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Slovenian banking system remains resilient in the face of several recent stress events

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The paper examines key features of both the Slovenian banking sector and banking sectors within the euro area. This comparative analysis serves to identify significant disparities between them, shedding light on areas of divergence. Additionally, it highlights the significance of enhancing the cost and profit efficiency of banks through digitalisation, consolidation, and a shift towards decarbonisation.

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1. Introduction

Over the last three years, the global economy and financial systems across the world have endured several stress events (the Covid-19 pandemic, supply chain disruptions, the war in Ukraine, inflationary pressures), but major adverse effects have been prevented by a fast and wide-ranging response by putting in place economic policy measures. Economic entities have thus succeeded in adapting to the altered circumstances. The persistently high inflation and the resulting fast and decisive interest rate hikes by the ECB are meanwhile already being reflected in a slowdown in lending activity in Slovenia and elsewhere in the euro area (hereinafter: the EA), and the future economic situation remains relatively uncertain in Slovenia and across the EA, despite this year's slight improvement in the economic sentiment.

The Slovenian banking system remains one of the smallest in the EA, and Slovenian banks are not significantly altering their business models. Household lending remains the focus on the asset side, although there have recently been large holdings of liquid assets, while deposits account for much of the funding side. The latest simulations of consolidation of the Slovenian banking system suggest that the banking system could become moderately concentrated after the completion of the merger of two large banks, which would raise Slovenia from the EA average to the top third of the countries with the highest banking system concentration.

By contrast, the Slovenian banking system is significantly behind the EA average when it comes to digital transformation. The share of green loans also remains low, which means that there is a great potential for the banks to support decarbonising the economy.

2. The banking system has adapted relatively well to difficult circumstances

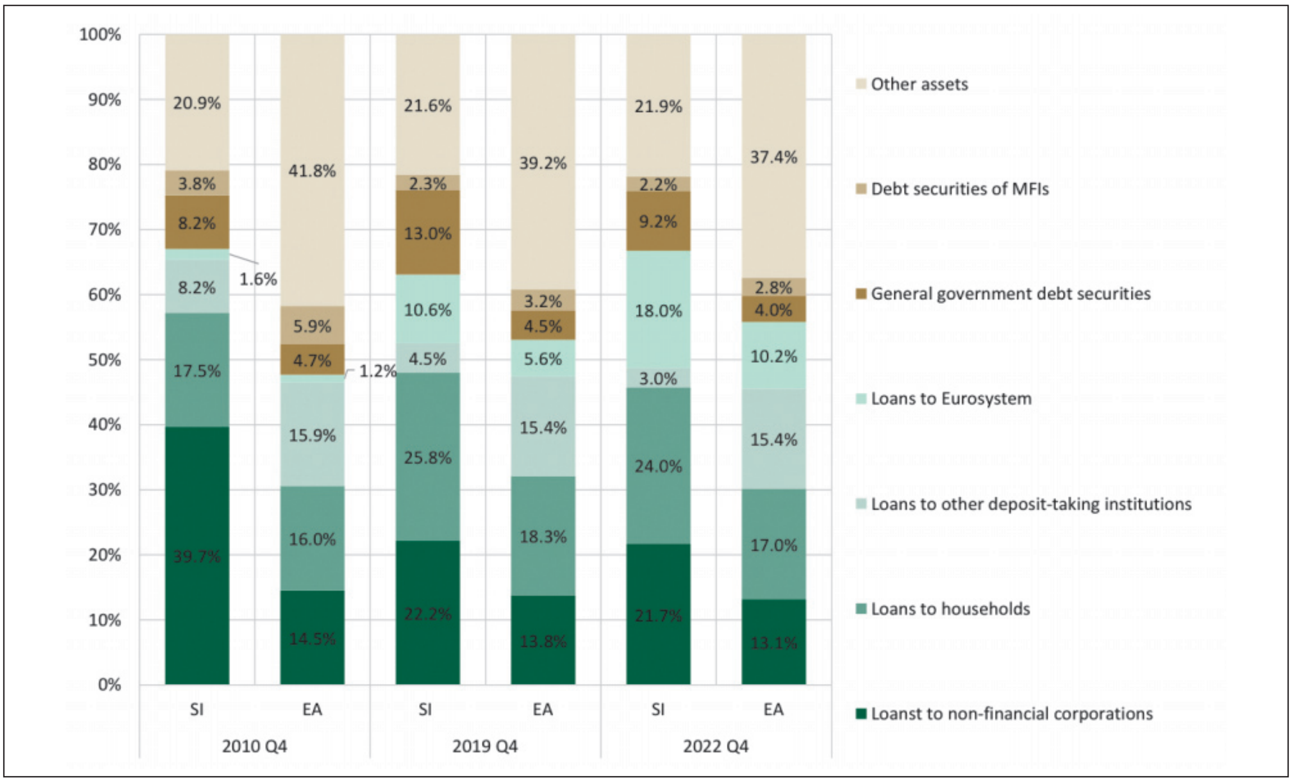
Household loans remain the largest component of the banking system's assets

The Slovenian banking system has remained among the smallest in the EA over the last twelve years. The balance sheet total of Slovenian monetary institutions (excluding the ESCB[1]) amounted to EUR 52 billion at the end of 2022, equivalent to 88% of Slovenia's GDP, less than a third of the EA average (292%). There has been a significant change in the structure of the Slovenian banking system's assets over the aforementioned period. Following the dominance of lending to non-financial corporations (NFCs) before the global financial crisis (GFC), the recapitalisation of the banking system and the transfer of a large part of the NFCs portfolio to the Bank Asset Management Company after the GFC, and the gradual recovery in lending activity in the middle of the last decade, the banks have focused more of their lending to the non-banking sector on households. Amid relatively weak lending to NFCs, the share of bank portfolios accounted for by household

* All Banka Slovenije.

[1] Excluding the European System of Central Banks, which consists of the ECB and the national central banks of all EU Member States.

