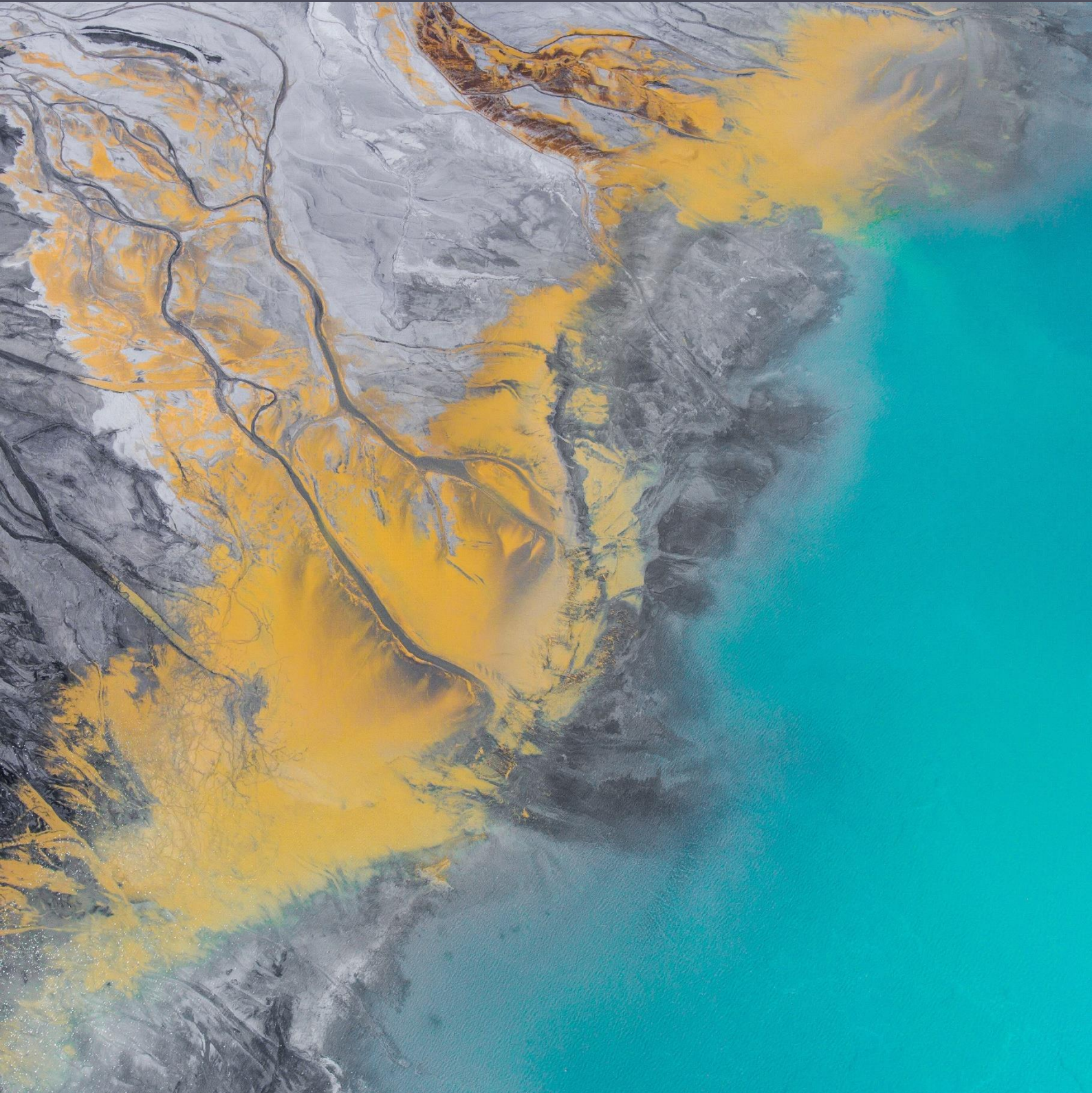


MACROPRUDENTIAL RISK SCANNER

2021 - Third Quarter

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1. Introduction

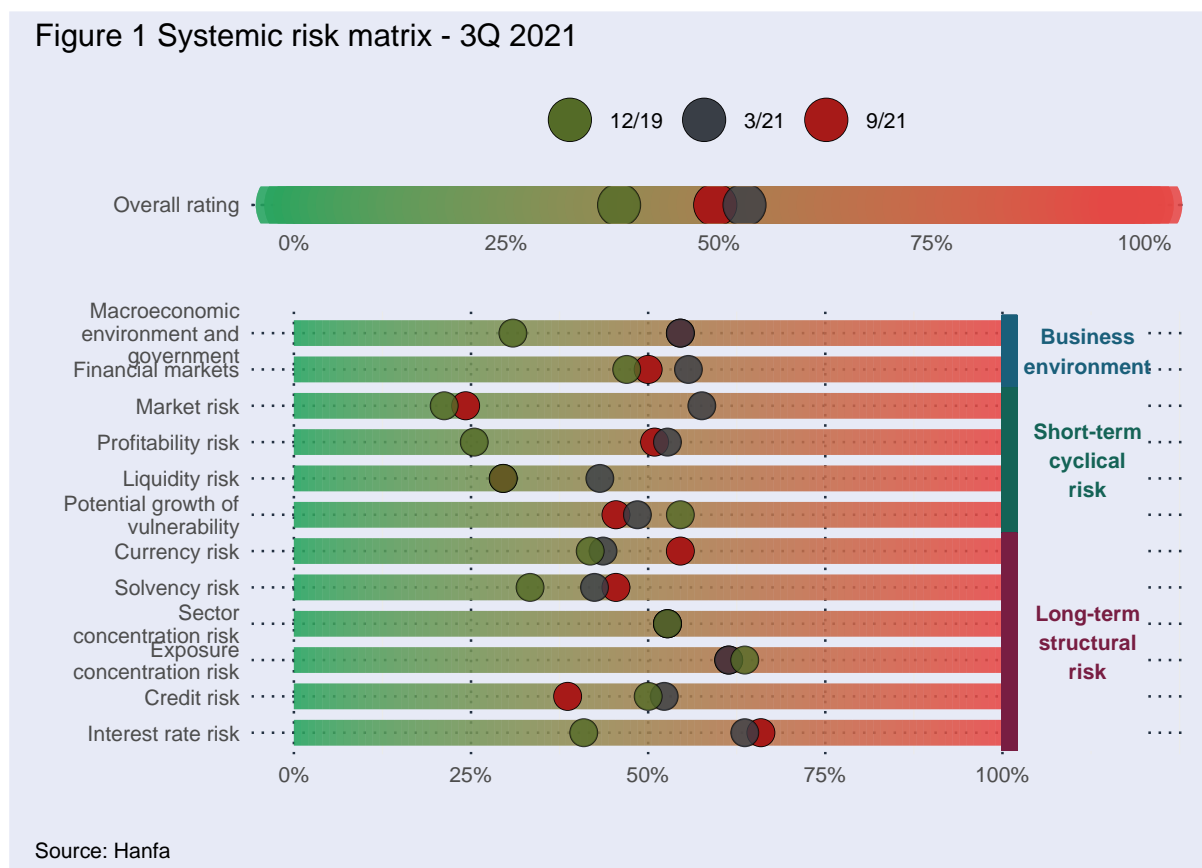
Together with the Croatian National Bank and the Ministry of Finance, the Croatian Financial Services Supervisory Agency (hereinafter: Hanfa) is responsible for the stability of the financial system in the Republic of Croatia, therefore promoting and preserving financial stability, in accordance with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

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

Over the past few years, global progress has been made in the area of understanding and consequently identification, evaluation and monitoring of systemic risks of the financial sector. However, in order to prevent the identified risks in time, and to mitigate the effect of their materialisation, an appropriate set of instruments and tools, i.e. policies aimed at preserving the stability of the system as a whole, called *macroprudential policies*, need 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.

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

Figure 1 Systemic risk matrix - 3Q 2021

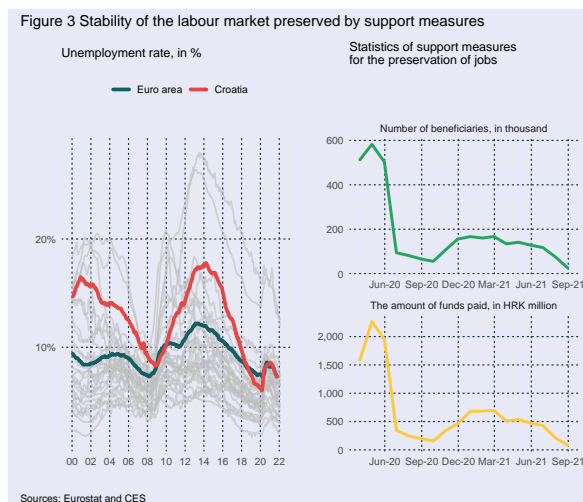
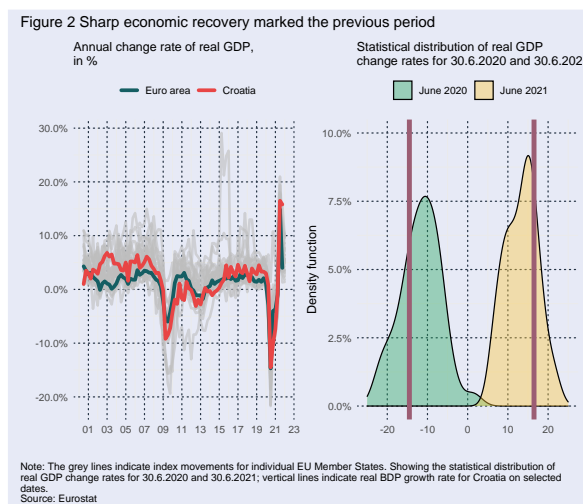


