

THE EU BANKING REGULATORY FRAMEWORK AND ITS IMPACT ON BANKS AND THE ECONOMY

Reference study

January 2023



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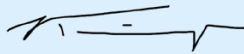
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FOREWORD BY THE EUROPEAN BANKING FEDERATION

We have come a long way since the Global Financial Crisis (GFC) in 2008. Policymakers and regulators around the world took steps to strengthen banks against future shocks. Banks re-assessed and adjusted their business strategies and models, including balance sheet structure, cost base, scope of activities and geographic presence. The EU has achieved considerable progress with the establishment of the Single Supervisory Mechanism and the Single Resolution Mechanism.

As a result of these substantial changes, the European banking sector is much better capitalised today, less exposed to liquidity risks and more transparent for market participants and supervisors. The changes to the regulatory and supervisory framework made banks in Europe more robust, as demonstrated by their resilience through the COVID-19 crisis.

However, these profound changes add to the burden that the European banking sector — and ultimately its customers — have faced over the last years. The revenue growth, profitability and valuations of European banks have been trailing behind their US peers since the GFC. While part of this is explained by macroeconomic vulnerabilities and differences in business models, the regulatory and supervisory pressure EU banks are exposed to play important roles.

Financial regulation has a direct impact on the banking sector's ability to support the real economy. Today, banks face the challenge of supporting the economy at a very precarious time, as well as catalysing the transition of the European economy towards greener and more digital business and operating models. This is particularly relevant for Europe, where around 70% of corporate borrowing is intermediated by banks, as opposed to the US, where around 77% of corporate external funding is provided through capital markets. Credit intermediation is the basis for several political objectives of the European Union, including relaunching growth, ensuring strategic autonomy, competitiveness and financing the digital and green transitions. When setting the regulatory agenda, authorities should closely consider the costs for financial institutions and the impact they will have on clients and more broadly on Europe's economic growth.

With this study, the EBF aims to substantiate the ongoing debate with an independent view on regulatory and supervisory costs. To this end, Oliver Wyman, commissioned by the EBF, provides a quantitative and independent assessment of the regulatory and supervisory costs for EU banks compared to US banks, accounting for structural differences between both regions. While there is significant literature on the topic, the study strives to provide a holistic view of the regulatory burden to serve as input to the development and calibration of policy action.

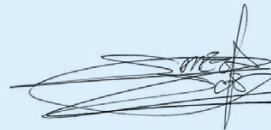
Such a forward-looking and constructive dialogue between banks and EU authorities on the direction of the future regulatory and supervisory measures is essential in the context of the digital, environmental, and geopolitical challenges ahead.



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KEY POINTS

- Since the Global Financial Crisis (GFC), significant steps have been undertaken to strengthen the EU's banking regulatory framework. The strength of the EU banking system has allowed banks to weather the cataclysmic impact of the COVID-19 crisis relatively undamaged. Banks helped backstop the economy, leveraging fiscal support measures of unprecedented scale and the accommodative monetary policy regime of the last decade.
- Despite its strength, the EU banking sector today is not earning its cost of capital, while US competitors have returned to pre-crisis profitability levels. This has been driven by an economic environment of comparably poor growth in the Eurozone, late policy responses to the Eurozone debt crisis, high fragmentation, lack of scale in a context of rising minimum cost of doing business, and a long period of negative interest rates that depressed banks' earnings in a period where they had to strengthen capital buffers.
- Today, there are still structural obstacles to bank consolidation across the Eurozone, preventing banks from realising synergies across markets. The Banking Union will remain incomplete for the foreseeable future. Political and regulatory restrictions remain that prevent the emergence of universal bank business models spanning across borders, in particular requirements that impede liquidity transfers within the Banking Union.
- Furthermore, the EU's capital market union remains underdeveloped, preventing the creation of a securitisation market. Persisting market fragmentation, due to the lack of convergence of insolvency rules among other issues, hampers cross-border investment within the EU and dampens funding from outside. This happens at a time when more financing, including equity, is needed to overcome geopolitical, environmental, and digitalisation challenges.
- Despite a globally coordinated "level playing field," differences remain across economies in how rules effectively work and how they are implemented. The incremental difference in regulatory-induced cost at EU banks compared to US peers can explain 0.8-1.0 percentage points of the return on equity (RoE) gap.
- The EU's approach to determine capital requirements is more complex, gives regulators wider discretion and might be perceived as being less transparent. The resulting uncertainty is one of the reasons that EU banks tend, on average, to hold surplus capital. Additionally, on average and considering that samples are not directly comparable given differences in business models and market structure, EU banks face higher capital requirements than US peers: 10.6% versus 9.9% for Common Equity Tier 1. In addition, future requirements related to the full implementation of Basel III and climate-related capital surcharges are expected to penalise EU to a larger extent than US banks.
- Further, EU banks face almost twice as high contributions to deposit and resolution funds at EU and member-state level compared to US peers, while requirements on bail-in-able capacity are 3.9 percentage points higher than in the US. Despite a gradually mutualised safety net, cross-border access to the European market remains limited for EU banking players.
- A review of current capital requirements and supervisory processes could, in a hypothetical scenario, provide capacity for €4-4.5 trillion additional bank lending, provided that policies and measures are put in place to ensure that viable borrowers have growth opportunities that support additional borrowing demand. Additional lending could also support the financing of the green and digital transitions, and more generally investments in strengthening the competitiveness of the EU economy. Further, this would create additional opportunities for investment in areas such as consolidation and digitisation.

CALL TO ACTION

Policymakers should redouble their efforts to complete the banking and capital markets unions. They should also simplify the current complex and costly resolution regime.

Supervisors should place greater emphasis on streamlining and making more efficient key processes (such as the Supervisory Review and Evaluation Process or stress testing) and be more vigilant on breaches of the level playing field in EU countries. As Basel III is fully implemented, authorities must ensure that EU banks do not have a disadvantage on the global playing field.

For their part, banks should sustain their focus on improving operational efficiency and digitisation. They should position themselves for a long-expected process of consolidation in the Eurozone that will also foster better allocation of resources across EU borders. They also must recognize that a level playing field is a legal requirement in the EU.

CONTENTS

EBF Foreword	iii
Key points	v
Call to action	vi
Executive Summary	1
Methodology	6
1. Structural factors affecting profitability of the EU banking sector	8
1.1 Macroeconomic conditions	10
1.2 Business models and balance sheet structures	12
1.3 Banking sector composition	18
2. Regulatory-induced costs	20
2.1 Capital constraints	20
2.1.1 Risk-based capital requirements	24
2.1.2 Non-risk-based capital requirements	30
2.1.3 Management buffer	33
2.2 Safety net architecture contributions	35
2.2.1 Public resolution funds and deposit schemes	35
2.2.2 Loss-absorbing capacity requirement	39
2.3 Regulatory-induced operating costs	43
2.3.1 Compliance costs	43
2.3.2 Supervision costs	46
3. Implications for funding the EU economy	49
Glossary	54

LIST OF EXHIBITS

Exhibit 1: Comparison of RoE between Eurozone and US banks	9
Exhibit 2: Comparison of the CoE between Eurozone banks and US	9
Exhibit 3: Overview of stock performance for EU and US banks	9
Exhibit 4: GDP evolution — Indexed to 2007	10
Exhibit 5: Comparison of long-term interest rates in the Eurozone versus the US	11
Exhibit 6: Comparison of securitisation volumes US versus Europe (including the UK) in € billion	13
Exhibit 7: Comparison of ultimate sources of funding in Eurozone versus US (Banks Loans versus Capital Markets)	13
Exhibit 8: Overview of impact of securitising loan portfolios for EU banks	15
Exhibit 9: Volume of syndicated loans in EMEA during the COVID-19 crisis (flow)	17
Exhibit 10: Evolution of CET1 ratio in the EU and US	20
Exhibit 11: Comparison of CET1 capital ratio between Europe and the Americas	21
Exhibit 12: CET1 capital ratio drivers in Europe and the Americas	22
Exhibit 13: Breakdown of CET1 capital requirements of Europe versus US in 2022	25
Exhibit 14: Overview of the impact of Basel III enhancements — change in total Tier 1 minimum required capital	29
Exhibit 15: Overview of the impact of Basel III enhancements — change in RWA density	29
Exhibit 16: Leverage ratio evolution in the EU and US	31
Exhibit 17: Leverage ratio interaction — combined buffer requirements (CBR) usability by country	32
Exhibit 18: Evolution of CET1 management buffers held by banks in the EU and US	33
Exhibit 19: Target size of bank-funded deposit insurance or resolution structures	36
Exhibit 20: Personal financial assets breakdown	37
Exhibit 21: Comparison of burden of contributions in EU and the US	38
Exhibit 22: Overview of EU MREL and US TLAC requirements	40
Exhibit 23: Comparison of bail-in risk premium between EU and US	42
Exhibit 24: Benchmark — Observed FTE lifecycle of compliance functions	44
Exhibit 25: Visual representation of the model to assess the impact of regulatory induced costs	51
Exhibit 26: Impact analysis — simulating the RoE impact of regulatory-induced capital and cost measures	52

