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Performance and risk – a changing and complex relationship for banking business

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Abstract. *The paper aims to analyse the evolution of the European banking sector between two global crises. It focuses on the factors that triggered the banking transformation after 2008 and on the interrelationship between business activity and risk related indicators. The research also considers the development of the banking sector and the necessity to be permanently equipped with the proper mitigation strategies for a constantly changing risk landscape.*
We selected the most important European banks that, during the entire analysed period, maintained their leading positions through increased financial performance and efficient risk management. The results of the study indicate that the profitability of European banks registered a mixed evolution, depending on the indicator considered for the analysis. In terms of risk, the strategic analysis of the Basel framework indicates a link between the state of the banking sector and the prudential framework when comparing the global financial crisis with the crisis generated by the Covid-19 pandemic.
To enrich the research, we considered top 10 banking organisations from Western Europe and top 10 from Central and Eastern Europe. The results of the comparative analysis between West and East indicate structural differences that emerge as a result of different ways of doing banking business.
Profitability and risk maintain their key importance, as the risk landscape evolved at the same pace with the banking activity. Besides the traditional financial risks, other factors of risk have reached an importance level which question the capacity of the risk management function at the level of banking organisations to keep up in a volatile, dynamic and complex environment.

Keywords: banks, transformation, regulatory reform, risk management, profitability.

JEL Classification: G01, G21, G28, G32.

1. Introduction

The banking industry has constantly been subject to intense debate and profound analysis, especially during economic upheavals such as the 2008 global financial crisis and the Covid-19 pandemic. These events tested the resilience and adaptability of banking organisations against fundamental economic and social challenges. The years between these crises, distinguished through uncertainty, dynamic technological evolution, rapidly changing customers` preferences and new factors of risk profoundly changed the modern financial system.

Taking into account the volatile and transformative period from 2007 to 2022, our paper addresses the issue of performance and risk in the banking sector. A lesson not to be forgotten from the global financial crisis is linked to the paradigm shift following which banks changed the way they operate and relate to risk. Another lesson of the 2008 crisis is that it increased the global focus on prudential regulations and supervision, while promoting transparency and common responsibility.

Considering the 2008 turmoil, the lack of adequate capital to cover defaulting customers and liquidity shortages were experienced globally, even by the most successful banks. Consequently, state intervention became necessary to avoid systemic collapse. After organisational restructurings and balance sheet cleaning, banking organisations recovered and continued to support the economy, but the new way of doing business implied continuous transformation. Technological evolution, ESG, geopolitical factors and growing competition from non-bank financial institutions are supplementary factors of business model change for banking organisations and can only be overcome through more in depth cooperation between all relevant stakeholders, the most important one being customers.

Risk is *a modus operandi* for banks and the performance-risk nexus represents a continuous debate in the scientific literature. After the global financial crisis, the risk landscape has significantly changed, with new risks and factors generating uncertainty and challenging the traditional risk management approaches in the banking sector. Financial risks – credit, liquidity and market risk – materialised during both envisaged crises, but the Covid-19 pandemic revealed that the banking sector should focus more than ever on the non-financial dimension of risk.

To highlight the complex spectrum of the two pillars envisaged for the research, a review and comparative analysis of the regulatory standards were performed to identify the challenges encountered by the banking sector in 2008 and the reforms that made it possible to withstand the same challenges during the Covid-19 crisis. Furthermore, a number of representative performance and risk indicators were analysed.

The empirical analysis of this extended period, regulatory changes and the overall transformation of banking allowed us to take a broader approach to the interrelations between performance and risk. Being the most significant crises in the first 24 years of the 21st century, the global financial crisis changed the way of doing business in the financial sector, while the crisis generated by the Covid-19 pandemic changed how we work. During the first crisis banks were the cause, while in the second they were part of the solution.

Our research contributes to the literature through new perspectives that we analyse through our professional and research rigor and can be used as a support to clarify some concepts as well as for new risk policies or other scientific and banking analyses.

2. Literature review

The global financial crisis and the Covid-19 pandemic are the first major events that the banking industry has faced in the 21st century. These events had a profound impact on the architecture of the global financial sector, causing substantial changes both at the level of prudential regulation and at the level of the portfolio of banking products and services. The financial crisis of 2008, in particular, highlighted significant risk management deficiencies (Sacasa, 2008), leading to a reassessment and strengthening of prudential norms globally.

The years between the two crises highlighted a continuous evolution and adaptation of the banking business model to a dynamic and uncertain macroeconomic environment (Bhattacharyya et al., 2023), in which the resilience of the banking organization was a fundamental need against various challenges (Bellens, 2021).

The performance of banking organisations is affected by a multitude of factors. Berger and Bouwman (2013) emphasize that banking profitability is influenced by revenue diversification and asset quality. Furthermore, Claessens et al. (2017) and KPMG (2022) see digital transformation and innovations as a tool to adapt to increasing market dynamics and as a catalyser for profitability.