The overall assessment of the exposure of the financial services sector to systemic risks in the third quarter of 2021 was kept at a moderate level with a slight decrease with respect to the first quarter of 2021. Despite the economic recovery that was stronger than initial expectations, the most pronounced risks remain related to trends in the macroeconomic environment, given the worsening of the fiscal position associated with fiscal response to health and economic consequences of the pandemic. The more and more increasing risk is also posed by the rising uncertainty about the nature and duration of inflationary pressures and the consequential reaction of economic policy makers. Although reduced relative to 2020, risks arising from trends and conditions in financial markets in the circumstances of uncertainty increased by inflation may distort and slow down economic recovery, which will significantly depend on the dynamics and intensity of normalisation of monetary policies, particularly in relation to market expectations. The likely normalisation of monetary policies could thus, given the high level of interest rate risk assumed by financial institutions in search for yield over a multi-year period of low interest rates, also have a negative impact on the value of their investments in debt securities. It is precisely interest rate risk combined with a high level of concentration of investment in government bonds that is the most pronounced long-term structural risk to which the domestic financial services sector is exposed. At the same time, general valuations in global stock markets continue to be separate from business indicators and the risk of a sudden stronger global price adjustment remains elevated. Therefore, the current decrease of short-term cyclical risks arising from the operations of the domestic financial services sector in the event of distortions and corrections in global markets through spillover to shallow and poorly liquid domestic capital market can easily be reversed by materialisation of market risk with negative consequences on profitability, i.e. yields of the financial services sector.

2. Risks of macroeconomic and financial environment

2.1 Macroeconomic environment

The assessed systemic risks arising from trends in the macroeconomic environment during the second and third quarter of 2021 remained at a slightly higher level despite strong economic activity growth, mainly due to worsened fiscal indicators as a consequence of fiscal response to circumstances of the pandemic (Figure 1). The real annual economic growth rate was as high as 16.5% in the second quarter, and only slightly lower in the third quarter when an annual growth of 15.8% was recorded (Figure 2). The primary reason for these historically high growth rates is the base effect, since in the same period of the previous year, due to the closure of the economy, the greatest decrease in economic activity was recorded (-14.5%), which placed Croatia in the lower part of distribution of real economic growth in European countries. The positive epidemiological situation during the summer months of 2021 and the consequent absence of strict epidemiological measures enabled good results in tourism¹ that supported the continuation of economic recovery in the third quarter of 2021, with personal consumption and export of goods and services being the main drivers of a strong economic recovery. The trend of relatively high economic growth rates is expected to continue in 2022, stimulated by the implementation of the National Recovery and Resilience Plan, which is confirmed by the currently available high-frequency indicators of economic activity².



The labour market absorbed the effects of the coronavirus crisis well in 2021 (Figure 3). A significant rise in the unemployment rate did not occur primarily because of generous fiscal aid aimed at preserving jobs. In addition, good results in tourism and more intense seasonal employment contributed to keeping the registered unemployment rate at a relatively low level³. During the summer months, the number of beneficiaries of job preservation measures

¹ According to the CBS data, there were 11.6m arrivals and a little over 66m overnight stays in the first nine months, which is 75.2% more arrivals and 68.4% more overnight stays than in the same period of 2020.

² The average annual rate of change of the seasonally adjusted industrial production index in the period from December 2020 to

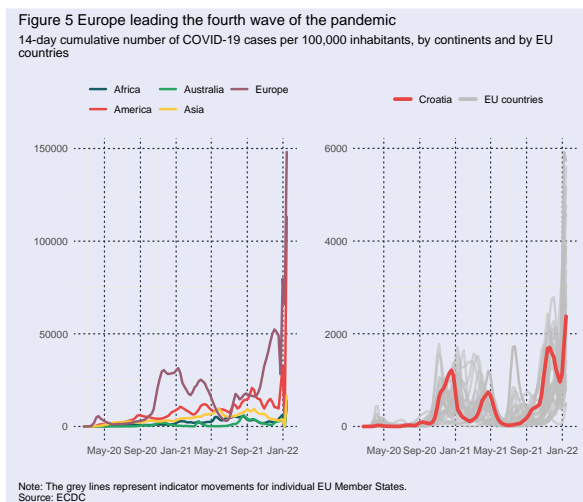
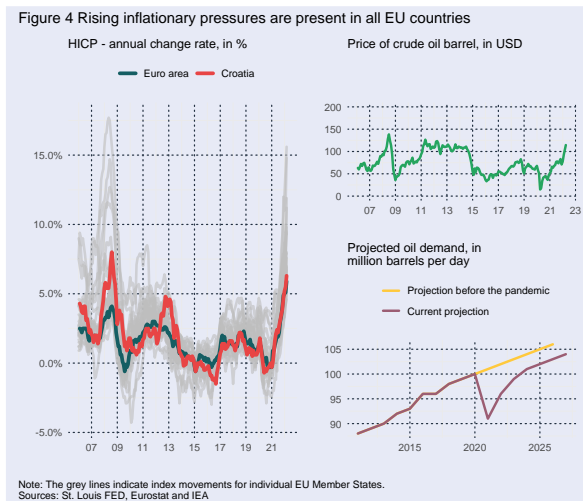
September 2021, i.e. since these values were continuously positive, was 7%.

³ At the end of September, it stood at 7% and was by 1.7. p.p. lower than at the end of September 2020, or 0.4 p.p. higher than in the same period of 2019.

significantly decreased⁴ (Figure 3), both because of the better epidemiological situation and the fact that during the previous period employers managed to adapt their operations to the working conditions in the pandemic, as well as because of binding the access to aid with COVID certificates⁵.

In addition to the sharp economic recovery, the second and third quarters of 2021 also saw an acceleration of the inflation rate above the expected level. At the end of November, the inflation rate⁶ was 4.8%, the highest since the beginning of 2013. Price increase on the annual level is largely due to the rise in transportation prices in view of the global rise in energy prices⁷. Therefore, inflation trends in Croatia are not an exception, but rather a reflection of global trends in the spillover of prices from world commodity markets, particularly oil prices (Figure 4) and rising inflationary expectations. While part of this increase can be explained by the base effect due to reduced consumption of petroleum products related to the economic closure and reduced mobility in the first wave of the pandemic, the price of oil barrel at the end of October 2021 even exceeded the pre-crisis values of December 2019. Currently available projections assess the price hikes as temporary and characterise ongoing inflationary pressures as short-term, stressing that the peak is to be expected in 2022⁸. However, in the event of deepening disruption on the supply side and strengthening of inflationary expectations, it will be necessary to contain the rising inflation in the short run. Therefore, the negative risks of macroeconomic trends projections remain

pronounced, especially taking into account the latest available data on the deterioration of the epidemiological situation in most European countries, which is further complicated by the emergence of new highly infectious coronavirus strains (Figure 5).



The price of maintaining a favourable situation in the labour market and rapid economic recovery in exceptional circumstances caused by the pandemic was reflected in worsened fiscal indicators (Figure 6). Significant fiscal expansion

⁴ At the end of August this year, support measures for the preservation of jobs were used by as much as 80% less beneficiaries than at the end of June.

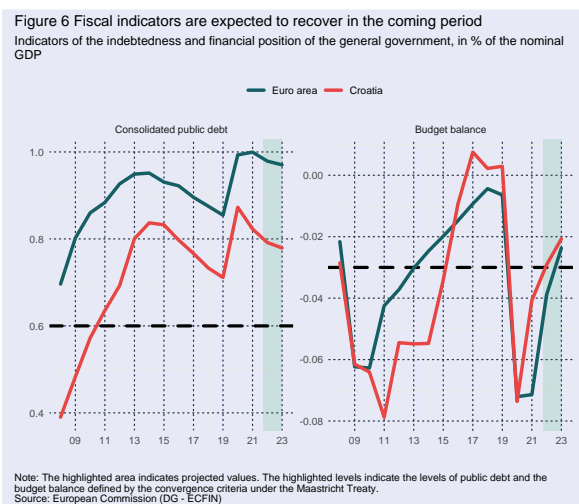
⁵ The total amount of aid can be obtained by employers with at least 70% of employees with a COVID certificate, while in other cases the amount of aid is proportional to the share of COVID certificates.

⁶ Measured by the annual rate of change in the consumer price index.

⁷ At the end of September, transport prices increased by 10.8% compared to September 2020.

⁸ According to the latest available [European Commission forecast](#) (from November), the annual inflation rate for the whole Union will reach 2.6% in 2021, while in 2022 and 2023 it will drop to 2.5% and 1.6%. According to the same forecast, the annual inflation rate in Croatia will reach 2.2% in 2021, it will decrease to 2.0% in 2022, and will further decrease to 1.5% in 2023.

triggered by the current COVID-19 pandemic is visible at the end of 2021 in the increased level of public debt and the deficit of the budget balance compared to 2019, despite the improvement of relative indicators in view of the growth of the economic base⁹. According to the forecast of the European Commission, fiscal consolidation should take place in the coming period with moderate but steady dynamics. Therefore, the systemic risks of this part of the system, at least in the short term and assuming the absence of new epidemiological and/or economic shocks, should not further deepen. The expected fiscal discipline, stimulated by the euro adoption process, as well as [the upgrading of credit ratings to the BBB with a positive outlook by Fitch](#) in mid-November 2021 will certainly contribute to this. Partial unburdening of public finances was also made possible by the payment of the first portion of the financial support (HRK 6.14bn) from the Recovery and Resilience Facility at the end of September¹⁰, after the European Commission had approved the National Recovery and Resilience Plan in early July.