EXECUTIVE SUMMARY

Since the Global Financial Crisis (GFC) significant steps have been undertaken to strengthen the EU's banking regulatory framework. The applicable rules have been revamped with the implementation of Basel III, requiring banks to hold more and better-quality capital and larger liquidity buffers to withstand stress. For larger banks that cannot be liquidated without risks to financial stability, an elaborate safety net has been created that includes additional capital buffers, measures to allow the recovery or eventual resolution of a failing bank, and several layers of funds to provide the financial means for such measures without putting taxpayers at risk. Further measures have been taken to strengthen transparency and resilience of derivatives markets and to require sound conduct and strong financial integrity. Extensive initiatives have been implemented to upgrade supervision. In particular, the EU established the Single Supervisory Mechanism (SSM), transferring the responsibilities for supervising the Eurozone's largest bank to the European Central Bank (ECB) and defining extensive minimum standards for the supervision of all banks regardless their size. The implementation of all these measures required significant efforts by the banking sector and its stakeholders, in particular the strengthening of the capital position, which entailed raising and retaining capital as well as deleveraging and de-risking the balance sheet.

The efforts paid off: The strength of the EU banking system has allowed banks to weather the cataclysmic impact of the COVID-19 crisis relatively undamaged, while at the same time banks were able to play an important role in backstopping the economy. The strength of banks is only really tested in times of crisis. Significant fiscal and monetary support and temporary regulatory measures were deployed to backstop the economy during the onset of COVID-19, preventing the deepest recession in decades from creating material damages to bank balance sheets. Banks played an important role in deploying state-led support measures, such as by providing access to and enhancing the emergency support programmes targeted at their business and household clients. Furthermore, banks demonstrated the resilience of their operations at a time where entire economies and societies went into shutdown.

Somewhat in contradiction to its robustness today, the EU banking sector has over the last decade faced low profitability and limited growth. Unlike US peers, adverse macroeconomic conditions and the fragmented structure of the EU's banking market prevented, in part, Eurozone banks from being able to recover to pre-GFC profitability margins. Cost of equity for EU banks has consistently exceeded that for US peers. This weaker performance has been reflected in bank valuations, with price-to-book ratios for EU banks remaining well below one for the past ten years, and aggregate market capitalisation, which had been well ahead of US banks before the GFC, has been continuously shrinking. While profitability levels vary across Eurozone banks as some do better than others, average profitability remains muted.

Differences in macroeconomic conditions and the associated fiscal and monetary conditions in the EU and the US are important factors in explaining EU and US bank performance since the GFC. The collapse of the subprime mortgage market in the United States was quickly followed by a sovereign debt crisis in the Eurozone, which exposed banks in the EU to losses in their banking and trading books. EU member states took a reactive approach when dealing with bank vulnerabilities. This was due to the limited fiscal capacity of the member states most affected, the design decisions of the sovereign rescue programmes, the structure of the currency union and its institutions, and economic policies such as state-aid rules. The policies were also a result of the notion that banking sectors were of the concern of member states, rather than of importance for the EU as such. The resulting inability to recapitalise banks upfront and relieve them of distressed assets led to a prolonged period of uncertainty and demanded a more prudent approach to banking supervision.

By contrast, US banks operate in a different economic and policy environment, notably involving a deep and liquid capital market and a strong central government with significant financing capacity. This enables a more holistic approach to policy, benefiting the entire economy, including the banking sector. Although also heavily impacted by the financial crisis, the US embarked on a different approach: after the collapse of Lehman Brothers made it clear decisive public action was needed, US banks were quickly subjected to compulsory recapitalisation with public funds to dispel any doubts about the viability of the US banking system. At the same time, the Federal Reserve and the government backstopped financial markets and the real economy. In doing so, the US directly confronted critical issues related to the capitalisation and risk exposures of the banking sector, and the industry was consequently able to focus on recovery and growth early on. This was aided by, and contributed to, an economy that recovered quicker than the EU's.

Furthermore, the ECB's highly accommodative monetary policy stance to limit deflation, liquidity, and credit crunch risk caused market distortions. Most notably, it propelled policy interest rates into negative territory, compressing Net Interest Margins (NIM) and hitting net profitability of the lending business, which is the main revenue driver of European banks. Despite enormous efforts to contain and mitigate the impact of these policies, economic conditions in the Eurozone were brittle even before the coronavirus lockdowns.

Additionally, the banking sector in the EU is less concentrated than in the US, thus facing higher competitive pressure and limited potential to benefit from economies of scale. The current policy environment continues to provide obstacles to cross-border consolidation of the fragmented financial market in the EU. The Banking Union was conceived to establish common standards for bank regulation and supervision, and break the sovereign-bank loop that caused and deepened the EU sovereign debt crisis. But the Banking Union also established the regulatory environment to allow banks to operate in several countries of the Eurozone, providing funding across borders and developing pan-European business models that allowed for diversification and leveraging effects of scale. Today, however, the Banking Union remains incomplete. Progress on the European Deposit Insurance Scheme (EDIS) has stalled, so that the remaining institutional pillar of the Banking Union will not be in place for

the foreseeable future. Also, impediments to liquidity transfers within banking groups across member-state borders within banking groups remain, making truly pan-EU business models expensive from a capital and liquidity perspective and therefore less attractive. Apart from the negative effects for credit availability and cost across the Eurozone, this results in the larger Eurozone banks being smaller than similar institutions in the US, where large players have a higher market share. The lack of scale also impedes the banks' ability to generate adequate returns on investments in technology that are needed to stay competitive in an increasingly digitised market.

EU and US banks operate with different business models, influenced by the deep capital market of the US. The integration of capital markets across the EU is still in early stages — the European securitisation market represents around 1% of GDP compared to around 18% in the US. While the capital markets union has led to relevant key policy initiatives, important obstacles remain, such as a lack of the harmonisation of insolvency regimes. Better integration would also increase financing through securitisation by allowing bank risk transfers to non-bank investors, including insurers and other institutions within and outside the EU. Integration would also leverage capital pools outside the banking sector to help finance the real economy. This kind of integration will be necessary to meet the significant future investment needed to transform EU economies.

Besides the structural factors mentioned above, at this time, the incremental difference in regulatory-induced cost at EU banks compared to US peers can explain 0.8-1.0 percentage points of the return on equity (RoE) gap. This gap could increase further given upcoming requirements the ECB plans to impose to cover the impact of climate risks on capital (which contrast with the US', which is not likely to approach the issue from a prudential perspective), as well as the finalisation of Basel III, which are estimated by the European Banking Authority to increase minimum Tier 1 capital requirements by on average 15%, compared to current levels across the EU banking sector. The impact on the group of EU global systemically important banks (G-SIBs) is significantly higher at 24.7%. The need to build up additional buffers will continue to reduce the banks' ability to pay dividends and negatively impact valuations. Also, the tone of supervisory communication is particularly relevant for client and investor sentiment.

While banking regulation is internationally coordinated to ensure a level-playing field, differences remain in how the rules effectively work and how they are implemented. Banking rules are developed at global level in the Basel Committee on Banking Supervision and the Financial Stability Board, which represents EU institutions (namely the ECB) as well as several member states. The rules define a minimum standard — such as on capital quantity and quality, liquidity, and supervisory processes — and are then transposed into local legislation, which, in the case of the EU includes the Capital Requirements Directive (CRD). Significant discretion remains on how the rules are implemented locally, which can give rise to material differences influenced by the importance of financial markets and the risks any failures could pose to the broader economy, as well as differences in bank business models in each jurisdiction.

Banking regulation aims for stable and transparent requirements; however, several elements are designed to vary depending on macro-economic conditions to promote financial stability. Due to macro-economic vulnerabilities, European policymakers and supervisors implemented a stringent approach to financial regulation to safeguard financial stability consistently across the Eurozone. The focus has been on building and harmonising macro and micro prudential tools across member states, giving primacy to the solvency of a heterogenous European banking system at a time when the Eurozone economy exhibited low growth and — in several regions — significant vulnerabilities.