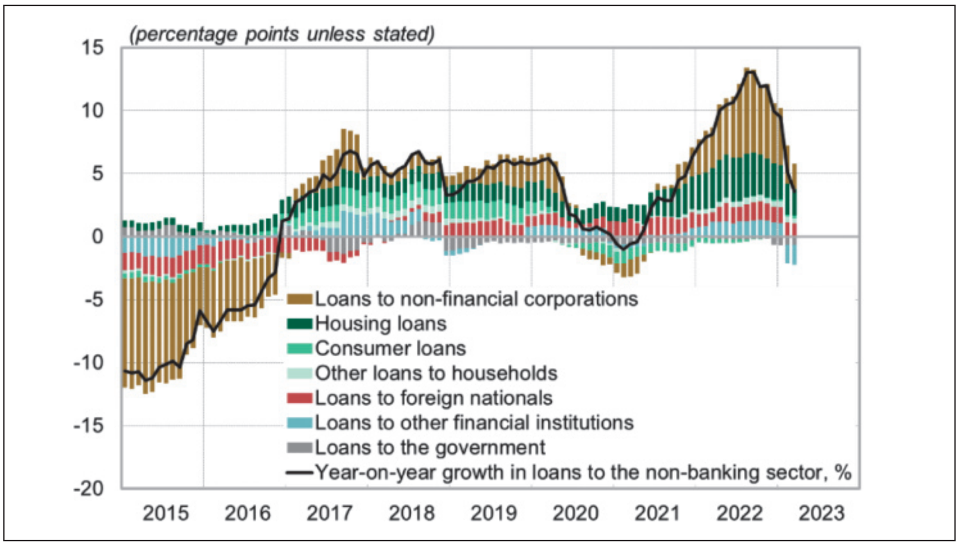
Figure 1: Breakdown of total assets of EA MFIs (excluding the Eurosystem)



Note: Other assets include loans to general government, loans to financial corporations other than MFIs, loans to insurance corporations and pension funds, fixed assets, external assets, holdings of equity and non-MMF IF shares, other euro area residents' debt securities and remaining assets.
Sources: ECB Statistical Data Warehouse, own calculations

loans has gradually increased, with housing loans and consumer loans both increasing in stock. The banks nevertheless did not succeed in fully directing the huge inflow of deposits
by the non-banking sector seen in particular during the Covid-19 pandemic (2020 and 2021) into loans or other asset classes, which sharply increased their holdings of liquid assets in accounts at the central bank. The share of the balance sheet total that they account for stood at 18% at the end of 2022 (illustrated in Figure 1 as loans to Eurosystem), well above the EA average (10%).
Year-on-year growth in loans to the non-banking sector fluctuated around 5% between 2017 and 2020, before slowing sharply at the outbreak of the Covid-19 pandemic in early 2020 and moving into negative territory for a few months at the beginning of the following year. Certain significant changes occurred in the household lending segment during the period of relatively stable growth, as consumer loans recorded double-digit year-on-year growth for several years. The issue of excessive consumer lending was addressed by Banka Slovenije macroprudential measures at the end of 2019, following which growth in consumer loans began to slow, before falling sharply with the outbreak of the pandemic a few months later and the crash in consumer demand, and by the end of 2022 it had moved into negative territory.
During this time the dominant role in household lending was taken by housing loans: growth strengthened sharply from early 2021 amid surging residential real estate prices and interest rates at record low levels, and had reached 11.9% by June 2022, the highest rate of the last ten years and one of the highest figures in the EA, where the average stood at 5.4% in that month.
While lending to NFCs recovered strongly in 2022, and the contribution to aggregate growth in loans to the non-banking sector made by corporate loans also increased significantly, much of this consisted of a recovery in lending following the great decline during the pandemic and was also attributable to a low base effect. As growth in housing loans remained uninterrupted even during the pandemic, and then subsequently gained further pace, household loans remained the most important component on the asset side of the banking system's balance sheet, accounting for 24.2% of total assets in March 2023 (compared with 20.5% for loans to NFCs). Lending in the majority of segments slowed discernibly in the early months of this year in the wake of monetary policy tightening and the increased uncertainty surrounding the outlook for the economy.

Figure 2: Growth in loans to the non-banking sector, and contributions by individual segments and loan types



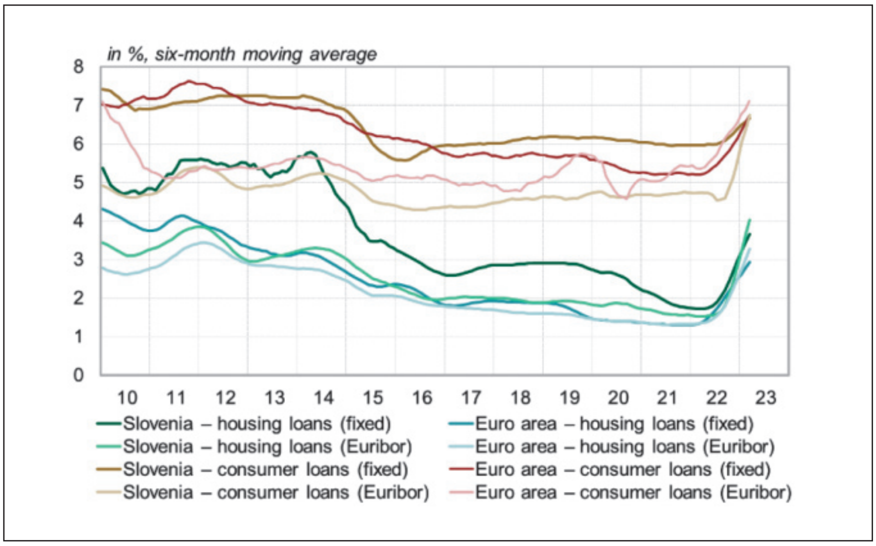
Source: Banka Slovenije

The end of the period of low interest rates

Extremely favourable financing conditions have been a major feature of the last ten years. Interest rates on loans to the non-banking sector fell for a sustained period, amid accommodative monetary policy with key interest rates close to zero and other less conventional monetary policy measures in place and reached a record low average in 2022. The trend of falling interest rates at banks was evident across different segments of the non-banking sector and also compared with other EA countries and the EA average. Interest rates at Slovenian banks converged on those seen across the EA, most evidently with regard to housing loans and loans to NFCs. Interest rates on housing loans in the Slovenian banking system reached their low in January 2022. Fixed interest rates had fallen to 1.7%, and variable rates (Euribor plus a premium) to 1.5%.