⁹ In relative terms, the share of public debt in GDP decreased by the end of the second quarter compared to the previous one (by 4 p.p.), primarily as a result of the aforementioned strong quarterly growth of economic activity, which resulted in an increase in revenues, and lower demand for fiscal incentives, and which had a positive effect on other fiscal indicators, such as, for example, the

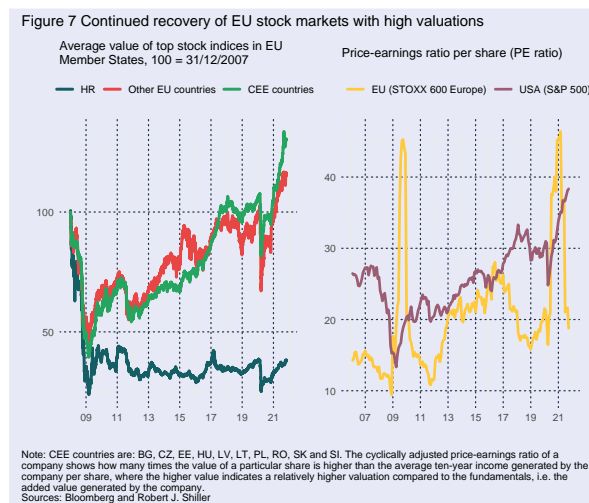
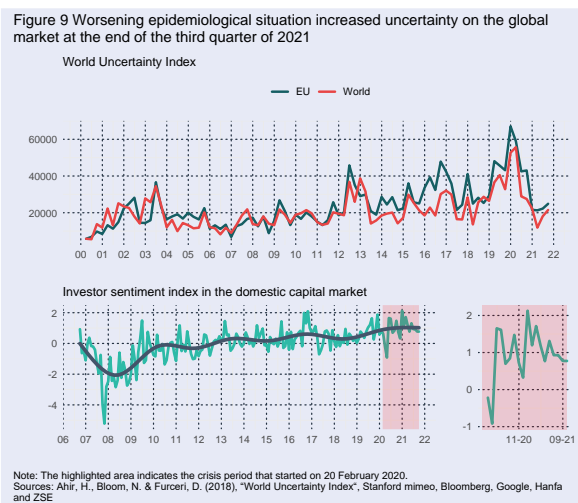
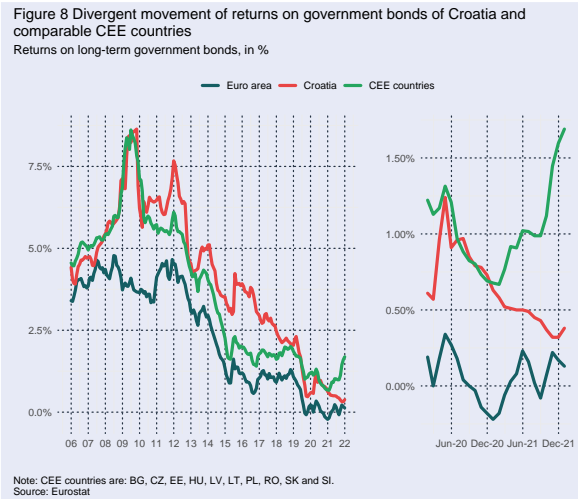
2.2 Financial environment

The level of exposure of global financial markets to systemic risks decreased slightly during the third quarter of 2021 compared to the previous one, primarily due to improved short-term systemic stress indicators on financial markets. However, the risk of a sudden significant price adjustment, whose materialisation essentially depends on inflationary trends and investors' expectations, remains pronounced. Following last year's discovery of a vaccine against COVID-19 and the consequent strong recovery of market sentiment, the focus of participants in financial markets is no longer primarily linked to the manner the pandemic is tackled, but rather to its consequences, which are currently largely reflected in globally higher inflation rates (Figure 4) and global economic recovery rates that are slightly below expectations. Recent trends of price indicators support the investors' currently growing concern (Figure 9) that the period of higher inflation will last longer than expected. Pending a response from the Fed and ECB monetary policy, price hikes on European and U.S. stock markets slowed down in the second half of 2021, while stock prices on emerging markets fell, mainly due to corrections in the Chinese market triggered by tightening regulations for the technology sector and the liquidity crisis of one of the leading Chinese real estate companies, Evergrande. Nevertheless, valuations remain at very high levels that potentially do not reflect business results of companies (Figure 7), which creates a space for a possible sudden and strong correction in the coming period and reinforces the risk of short-term market volatility. Under such circumstances, global trends would spill over to the domestic stock market, which only returned to the pre-crisis level of January 2020 at the end

general government deficit, which decreased by 1.9 p.p. over the same period to 5.6% of GDP.

¹⁰ More information is available via this [link](#).

of October¹¹. These risks further highlight the structural weaknesses of the domestic market. Low liquidity and high concentration, despite some improvements (more information in Box 1 *Measuring capital market liquidity*), remain pronounced. Almost half of the shares listed on the Zagreb Stock Exchange are traded less than 10 days a month, while the turnover of the first five shares accounted for as much as 55% of the total turnover on the ZSE in November 2021. Despite a slight increase in returns in global bond markets associated with inflationary trends and expectations, real interest rates remain low or negative (Figure 8). The expected tightening of monetary conditions highlights the interest rate risk to which the financial sector is exposed, since the maturity of financial institutions' investments has been significantly extended in recent years in an effort to achieve higher returns. This trend also exists in the domestic financial services sector. However, unlike the returns of comparable CEE countries that increased significantly during 2021, the returns on Croatian government bonds continued to decline and fell to the lowest recorded level of 0.32% at the end of November (0.17 p.p. less than at the end of June).



¹¹ At the end of June this year, the CROBEX value exceeded the 2000-point threshold for the first time since the beginning of the

crisis, followed by a decrease and again a recovery above the 2000-point limit in October 2021.

3. Risks of the financial services sector

The exposure of the financial services sector to systemic risks arising from its business operations did change significantly in the third quarter of 2021 compared to the previous period and remained at a slightly higher level. The exposure to short-term systemic risks was slightly reduced in view of the relative stabilisation of financial markets after the volatile 2020 and price increase, while at the same time structural vulnerabilities of this part of the financial system did not change significantly (Figure 1).

3.1 Short-term risks

In the segment of short-term risks that reflect cyclical trends, in the third quarter of 2021, looking at the overall financial services sector, the most significant decrease was recorded by market risk in view of the reduction in volatility in global stock markets along with a strong price recovery. However, despite a decrease in the perception of market risk, it is still latent, especially in the part of the fund industry for which market risk exposure is still considered to be moderate. This partially reflects uncertainties that are still high due to the global inflation growth and possible tightening of monetary policies that could stimulate a relocation of investors' investments and price correction, which suggests that in the coming period this form of risk will probably not be subdued.

The liquidity of the financial services sector improved compared to the beginning of 2021. After last year's episode where a significant number of investors exited investment funds in the first wave of the pandemic, and the successful response of investment funds to the set requirements, liquidity pressures were stifled and the fund industry fully recovered from the systemic event, resulting in an increase in

liquidity supplies. At the end of September 2021, high-quality liquid assets¹² were more than triple the monthly gross outflows and accounted for 26% of the total assets of investment funds, while payments into funds and withdrawals from them were balanced (Figure 10). The average liquidity of insurance companies also remained at a relatively high level¹³ although there is significant heterogeneity among certain companies.

Source: Hanfa

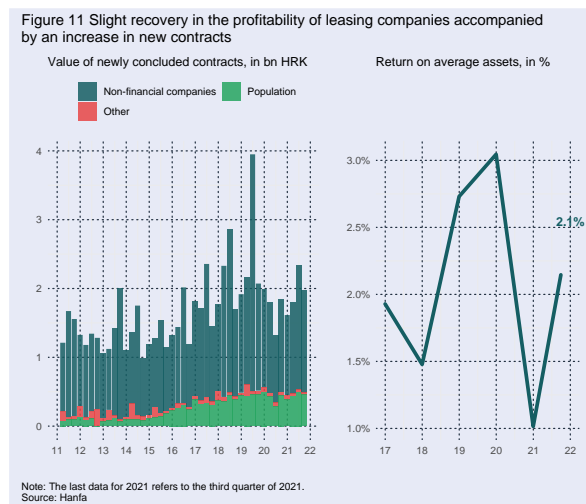
Given the great impact that liquidity risk may have on the financial stability of the system, especially in the context of the undermined trust of financial service users and the reputation of institutions, but also of possible significant interventions by regulators and economic policy makers in the event of its materialisation, the liquidity risk of the financial services sector has recently become the focus of European regulators. In 2017, the European Systemic Risk Board (ESRB) issued the first , and in 2020 the second recommendation in connection with this topic: [Recommendation on liquidity risks in investment funds \(ESRB/2020/4\)](#). In the framework of the 2020 Recommendation, the ESRB identified two segments of the investment fund sector as priority areas for improved supervision from a financial stability perspective: investment funds with particularly large exposure to corporate debt and investment funds with particularly large exposure to real estate, and recommended to the European Securities and Markets Authority (ESMA) to assess, in cooperation with national regulators, the preparedness of these two segments of the investment fund sector to absorb future adverse

¹² High quality liquid assets include cash, deposits and money market instruments.