EU banks face higher capital requirements on average and are more prone to hold a higher management buffer than US peers. The interaction of different business models, market structures, and regulatory and supervisory approaches result in average minimum capital requirements and buffers in the EU being about 1.3 percentage points higher than in the US. Per-bank requirements (and the corresponding gap compared to US) vary according to business model and size (such as the US “G-SIB Surcharge” being higher than the EU equivalent for this segment). The US model to determine ultimate capital requirements could be considered simpler, more quantitatively oriented, and more transparent than the EU process, where regulators have wider discretion. From a framework perspective, the single stress capital buffer (SCB) in the US contrasts with the methodologically elaborate, but less pragmatic approach of having multiple requirements and buffers imposed by EU supervisors. This complicates EU banks’ capital management efforts and bank investors’ efforts to understand the prospect of their investments, negatively affecting valuations. On top of regulatory buffers, banks hold additional capital to cover for unexpected events, such as downside risks and future supervisory requirements, as well as to stay clear of supervisory buffer requirements to enable dividend stability (also known as management buffer). EU banks are more prone to hold a higher management buffer than their US peers, driven by supervisory restrictions and expectations, uncertainty regarding capital requirements, and more limited ability to raise capital, but also because of a diverging understanding of the circumstances under which buffers can be “used.”

The costs associated with the European safety net impose a considerable burden on Banking Union banks. With the Federal Deposit Insurance Corporation (FDIC), the US has had a very experienced and well-provisioned institution to handle banking failures, pre-funded through regular “assessments” by US banks and backstopped by the federal government. In the EU, an elaborate structure has been established to break the sovereign-bank loop within the constraints of the Eurozone’s monetary and fiscal architecture. This comprises national deposit insurance and resolution funds, an EU-level Single Resolution Fund (SRF), and a backstop provided by the European Stability Mechanism (ESM) by means of fully repayable loans. The target size of bank-funded deposit insurance or resolution structures in the EU stands at around 2.4% of covered deposits, compared to 1.35% in the US. Given the SRF and domestic insurance deposit schemes are relatively recent structures, Banking Union banks face higher costs associated with setting up the funds, as opposed to simply maintaining the safety net. Contributions to the SRF and Deposit Guarantee Schemes (DGS) compared to covered deposits and risk-weighted assets (RWAs) are almost double those in the US at this time. From the perspective of building bail-in capacity, the EU has established a target for bail-in-able instruments of, on average, 23% RWA (excluding buffers), around 3.9 percentage

points higher than the US. This is also applicable to all EU banks subject to resolution (around 110 entities), in contrast to the US where only G-SIBs are required to comply. EU banks do not only face the challenge of building minimum requirement for own funds and eligible liabilities (MREL) reserves beyond total loss-absorbing capacity (TLAC) reserves in the coming years but must do so at a higher cost, as average bail-in bond risk premia are estimated to be twice as high for Eurozone banks. Meeting these requirements will require significant effort considering these banks' lower profitability levels.

Compliance and supervisory requirements have become increasingly resource-intensive across both Europe and the US. In terms of compliance, the main cost driver in Europe is the high level of regulatory reforms in recent years, leading to recurring change-the-bank costs. Member states typically retain some discretion on compliance-related topics. As a result, EU banks need to comply with local market standards in preparation for closer scrutiny of national regulation. Supervisory processes, too, have become increasingly resource intensive. The EU Supervisory Review and Evaluation Process (SREP) is characterised as relatively formalistic and bureaucratic, with an exhaustive review relying on on-site examination and ad-hoc analyses prepared by entities, compared to the US supervisory process which relies on standardised outputs and bank-led processes.

A review of the current capital requirements and supervisory processes could free up capacity for approximately €4.0-4.5 trillion of additional lending in a best-case scenario, representing an increase of almost 30% compared to current bank lending volumes. The lending boost would need to be assessed against the Eurozone economies' practical ability to absorb additional funding without a marked increase in banks' risk profiles, and any potential associated financial stability risks, especially in a recessionary environment. Economic policy actions outside financial regulation, such as to improve business competitiveness and to increase the availability of equity financing, would be a precondition for such lending to productively materialise. Additionally, it would also require further measures to facilitate, or at least not impede, cross-border banking activities.

The availability of private sector and bank financing will be crucial to support future policy initiatives to strengthen the European economy. The green transition will require significant financing to build and maintain energy production capacity and the required infrastructure, as well as to support businesses and households to switch to renewable energy sources. Additionally, and amplified by recent geopolitical events, European economies might need to change significantly to reduce supply-chain interdependencies, increase diversification, and reshape industries that are no longer viable for environmental and competitiveness reasons. Furthermore, digitisation will require continued financing. The required investments cannot be alone financed through public initiatives, considering high debt levels and inflation limit fiscal space. Rather, private sources, including bank balance sheets, need to be leveraged for the benefit of the economies of all EU member states. This requires strong banks and liquid and efficient capital markets. It will also require an attractive proposition for private investment from outside the EU. While the mandates of the ECB, the SSM and other competent banking supervisors are clearly focussed on price and financial stability, the macro-financial impact of financial regulation and its consistency with broader economic policy objectives needs to be duly considered in the political agenda of the EU institutions.

METHODOLOGY

This study strives to provide a holistic view of the regulatory cost confronted by EU¹ banks. The impact of the different elements of financial regulation has been extensively analysed both by policymakers and the private sector. However, the value of this comparative study lies in the comprehensive analysis of the regulatory differences explaining the costs EU banks face relative to their US peers. The study focuses on the evolution of financial regulation since the global financial crisis (GFC), identifying the drivers that have led to a different approach on either side of the Atlantic. We note, however, that performing such analysis must consider that the business models and therefore balance sheet structures of US and EU banks differ in important respects, in particular due to the well-developed and liquid capital markets in the US. Comparing regulatory frameworks therefore requires certain assumptions and model calculations to ensure meaningful results. At the same time, however, several of our findings pertain to aspects that are not materially influenced by the difference in business models.

Data gathered to substantiate findings has been collected from publicly available sources, giving primacy to regulatory publications, to ensure traceability. To set common ground for discussion, the study is based on recognisable figures with limited transformation, generally directly collected from regulatory publications. While the insights from an analysis conducted with private data or bank-level data could have been valuable, primacy has been given to traceability. Additionally, the study makes use of recent reports published by regulators and private institutions to triangulate the conclusions reached and to avoid duplication of analytical efforts.

The sample of entities analysed for the report has been defined after considering the scope of regulatory processes. In the case of Europe, this set comprises the population of so-called “Significant Institutions” (SI) as designated by the Single Supervisory Mechanism (SSM).² These around 110 banks represent 82%³ of the total banking assets of the European

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- 1 The quantitative analysis of this report concentrates on banks that are supervised by the SSM. This includes all banks in the Eurozone. However, EU regulation applies to all member states of the EU, regardless of their membership in the currency union, and there is significant convergence of regulatory and supervisory practices given the common rulebook. Therefore, where findings do not strictly relate to the euro area's and SSM's regulatory and institutional framework and practices (including its safety net architecture), the analysis can be expected to have relevance for the entire EU banking system.
 - 2 The SSM designates banks as SIs considering the size of their balance sheet, the importance for the economy of a specific member state or the EU as a whole and the scale of cross-border activities. The supervision of SIs is led by the SSM with support from the National Competent Authorities (NCAs). “Less-significant institutions” (LSIs) are supervised by the NCAs. For rules and principles to be applied in supervising SIs and LSIs are defined by the SSM to ensure a high degree of consistency of supervisory approaches across the entire banking sector.
 - 3 ECB, "Overview of the Single Supervisory Mechanism."

Union. In the case of the US, the set is composed of around 34 banks, representing about 95%⁴ of total banking assets, out of which 10 are subsidiaries of foreign institutions established in the US. Both samples are not directly comparable, however, from a regulatory perspective, the sample sheds light on the burden imposed on the entities under the highest scrutiny across both jurisdictions.

The differences in the EU banking regulatory framework and their impact on EU banks cannot be explained by a single factor. There are complex interactions between methodologies and tools, such as risk-based capital requirements, the leverage ratio and liquidity rules, that make it impossible to devise a framework that is neutral to business models for each relevant aspect. Moreover, surrounding economic and financial policy, central bank policy, institutional arrangements, and the functioning of the labour market as well the difference in institutional systems are also important factors. Regardless, outlining the differences in regulatory framework should help policy makers and private entities to reflect accordingly as they shape the role that the financial sector plays within society.

⁴ Estimated based on total banking assets and assets of banks with more than \$300 billion. Federal Reserve Statistics, 2022 Q1.