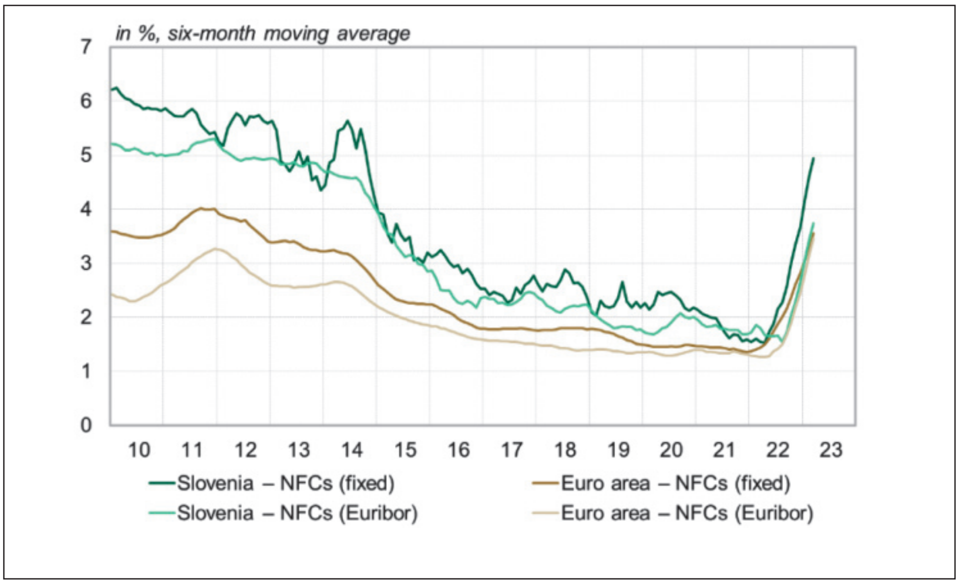
Interest rates on loans to NFCs have shown greater volatility from month to month, on account of the larger variations in loan amounts and loan terms typically seen in this segment and reached their low in the first half of 2022. Amid rising inflation in EA countries, July of that year saw the first in a series of hikes in the ECB's key interest rates, to which the banks have responded quickly by beginning to raise interest rates on loans to the non-banking sector. By May of this year the ECB's key interest rates have risen by 3.75 percentage points, and further rises are expected as inflation remains persistently high. While fixed interest rates on housing loans at Slovenian banks have risen to 4.0% by March of this year, variable rates have risen to 4.7%. It is similar with loans to NFCs: fixed interest rates have risen by more than 3 percentage points, and variable rates by more than 2 percentage points.

Figure 3: Interest rates on household loans



Source: Banka Slovenije, ECB Statistical Data Warehouse, own calculations

Figure 4: Interest rates on loans to non-financial corporations



Source: Banka Slovenije, ECB Statistical Data Warehouse, own calculations

Deposits remain the most important source of funding for the banking system

With the repayment of debt to banks in the rest of the world and the increase in deposits by the non-banking sector, the structure of the Slovenian banking system's liabilities has changed markedly over the last twelve years. The share of the balance sheet total accounted for by wholesale funding, which includes liabilities to foreign banks (largely included under deposits of deposit-taking corporations except central bank in Figure 5) and issued debt securities, declined by 30 percentage points between 2010 and 2022 to reach 6.6%, while bank funding via deposits by households and NFCs increased sharply. The share of the balance sheet total that they account for almost doubled over the aforementioned period, and stood at 70% at the end of 2022, which ranks Slovenia among the EA countries with the highest reliance on this source of funding. The figure was broadly unchanged over the early months of 2023.

Similarly to the majority of other EA countries, deposits by households and NFCs increased significantly during the time of the Covid-19 pandemic (2020 and 2021) despite record low interest rates on deposits, in part because of the limited opportunity to spend or to make investments. They also remained a stable source of funding for the Slovenian banking system even during the difficulties encountered by one of the banks in Slovenia after the outbreak of the war in Ukraine (March 2022), when fast and effective resolution meant that savers retained their confidence in the functioning of the Slovenian banking system.

The sharp rise in inflation in the second half of 2022, which along with low interest rates on deposits is reducing the real value of savings at banks, might drive a withdrawal of bank deposits to be moved into other higher-yielding but higher-risk asset classes. Thanks to the traditional conservative behaviour of Slovenian savers, the shallow capital market, and the lack of alternative investments, for now there has nevertheless been no major withdrawal of deposits from banks.

It is not only on the lending side that monetary policy transmission has occurred, but also partly on the deposit side, which in the future could lead to a change in the structure of bank funding in individual EA countries. A rapid rise in interest rates on fixed-term deposits is more evident in countries where deposits account for a lower share of funding, and with greater dependence on wholesale funding or liabilities to the Eurosystem, as deposits remain a cheaper source of funding than the aforementioned sources, despite rising interest rates. Although banks in Slovenia have begun to gradually raise interest rates on deposits, they are significantly below the EA average. Given their large stock of liquid assets and deposits by the non-banking sector, for now Slovenian banks have no great need for additional funding, and they have little dependence on costlier wholesale funding and other sources. However, it can be expected that a further rise in interest rates on deposits will gradually shift the maturity breakdown of savers' deposits. With interest rates on fixed-term deposits virtually zero, households and NFCs had little motivation to make fix deposits in the past years, and sight deposits therefore accounted for the majority of their savings (87% at the end of 2022, compared with 66% in EA average). Rises in interest rates on deposits will likely encourage savers to tie up at least some of their savings.

Figure 5: Breakdown of total liabilities of EA MFIs (excluding the Eurosystem)

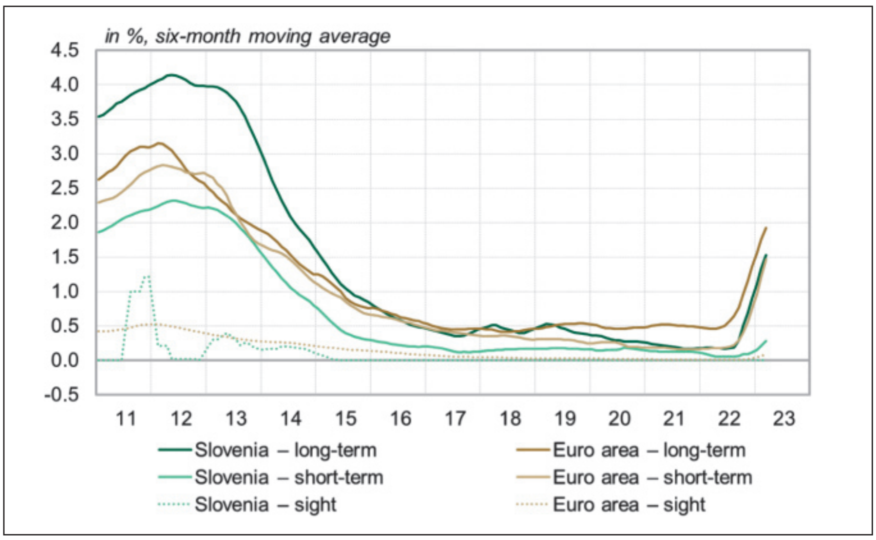
Note: Other liabilities include deposits by central bank, deposits by central government, money-market fund shares, external liabilities and remaining liabilities.
Sources: ECB Statistical Data Warehouse, own calculations