¹³ The share of liquid assets in the total assets of insurance companies increased slightly by the end of September 2021

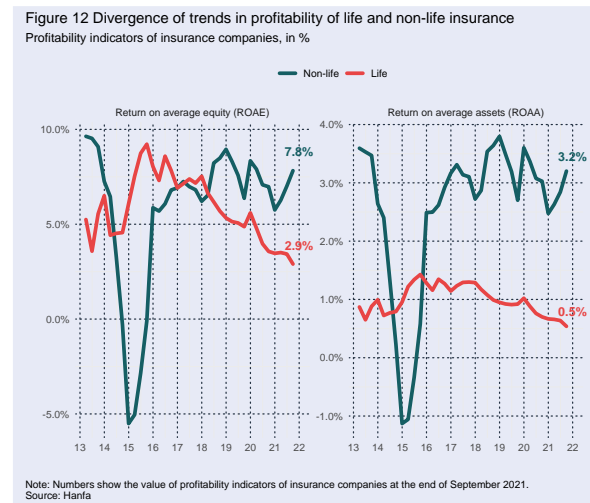
compared to the first quarter, with the median increasing from 75.4% to 76.3%.

shocks¹⁴. At the beginning of this year, EIOPA published [methodological principles](#) of insurance stress testing with a focus on the liquidity component of insurers. This document details the indicators for monitoring liquidity risk in insurance, as well as principles for the assessment of liquidity positions in simulated stress scenarios.



The stronger-than-expected economic recovery was reflected in the growth of profitability of leasing and insurance companies in the segment of non-life insurance, while real returns of the fund industry in view of inflationary pressures were suppressed. The tourist season, that turned out to be excellent within the framework of the pandemic, supported the increase in newly concluded leasing contracts, which, with the gradual expiry of moratoriums, contributed to the partial recovery and stabilisation of leasing companies' operations and the growth of return on assets amounting to 2.1% at the end of September 2021 (Figure 11). In the first nine months of 2021, the number of newly concluded contracts was 31.3% higher than in the same period of 2020, while their value increased 23.3% on the annual level (Figure 11). However, this increase only partially annulled the impact of coronavirus crisis, as the number and value of

new contracts are still one quarter lower compared to the levels before the pandemic.



At the same time, the profitability of insurance companies in the non-life insurance segment also improved significantly in 2021, so that at the end of September 2021 the return on the average assets in non-life insurance amounted to 3.2%, which corresponds to the three-year average return in the pre-crisis period. Unlike non-life insurance, profitability in the life insurance segment remains in decline under the significant influence of the prolonged environment of low interest rates (Figure 12). However, concerns about the intensification of the number of cases of early termination and insurance policies surrender have not yet come to life, primarily because of the continuation of relatively positive labour market conditions even after the withdrawal of a large portion of economic support measures.

At the same time, although investment funds continue to record positive average real returns anchored at levels below 1% in view of rising inflation, heterogeneity of realised returns increases significantly depending on the risk profile of the fund. Funds with higher allocation of assets to shares generate considerably higher returns, while conservative investment strategies do not achieve satisfactory returns, a

¹⁴ The domestic investment fund sector does not possess systemic material exposures to segments highlighted by this recommendation.

continuation of which is certain at least until monetary policy normalization and interest rate increase. Therefore, lower returns continue to motivate fund management companies to gradually turn to foreign markets and riskier asset classes when allocating investments. For pension funds as well, the realised returns were proportional to the level of investment risk, so that at the end of September 2021 mandatory pension funds of category A generated annual return of 13.7%, while categories B and C generated returns of 7.06% and 1.26% respectively on an annual basis.

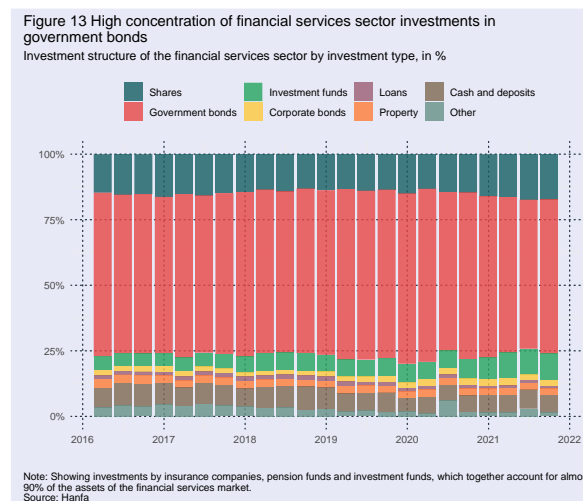
3.2 Long-term risks

Interest rate risk is the most prominent structural risk to which the domestic financial services sector is exposed, and its heightened level slightly increased in the third quarter of 2021. During a several-year-long period of low interest rates, funds, especially investment funds, significantly extended the maturity of bond investments in order to achieve higher comparative returns such investments carry in relation to those with shorter maturities¹⁵ (Figure 14). The normalisation of monetary policy and the consequential growth of reference interest rates, the probability of which is very high in the next year in view of inflationary trends and announcements of central banks, expose debt securities holders to a risk of decrease in the value of their bond investments. Therefore, the exposure to interest rate risk of domestic funds and insurance companies is relatively high.

Interest rate risk is further intensified by the high level of exposure concentration of the financial services sector, which has, however, gradually decreased over the recent period through greater class and geographical diversification of investments. At the end of September 2021 (domestic) government bonds accounted for 58.8% of all investments made by the sector¹⁶

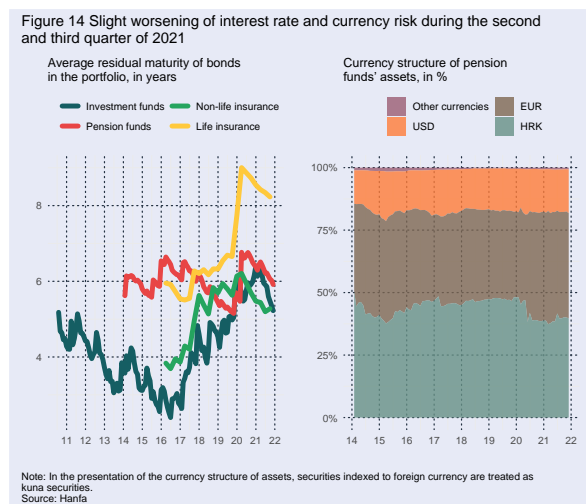
(Figure 13). However, with some service providers (primarily funds) there is a noticeable trend of reducing this type of asset and increasing exposure to riskier classes, such as stocks, especially those on foreign markets. The expected continuation of this trend, which significantly depends on the further movement of real interest rates on debt issues, will reduce the sector's exposure to the structural risk of concentration, while at the same time, depending on market trends, increase their exposure to cyclical market risk.

At the same time, the continued trend of foreign investment growth increased the exposure of the financial services sector to the currency risk (Figure 14). At the end of September, the average open net currency position of pension funds stood at 34.5%, slightly below the legally defined limit of 35%. However, it should be stressed that in the coming period the introduction of euro as the official currency will greatly reduce the currency risk, and in the meantime the likelihood of its materialisation is very low considering the binding relative stability of the kuna exchange rate during the period of Croatia being in the ERM II, as well as very high foreign currency reserves of the Croatian National Bank.



¹⁵ The average weighted number of years until the maturity of the UCITS funds' bond portfolio has multiplied over the past four years and reached a level of 5.3 years in the last quarter of 2020.

¹⁶ More information on risks arising from such investment structure can be found in *Box 2 Risks arising from the interconnection between the financial services sector and the public sector* in the publication [Macroprudential risk scanner No 3](#).



Out of the long-term structural risks, the exposure of the financial services sector to credit risk significantly decreased during the third quarter of 2021. This is the consequence of stabilization of leasing operations caused by timely adoption and gradual withdrawal of macroprudential measures, which allowed companies enough time to adapt their business operations to the new circumstances¹⁷, but primarily due to exceptionally good tourist season and general economic recovery. At the end of September, the share of non-performing placements in total placements was 2.7%, the level at which it last stood at the beginning of 2015 (Figure 15). Similar trends, contrary to what is expected, are evident in the corporate sector. In Croatia, as well as in Europe, there is still no significant increase in the number of companies that cease to operate, which is normally a characteristic of crisis periods (Figure 15). According to data from Fina, at the end of September 2021 the number of insolvent entities was almost 20% lower than at the end of 2019, and their debt was almost 30% lower. Given the significant link between leasing companies and the non-financial companies sector¹⁸, it is likely that further business operations of both sectors will be dominantly influenced by the development of the epidemiological situation

and macroeconomic trends, as well as a potential increase in the cost of financing in the context of increased inflationary pressures.

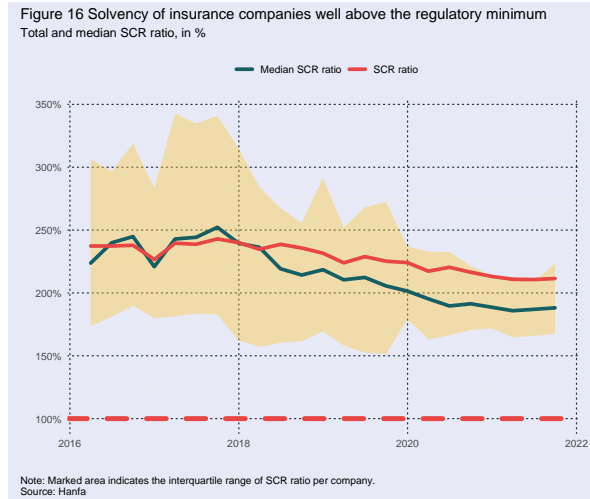
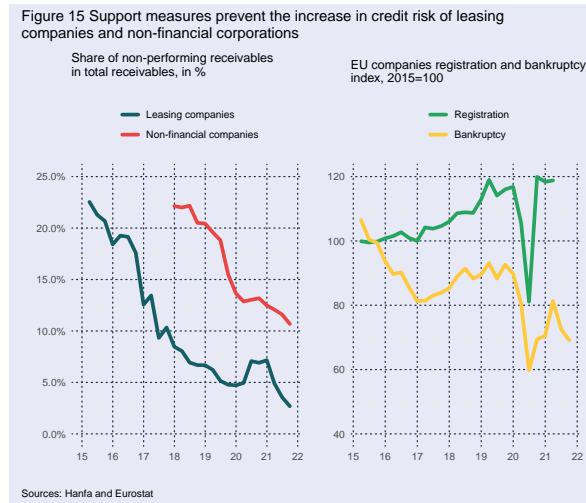
Although the business environment of the financial services sector was very challenging even during 2021, capitalisation remained at appropriate levels. So far, the crisis circumstances have not significantly undermined the indicators of capitalisation of insurance companies that remained at levels almost twice the regulatory minimum levels in the observed period, partly due to the timely adoption of a macroprudential decision on temporary restriction of profit distribution¹⁹. The median solvency ratio of insurance companies at the end of September 2021 stood at 184.3% (Figure 16), therefore, the insolvency risk was low and the insurance sector was relatively prepared to absorb potential new shocks. However, there is a noticeable high level of heterogeneity of the capitalisation degree among individual companies (more than half of the companies recorded a decrease in SCR between March and September), which is primarily the result of an increase in the total capital requirement due to increased market uncertainty, which clearly confirms the necessity of coordinating microprudential and macroprudential views in risk assessment. In the coming period, the solvency and profitability indicators of insurance companies will be greatly influenced by the expected introduction of a new international accounting standard about to take place at the beginning of 2023 (more information in [Box 2 The new IFRS 17 - Insurance contracts](#)), as well as the introduction of the euro due to a lower euro risk-free interest rate curve when determining the value of liabilities. At the same time, leasing companies exhibit a continued trend of improving capital positions and maintaining capitalisation at stable levels as a result of faster