1. STRUCTURAL FACTORS AFFECTING PROFITABILITY OF THE EU BANKING SECTOR

The EU banking sector suffers from structurally lower earnings profitability in comparison with the US. Unlike US peers, Eurozone banks have not been able to recover to pre-global financial crisis (GFC) profitability margins. Return on equity (RoE) in 2021 stood at 6.7%, compared to 11% in the US (in 2022 Q2 the gap narrowed to 7.6% and 9.9% respectively). Before the crisis, both regions had similar RoEs, comfortably above 10%. Additionally, cost of equity for EU banks has consistently exceeded that for US peers; in 2022, the cost of equity reached around 8.4% in the Eurozone compared to about 6.5% in the US. Weaker performance has been reflected in bank valuations, with price-to-book ratios for EU banks remaining well below one for the past ten years, and market capitalisation shrinking compared to US banks. At the beginning of 2008, the largest EU bank had a capitalisation comparable to the largest American bank (\$115 billion versus \$118 billion). However, in 2022, the capitalisation of the largest American bank was equal to more than the five largest EU banks combined (\$345 billion versus \$125 billion).⁵

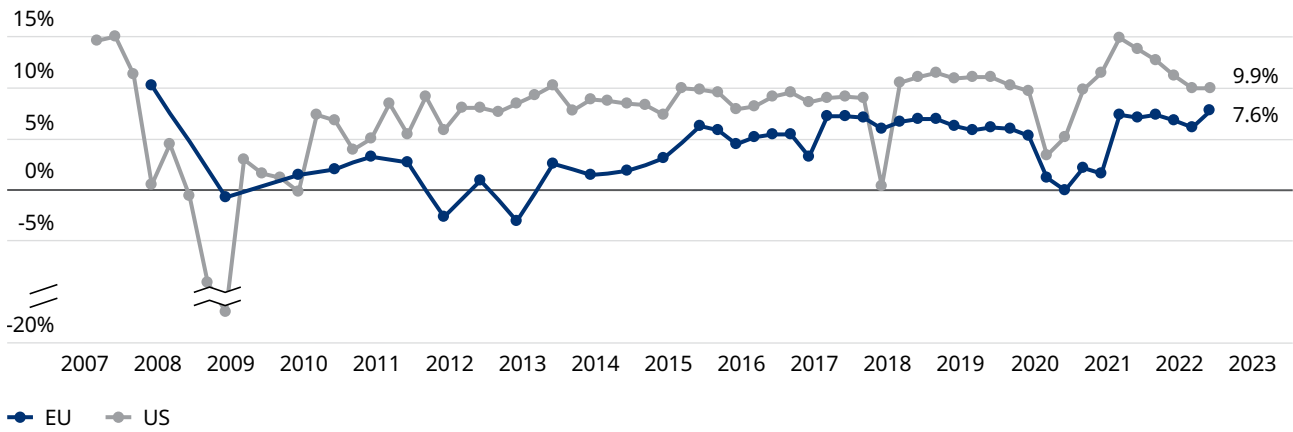
Healthy profitability is the first line of defence, and a pre-requisite for banks' ability to attract investors and raise capital if needed. A bank's profitability at the pre-provision profit level helps to amortise shocks and build capital organically, thereby making entities more resilient and reducing dilution risk for shareholders. Moreover, in the event of a capital raise, attractive economics widen the investor base and reduce the degree of dilution as an entity is valued at higher multiples, making it easier to raise capital. Furthermore, research suggests the stronger the return profile of a bank, the more likely it will make use of its buffers when allowed and encouraged to do so by supervisors, making policy tools more effective.⁶

This section seeks to explain the structural factors affecting the profitability of EU banks. The first sub-section focuses on the adverse macro-economic conditions EU banks have faced in comparison with US peers. The second sub-section analyses the business model of EU and US banks, explaining the influence that deeper capital markets and access to securitisation have on balance sheet structure. The third sub-section discusses the difference in market composition, highlighting how the less concentrated EU banking market leads to competitive pressure and lower economies of scale. This section will isolate differences across both jurisdictions as a result of elements not directly influenced by financial regulation (or which require deeper policy action).

5 S&P Capital.

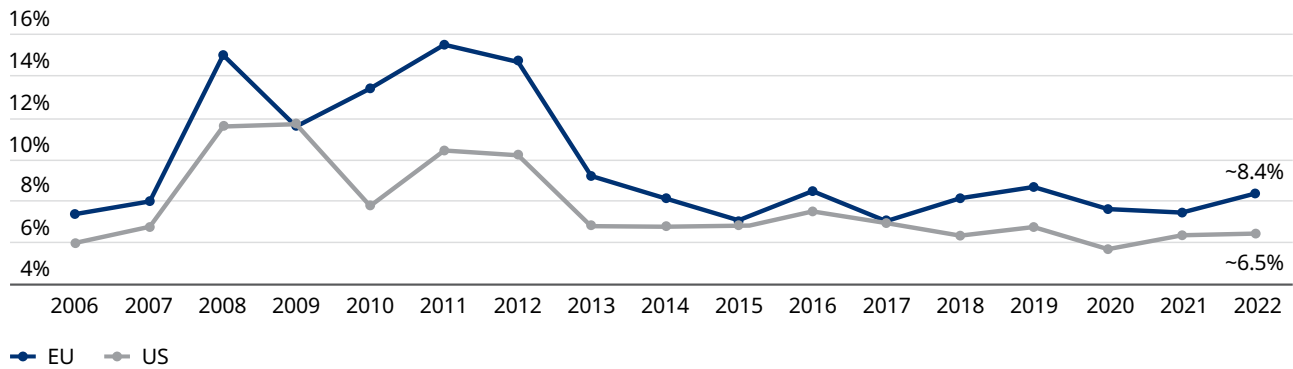
6 Abad and Garcia-Pascual (2022), "Usability of Bank Capital Buffers: The Role of Market Expectations, International Monetary Fund," Working Paper No. 2022/021.

Exhibit 1: Comparison of RoE between EU and US banks



Source: ECB — Consolidated banking data, Supervisory banking statistics (figures from 2015 onwards from supervisory banking data for SSM entities), FED — Supervision and Regulation Report (figures 2007-2017 from 2020 May report, 2017-2021 from 2022 November report)

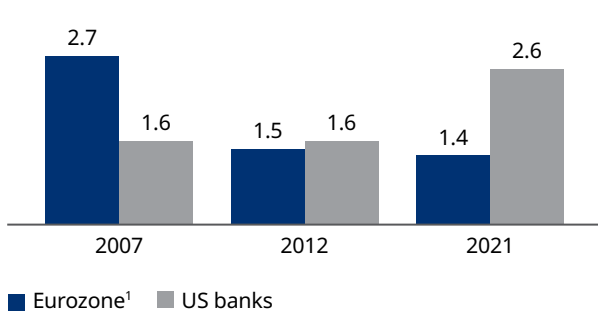
Exhibit 2: Comparison of the CoE between EU banks and US



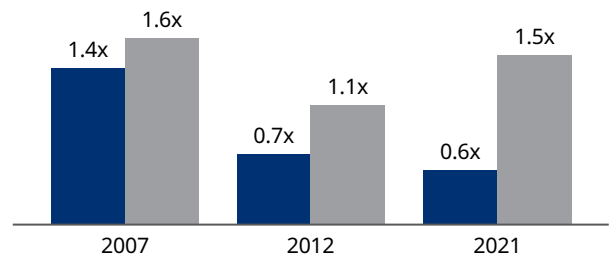
Source: Oliver Wyman analysis, S&P Global Market Intelligence (SNL), Refinitiv Eikon

Exhibit 3: Overview of stock performance for EU and US banks

Market cap evolution (€ trillion)



Price/book² ratio evolution



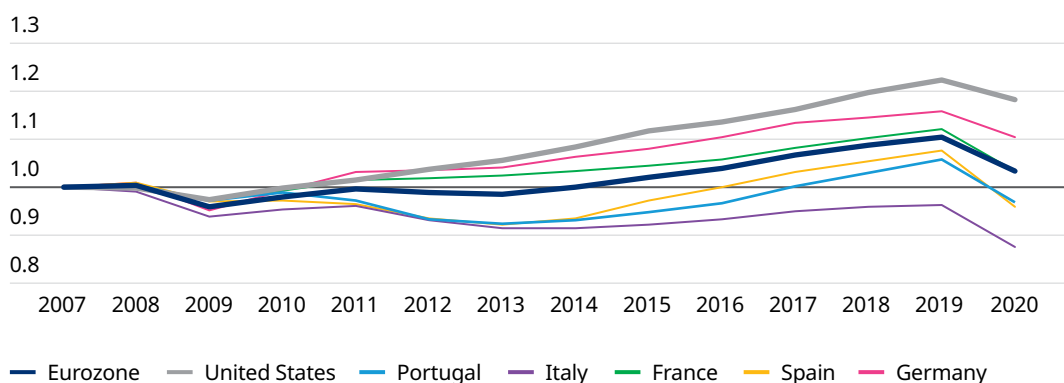
1. European and US sample based on all the listed banks for each fiscal year; 2. Price/book calculated as market cap/equity value.
Source: S&P CapitalIQ database, Oliver Wyman analysis