The post-global financial crisis reforms resulted in a paradigm shift in the banking sector. Anginer et al. (2020) highlight that the efficiency and adaptability of banking organisations increased due to post-global financial crisis restructuring, introduction of digitalization strategies and business diversification. Furthermore, competition from non-bank financial institutions and fintech firms, which have a positive effect on competition, but a disruptive influence on the traditional business model, forced banks to embrace these new trends (Claessens et al., 2017). Another transformational factor is ESG, which has influenced banks` strategy and even risk management policies (Izcan et al., 2022).

Starting with the post-global financial crisis reforms, the cost of banking operations registers an upward trend. This is the result of the technological transformations –

digitalisation and artificial intelligence, the Basel III prudential regulatory framework, which is more complex compared to the previous one – Basel II, and the transition to a new competitive environment, where traditional banking institutions compete with other types of entities on market segments traditionally operated by the banking sector (BIS, 2021).

The profitability of particularly vulnerable banks should be closely monitored, as the sensitivity of net interest margin varies from bank to bank, depending on certain bank characteristics. While negative rates could put additional pressure on banks' net interest margin (Kerbl and Sigmund, 2016; Molyneux et al., 2020; Boungou, 2020), actions that banks could take to mitigate the decline in net interest margin should be explored in more detail in the literature (Boungou, 2020). On the other hand, a tightening of monetary policy could ease the pressure on earnings faced by banks. In the presence of a non-linear relationship, the effects are likely to be attenuated at higher interest rates.

Therefore, the impact of future interest rate developments on net interest margin should be monitored. Moreover, the literature suggests that the relationship between net interest margin and interest rates may also be affected by the degree of competition in the banking sector (Elekdag et al., 2020). Therefore, further research could investigate the connection between market structure, monetary policy and bank profitability.

Since the global financial crisis, fees and commissions have gained importance as a source of revenue for banks in the Europe. As a consequence, in the post crisis financial and economic spectrum, measuring the profitability of banks relies heavily on their net fees and commission income as a percentage of total net income.

These changes started before the Covid-19 pandemic, which only accelerated the speed of transformation of the banking business environment. This process brings, in addition to the natural benefit of evolution, also the amplification of traditional banking risks and the emergence of new risks (Karkovska et al., 2023).

By the nature of their activity, banks cannot protect themselves completely from financial risks (credit, liquidity and market risk), but by diversifying the products and services offered, they can reduce their risk exposure. The problem arises when the diversification includes the business model, as the quality of the asset portfolio is also a consequence of the banking business model.

Bank capital is an integral part of financial stability as it provides a buffer to absorb losses in times of crisis (Repullo, 2004; von Thadden, 2004). Capital requirements also have indirect stabilizing effects through incentivizing the management to improve risk management and reduce excessive risk-taking. According to this argument, several theories emphasize that higher capitalization improves borrower selection and risk monitoring functions of banks and thus reduces banking risk (Coval and Thakor, 2005; Powell et al., 2011; Holmstrom and Tirole, 1997; Mehran and Thakor, 2011).

Regulatory reforms after 2008 enriched capital and liquidity prudential standards (Barth et al., 2013), but the Covid-19 pandemic was an unprecedented challenge for the banking sector which caused significant credit and liquidity pressures and unveiled operational weaknesses (Cerutti et al., 2020; De Haan et al., 2021). Banks adapted their risk management policies and implemented contingency plans to reduce the impact of the crisis (Beck et al., 2021).

Therefore, risk management remains a core function of banking organizations, with significant influences on the entire organizational ecosystem, but also at the level of the banking system. Cihak & Hesse (2010) emphasize that risk management and stress testing are catalysers for financial stability. If risk management is not carefully calibrated to the risk profile of the banking organization, profitability can be diminished and thus all stakeholders, from customers to investors, are affected.

Referring to the 2023 US and Swiss turmoil, Enria (2023) highlights that the European banking sector`s resilience was the result of capital, liquidity and business strategy improvements after the global financial crisis, but key elements for maintaining this resilience are the governance structure, supervision and prudential regulation. While well-run banks are essential for financial stability and economy (Enria, 2023), ineffective governance structures can cause bank vulnerabilities (Elderson, 2023).

In the context of these challenges, banks are forced to adapt their strategies to remain competitive. Härle et al. (2015) emphasize the importance of adapting to a constantly changing economic and technological environment, resulting in the need for a clear strategy and effective risk management. This includes not only the implementation of new technologies such as Artificial Intelligence, but also the ability to adapt to changing macroeconomic and geopolitical scenarios, while maintaining profitability levels.

3. Data and methodology

The research aims to analyse the developments of the European banking sector from the global financial crisis to the crisis generated by the Covid-19 pandemic. It puts an emphasize on the factors that triggered the banking transformation after 2008 and on the interrelationship between business activity and risk indicators, while paying close attention to the risk management practices.