¹⁷ Among other things, companies were allowed not to form value adjustments for deferred payments.

¹⁸ At the end of September, 68.9% of leasing companies' active contracts were concluded with non-financial companies.

¹⁹ More information can be found in [Box 2 Macroprudential preservation of insurers' capital buffers in stressful circumstances](#) of the publication [Macroprudential risk scanner, No 5](#).

growth of capital and reserves in relation to assets.



Box 1 Measuring capital market liquidity

The domestic stock market is characterised by a relatively high level of capitalisation, which is, however, not followed by a satisfactory level of activity. In such circumstances, structural capital market indicators are particularly important, not only for investors, but also for regulators since they point to the strength of the market to withstand sudden systemic shocks. Even though the notion of market liquidity is intuitive and easy to understand in theory, in practice the umbrella term “market liquidity” covers several different concepts or market characteristics. The constructed composite stock market liquidity index (TILDA) shows that the liquidity of the domestic capital market has been recovering, with some fluctuations, since 2015, and has not decreased significantly or over a longer period of time even in the period of the coronavirus crisis. However, the liquidity level is evidently still rather low, particularly when compared to other similar markets.

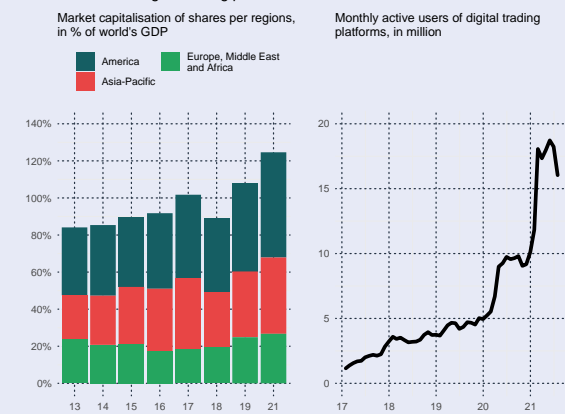
1 Importance of capital market liquidity

The financial system is the central sector of the economy, whose role of a financial intermediary between savers (institutions and individuals with net surplus financial assets) and debtors (economic agents with deficit funds) encourages economic growth and development by (more or less) effectively allocating capital towards activities that create added value. Although a financial system primarily implies credit institutions, pension funds or insurance undertakings, the capital market is the best example of the basic allocation function of a financial system.

According to Wurgler (2001), developed capital markets actively foster the allocation of investments towards growing industries on the account of industries with slowing business trends. In addition to creating added value through the improvement of the process of allocating internal capital, capital markets also

support the accumulation of foreign capital. Alfaro et al. (2004) showed that countries with a developed capital market are more successful at attracting foreign direct investment, which in turn stimulates the growth of the economy.

Figure 1 A strong capital market increase in recent years boosted by a growing number of users of digital trading platforms



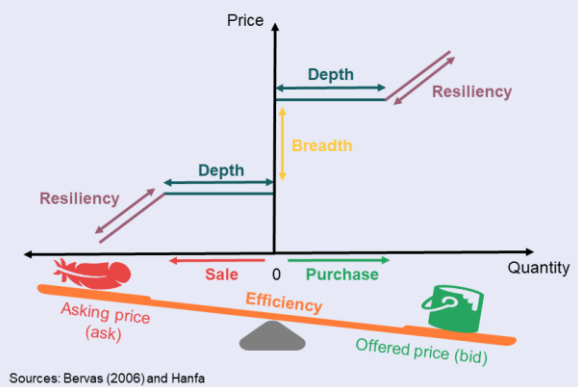
Note: Data on 2020 world's GDP were used to calculate the share of market capitalisation of stocks for 2021. Sources: Statista, World Bank, WFE and Airov

The importance of the smooth functioning of the capital market is reflected, apart from the positive effects it generates for the economy, in the potential negative implications for financial stability during the episodes of systemic stress. The impact of the capital market on economic agents is directly proportional to its size and presence in investors' economic decisions, with both aspects multiplying over the past decade. The continuous growth of market capitalisation of almost all regional markets points to an increasingly significant role of capital markets, and this is supported by a strong increase in the number of active users of digital trading platforms. Technological advances through the digitisation of financial intermediation have significantly reduced the barriers for participation in financial markets, while the coronavirus crisis and related deeper entry into the digital sphere have further catalysed the changes already present. The number of active users of digital trading platforms almost quadrupled in 2021 compared to the pre-crisis period (Figure 1). Further supported by expansionary monetary policies, equity markets grew significantly over the period of less than two years and, in terms of market capitalisation, reached the level of 125% of global gross

domestic product (Figure 1). The dominance of the American capital market was further reinforced during this period, accounting for as much as 45% of global market capitalisation at the end of 2021.

While the primary capital market enables private and public companies to collect funds to finance growth, the secondary capital market enables investors (institutions and retail investors) to participate and invest in sustainable projects and companies on a daily basis. Due to its transparency and direct nature, trends in capital markets continuously provide insight into general financing conditions, real fundamentals of the economy, but also into expectations and sentiment of investors. In other words, through the provision of timely information, capital markets serve as barometers of general financial and economic trends. The quality of this information depends greatly on the structural characteristics of the market, which often hide behind the concept of capital market liquidity.

Figure 2 Many "faces" of market liquidity
Schematic representation of 4 dimensions of market liquidity



The significance of capital market liquidity for the economy is pointed out by Levine and Zervos (1998) who showed that, in addition to a developed banking system, the liquidity of the share market supports economic growth and capital accumulation and stimulates improvements in the productivity of the economy over the long term. According to Lybek and Sarr (2002), a liquid capital market helps the functioning of the rest of the financial system through: a) improving the transmission

mechanism for monetary policy implementation and b) enabling financial institutions to accept higher currency and interest rate mismatches, which is particularly important in the context of crisis management.

The importance of capital market liquidity is much more emphasised during the episodes of systemic stress. If market liquidity turns out to be insufficient, this can produce or increase a systemic shock with potential extremely negative consequences for the stability of the financial system. More precisely, the prices of individual financial instruments in a market with a low level of liquidity often record disproportionately stronger contractions in crisis situations, compared to securities in more liquid markets. This is due to the insufficient number and value of orders that would absorb increased sales, so financial instruments are often sold at prices below market value (fire sale). An additional reason for a more pronounced contraction is uncertainty about the actual value, which is additionally emphasized during the crisis periods. These trends have a negative impact on the financial position of investors, but also on companies to which the availability of market-based funding is particularly important during crisis periods. Quantification and regular monitoring of capital market liquidity indicators are therefore necessary tools for the analysis of structural causes of market trends, but also for timely response by regulators in order to protect stability not only of the market but also of the financial system in general.

2 Defining capital market liquidity

Even though the notion of market liquidity is intuitive and easy to understand in theory, in practice the umbrella term "market liquidity" covers several different concepts or market characteristics. According to Lybek and Sarr (2002), liquid markets tend to exhibit the characteristics of efficiency, depth, breadth and resiliency (Figure 3).

Market efficiency primarily refers to low transaction costs, which are most often reflected in a narrow bid-ask spread of individual instruments. These costs reflect several characteristics of the market micro-structure such as, for example, market participants' order-processing costs, the level of market information asymmetry, market makers' inventory costs and potential oligopolistic market structure.

Market depth implies the presence of a relatively high number of orders, but also the turnover of a significant part of listed value on the market. A deep market provides investors with current prices, as well as with a possibility to sell securities relatively quickly, should such a need arise. On the other hand, a deep market ensures wider availability and stability of market financing for issuers.

Breadth is a characteristic of the market with numerous smaller orders with minimal impact on prices. In other words, securities prices on the market do not show discontinuity and investors have regular insight into price compliance with fundamentals.

Resiliency is the ability to quickly correct prices on the market back to the fundamentals after the occurrence of price disruption. More specifically, resilient markets are characterised by a rapid creation of numerous orders that move away from previously created price deviations warranted by fundamentals. The increase in volatility in such markets is short-lived and fades relatively quickly, i.e. valuations are robust in relation to short-term shocks.