1.1. MACROECONOMIC CONDITIONS

Although the banking sectors in both Europe and the US were heavily impacted during crisis episodes since 2008, US public policy allowed US banks to stabilise and recover more quickly, while EU banks have faced protracted uncertainty. The impact of the GFC has been more onerous on European banks than on US banks. US policy makers were able to take a much more proactive approach to coping with economic uncertainty. The large banks received swift and substantial support, both through equity injections and Federal Reserve interventions. When the EU was subsequently hit by the Sovereign Debt Crisis, similar action was thwarted by fragmentation, lack of fiscal capacity in several countries, and EU competition policy. The EU banking sector was able to cope with the crisis but had to face and manage significant uncertainties for a longer time. While US banks were able to focus on recovery and growth, EU banks still had to be cautious, building and retaining significant capital buffers for risks, such as those related to non-performing loans (NPLs). This was also reflected in the priorities pursued by EU bank regulators and supervisors.

Compared to the US, Eurozone growth has been slower, an important factor in explaining the differences between US and EU bank performance. Over the last 15 years, US GDP rose by 1.6% per year on average, compared to 1.0% in the EU.⁷ Reduced growth translated into fewer lending opportunities, less profit for banks, less return on bank equity and lower valuations. Domestic credit to the private sector as a percentage of GDP decreased from 102% to 92% over the period from 2010 to 2020, in contrast with an increase from 182% to 217% in the US.⁸ In addition, economic growth in Europe was asymmetric, so banks with exposures to certain jurisdictions were further penalised.

Exhibit 4: GDP evolution¹ — indexed to 2007



1. GDP in constant local currency unit.

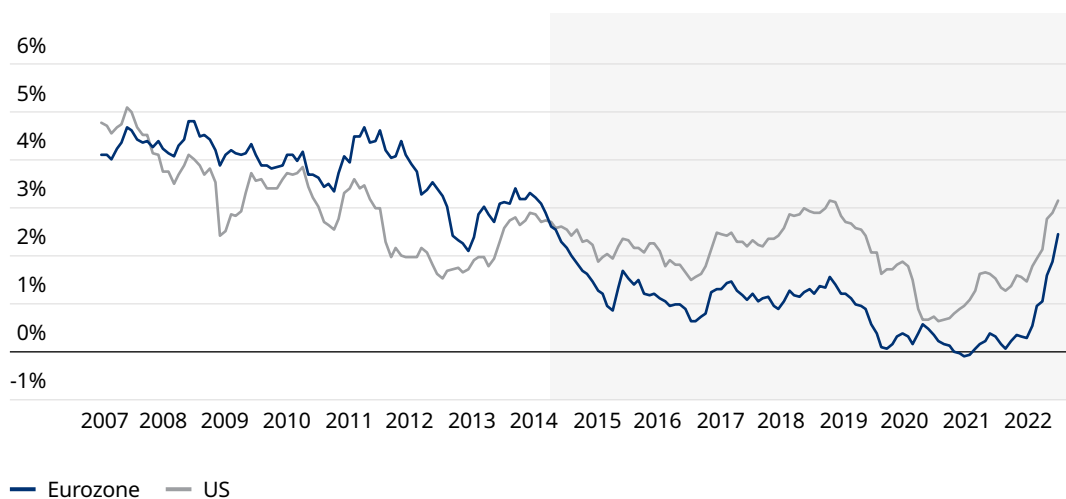
Source: World bank

⁷ World Bank — GDP growth (annual %), 2007-2021.

⁸ World Bank — Domestic credit to private sector (% of GDP).

Limited Eurozone growth was also reflected in monetary policy, with the ECB keeping rates down longer than the US Federal Reserve. Considering deflationary pressures, limited growth, and the need to keep down borrowing costs for Eurozone sovereigns, the ECB pursued an extraordinarily accommodative monetary policy strategy, including negative policy rates and phases of extensive quantitative easing. While low interest rates in Europe, notably in the long-term rates, led to a positive impact on bond portfolios, they created a drag on net interest income.

Exhibit 5: Comparison of long-term interest rates in the Eurozone versus the US
2007-2022 June



— Eurozone — US
Long-term interest rates refer to government bonds maturing in ten years.
Source: OECD

The current economic outlook will place further pressure on EU banks. The Eurozone is on the verge of a recession, given the challenging geopolitical environment and the significant rise in energy prices. Inflation has picked up markedly, and the probability of consumer price index (CPI) growth receding towards the ECB target of 2% in the medium term is low. While the increase in policy rates to curb inflation will lead to a forward normalisation, it will also put pressure on funding costs (deposits and wholesale funding), particularly for banks with long-duration locked-in asset yields. If coupled with a slowdown, the increase may also lead to a drop in credit supply and demand.

1.2. BUSINESS MODELS AND BALANCE SHEET STRUCTURES

The prevailing business model for banks in Europe is that of a universal bank that retains loans on its balance sheet in the long run, often until full repayment. This applies to mortgage loans, which are especially important for the EU banking sector, amounting to 44%⁹ of aggregated bank balance sheets. This model also applies to business loans, which in Europe are predominantly funded by banks, as all but the larger corporates lack direct access to capital markets. For real estate lending, European countries have very efficient and sizeable covered bond markets (such as Pfandbriefe) that allow banks to obtain funding against collateral from a wider investor base. However, the way these transactions are structured still result in loans being retained on bank balance sheets. While a market for loans has developed in recent years, it mostly involves distressed assets that banks have preferred to offload to specialised investors. Indeed, the European securitisation market (including the UK) is about 6% the size of its counterpart in the US, representing around 1% of GDP compared to about 18% in the US.¹⁰ A loan servicing industry is slowly developing but is so far limited in overall importance.

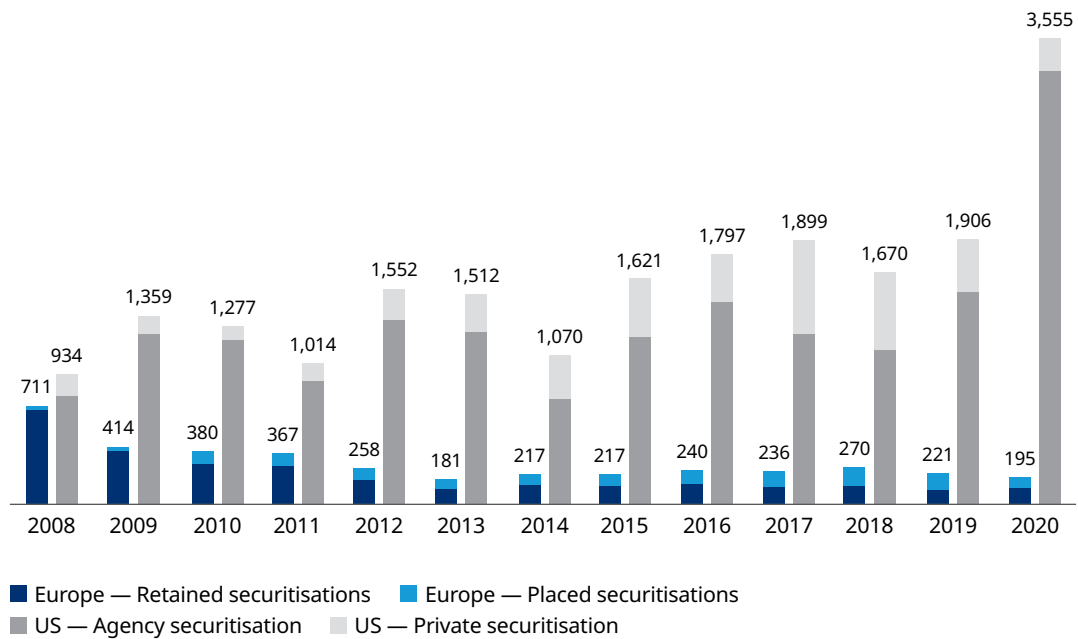
In contrast, US banks can leverage the US's deep capital markets in their lending business. For secured lending, such as mortgages, US banks employ an originate-and-distribute model, where loans are quickly securitised and placed into financial markets. This is supported by Government-Sponsored Enterprises (GSEs) that have been established to facilitate the flow of credit to certain sectors of the US economy, most notably housing. GSEs guarantee loans within their scope and buy loan securitisations in the secondary market. These actions effectively reduce the risk that lenders and investors bear. Banks offload loans from their balance sheet, although they usually retain the more junior tranches of the securitisations. While banks lose the steady income stream of the loan portfolios, the financial structuring and other services they provide in relation to securitisations generate advisory fees.