The rapid rise in interest rates is driving up income, and improving bank performance over the short term

Similarly to banks elsewhere in the EU and the EA, banks in Slovenia have in recent years faced challenges in generating stable (net) interest income. Slovenia has mostly seen a decline in the net interest margin (NIM) for more than two decades now. Having stood at 2.18% at the end of 2014, it underwent a sustained decline between 2015 and the beginning of the second quarter of 2022 driven by price effects (the low interest rate environment), and relatively low growth in loans. Following an improvement in lending growth in 2021, growth in net interest income turned positive again in early 2022.

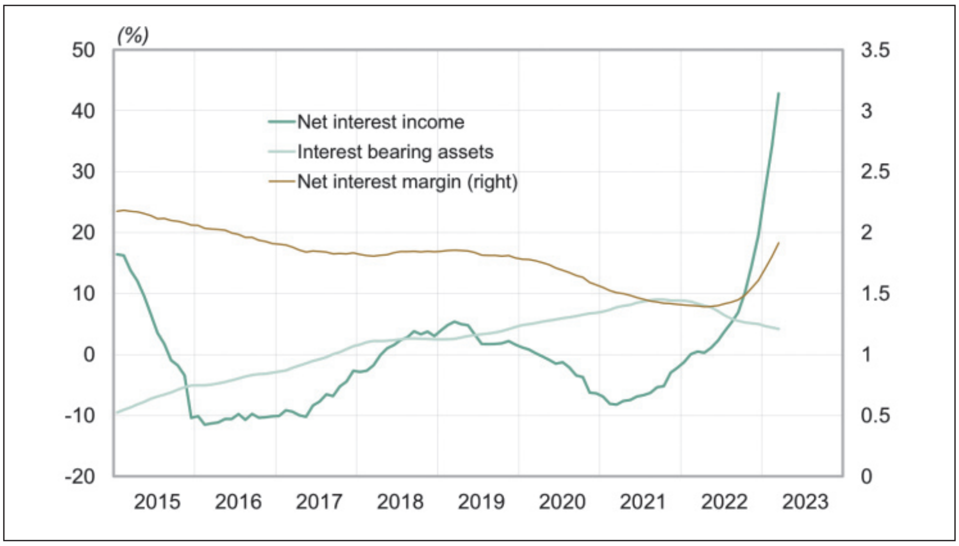
The conditions for generating income from net interest, which is the most important component of gross income, were improving rapidly, particularly with the ECB's interest rate hikes. Net interest income in 2022 was up a fifth on 2021, and in the first quarter of this year more than doubled in year-on-year terms. The increase in net interest is driving a rise in income and profits. These trends have

Figure 6: Interest rates on new household deposits



Source: Banka Slovenije, ECB Statistical Data Warehouse, own calculations

Figure 7: Year-on-year growth in net interest and interest-bearing assets, and net interest margin



Note: The net interest margin is calculated for the preceding 12 months. Growth in net interest and interest-bearing assets is calculated from the 12-month figures.
Source: Banka Slovenije

been particularly pronounced as of the final quarter of last year.

The banks have large holdings of liquid assets, where the rise in ECB interest rates is immediately reflected in higher net interest income. Interest income on loans is also growing fast: more than half of loans to NFCs and households carry a variable interest rate, while on the funding side sight deposits are prevalent, and costlier wholesale funding accounts for only a small share of total liabilities.

The banks are responding very slowly and cautiously in raising liability interest rates. Compared with other countries, they have relatively high interest income and very low interest expenses at the same time. Positive price effects on the asset side of the balance sheet therefore prevail at present. Net interest income in the first quarter of this year was up fully EUR 152 million or 96% in year-on-year terms. The year-on-year increase in net interest in the first quarter of this year alone exceeded that in the whole of 2022 (EUR 123 million). The increase in net interest is also being reflected in rapid growth in the net interest margin, which stood at 1.92% over the 12 months to March 2023, up more than 0.5 percentage points in year-on-year terms. The net interest margin in the first quarter of 2023 already amounted to 2.65%, which is comparable to the figures seen more than a decade and a half ago. Under these conditions of rising income, the banking system's gross income in the first quarter was up almost a third (31.1%) on the same period last year, while net income was up 43.2%. The banks can also be expected to increase their income generation over the following months, with a positive impact on their performance.

Bank profitability in Slovenia compared with banks across the EU and the EA

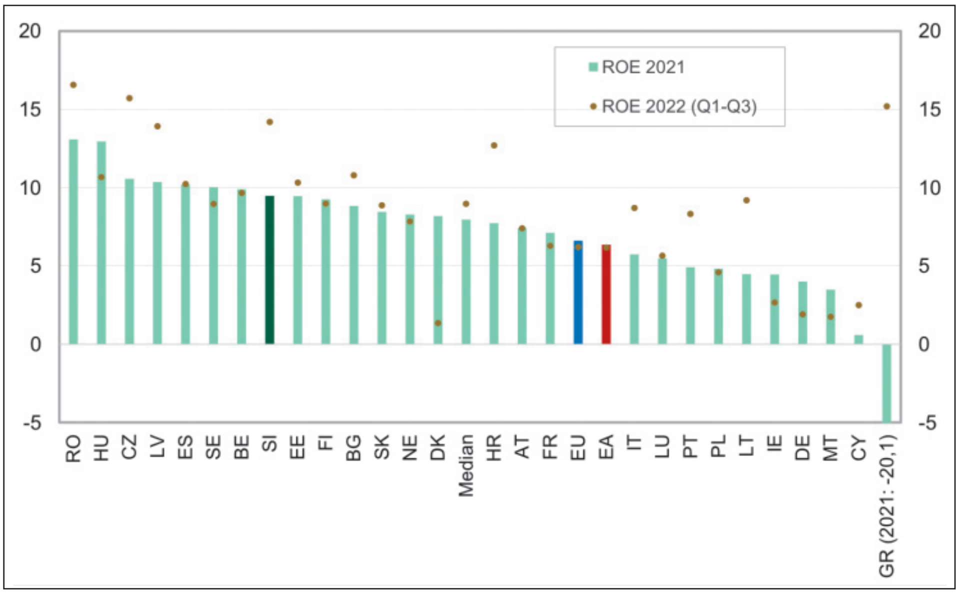
The Slovenian banking system has recorded relatively high ROE in recent years. It stood at 10.8%[2] in 2022, similar to its average between 2017 and 2022. During this period of challenging conditions for generating income and economic uncertainty, Slovenian banks realised an average annual pre-tax profit of around EUR 0.5 billion. The banking system's profit in the first quarter of this year amounted to EUR 152 million, up significantly (57%) on the same period last year, and its pre-tax ROE was 12.4%.