Based on the *2023 Top 1000 world banks* ranking, issued by The Banker Magazine, the sample was developed considering the performance and risk linked with specific banking organisations that, during the entire analysed period, maintained their leading positions through increased financial performance and efficient risk management. Accordingly, a selection of top 10 banking organisations from Western Europe and top 10 from Central

and Eastern Europe was made. A specific point here is related to the Central and Eastern part, due to the strategic differences compared to the Western Europe.

For the relevance of the analysis, the entire period between 2007 and 2022 was considered and within the research only the relevant peaks were reflected, around which there was a trend shift and significant fluctuations regarding the selected indicators.

Furthermore, the research is enriched by comparing the performance and risk profiles of banking organizations in Western and Central and Eastern Europe. The empirical study focuses on a selection of countries, as follows: Western European countries – United Kingdom, France, Spain, Germany, Netherlands, Switzerland and for the Central and Eastern Europe – Poland, Czech Republic, Slovakia, Hungary, Romania, Bulgaria and Croatia.

The methodology includes the comparative analysis of the indicators based on the data from the annual reports and from the Refinitiv database. Representative metrics for performance and risk management in the banking sector are utilised, encompassing various aspects such as profitability, asset quality, liquidity, capital adequacy and risk exposure, as follows:

Table 1. *Indicators used in the analysis*

Indicator Type	Indicator Name	Description	Justification
Performance Indicators	Net profit	Net Profit	The first pillar of the research was analysed through indicators that reflect profitability and business related indicators that reveal the mix of income types.
	NII	Net Interest Income	
	NFCI	Net Fees and Commission Income	
	NIM	Net Interest Margin	
	ROE	Return on Equity	
Risk Indicators	Capital ratio	Total Capital Ratio	The second pillar of the research comprises risk indicators to emphasise the evolution of capital and liquidity. The non-performing loans ratio was selected as it is directly connected with the performance.
	LCR	Liquidity Coverage Ratio	
	NPL	Non-Performing Loans Ratio	

Source: own research

Apart from the performance and risk indicators, to better reflect the evolution process that emerged after the global financial crisis, the research was further developed through the analysis of the regulatory landscape. To this aim, the main pillars of the Basel framework, implemented mainly in Europe, were selected and their evolution in time was presented, as the post global financial crisis regulation has strengthened risk management and the overall equilibrium of the financial sector.

4. The evolution of the banking sector between two crises

4.1. Prudential regulation – an essential change

The World Bank (2020) defines banking crises as those times when financial institutions experience significant liquidity or solvency difficulties caused by the same external shock or may occur as a result of the domino effect, by propagating the shock from one financial institution to another.

Although we can identify a number of similar macroeconomic effects between the global financial crisis of 2008 and the crisis generated by the Covid-19 pandemic, from the analysis of the causes of each we selected two relevant differences. The first refers to the way it was triggered – the global financial crisis started from within the banking system, while the second crisis was caused by external factors, namely the Covid-19 pandemic.

Another important difference is that the shock caused by the Covid-19 pandemic occurred after the banking prudential regulatory framework was significantly developed, precisely with the aim of protecting banking institutions and the banking system as a whole against such shocks.

In terms of similarities, the most relevant for our analysis is the favourable economic situation that preceded both events.

Thus, the resilience of the European banking sector in the years 2020-2023 came both from the good state of the economy that preceded the crisis, but especially from the regulatory reforms and transformations that took place at the level of the banking system ex-post global financial crisis. The European prudential regulations are based on the Basel framework, which was significantly improved, especially with the uncovered aspects during the global financial crisis. The strong prudential rules have been the basis of the risk management function in the context of amplifying emerging risks.

Thus, a comparison between the various stages of the Basel regulatory framework, the benchmark for prudential regulation in Europe, creates the base for further improvements. Table 2 presents the evolution of the Basel framework, with its most important pillars and key features grouped considering the risks to the banking sector.

Table 2. *The evolution of the Basel framework*

Key feature	Basel I	Basel II	Basel III
Introduction	1988	2004	Gradual introduction starting with 2010
Focus	Creating a level-playing field in the international banking system and strengthen the soundness and the stability of banks by introducing capital requirements	Enhancing risk management	Strengthening financial stability and resilience
Capital framework	**Tier 1 capital**: core capital	Capital adequacy framework	**Tier 1 capital**: common equity tier 1 + additional tier 1 (subordinated instruments with no maturity)