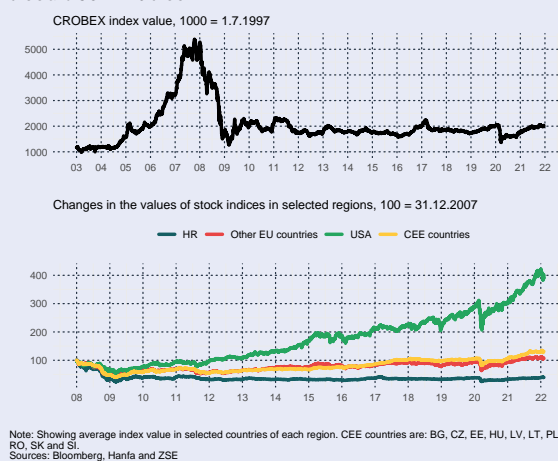
Although these terms reflect various dimensions of market liquidity, it is important to point out that they nevertheless overlap to some extent and it is not possible to draw a clear distinction between various liquidity dimensions. For example, indicators measuring efficiency, i.e. costs associated with market participation implicitly indicate the level of depth, breadth and robustness of the market. Moreover, market liquidity characteristics often complement each

other where relatively shallow markets with small turnover of listed values are also characterised by a lack of breadth in the context of a modest number of active investors. This makes valuations vulnerable to sudden distortions with a prolonged period of return to fundamentals. Ultimately, such markets are less efficient, i.e. they imply higher participation costs. Consequently, a deeper understanding of the structure of the capital market and the key causes of liquidity change is important both for the regulator and for (potential) investors, which, apart from natural persons, also comprise other financial institutions, from credit institutions to pension and investment funds.

3 Characteristics of the domestic capital market

Due to its importance for the financing of companies, as well as its significance for investors, this analysis will focus on the domestic stock market, which has undergone several phases over the past 20 years. From the phase of remarkable dynamism in the years before the global financial crisis, followed by the years of dormancy in the ensuing period and the long-awaited revitalization that coincided with the emergence of a new crisis triggered by the COVID-19 pandemic at the beginning of 2020.

Figure 3 Heterogeneous recovery of stock markets following the global financial crisis and COVID-19 crisis



The stagnation period after the financial crisis in 2008 is not an exclusive characteristic of the domestic stock market. However, it was somewhat more pronounced and prolonged in

Croatia than in comparable Central and Eastern European countries (Figure 3). Changes in the value of stock indices indicate that from 2008 until today, the American market quadrupled in size, while the markets of CEE countries significantly lag behind, recording an increase of only 31.66% in the same period. At the end of 2021, the value of the leading domestic stock index CROBEX was at 63% lower level than in 2018, before the crisis. The absence of a rapid recovery of the stock market following the financial crisis in 2008 is partly linked to real trends, that is, a long-term recession, but a part of it is undeniably of idiosyncratic nature. This is also indicated by relatively low levels of market turnover, but also by the increasingly smaller number of active stocks on the market²⁰ (Figure 5).

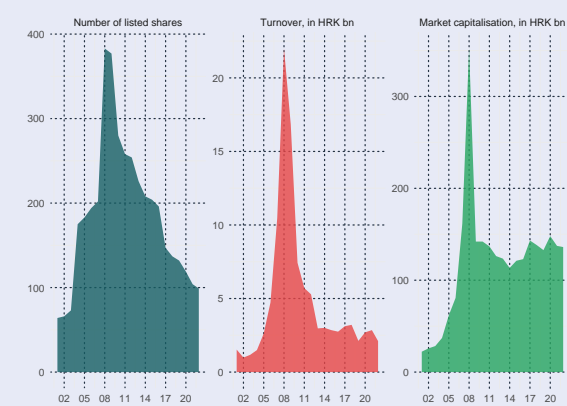
Although lagging behind in terms of activity (Figure 4), the domestic market is better capitalised compared to CEE countries. At the end of 2020, the capitalisation of shares amounted to 38.9% of GDP, while the average capitalisation in other CEE countries amounted to 16.45% of GDP. Based on the simple univariate linear relation between the size and the activity of the market, estimated on a sample of EU countries, the expected annual turnover for such a market would be 7-9% of national GDP, but it amounted to only 0,63% of GDP during the first 11 months of 2021. An additional structural weakness of the domestic stock market stems from the fact that such modest trading is also highly concentrated (only 5 shares make up more than 50% of total average trading; more information in Chapter [2 Risks of macroeconomic and financial environments](#)).

Figure 4 Relatively low activity is one of the key structural vulnerabilities of the domestic capital market
Indicators of stock market size and activity, in % of GDP



Note: Showing the latest available indicator values in the period from 2014 to 2020. Values on the horizontal and vertical axis are presented in the logarithmic scale. Source: World Bank

Figure 5 Reduced trading and declining number of listed shares suggest low liquidity of the domestic capital market
Domestic stock market indicators



Sources: Hanfa and ZSE

Reasons for such poor activity lie partially behind the demand of domestic investors and partly behind the supply of equity securities on the domestic market. The third factor that affects low activity, and which is at the same time the consequence of low activity, is certainly the comparatively low market liquidity.

4 Constructing the capital market liquidity composite indicator

Given the multidimensional nature of market liquidity, nine indicators were used in constructing the index, showing various aspects of market liquidity (Table 1), which can be grouped into:

was also a noticeable decrease relative to the year 2007, when there were 383 listed shares.

²⁰ Stock turnover has stagnated for several years now and is currently at the level of HRK 2.1bn, which is a much lower activity than in other EU countries. At the end of 2021, there were 99 shares admitted to trading on the Zagreb Stock Exchange, which

- 1) indicators of implicit and explicit transaction costs – efficiency
- 2) indicators measuring the impact of transaction volume on price stability – breadth
- 3) indicators measuring trading activity – depth
- 4) indicators assessing the robustness of prices to sudden disturbances – resiliency.

Table 1 Overview and description of indicators used to assess the liquidity of the domestic stock market

Dimension	Indicator name	Indicator calculation	Explanation
Efficiency	Bid-ask spread	$S_t^i = \frac{Ask_t^i - Bid_t^i}{\frac{Ask_t^i + Bid_t^i}{2}}$ where <i>Ask</i> is the highest buying price, and <i>Bid</i> the lowest selling price of the share <i>i</i> in the day <i>t</i> .	Due to its simplicity, the most frequently used capital market liquidity indicator, which measures the spread between the ask-side and bid-side in the market, reflecting various market trading costs such as order processing costs, inventory costs, cost associated with information asymmetry, etc.
	Roll's implicit spread	$Roll_t^i = 2 * \sqrt{-Cov(r_t^i, r_{t-1}^i)}$ where <i>Cov</i> is covariance function, and <i>r</i> is the daily price return of share <i>i</i> in the day <i>t</i> relative to the previous day.	Calculation of the explicit bid/offer spreads is sometimes not possible in cases where all data on the orders in the market are not available. Therefore, Roll (1984) developed a simple model to calculate the implicit market spread measure from publicly available data on the changes in securities prices.
Breadth	Amihud illiquidity index	$A = \frac{1}{N} \sum_{t=1}^N \frac{ r_t^i }{V_t}$ where <i>N</i> is the number of days observed, <i>r</i> is the share return on the day <i>t</i> and <i>V</i> is turnover on the day <i>t</i> .	Amihud (2002) constructed an index that measures the impact that large transactions may have on the changes in securities prices, the increase of which may indicate a relatively tight market with a small number of investors.
	Hui-Heubel liquidity index	$H = \frac{(P_H - P_L)/P_L}{V/(M * P_L)}$ where <i>P_H</i> is highest price, <i>P_L</i> lowest price, <i>P_μ</i> average price, <i>V</i> turnover realised and <i>M</i> market capitalisation.	The index constructed by Hui and Huebel (1984) measures the effect of the trading volume on prices, where higher index values indicate greater price sensitivity, i.e. a lack of market breadth.
	Martin's liquidity index	$M = \sum_{t=1}^N \frac{(P_{it} - P_{it-1})^2}{V_{it}}$ where <i>P</i> is the closing price of the share <i>i</i> on the day <i>t</i> , and <i>V</i> indicates the turnover of the share <i>i</i> realised on the day <i>t</i> .	The liquidity index proposed by Martin (1975) measures the sensitivity of prices to trading indicators, with an emphasis on the volume of trading, as it considers that the size of a particular transaction is not significant when measuring liquidity across the market.
Depth	Turnover coefficient	$T = \frac{V}{M}$ where <i>V</i> is the volume traded, and <i>M</i> is market capitalisation.	The turnover coefficient measures the turnover of denominated values of shares on the market, with higher values indicating higher market activity, i.e. higher market liquidity.
	Order coefficient	$O = \frac{n}{N}$ where <i>n</i> is the number of shares in orders and <i>N</i> is the number of listed shares.	The order coefficient, similar to the turnover coefficient, measures market activity, taking into account the fact that the absence of transactions does not necessarily mean illiquidity, but it primarily relies on measuring the available orders which may or may not be executed.
Resiliency	Sharpe ratio	$SR = \frac{r_t}{\sigma(r_t)}$ where <i>r</i> is the observed share return, and <i>σ</i> is a standard deviation of previous 30 days of observed returns.	The ratio defined by Sharpe (1994), which has been inverted (multiplied by -1) for the purposes of constructing a liquidity indicator, measures the level of price volatility per unit of return and, as such, the price (un)stability assumed by investors for the expected return.
	Market efficiency coefficient	$MEC = \frac{Var(R_t)}{T * Var(r_t)}$ where <i>Var(R_t)</i> is the variance of returns over the longer period, <i>Var(r_t)</i> is the variance of the return of the shorter period and <i>T</i> is the number of shorter periods observed over a longer period.	The market efficiency coefficient was proposed by Hasbrouck and Schwartz (1988) as a measure for the resiliency of market prices. Price fluctuations in liquid markets are continuous and even if new information significantly affects the equilibrium prices, they are of a transient nature and prices in resilient markets are very quickly adjusted towards levels warranted by fundamentals. Therefore, the higher level of this indicator indicates higher liquidity in the market.