ROE in the Slovenian banking system has been above the EU and EA averages in recent years.[3] Average ROE between 2017 and 2021 was double the figures seen in the EU and the EA overall. ROE averaged 10.2% in Slovenia over this period, compared with 5.1% in the EU and 4.9% in the EA (ECB SDW, CBD, latest whole-year figures), while average ROE at banks of comparable size in the EU and the EA was a little lower again (4.5% and 4.4% respectively). A similar gap was seen in the figures up to the third quarter of 2022. Slovenia's figure of 14.2% last year significantly exceeded the average of the EA and the EU, in part because of the one-off effect of the acquisition of one bank by the largest banking group in the first quarter of 2022. Even excluding this effect, its ROE of around 10% would still rank it at the top of the second third of the distribution of countries with the highest values.

A major factor in the high profitability of Slovenian banks in recent years has been the net release or very low creation of impairments and provisions, while one-off factors that drove up non-interest income also played a role in raising profit (at the large banks) in individual years (2020 and 2022). The net release of impairments and provisions (or

[2] Individual bank data, pre-tax ROE.
[3] Consolidated bank data (ECB SDW, CBD), ROE after tax.

Figure 8: ROE in EU Member States at the end of 2021 and to the third quarter of 2022



Note: Data to the third quarter of 2022 is annualised.
Source: ECB SDW (CBD)

low net creation) was a major factor in the maintenance of high profitability at the banks, particularly during the period of low interest rates: four of the years between 2017 and 2021 saw a net release of impairments and provisions, while 2020 saw impairments and provisions at a level comparable to the EU and the EA overall. Slovenia's net impairments and provisions in 2022 were among the lowest of any country (Banka Slovenije, 2023).[4] A longer time horizon of comparison with EU Member States otherwise shows that Slovenia's ratio of net impairments and provisions to the balance sheet total was above-average for several years after the last financial crisis (2010 to 2015).

The net creation of impairments and provisions again prevailed at banks in Slovenia in 2022, but at a low level, comparable to other European countries, and to figures seen in Slovenia over the past two decades. The trend remained similar in the first quarter of 2023.

A comparison between the banking systems in Slovenia and other EU and EA countries in terms of certain income and cost indicators measured against the balance sheet total shows the Slovenian banking system achieving a slightly higher net interest margin, net non-interest margin and, in particular, net commission margin. At the same time the ratio of operating costs to the balance sheet total and the cost-to-income ratio (CIR) were also higher in Slovenia. Conversely, when compared with banks of similar size (small banks in the EU and the EA), the Slovenian banking system has mostly recorded similar or slightly higher figures for the net interest margin in recent years. The figures for net non-interest margin and net commission margin were comparable, while banks in Slovenia were notable for the slightly lower values for the ratio of operating costs to the balance sheet total and the CIR.

3. Banking system consolidation

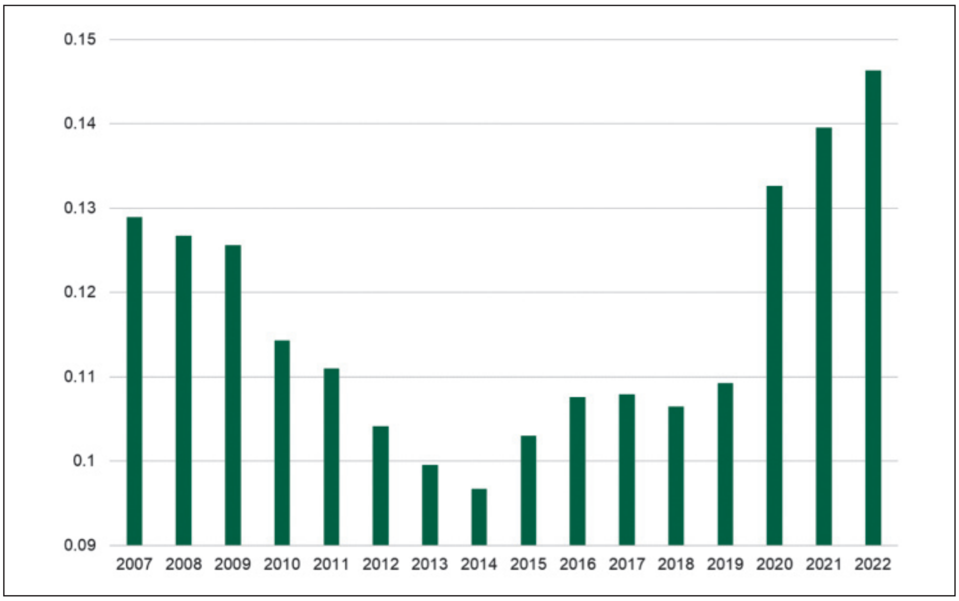
Consolidation refers to the process of merging two or more financial institutions to create a larger entity. Consolidation in general has resulted in the creation of large financial institutions that have a significant market share and, as a result, have a considerable degree of market power.

The level of competition in the banking industry has an impact on its ability to withstand shocks and maintain financial stability, which has long-term implications for the economy. When there is healthy competition among banks, it can improve their efficiency and encourage them to innovate in terms of their products and services, resulting in lower interest rates for borrowers and reduced probability of loan defaults. However, according to some studies (FSR, 2019), excessive competition may push banks to take on too much risk, and if they experience financial distress, it can have significant spillover effects on the broader economy.