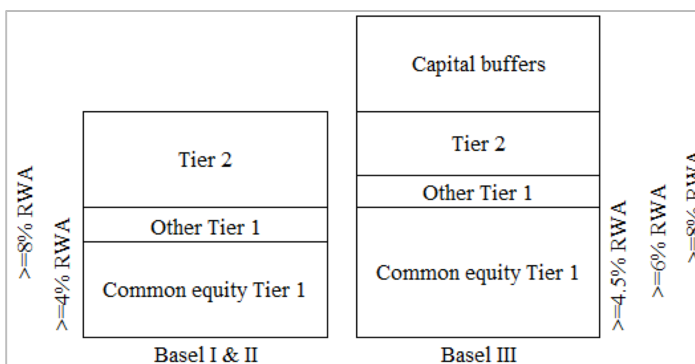
Key feature	Basel I	Basel II	Basel III
	Tier 2 capital: undisclosed and revaluation reserves, general provisions/general loan-loss reserves, hybrid debt capital instruments, subordinated term debt	No material changes from Basel I	**Tier 2 capital**: long term subordinated debt
	Tier 3 capital: unsecured debt		**Tier 3 capital** is eliminated
	Supervisory deductions (goodwill and other intangibles) applied to Tier 1 Investment in unconsolidated subsidiaries deducted from capital		More deductions applied to Tier 1
	No capital buffers	No capital buffers	Capital conservation buffer Countercyclical buffer Systemic risk buffer Systemic importance buffer
Credit risk	Simple risk-weights, from 0 to 100 percent Four categories of risks-weights	Increased risk sensitivity Standardised approach Internal ratings-based approach	More detailed standardised approach Restrict the use of advanced internal risk-based approach for exposures to banks, financial institutions and specific large corporates
Market risk	Standardised method and an internal models approach (Basel I.5 – 1996)	No changes from Basel I	Clear delimitation between trading book and banking book New standardised and simplified standardised approaches
Operational risk	Not explicitly addressed	Recognised as a distinct risk category Standardised and advanced measurement approach	A completely new standardised approach
Supervisory review process	Not explicitly addressed	Supervision should go beyond capital requirements and should cover risks such as concentration, reputational, etc.	Enhanced supervision of credit and market risks
Disclosure requirements	Not explicitly addressed	Introduced effective disclosure as a medium to encourage market discipline	Additional disclosures compared to Basel II
Liquidity risk	Not explicitly addressed	Not explicitly addressed	Liquidity coverage ratio to ensure that banks have enough liquid assets Net stable funding ratio to ensure that banks have reliable funding sources in a stressed environment
Leverage	Not explicitly addressed	Not explicitly addressed	Leverage ratio, as a tool to reinforce the risk-based capital requirements with a simple, non-risk-based "backstop" and to prevent excessive risk-taking

Source: BCBS, authors' processing.

Basel II introduced capital requirements for market and operational risk in pillar I, together with another additional requirement – pillar II, according to which credit institutions will carry out an internal capital adequacy assessment process (ICAAP). This process requires identifying all significant risks the bank is facing and allocating capital to cover those risks.

Basel III represents the *in extenso* approach to banking risks, regulators' response to the global financial crisis, with additional capital requirements and addressing liquidity risk and leverage for the first time.

Figure 1. *The evolution of capital requirements under the Basel framework*



Source: BCBS, authors' processing.

Before the global financial crisis, banking regulation was less oriented towards key elements that give consistency to risk management, for governance and risk architecture, as compared to the Basel III framework, and did not address liquidity risk explicitly through quantitative requirements. Thus, in order to address this risk, prudential regulations were developed and specific requirements were introduced for liquidity risk – liquidity coverage ratio and net stable funding ratio.

Another impactful reform within Basel III was achieved through the leverage requirement, which involves supplementing risk-adjusted capital requirements with non-risk-adjusted capital requirements.

The updating of the regulatory framework to respond to the post-global financial crisis realities initiated an irreversible transformation process of banking businesses. The objective of this process is adaptation under the pressure of traditional risks, which materialized during the global financial crisis as a result of deficient risk management policies, but also of emerging risks (ESG, digitalisation, customer retention in the context of digitalisation, etc.), which appeared especially after 2015.

But this is only a part of the evolution process related to banking business between the two major crises envisaged. Banking organizations have also evolved from the perspective of business strategy and performance indicators.

4.2. From the global financial crisis to the Covid-19 pandemic: a banking performance perspective

In the years after the global financial crisis, systemic and dynamic transformations took place in the banking sector, its performance being influenced by numerous external and internal factors. The reason why the specialized literature gives so much importance to banking performance has to do with the role of banks as the main financiers of economic activity, especially in Europe.

The increasing interconnectedness of economies and the volatility in which the banking sector operates can affect the functioning of the entire financial sector. For banking organizations, security means the ability to perform financial intermediation with a proper balance between risk and profitability.

Considering the severity of the global financial crisis and the Covid-19 pandemic on banking organizations, it is necessary to analyse the impact of these crises on the European banking sector and highlight the structural differences between the banking organization during the two crises.

Table 3 shows similarities and differences between the two crises, which transformed the banking system. The analysis emphasises that during the global financial crisis, bank profitability, measured by return on equity and net profit decreased, in contrast to the upward trend during the Covid-19 pandemic. Also, there is a negative relationship between profitability and the rate of non-performing loans. Moreover, the significant decrease in the rate of non-performing loans can be distinguished, which demonstrates that the improvement of risk management policies and more conservative prudential requirements contribute to the improvement of the loan portfolio and, implicitly, bank profitability.