Source: Hanfa

The aggregate indicator of stock market liquidity was calculated in three steps. In the first step, at the monthly frequency, these indicators were estimated for each individual share that was regularly traded²¹. The individual indicator values are aggregated to market level using the median value of indicators of individual securities (Figure 6). In the second step, aggregated indicators

were standardized²² and, with the aim of maximising the preservation of information contained in the basic indicators, indicators of individual dimensions of capital market liquidity

²¹ Regular trading implies that the share in question was traded for at least five days during a month.

²² The X variable was standardized using the following transformation: $z = (X - \mu)/\sigma$, where μ is the mean of the X variable, while σ is the standard deviation of the X variable.

were created using the principal component analysis²³ (Figure 8).

The third step implies the aggregation of indicators of individual liquidity dimensions into the composite index, using the method popularised by Kremer et al. (2012). Aggregation into composite index is done as follows:

$$MLI_t = \sqrt{(t \circ z_t)^\tau M_t^{kor} (t \circ z_t)},$$

where t vector is the weight of indicators marking individual dimensions of liquidity, z_t vector the values of normalized indicators, M_t^{kor} the dynamic correlation matrix at the moment t , \circ Hadamard product of vector and τ the transposed version of the matrix. The elements $\rho_{ij,t}$ of the dynamic correlation matrix at moment t are assessed recursively in the following way:

$$\sigma_{ij,t} = \lambda \sigma_{ij,t-1} + (1 - \lambda)(z_{i,t} - \bar{z}_i)(z_{j,t} - \bar{z}_j),$$

$$\sigma_{i,t}^2 = \lambda \sigma_{i,t-1}^2 + (1 - \lambda)(z_{i,t} - \bar{z}_i)^2,$$

$$\rho_{ij,t} = \frac{\sigma_{ij,t}}{\sigma_{i,t} \sigma_{j,t}},$$

where \bar{z}_i is the average value of the indicator z_i on the entire observed sample and λ is the smoothing parameter calibrated to 0.94²⁴. Initial values of correlation matrix elements $\rho_{ij,0}$ are set at the value of correlation coefficient between variables z_i and z_j on the entire observed sample.

The approach used to create the composite index enables the decomposition of market liquidity into individual dimensions while quantifying the effects of the synchronised movement of various liquidity dimensions, i.e. their correlation²⁵. This corrects the calculated overall liquidity for possible overlapping of

individual liquidity dimensions (duplication of information), as well as for an increase in correlation especially expressed during crisis periods covered by this analysis, which may distort the true picture of available liquidity on the market.

Figure 6 Liquidity indicators signal a rapid recovery in stock market liquidity following a temporary deterioration at the beginning of the COVID-19 in March 2021

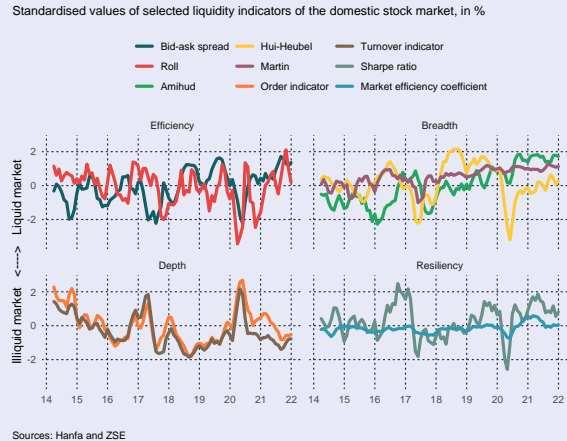
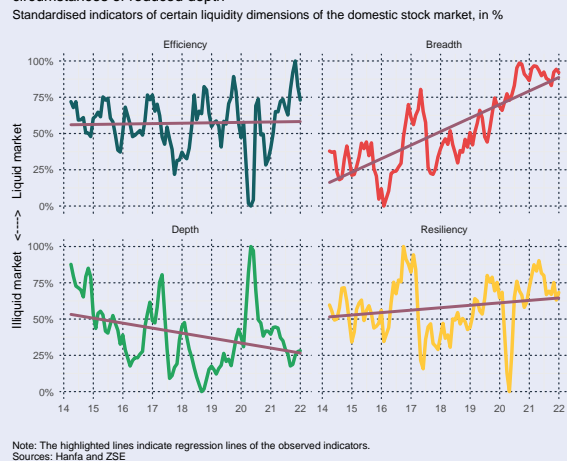


Figure 7 Development of the breadth and resiliency of the market in circumstances of reduced depth



5 Stock liquidity market index (TILDA)

The recovery of capital market liquidity, which started at the end of 2015 (Figure 8), was temporarily slowed down by two crises: the 2017 crisis in the Agrokor Group and the coronavirus crisis from the beginning of 2020. Although the coronavirus crisis caused the market liquidity

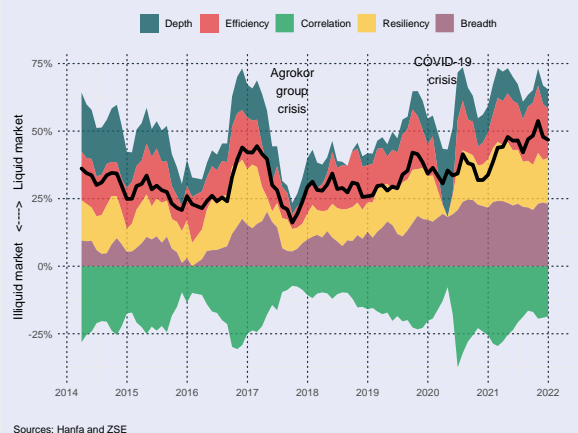
²³ Principal component analysis is a multivariate statistical method used to reduce the dimensionality of data. The first basic component containing the highest percentage from the basic information space was used to evaluate the indicators of individual dimensions of capital market liquidity.

²⁴ More information about the parameter λ is available in the document [RiskMetrics™](#).

²⁵ The correlation dimension actually quantifies the span from the current to the complete correlation, i.e. the lack of correlation, which is why it is presented with a negative sign.

indicators to worsen, swift reactions from economic policy makers prevented long-term consequences. Therefore, at the end of 2021, the stock liquidity market index (TILDA) reached its highest level since 2014. However, it should be noted that the estimated values of the market liquidity index should be viewed in the context of the period in which it was created. More specifically, the availability of data makes it impossible to create the index on the horizon of the entire financial cycle. It is to be expected that, if the index could be extended to the period before 2014, and in particular before 2008, the current level of liquidity would be significantly below historical trend. Therefore, although market liquidity has been rising recently, it is certain that the level of liquidity is still low, both in comparison to previous periods and other comparable capital markets.

Figure 8 COVID-19 crisis left no long-term effects on the liquidity of the domestic stock market
Stock liquidity market index (TILDA), in %



A continuous increase in market breadth and resiliency mainly contributed to the improvement of market liquidity in the observed period (Figure 7). Market efficiency, however, showed several years of stagnation, while market depth further decreased over the observed period and constitutes one of the key structural challenges of the domestic capital market.

The further growth of liquidity in the domestic stock market will significantly depend on trends in international capital markets in the context of increasing inflationary pressures and a likely shift in the monetary policies of the leading central

banks. Although the domestic capital market shows no signs of overheating, the recent crisis has shown that it is very vulnerable to changes in investor sentiment and the spillover of shocks from foreign markets. This further highlighted the importance of sufficient and robust market liquidity, which ensures the potential of the market to buffer sudden systemic shocks while catalysing rapid and robust recovery.

References

Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and Economic Growth: The Role of Local Financial Markets*. *Journal of International Economics*, 64(1), 89–112

Amihud, Y. (2002). Illiquidity and stock returns: Cross-section and time series effects, *Journal of Financial Markets* 5, 31–56

Bervas, Arnaud (2006), "Market Liquidity and Its Incorporation into Risk Management", *Financial Stability Review No.8*, Banque de France, May 2006

Hasbrouck, J., & Schwartz, R. A. (1988). Liquidity and execution costs in equity markets. *The Journal of Portfolio Management*, 14(3), 10–16

Hui, B., and B. Huebel, (1984). Comparative Liquidity Advantages Among Major U.S. Stock Markets. DRI Financial Information Group Study Series.

Kremer, M., Duca, M. L., & Holló, D. (2012). CISS - a composite indicator of systemic stress in the financial system. *Research Papers in Economics*.

Levine, R., & Zervos, S. (1998). Stock Markets, Banks, and Economic Growth. *The American Economic Review*, 88(3), 537–558.

Lybek, T., & Sarr, A. (2002). Measuring Liquidity in Financial Markets. *Research Papers in Economics*.

Martin, P. (1975). Analysis if the Impact of Competitive Rates on the Liquidity of NYSE Stocks Economic Staff Paper, 75-3, Securities and Exchange Commission.

Roll, R. (1984). A Simple Implicit Measure of the Effective Bid - Ask Spread in an Efficient Market. *Journal of Finance*, 39(4), 1127–1139.

Sharpe, W. F. (1994). The Sharpe Ratio. *The Journal of Portfolio Management*, 21(1), 49–58.