To put it simply, European banks have larger balance sheets with a lower risk density compared to their US peers. European banks cannot offload loans through securitisation, obliging them to hold and fund them until repayment. As the bulk of retail and business loans is collateralised, they have a risk weight that corresponds to the long-term unexpected loss of a well-diversified portfolio. In contrast, US banks are able to offload a significant portion of the loans they originate to the market, effectively originating a similarly-sized loan portfolio with a materially lower long-term balance sheet volume. Consequently, and considering US banks usually retain the equity and junior tranches of the subsequently securitised loan portfolios, the resulting risk density is higher.

9 ECB, July 2022, "Sectoral breakdown of MFI loans."

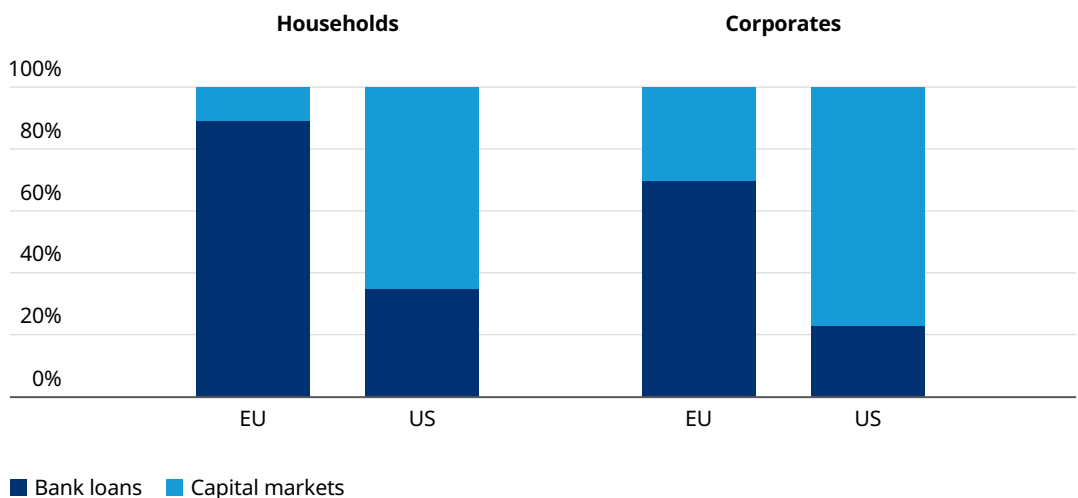
10 World Bank data, 2020, GDP (current US\$).

Exhibit 6: Comparison of securitisation volumes US versus Europe (including the UK)
 € billion



Source: ESM, (2021), "Reviving securitisation in Europe for CMU"

Exhibit 7: Comparison of ultimate sources of funding in Eurozone versus US
 Banks Loans versus Capital Markets



2021 Q4 for EU, 2022 Q2 for US.

Source: Eurostat, AFME, SIFMA

INFO BOX

Leveraging securitisation to provide financing to the EU economies

Securitisation is an important instrument to make accessible additional capital pools to finance the economy. Today, banks retain most of the loans they extend to borrowers on their balance sheet, binding capital and funding. Securitisation allows for the transfer of loans and credit risk to non-bank investors, such as insurers or other domestic and foreign institutionals. As the banks “originate” the loans and then “distribute” them to securitisation investors, they play an important role as intermediaries. The non-bank investors would normally lack the market access, risk assessment capabilities and operational prerequisites to directly fund the borrowers, often a larger number of mortgage debtors or small- and medium-sized enterprises (SMEs). At the same time, securitisation allows banks to transfer risks to investors, thereby freeing up lending capacity. Leveraging these advantages, securitisation is heavily employed in the US, where more than half of the outstanding mortgage exposures are securitised and do not remain on banks’ balance sheets.

In a hypothetical scenario where EU banks could transfer half of their current mortgage portfolio to non-bank investors, banks’ CET1 ratio would increase by around 0.9 percentage points, and banks’ lending potential could increase by about €0.9 trillion.

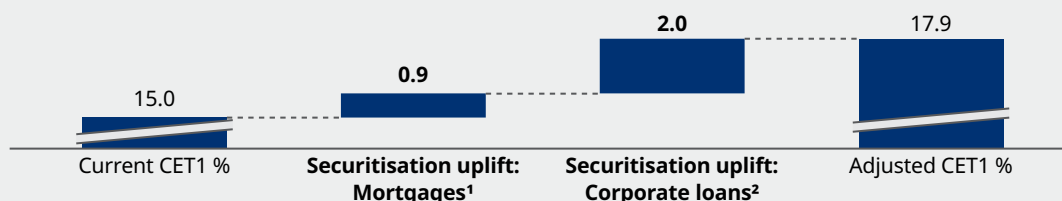
If EU banks managed to securitise 50% of the mortgage portfolio, which amounts to around €5.2 trillion for the Eurozone,¹¹ about €76 billion of capital would be freed-up.¹² This additional capital would result in additional lending potential of about €0.9 trillion.¹³ Accordingly, the risk-weighted assets (RWA) density of EU banks would increase by 1.4 percentage points (excluding additional lending and assuming no tranches are retained). Securitisation benefits are even higher for the corporate loan book, as average risk weights for corporate loans are significantly higher than for retail mortgages. Assuming the securitisation of half of the Eurozone banks’ corporate book and an average risk weight of 45%, an uplift of 2.0 percentage points CET1 would be created.¹⁴ However, it should be noted that in such a hypothetical scenario the financial system would look very different from today. In particular, the structure of the resulting capital markets as well as the banks’ and other financial intermediaries’ role would need to change significantly, as would the earnings structure of banks (such as less interest income, but more fee-based earnings).

11 European Mortgage Federation, 2021.

12 This assumes an RWA density of around 20% (average across IRB and standardized portfolios according to internal benchmarks).

13 This assumes an average RWA density for the new lending.

14 Both hypothetical scenarios assume that the risk-weights of the banks’ exposures remain constant. The actual risk-weight of the retained share of the loan books will depend on the securitisation structure.

Exhibit 8: Overview of impact of securitising mortgage portfolio for EU banks

1. Assumes no tranches are retained and 50% of the mortgage book (RWA density of 20%) is securitised.

2. Assumes no tranches are retained and 50% of the corporate book (RWA density of 45%) is securitised.

Source: ECB, Supervisory banking statistics, 2022 Q1

Regulators have identified the rise of securitisation as a key measure to build European capital markets. Over the last few years, the European Parliament and member states have expressed willingness to revive the EU securitisation market so that it can act as an effective funding channel to the European economy. In 2015, the European Commission proposed new rules on simple, transparent, and standardised (STS) securitisation. This paved the way for the strengthening of investor confidence by setting set high safety and disclosure standards for securitisation operations across the EU. In addition, the ECB's asset-backed security (ABS) buyback programme and the (limited) government-backed schemes launched in the past few years encouraged transactions (such as the Italian GACS or the Greek APS, both limited to distressed exposures). These transactions have demonstrated how securitisation can be used to unlock lending by better matching the risk appetite of investors. Going forward, the aim should be to leverage securitisation more broadly for performing assets such as mortgages and commercial loans. An important example to that end is the European Investment Fund's programme to buy mezzanine tranches of SME portfolios.

However, the success of the measures has been moderate, and there is still room to provide incentives and remove obstacles for banks and investors to engage in securitisation. Refinements on capital charges related to securitisation or simplifications in the approval process of the transfer of risks, without reducing the necessary prudential safeguards, would allow for a more risk-sensitive regulatory treatment of exposures to securitisations. Recent initiatives enhancing the quality and comparability of data on SMEs, such as European Single Access Point (ESAP),¹⁵ are already a step into the right direction of increasing transparency and facilitate pricing. Moreover, a minimum harmonisation of national insolvency laws, including collateral enforcement, would, in the longer term, provide additional safeguards and predictability of outcomes to investors.

When comparing the situation in the EU with the US, the role of Government Sponsored Enterprises (GSE) cannot be ignored. GSEs have been established in the US to underwrite credit risk and provide lending into areas considered important from a public policy perspective. This most importantly includes retail mortgages. Fannie Mae and Freddie Mac accounted for 52% of the total outstanding single-family mortgage debt in 2021.