In terms of capital and liquidity requirements, the imposition of new regulatory requirements generated a paradigm shift. Thus, at the outbreak of the Covid-19 pandemic, the banking sector registered solid capitalization and was protected against abrupt liquidity outflows by the introduction of liquidity coverage ratio.

Regarding business strategy, the comparison between the two crises reveals an accelerated increase in commission income during the Covid-19 pandemic, while interest income registered a slight decrease compared to the period of the global financial crisis. Thus, there is a change in the operating paradigm of the European banking sector, from one based largely on interest income, towards a more diversified banking sector, with multiple sources of income. This fact could be generated by the low interest rate regime in the post-global financial crisis Europe.

Our analysis shows that this trend was not triggered by the Covid-19 pandemic, but was already present since the years following the global financial crisis, which indicates the possibility of witnessing a permanent change in the business model of banks in Europe.

Table 3. *Banking performance between the two envisaged crises*

Description	2007-2010	2019-2022	2010-2019	2007-2022	2010-2022
Net profit	-8.7%	66.5%	-6.5%	42.2%	55.7%
Capital ratio	26.8%	6.2%	27.2%	71.4%	35.1%
NIM	12.8%	-4.4%	-22.6%	-16.5%	-26.0%
LCR	-	-6.4%	-	-	-
NFCI	-6.2%	10.9%	-8.7%	-5.1%	1.2%
NII	20.3%	19.5%	-17.4%	18.8%	-1.3%
NPL	254.8%	-21.8%	-57.0%	-14.3%	-66.4%
ROE	-47.1%	30.0%	-0.5%	-31.6%	29.4%

Source: annual reports and Refinitiv database, authors' processing.

In terms of profitability, the results are mixed: while net profit registered a significant increase, return on equity experienced an important decline of 31.6%. Completing this picture with the negative evolution of net interest margin, the results show an unfavourable context for the European banking sector. This could be the consequence of a more conservative prudential framework, which creates a trade-off between profitability and risk.

The analysis of the liquidity indicator, introduced in 2018 as a minimum 100% requirement, reveals a decrease in liquidity during the Covid-19 crisis. Unlike the global financial crisis, when there was no liquidity requirement, during the Covid-19 period, the banking sector better resisted the shock generated by the cash withdrawals of retail customers. The improved liquidity position materialised in the increased customer protection also due to better cash management.

4.3. Structural differences between Eastern and Western Europe

Given that there are significant differences between European countries, our empirical research is focused on performing a comparative analysis of the envisaged indicators between a group of 10 Western European banks (HSBC, BNP Paribas, Credit Agricole, Banco Santander, Barclays, Societe Generale, Deutsche Bank, Lloyds Banking Group, ING Group, UBS) and another group of 10 Central and Eastern European banking organisations (PKO Bank Polski, Bank Pekao, Ceska Sporitelna, Komercni banka, Banca Transilvania, Banca Comercială Română, OTP Bank, Unicredit Bulbank, Slovenska sporitelna, Zagrebacka Banka).

In particular, we aimed to discover what are the main differences and determinants of performance and risk in these groups of countries and to identify possible conclusions and actions needed to improve the performance of banking systems.

The results of the analysis reflect that the net profit increased in the period 2007-2022 both for the banks from the West of Europe and for the banks from the Central and Eastern Europe. The banks from West increased on average only by 11.3%, compared to those from East, which increased their net profit by 15.5%.

Table 4. *Comparative analysis between Western Europe and Central and Eastern Europe banks*

Western Europe		Central and Eastern Europe	
Indicator	**2007-2022**	**Indicator**	**2007-2022**
Net profit	11.3%	Net profit	15.5%
Capital ratio	86.6%	Capital ratio	66.6%
NIM	-62.4%	NIM	-27.4%
NFCI	-7.9%	NFCI	73.8%
NII	18.2%	NII	32.5%
NPL	-7.5%	NPL	-17.7%
ROE	-24.1%	ROE	-36.7%

Source: annual reports, Refinitiv database, authors' processing.

Although there are variations between countries, overall, there was a significant increase in regulatory capital ratios between 2007 and 2022, especially for the larger banks in Western Europe.

The average net interest margin decreased by approximately 62.4% between 2007-2022 for banks in Western Europe, and for banks in Central and Eastern Europe it decreased by approximately 27.4%. The analysis reflects that the net interest margin is statistically significantly lower in 2022 than in 2007.

The average net fees and commission income compared to total net income generally decreased in the analysed period for banks in Western Europe, but increased for banks in Central and Eastern Europe.