Wurgler, J. (2001). Financial Markets And The Allocation Of Capital. *Research Papers in Economics*

Box 2 The new IFRS 17 - Insurance contracts

1 Standardisation of reporting and greater transparency

Pursuant to the provisions of the Accounting Act²⁶, insurance companies in the Republic of Croatia are considered to be entities of public interest and, as such, are required to prepare and present annual financial statements using International Financial Reporting standards (IFRS). For the past 20 years, insurance companies have been required to draw up financial statements in relation to the calculation of obligations under insurance contracts by using IFRS 4 accounting standard. This standard does not prescribe an explicit standardised method of “measuring” insurance contracts, but companies are allowed to use various practices. This mostly meant that companies used national accounting standards, making it more difficult to compare business operations of companies at the international level. It was precisely the different accounting treatment, which made it very difficult for investors and analysts to understand and compare the results of business operations of insurance undertakings, that was one of the main reasons for the adoption of [IFRS 17 accounting standard](#), which is expected to enter into force on 1 January 2023 (Figure 1).

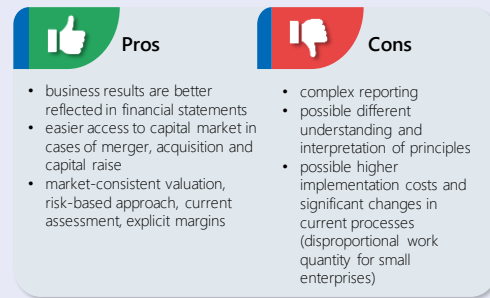
Figure 1 IFRS 17 to come into force at the beginning of 2023
The most important dates in the implementation of the new accounting standard IFRS 17



²⁶ Official Gazette, No 78/15, 134/15, 120/16, 116/18, 42/20, 47/20

Figure 2 In addition to the desired advantages, the introduction of the new standard also has certain shortcomings

Schematic overview of key pros and cons of IFRS 17



Source: Hanfa

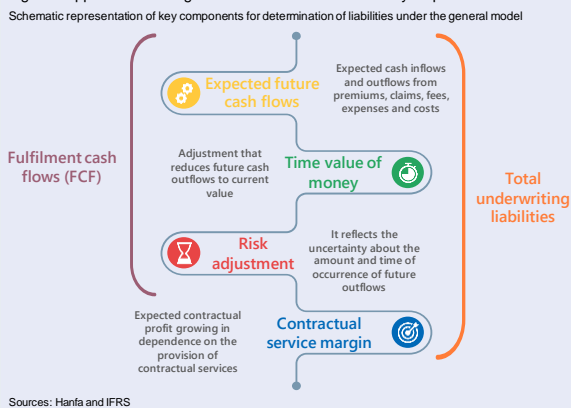
2 Significant changes in the valuation of liabilities and the determination of business results

IFRS 17 introduces significant changes with regard to reporting on insurance contracts, not only for future contracts but also for existing contracts, given the obligation to apply it retroactively. The greatest changes relate to the manner in which insurance companies’ liabilities under insurance contracts are determined and profits expressed.

Determining companies’ liabilities under insurance contracts will thus be market-based and risk-based with the application of IFRS 17. The majority of long-term insurance contracts will be evaluated using the so-called general model (Figure 3). In accordance with this model, the liabilities of insurance companies are determined on the basis of the unbiased and probability-weighted expected future cash flows of a particular contract by applying applicable discount rates. Such determined value of insurance companies’ liabilities under contracts is adjusted to non-financial risks assumed by companies, such as insurance risk or termination risk (Risk Adjustment, RA)²⁷. The final value of obligations is determined by adding the contractual service margin, which represents the future expected profit.

²⁷ The assessment of the risk adjustment is not prescribed by IFRS; its calculation is left to the companies themselves.

Figure 3 Application of the general model consists of four key steps



In addition to the general model, companies will be able to use two additional approaches to evaluate their liabilities, namely:

1. premium allocation approach as a simplification of the general model for the majority of short-term contracts, and
2. variable fee approach, to be used for contracts with direct participation feature having an investment component (contracts where the investment risk is borne by the policyholder, such as index-linked or unit-linked contracts).

Another important amendment introduced by IFRS 17 concerns the recognition of profit or loss and data quality requirements. Companies will thus be required to separately provide information on profits/losses under insurance contracts and on the overall financial result, including income from the investment of assets. The new standard requires reporting on the amount of income at the time when it was earned, and not at the time of collection, i.e. when the company was paid a premium, as defined by the existing standard. Based on this, companies will have to group the total portfolio of insurance contracts into separate groups depending on their exposure to similar risks and manage them as one single portfolio. Contracts may be grouped into one of three contract groups²⁸:

- (i) contracts that can almost certainly be presumed profitable
- (ii) contracts that can almost certainly be presumed non-profitable (onerous contracts)
- (iii) remaining contracts.

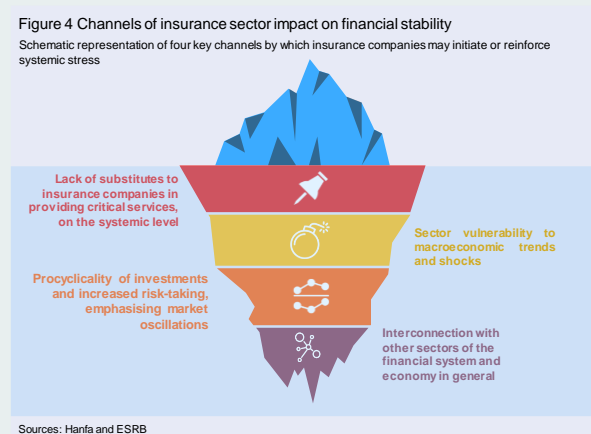
In order to ensure the profit recognition for the period of its realisation, a margin is established for profitable contracts falling under category (i) for the services agreed, and the profit at initial recognition stands at zero. The contractual margin then increases over the duration of the contract in accordance with its recovery, and profits over the duration of the contract are also recognised. In order to ensure the timely recognition of losses under contracts in category (ii), the contractual service margin is not defined, but the expected loss is recognised immediately. For contracts in category (iii), a contractual margin is established throughout the duration of the contract for all the time expected to be profitable. However, if such a contract becomes unprofitable, the expected future losses should be recognised at that moment. This will contribute to the increase in transparency and comparability of financial statements of insurance companies throughout the EU, but also provide accurate and credible information to users of such information in the process of making business decisions.

3 Impact on financial stability

Following the global financial crisis, European regulators (EIOPA and ESRB) identified the four most significant channels through which insurance companies can create or reinforce an existing systemic risk, which may have a negative impact on financial stability (Figure 4). These are, in particular, lack of substitutes to insurance and reinsurance companies in providing services critical for the economy, which would become prominent in the event of a systemic failure of

²⁸ Further breakdown of these groups is allowed, whereby only contracts issued within a year or a shorter period may be grouped.

most sectors. Insurance companies may enhance the existing systemic risks both through **pro-cyclical behaviour and excessive risk-taking**, which may increase amplitudes in financial markets, and a **high interconnection with other financial intermediaries**, which may exacerbate the effects of spillover of shocks on other sectors of the financial system. The always present **vulnerabilities with respect to macroeconomic factors** additionally became prominent in the recent environment of low interest rates with negative implications on the profitability of companies, especially in the segment of life insurance (more details in previous issues of publications [Financial stability](#) and [Macroprudential Risk Scanner](#)).



Although accounting standards are not designed to be a tool for preserving financial stability, they may have some impact on it. The specific impact of IFRS 17 on the channels concerned is difficult to assess at this point, however, a positive contribution to financial stability is expected by promoting internationally comparable accounting practices and increasing transparency through the provision of more

accurate and timely information to users of financial statements, which they can use to make informed economic decisions. On the other hand, IFRS 17 is unlikely to encourage insurance companies to engage in certain risky activities or to cease activities deemed socially desirable. On the contrary, it is expected that the new standard could contribute to the discipline of insurance companies and deter them from excessively risky behaviour and transactions, and lead to a decreased number of situations where losses are not recognised immediately or remain “hidden”. Moreover, there are currently no reasons that could lead to significant changes in risk taking, pro-cyclical behaviour or concentration of assets. Despite the likely positive effects on business transparency and operational discipline of companies, a possible increase in volatility of profitability for a particular segment of insurance companies (triggered by the obligation to group insurance contracts annually) may nevertheless increase the procyclicality of the sector with potential certain negative effects on financial stability.

References

Deloitte (2017), Seven reasons why IFRS 17 Insurance contracts should boost your interest

ESRB (2021), Financial stability implications of IFRS 17 Insurance Contracts

IFRS (2021), IFRS 17 Insurance Contracts

Katarina Mikić (2020), Valuation of insurance contract liabilities under IFRS 17

Munich RE (2021), Introduction to IFRS 17

List of abbreviations

GDP – gross domestic product
CBS – Croatian Bureau of Statistics
EIOPA – European Insurance and Occupational Pensions Authority
EC – European Commission
ECB – European Central Bank
ESMA – European Securities and Markets Authority
ESRB – European Systemic Risk Board
EU – European Union
EUR – euro
Hanfa – Croatian Financial Services Supervisory Agency
HICP – Harmonised Index of Consumer Prices
HRK – Croatian kuna
m – million

bn – billion
IFRS – International Financial Reporting Standards
pp – percentage point
SCR – Solvency Capital Requirement
CEE – Central and Eastern Europe
UCITS – undertakings for collective investment in transferable securities
ZSE – Zagreb Stock Exchange
Country codes: AT – Austria; BE – Belgium; BG – Bulgaria; CY – Cyprus; CH – Switzerland; CZ – Czech Republic; DE – Germany; DK – Denmark; EE – Estonia; EL – Greece; ES – Spain; FR – France; GB – Great Britain; HR – Croatia; HU – Hungary; IE – Ireland; IT – Italy; LT – Lithuania; LU – Luxembourg; LV – Latvia; MK – North Macedonia; MT – Malta; NL – Netherlands; NO – Norway; PT – Portugal; PL – Poland; RO – Romania; USA – United States of America; SE – Sweden; SI – Slovenia; SK – Slovakia; UK – United Kingdom