¹⁵ ESAP will act as the data hub for financial and extra-financial data from EU corporates including SMEs. In the "Update on progress towards European Single Access Point," the European Commission confirmed that ESAP will be operational by 2024.

Given the GSEs enjoy a de-facto state guarantee, mortgage loans are partially underwritten by the government, and bonds issued by the GSEs are considered a high-grade asset, substantially contributing to the depth and liquidity of the US capital market. Still, not considering GSE-sponsored, “agency” securitisations, private securitisations in the US where three to six times higher than in the EU (excluding retained securitisations over the last ten years). In comparison, the EU has no similar government support or guarantee scheme for mortgage lending.¹⁶ Establishing such scheme would pose a challenge as several Eurozone governments would lack the fiscal standing to back GSEs at larger scale, while a pan-European GSE would raise the question of risk transfers between member states. Regardless, leveraging securitisation to access private sector funding would already be a first and important step that should be tackled.

Thanks in part to deeper capital markets, US banks have also consolidated their position as leaders in the investment banking space, with a corresponding impact on profitability. Since the GFC, EU banks have lost market share in investment banking, which is now largely dominated by US entities both globally and at European level. Comparing the market share of the top 12 EU and US banks reveals the growth of US firms. In 2013, US banks represented 55% of revenues, increasing to 67% in the first half of 2020.¹⁷ While this is partly explained by growth in business areas with traditionally higher US presence — such as equity capital markets (ECM), debt capital markets (DCM) and mergers and acquisitions (M&A) — US entities also benefit from a large home market and higher capital allocations to fuel expansion. Besides the access to a profitable business line, the dominance of US banks in the investment banking space also has geopolitical implications.

EU banks hold a significant portion of sovereign debt in comparison with US peers, affecting profitability and, for some banks, leading to a market penalty in funding costs. Eurozone banks have been resorted to domestic sovereign debt to comply with liquidity requirements. According to the ECB,¹⁸ sovereign debt accounted for approximately 3.5% of bank assets in the Eurozone in 2020, with large variations among member states (in some cases reaching about 12%). These figures are expected to increase further in response to excess liquidity (higher deposits and lower loan volumes resulting from the rise in rates) and to the fiscal measures supporting the economy after the COVID-19 pandemic. Changes in the valuation of sovereign debt exposures impact profitability and earnings volatility and can act as an amplifier in the event of a macro-economic downturn. Conversely, US banks are not as prone to holding domestic sovereign debt as Eurozone banks, due to a deeper investor base and a lower share of sovereign bonds being used as collateral in central bank operations. Incidentally, high exposures to domestic debt led to a risk of divergence within the Eurozone, and a situation where the funding costs of households and corporates are influenced affected by country of origin, an eventuality which is at odds with the objectives of the single market.

16 It should be noted that development banks play a similar role in those asset classes they are focusing on.

17 S&P Global, 2020, “European Investment Banks Face A Continued Fight To Remain Competitive.”

18 ECB, 2020, “Developments in the sovereign-bank nexus in the euro area: the role of direct sovereign exposures.”

INFO BOX

The importance of a strong EU banking sector in times of economic uncertainty

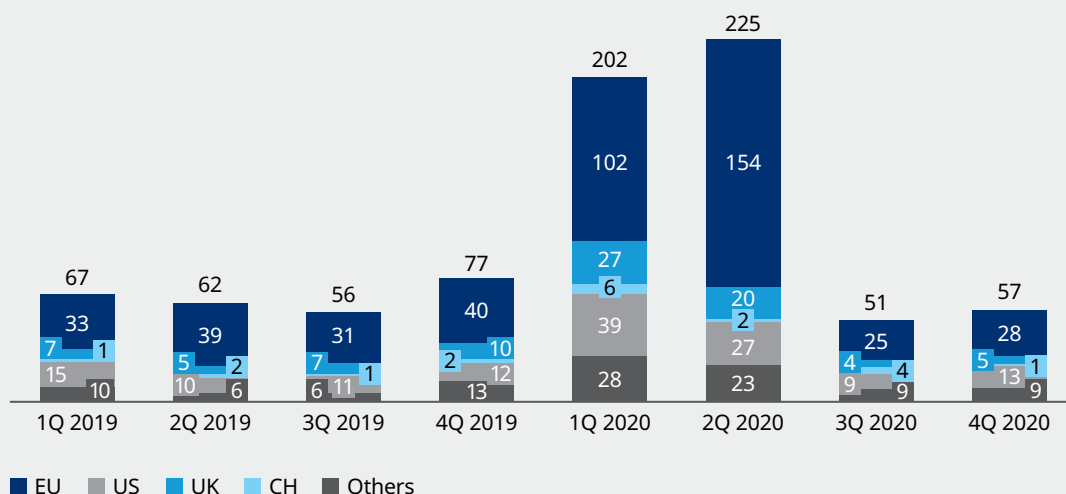
Global financial integration and cross-border banking have reduced compared to the level reached before the GFC. After the GFC, many globally active banks, including European firms, rebalanced their engagements toward a more pronounced home bias. This was driven by banks needing to be more selective in which regions to bind capital and invest efforts. The expanded regulatory regimes are also a reason of such refocus, as — despite the Basel rules aiming to ensure a global level playing field — banking activities often come with national establishment requirements and the need to implement the local rulebooks, which differ at least in details and processes and reduce the banks’ ability to scale across borders.

Banks often resort to local rebalancing in times of economic uncertainty, when funding the general economy is of utmost importance to avoid amplifying the downturn. As banks review their exposures and risk positions in downturns to focus their business to fewer but more profitable markets, it has often been observed that they retreat from abroad, contributing to a liquidity reduction at a time where even viable companies and individuals are facing uncertainty. At the same time, local banks are usually the ones that support their local client base given their strategic positioning. Given their broad market share, they also have the means and interest to contribute making government-sponsored financing facilities available, as recently observed in the COVID-19 crisis (Exhibit 9).

For broader economic policy and resiliency considerations, it is critical to have a strong banking sector focused on the region.

Exhibit 9: Volume of syndicated loans in EMEA during the COVID-19 crisis (flow)

€ million



1.3. BANKING SECTOR COMPOSITION

The banking sector in the EU is less concentrated than in the US. According to the IMF,¹⁹ the European Union faces the challenge of overbanking, or an “overly large banking sector that in the end affects the profitability of the banks in the system.” This is demonstrated by a series of indicators, such as the banking assets compared to GDP (around 280% in the EU versus approximately 91% for the US [again to be seen in context of the different balance sheet structures]), or branches per population (44 per 100,000 inhabitants in the Eurozone versus 26 in the United States).²⁰ In the aftermath of the GFC, the US banking sector underwent a consolidation. Nowadays, the top five US banks within the United States have a market share of about 40%, compared to approximately 20% in the Eurozone.²¹ EU banks have generally shown less appetite for cross-border M&A operations. This is due, in part, to a lack of financial synergies (such as the requirement that EU banks with subsidiaries in different member states must satisfy liquidity and capital requirements at the level of both the subsidiary and the consolidated balance sheet, and geographical diversification of exposures is not directly factored into capital requirements), and regulatory uncertainty (like the treatment of bad will requirements²² or differences in consumer protection laws). Moreover, big bank M&A has become less attractive as banks are now less dependent on branch networks for growth, and cost synergies are harder to realise given the complexity of integration initiatives, labour laws, and the non-linear dynamics of regulatory requirements.

Banks in Europe face higher competitive pressure than US peers, with a concomitant impact on pricing. The EU banking sector is composed of many banks, with comparatively high-cost structures, competing for the same customers. The ownership structure of EU banks also influences competitive pressure, as only 30% of the banks supervised by the Single Supervisory Mechanism (SSM) are publicly traded companies, compared with the majority of US banks.²³ Most of the non-listed banks in the Eurozone are savings banks, regional banks or cooperative banks, which do not always follow profit-maximising objectives, putting further pressure on pricing. This is particularly relevant in some member states, such as Germany, which have a high concentration of non-listed banks operating on a non-profit charter basis. Competitive pressure is further intensified by new entrants such as Big Tech and Fintech companies, which have nimbler business models and are subject to a less regulated environment.

19 EUROFI, 2021, “Banking Fragmentation Issues in the EU” — Note written by Didier Cahen; IMF, Global Financial Stability Report.

20 Eurofi Secretariat, 2019, “Fragmentation Issues in the EU Banking Sector.”

21 Financial News, 2021, “Europe’s banks can’t ignore the M&A rush in fight with the US giants.”

22 While the ECB’s Guide on the supervisory approach to consolidation in the banking sector provides more clarity on the supervisory approach to consolidation, uncertainty is driven by elements such as valuation implications regarding badwill or the assessment of the business model (and resulting impact on capital requirements).