In the post-crisis period, European banks' fees and commission income became more volatile due to narrow net interest margins resulting from excessive competition. The volatile nature of fees and commission income in the post-crisis banking environment helps some banks realise higher income from these charges. Banks in Western Europe, for example, have a larger customer base due to the economies of scale and tend to have a more diversified source of fees and commission income, including fees income from investment and trading activities.

Throughout the analysed period, net interest income registered an increase both for banks in Western Europe, on average registering an increase of 18.2%, but also for those from Central and Eastern Europe, which registered an increase of 32.5%.

The nonperforming loan ratio decreased in 2022 compared to 2007, by 7.5% for banks in Western Europe and 17.7% for banks in Central and Eastern Europe.

Return of equity is the profit measure used because of its importance to investors and its widespread use in bank capital allocation. In the analysed period, the return on equity of the banking sector decreased in all countries. Within our sample of banks, the majority reported a return on equity at the end of 2022 that was significantly lower than in 2007. About 65% of banks had a return on equity between 10-13% at the end of 2022, a rough

mark for the cost of banks' own capital. The share is higher within the subset of banks from the advanced economies of Western Europe, being 90%.

On the other hand, in some Eastern European countries the research reflects a return on equity of 24.9% at the end of 2022, double the average return on equity of banks in Western Europe.

The structural differences between the Western and Central and Eastern European banking systems can be seen in various aspects, as follows:

Table 5. *Structural differences between West and East*

Difference driver	Description
Diversity of financial institutions	In Western Europe, the banking system is often more diversified, including a wide range of commercial banks, investment banks, savings banks and credit unions. On the other hand, in Eastern Europe, the banking system can be more concentrated, with less diversity of financial institutions, having more commercial banks and sometimes a limited presence of other types of financial institutions.
Size and complexity of financial markets	Financial markets in Western Europe are often larger and more complex than those in Eastern Europe. These include a wider range of financial instruments, more developed capital markets and a greater diversity of financial products and services.
Degree of banking market concentration	In general, in the Western European banking system there is often a greater diversity with a mix of large multinational banks alongside smaller and national players. In contrast, Central and Eastern European banking sector may have fewer dominant players with a larger number of smaller banks operating at the national level.
The role of the banking sector in the economy	In some Eastern European countries, the banking sector may play a more dominant role in the economy than in Western Europe. This is due in part to the greater reliance on bank financing compared to other sources of financing, such as capital markets.
Degree of European and International Integration	Banks in Western Europe are often more integrated into European and international financial markets than those in Eastern Europe. This allows them to take advantage of greater business opportunities and better cope with international risks.
Maturity and Development	In general, the banking system in Western Europe is more mature and developed than that in Eastern Europe. Western European banks are often larger and more established, with a global presence and a wider range of banking services.
Degree of Innovation and Digitalisation	Banks in Western Europe are often more advanced in terms of innovation and digitalisation compared to those in Eastern Europe. Online and mobile banking services are more widespread and sophisticated in Western Europe, while in Eastern Europe these technologies are often less developed or accessible.
Access to Finance	In Eastern Europe, access to finance may be more limited for businesses and individuals compared to Western Europe. This is due to a narrower range of financial institutions available and stricter criteria for granting loans.
Stability and Risk	In general, banks in Western Europe are considered more stable and less exposed to risk than those in Eastern Europe. This may be in part due to different levels of economic development.

Source: own research.

The results of the study emphasize also a discrepancy in terms of liquidity coverage ratio between Western and Eastern banking sector, with a higher indicator registered by Eastern banks. Thus, understanding how and why does the West manage funds better that the East is necessary. But to answer this question we shall consider that the Western banks lend money through more complex instruments and their corporate clients are much better capitalised than their peers in East. Consequently, the financial intermediation is better than in the East. Thus, this difference is not because of better banking regulations, but due to the different nature of the economy and a more diverse banking business.

Another influence is the education of customers. Those from the East prefer to credit their companies through personal debt as shareholders and thus avoid capitalisation of their business. On top of these factors, there are the fiscal system and macroeconomic policies that change more frequently than in the West, where there is a better predictability and stability.

The historical development of banking systems in Western Europe has been characterized by gradual evolution and diversification over centuries. In contrast, Eastern European countries experienced significant disruptions and transformations during the 20th century, including periods of socialist central planning. Thus, the historical context has influenced the structure and diversity of financial institutions in the region.