According to econometric analysis presented in the FSR (2019), the relationship between competition and bank stability in the euro area can be illustrated as an inverted U-shape. This means that there exists an optimal level of competition in terms of maintaining bank stability. In particular, if the market power of banks is increased up to that ideal level, it would result in a more stable banking sector. However, if the market power goes beyond that level, it could result in a more vulnerable banking sector.

[4] Consolidated bank data (ECB SDW, CBD), comparison to third quarter of 2022.

Figure 9: HHI for the Slovenian banking system

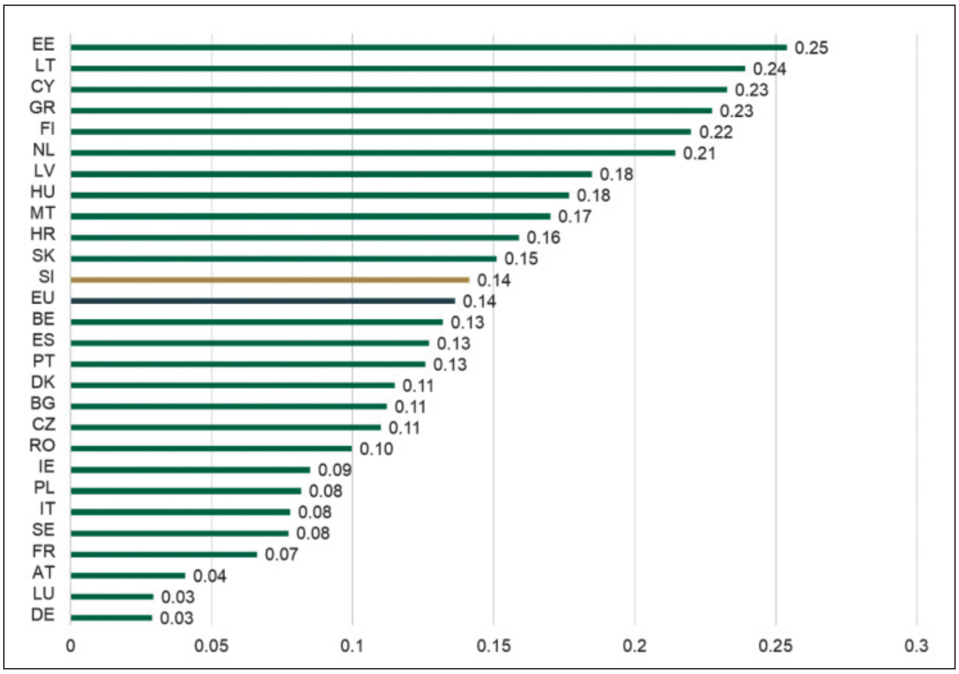


Sources: Banka Slovenije, own calculations
Note: HHI: Herfindahl-Hirschman Index by total assets at the end of 2022

Several studies have also explored the interactions between market power, competitiveness, and financial stability in the banking sector. For instance, Claessens et al. (2001) examined the relationship between bank competition and stability, and found that increased competition can improve stability. However, Beck et al. (2013) argued that a higher degree of concentration in the banking sector can lead to lower financial stability. Furthermore, Demirgüç-Kunt and Huizinga (2010) investigated the relationship between bank concentration and competition, and found that an increase in concentration could lead to a reduction in competition. Furthermore, Berger et al. (2004) found that increased concentration in the US banking industry was associated with higher profit margins and reduced competition. Similarly, Bikker and Haaf (2002) found that increased concentration in the European banking industry was associated with lower efficiency and higher costs.

In Slovenia the process of consolidation of the banking system has been present since independence. There are 16 commercial banks and savings banks at present, and the process of consolidation continues. With regard to banking market concentration in Slovenia, the value of the Herfindahl–Hirschman Index (HHI), a commonly accepted measure of market concentration, stood at 0.126 in terms

Figure 10: HHI in the EU (2021)



Source: ECB
Note: HHI: Herfindahl-Hirschman Index (total assets) in 2021

of total assets at the end of 2008 (see Figure 9). It reached its lowest value of 0.097 at the end of 2014, and then started to rise. The HHI of 0.146 at the end of 2022 shows that the banking industry in Slovenia was still unconcentrated. The HHI in the EU stood at 0.136 in 2021 (latest available data; see Figure 10). The HHI for 2022 does not take account of the merger of Nova KBM and SKB, but a simulation estimates the post-merger HHI at 0.182, which already means a moderately concentrated banking market. In light of such developments it should be considered that instead of two large banks with approximately the same market share by total assets and a few relatively smaller ones, the banking system would probably function better and be more stable if there were three or more banks of approximately equal size.