5. Are banking organisations equipped to perform within the new risk framework?

5.1. Banking risk management between two crises

The global financial crisis and the Covid-19 crisis emphasized the vulnerabilities of the banking organizations. Credit, liquidity and market risks maintain their places as the most important risks in the banking sector and the management of these risks is crucial for maintaining the resilience and stability of the entire financial system against future economic and social challenges. These risks are witnessed during both crises, with significant systemic effects:

Table 6. *Financial risks during both crises*

Risk category	Description	Impact
Credit risk	The risk of loss resulted from the default of the obligor	Non-performing loans ratio registered a spike of almost 255% during the global financial crisis, which caused systemic instability, but during the Covid-19 crisis it decreased by 21.8% as a result of the improvements in the risk management function. Another reason for the good results during the 2019-2022 period is the legal moratoria introduced in most European countries, which helped clients remediate the liquidity shortages.
Liquidity risk	The bank cannot fulfil its obligations in due time	Liquidity coverage ratio registered a decline of 6.4% during the Covid-19 years, produced by the generalized panic. Liquidity risk is among the most important banking risks, as it can materialize even if the bank has a good solvability and other prudential ratios.
Market risk	Caused by changes in the financial market, like fluctuations of the interest rate or the assets' value	Market risk was triggered by residential properties value plunge in 2008 and by the rise of treasury bonds value in the Covid-19 crisis. In both cases, banks capital was affected, even though in the second crisis the prudential regulations were adapted to diminish the negative effects.

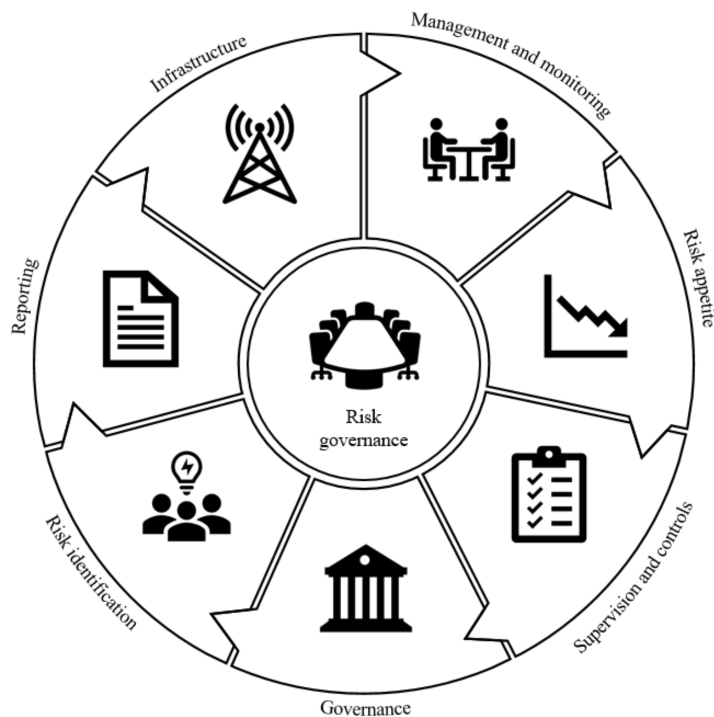
Source: authors' processing.

Analysing comparatively, the research emphasises structural differences between pre-2008 and post-2008 risk management. If before the crisis, complex financial instruments were often used without a full understanding of them and the identification of risks was done only on the basis of quantitative models, the hard lessons of those years required a reanalysis of these models and qualitative and scenario-based approaches were introduced.

In the years before the global financial crisis, banking institutions became excessively indebted compared to the level of capital at their disposal, a fact also facilitated by the existence of much more permissive solvency requirements. With the introduction of Basel III regulations, capital requirements have become much stricter, including the specific requirement for leverage, the authorities' aim being to develop a capital base more prepared to absorb losses and increase the resilience of the banking sector.

In the post-crisis years, risk management underwent a paradigm shift, and stress testing became a key point in risk identification.

Figure 2. *Core elements for risk management framework in the banking sector after 2008*



Source: own research.

Regulatory efforts have helped create common standards, increase transparency and address systemic risks. Liquidity risk management has become an essential component, through the introduction of liquidity coverage ratio and net stable funding ratio, which leads to an adequate liquidity position in times of stress.

Risk appetite has gained prominence, being aligned with the business strategy. The same has happened with operational risk, too often being given low importance, which has made it possible to realize the significant impact that failures in internal infrastructure processes and systems have on the organization as a whole. Therefore, cyber security aspects have become more important components in operational risk management.

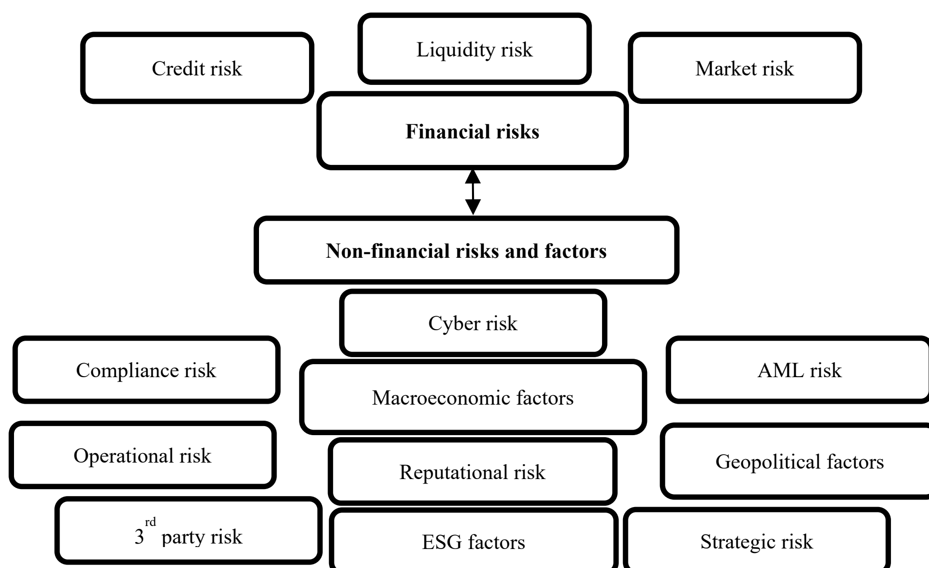
On top of all these elements are the developments regarding organizational culture, risk reporting and disclosure, which have an essential role in risk management.

The accelerated developments of the economic-financial environment post-global financial crisis impose on the stage of discussions the strategies of traditional banking and the rethinking of approaches regarding risk management, which should generate an updated image of banking resilience. For this, it is necessary to permanently know the most significant risks that the banking sector is faced with.

5.2. Why is important for banks to reimagine risks?

The traditional banking business has evolved around understanding and mitigating business and financial risks, but faced with evolving challenges, a new strategy is necessary. Back from the global financial crisis, banks are confronted with a constantly changing multitude of risks, both traditional and emerging, necessitating a revaluation of the risk management policies.

Figure 3. *Financial and non-financial banking risks and factors that may amplify other categories of risk*



Source: BCBS, authors' processing.

The landscape demands a broader perspective as, besides the financial dimension of risk, other factors such as geopolitical factors, maintaining customers' loyalty, macroeconomic uncertainties or reputational hazards expand banking risk horizons. The rise of ESG factors added a new and full of uncertainties dimension to the already complex risk management framework.

Banks must reimagine the risk management strategies to be broader and include risks seen from all relevant perspectives while maintaining their profitability, stability and social

responsibility. Besides the traditional/financial risks (credit, liquidity and market risk), banks must focus more on non-financial risks, which are multifaceted, harder to quantify and there are no well-established mitigation techniques.

To overcome the pressing challenges linked to risk addressing methodologies, the banking organisations of the future should more deeply collaborate with all relevant stakeholders, from public authorities to academics and, most important, customers. Banks should use innovative approaches and create early warning systems to identify signs of potential stress before they escalate into crises.

Considering the complex process to identify and manage risks, on top of it we may also consider the volatile, dynamic and complex environment in which banks operate. If after the global financial crisis, the risk management function was focused around governance, the developments during the Covid-19 crisis require even a more complex approach to risks, which should have as its main pillar the risk behaviour and accountability to internally discourage these behaviours.

6. Conclusions

The global financial crisis seriously damaged trust among customers and generated a new banking relationship approach and a change in the business model.

The reassessment of the regulatory framework imposed the banking transformation that was needed to restore confidence over banks` social responsibility. That transformation meant supplementary and more qualitative capital instruments (capital buffers and higher tier 1 rates) and the elimination of tier 3 requirements (unsecured debt).

For the first time, internationally uniform liquidity and leverage requirements were introduced, in order to incentivise the more stable and preferred retail funding and avoid excessive risk-taking.

The regulatory measures increased transparency and strengthened the ability of supervisory authorities to step-in when necessary. The inherent short-term cost was lower profitability ratios, but in the long-run it means the basis for banking organisations` adaptability to unknown circumstances.

Our research indicates that only financial risks (credit, liquidity and market risk) are common to both crises. After the global financial crisis, the non-financial dimension of risk is no longer a concept, but rather a matter of the new reality the banking organisations operate in. The fundamental particularity of non-financial risks and factors is that they may irregularly amplify other categories of risks, without knowing which one first and how exactly. Adjustment to these unknowns should be considered as a creative opportunity to serve the clients` changing needs, improve trust and cultivate their loyalty. It requires not

only a top-down approach to risk, but also a bottom-up responsibility sharing, risk culture being the ultimate line of defence against constant challenges.

In the complex equation of banking transformation, performance and risk are themselves challenges and banking organisations need to find the right balance between them, but the order should be risk and performance. Banks need also quality in both risk management and performance. Aligning performance targets with risk appetite frameworks ensures that growth objectives are pursued within acceptable risk parameters and strengthens trust in banking organisations.

In the risk-performance balance and the quest for maintaining their relevance, banks should consider also the structural differences between the regions they operate in, like international integration, size and complexity of the financial markets and access to finance for their customers.

The question that arises is whether banking organisations can sustain a continuous transformation. Without education (inside and outside the organisation), client relationship and adapting risk management, they could not withstand a changing and complex framework, dominated by multiple crises, uncertainty and the premises for a new banking business framework.

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