4. Digital transformation[5] and use of fintech[6] in the banking system

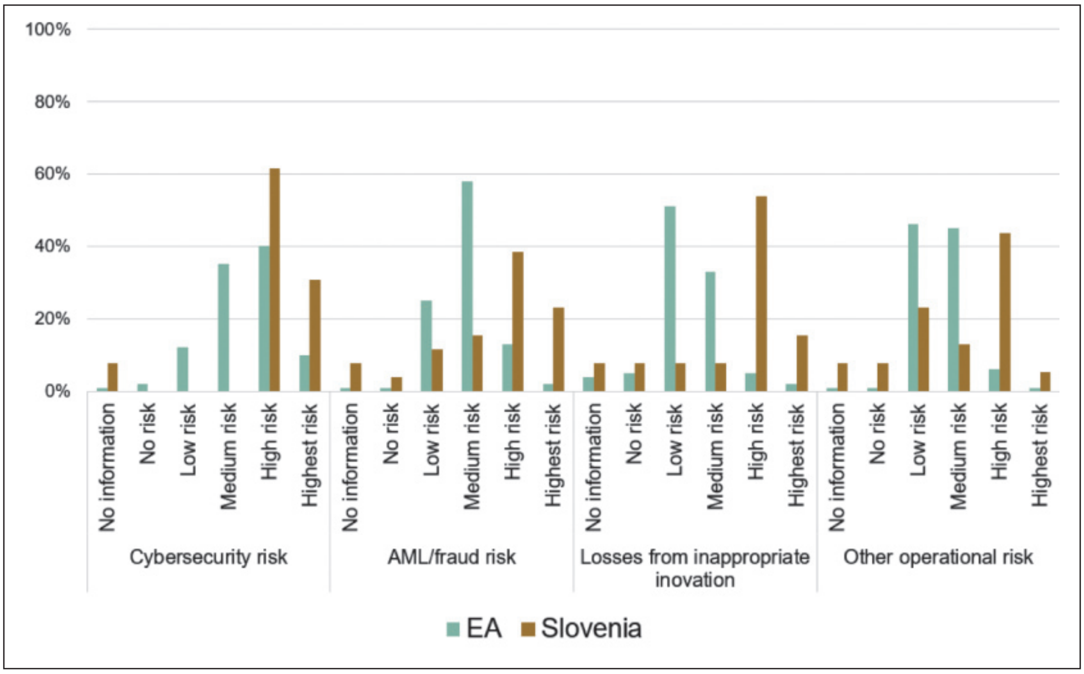
Digitalisation and new financial technologies (fintech) are having an increasing impact on the banks' performance and business models. Appropriate digital transformation and using fintech gives banks an initial competitive advantage in the banking and non-banking markets, but later becomes a prerequisite for survival (Banka Slovenije, 2022). The development of the fintech sector, which is based on the use of innovative information technology in financial services, began to change the use of technology in the development of new banking products and services and business models (OECD, 2020). On this basis banks have begun using certain fintech with the aim of making a digital transformation of their business and maintaining competitiveness on the market. Fintech such as machine learning is being used by certain banks in particular in areas such as cyber security and anti-money laundering. Digital transformation also has an impact on bank profitability, where the benefits of digitalisation vary according to the size of the bank and their business model (OECD, 2021). Digital transformation usually requires substantial initial investment, which can be a problem for smaller and less-profitable banks (IMF, 2021).
In the area of digital transformation banks are in some way forced to adapt their strategies and business models to the new situation in the banking market. Banks work with external partners on implementing a digital transformation strategy, mainly by purchasing services and hiring consultants. There is also increasingly evident collaboration between banks and fintech firms with regard to digital transformation. The challenges faced by banks in digital transformation mainly relate to a shortage of human resources, and a lack of alignment between the business and IT strategies. Cost management is another challenge, as digital transformation is often undertaken within the bounds of strict limits on investment. Digital transformation also brings certain risks for banks, in connection with cyber security, greater dependence on ICT outsourcers, money laundering and fraud, and the potential loss of customers. Digital transformation is nevertheless necessary to banks, given customers' changing requirements, and the pressure to reduce costs and increase efficiency. Banks have no option but to consider the use of advanced new financial technologies. The Covid-19 pandemic had a significant impact on digital transformation, creating a direct need for banks to communicate with their customers via digital channels such as platforms and apps, with social distancing heavily enforced during this period.
The objectives of the digital transformation in banking focus on controlling costs, raising income, and managing risks in a way that offers new/improved contactless banking products and services. In the cost realm they aim to use digital transformation to reduce personnel costs, and to optimise business processes and the range of services. The primary impact of the digital transformation of the banking system is on business processes, and activities that improve internal and external business processes, such as open banking,[7] AML/CFT monitoring, payments settlement, and data quality (Banka Slovenije, 2022). The digitalisation of the banking system is also increasing the importance of cyber security, and it is therefore vital that banks devote enough attention to activities that strengthen resilience to cyber-attacks (see Figure 11). Conversely digital transformation can speed up the consolidation of the banking system and reduce the costs of bank mergers.
Banks' main focus in adopting new financial technologies is to increase their competitiveness in the market and improve their business performance (BIS, 2021). Banks are using digital/mobile wallets, biometrics and big data to raise competitiveness on the market. Meanwhile they are using fintech such as cloud computing and artificial intelligence (including machine learning) to improve profitability (see Figure 12). It can still be seen that banks are investing more and more to develop new products based on fintech, but the actual sums are still limited (Banka Slovenije, 2021).

[5] Digital transformation means a comprehensive change in the functioning of the institution, using and upgrading ICT with the aim of raising the bank's productivity, growth, and competitiveness.

[6] Fintech includes cloud computing, digital/mobile wallets, biometrics, big data, AI (including machine learning), smart contracts, and distributed ledger technology.

[7] Open Banking brings together different stakeholders in the new financial industry (banks, third party ICT service providers and other financial institutions operating in the market).

Chart 11: Challenges arising from digital transformation, in 2022



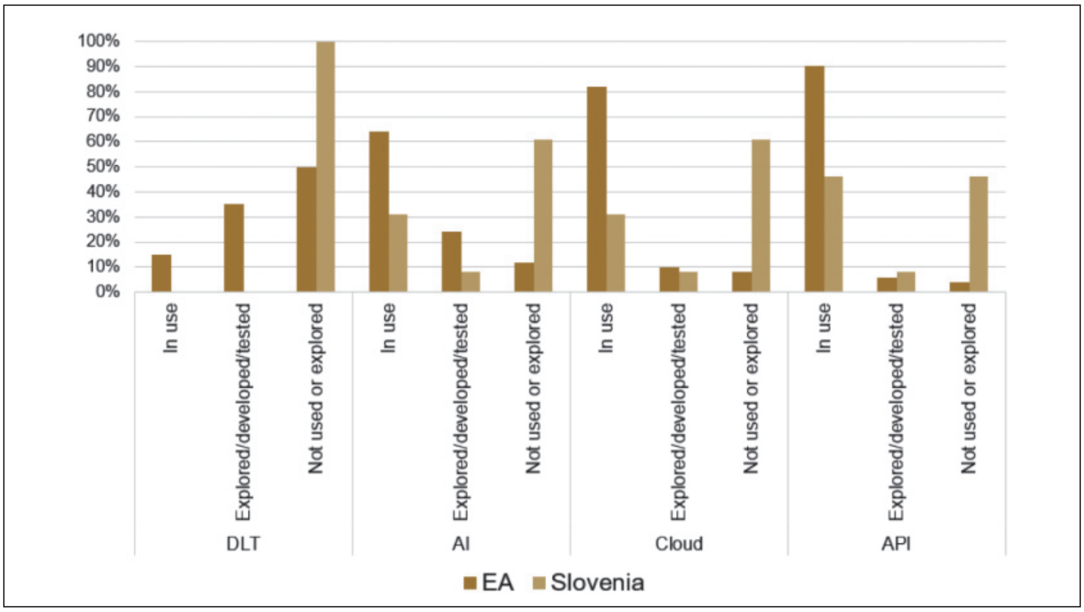
Sources: ECB, Banka Slovenije

Banks remain conservative in their introduction of fintech, which means that they make a thorough assessment of the added value of the technology before deciding to implement it. There has been no major shift in the use of fintech at Slovenian banks in recent years.

5. Green transition

Global warming constitutes a risk to the financial system too. The growing importance of banks in supporting the green transition is a trend that will be continued as part of the EU reaching its objective of net zero greenhouse gas emissions by 2050. Cardillo et al. (2021) identify three main channels by which banks may expand their role in the climate agenda: the reallocation of market portfolios via sustainable investment strategies, the direct financing of green firms/projects, and specialist advisory services. Slovenian banks offer green loans, which can be used to purchase and build energy-efficient real estate, or for investments in energy-efficient systems (solar panels, heat pumps, heat recovery systems, etc.) (Banka Slovenije, 2021). These loans are still rare: there were just 231 loans approved for energy-efficient systems in 2022, accounting for less than 0.2% of total new household loans. At the same time there were just 772 housing loans secured by residen-

Chart 12: Adoption rates of innovative technologies, in 2022, in %



Sources: ECB, Banka Slovenije

tial real estate (2.6% of the total) granted for the purchase or construction of energy-efficient real estate.[8] Although households generate approximately a fifth of all carbon emissions, decarbonising the entire economy requires significant investment by the NFCs sector. The high share of value-added accounted for by industry (27%, compared with the EU average of 19.6%) points to larger transition risks,[9] but is also indicative of opportunity for banks in financing green sectors. The exposure to climate-sensitive sectors (manufacturing, construction, electricity, and transport) reflects the structure of the economy, at a size of between one-third and approximately 60% of bank lending to NFCs.

The banks must offer greater support for decarbonisation efforts. The results of the first climate risk stress tests reveal great differences between the banks with regard to their readiness to address climate risks. At the same time the tests showed the banks' progress in their consideration of climate risks in their business, their risk management frameworks, and their disclosure practices. The banks will above all have to improve their gathering of data in this area in the future.

6. Conclusion

The trend of increase in the Slovenian banking system's exposure to households has continued over the last few years when the global economy and financial systems have been hit by numerous stress events. This was reflected most evidently on the funding side, where household deposits have increased sharply, and account for more than half of total bank funding, while on the asset side the ratio between household loans and loans to NFCs has not changed significantly. This is helping to build a large liquidity reserve and to maintain a high assessment of the banking system's resilience in the liquidity segment, but questions also arise with regard to the effectiveness of financial intermediation in Slovenia, the support for broader economic development, and the viability of the banks' business models in light of the rapid development of finance in the wider sense.

The general rise in interest rates is improving bank performance over the short term, but it should not be overlooked that a rise in interest rates on loans will sooner or later be followed by a significant adjustment in interest rates on deposits. Slovenian banks are still considerably behind the EA average in this segment. In light of the announcement of a merger between two of the larger banks, our assessment is that concentration in the banking market will be increased significantly by this step, which could have an adverse impact on financial stability. It can also be observed that Slovenian banks remain highly cautious in the introduction of fintech, as there are no major shifts in the use of fintech, while the share of green loans remains low.

[8] The reason for the scarce data in international comparisons is that the first disclosures under Pillar 3 reporting were made as at 31 December 2022. In addition this reporting only covers large banks listed on the stock market.

[9] Transition risks occur when moving towards a less polluting, more sustainable economy. For more, see Sokolovska (2020).

References:

Banka Slovenije (2021). *Financial Stability Review, October 2021* [Online]. Available at: https://bankaslovenije.blob.core.windows.net/publication-files/fsr_oktober_2021_en.pdf (Accessed: 16. May 2023).

Banka Slovenije (2022). *Financial Stability Review, October 2022* [Online]. Available at: https://bankaslovenije.blob.core.windows.net/publication-files/fsr_2022_okt_eng.pdf (Accessed: 16. May 2023).

Banka Slovenije (2023). *Poročilo o finančni stabilnosti, maj 2023* [Online]. Available at: https://bankaslovenije.blob.core.windows.net/publication-files/fsr-2023_maj_l.pdf (Accessed: 15. May 2023), 45.

Beck, T., De Jonghe, O., & Schepens, G. (2013). Bank competition and stability: cross-country heterogeneity. Journal of Financial Intermediation, 22(2), 218-244.

Berger, A. N., Demsetz, R. S., & Strahan, P. E. (2004). The consolidation of the financial services industry: Causes, consequences, and implications for the future. Journal of Banking & Finance, 28(9), 1985-2010.

Bikker, J. A., & Haaf, K. (2002). Competition, concentration and their relationship: An empirical analysis of the banking industry. Journal of Banking & Finance, 26(11), 2191-2214.

BIS (2021). *Fintech and the digital transformation of financial services: implications for market structure and public policy*, [Online]. Available at: https://www.bis.org/publ/bppdf/bispap117.htm (Accessed: 15. May 2023).

Cardillo, S., Gallo, R., Guarino, F. (2021). 'Main challenges and prospects for the European banking sector: a critical review of the ongoing debate', Banca d'Italia Ocacsional Paper series, No. 634.

Claessens, S., Laeven, L., & Demirgüç-Kunt, A. (2001). Bank competition and stability: Cross-country evidence. Journal of Banking & Finance, 25(2), 219-243.

Demirgüç-Kunt, A., & Huizinga, H. (2010). Bank activity and funding strategies: The impact on risk and returns. Journal of Financial Economics, 98(3), 626-650.

FSR (2019), Financial Stability Review, ECB, November 2019, 110-118, [Online]. Available at: https://www.ecb.europa.eu/pub/pdf/fsr/ecb.fsr201911~facad0251f.en.pdf (Accessed: 16. May 2023)

IMF (2021). Stay Competitive in the Digital Age: The Future of Banks, IMF working paper, [Online]. Available at: https://www.imf.org/en/Publications/WP/Issues/2021/02/19/Stay-Competitive-in-the-Digital-Age-The-Future-of-Banks-50071 (Accessed: 15. May 2023)

OECD (2021). *Artificial Intelligence, Machine Learning and Big Data in Finance: Opportunities, Challenges, and Implications for Policy Makers*. [Online]. Available at: https://www.oecd.org/finance/artificial-intelligence-machine-learning-big-data-in-finance.htm (Accessed: 15. May 2023)

OECD (2020). *Digital Disruption in Banking and its Impact on Competition*. [Online]. Available at: https://www.oecd.org/competition/digital-disruption-in-banking-and-its-impact-on-competition-2020.pdf (Accessed: 15. May 2023)