23 Eurofi Secretariat, 2019, “Fragmentation Issues in the EU Banking Sector.”

Furthermore, from a cost perspective, European banks have lower economies of scale and less capacity to invest in digital transformation. US banks benefit from a large domestic base, in comparison with EU banks, and can distribute costs more effectively. Their size and profitability, as well as a more advantageous accounting treatment of software investments, have allowed US banks to invest more in digital transformation. US banks are directing their technology spending towards digitising customer experience and to back-office operations, with a corresponding impact on efficiency. US bank executives said 40% of their bank's technology budget in the 2021 fiscal year was directed to core systems technology.²⁴ On the other hand, EU banks have focused on designing digital solutions for customers but have so far not been as effective in translating technology investments into cost efficiencies. European labour regulation also restricts flexibility in comparison with the US, where it is easier to restructure more quickly and at lower cost.

²⁴ Insider intelligence, "Bank Director's 2021 Technology Survey."

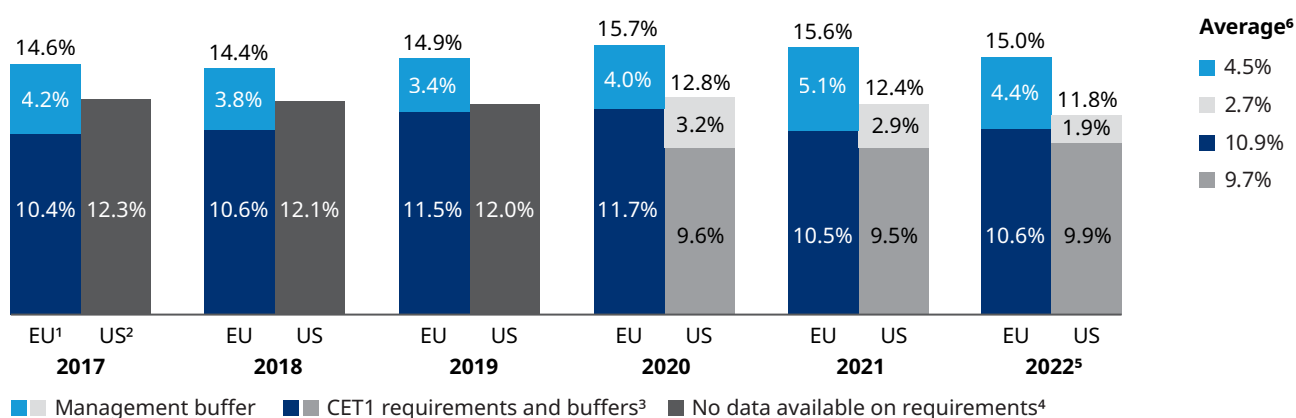
2. REGULATORY-INDUCED COSTS

This section covers the cost of doing business for European Banks, emanating from and related to regulatory requirements. The focus is on the main elements of financial sector regulation, excluding aspects of the overall legislative environment (such as insolvency frameworks) or tax considerations, although the latter are becoming increasingly relevant in some member states. The first subsection covers regulatory capital, considering both requirements and supervisory influence. The second subsection assesses the cost imposed on banks by maintaining the safety net architecture, including resolution funds and deposit insurance schemes, as well as loss-absorbing capacity requirements. The final section examines the operating cost resulting from compliance efforts and supervisory events. The regulatory impact is compared with the US across the three subsections, analysing differences in requirements and regulatory approaches.

2.1. CAPITAL CONSTRAINTS

Over the last three years, EU banks hold on average 3.1 percentage points more CET1 capital compared to risk-weighted assets (RWAs) than US banks, of which approximately 1.3 percentage points correspond to higher capital requirements and buffers imposed by the EU regulator, and about 1.8 percentage points to a higher management buffer held by entities. This section explains the factors leading to the higher capital reserves held by EU banks. It is structured in two parts: the first covers capital requirements, both risk-weighted and non-risk-weighted, and the second analyses the factors that influence banks' propensity to hold a higher management buffer.

Exhibit 10: Evolution of CET1 ratio in the EU and US



1. Based on sample of banks participating in SREP; 2. Based on sample of US large banks participating in Dodd Frank Act Stress Test; 3. EU capital requirements reported as simple average; 4. Capital requirements and buffers only available for the US from 2020 onwards; 5. Latest available (2022 Q1); all other data points are respective to the Q4 of that year; 6. Average over the period 2020-2022 where all data points are available for comparison.

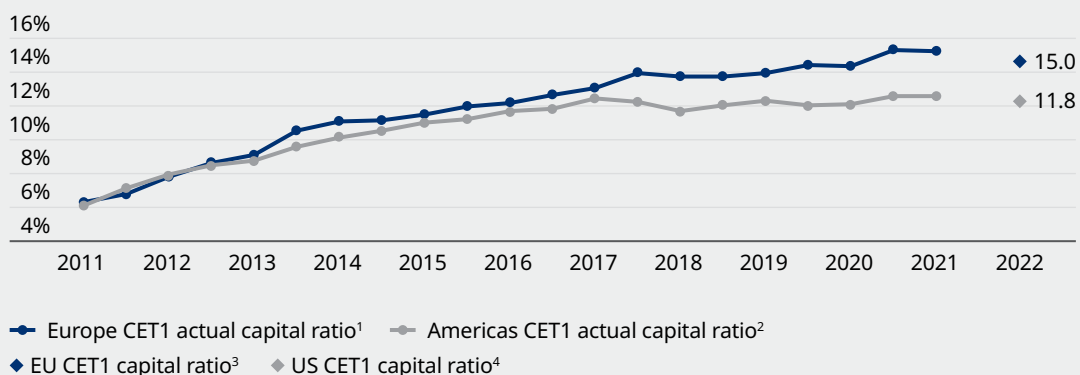
Source: European Central Bank, Dodd-Frank Act Supervisory Stress Test Results, SREP results, Dodd-Frank Act Stress Test Publications — Large bank capital requirements

INFO BOX

Capital build-up in Europe and Americas

Consistent with the evolution of regulatory capital requirements, banks have grown their capital reserves, with European banks engaging in a longer capital building phase compared to their counterparts in the US. Across both Europe and the Americas, the period from 2011 to 2016 was focused on capital building, with similar CET1 ratios across both regions. From 2016 to 2017, the regions decoupled, with US CET1 ratios stabilising between 12-13%, and EU CET1 ratios continuing to increase to more than 15%.

Exhibit 11: Comparison of CET1 capital ratio between Europe and the Americas



1. Europe sample based on 35 Group 1 banks; 2. Americas sample based on 16 Group 1 banks; 3. EU 2022 CET1 capital ratio data of Q1 for SSM banks (111 entities, representing 82% of banking assets); 4. US 2022 CET1 capital ratio data of Q1 as reported in Dodd-Frank Act Stress Test 2022.

Source: Basel Committee on Banking Supervision (2022), 'Basel III Monitoring Report', European Central Bank, Federal Reserve

The build-up of capital in EU and US has been driven by heterogeneous factors. EU banks have focused on de-risking and deleveraging balance sheets, raising additional CET1 capital, and building up capital through earnings retention. US banks' efforts at capital build-up, meanwhile, have also benefited from accounting tailwinds.

The improvement of CET1 capital ratios in the EU stems mainly from a reduction in total RWA (de-risking and deleveraging), which is partially driven by the economic cycle, but also by the implementation of Basel III. This reduction provides evidence of an effort to retrench and improve asset quality.

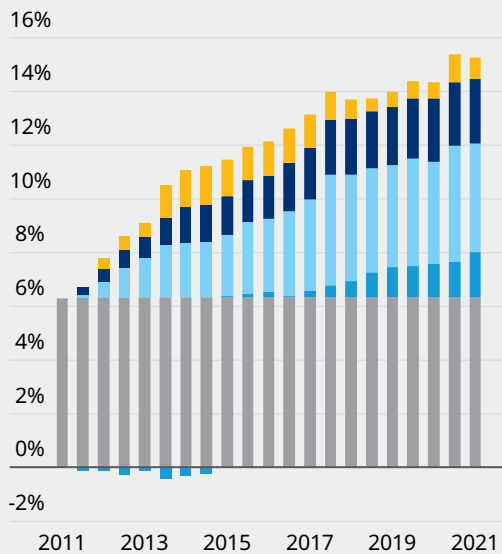
In the Americas, the main driver of the strengthening of the CET1 ratio is the category "Other changes to CET1". This category refers to changes in regulatory adjustments to CET1 capital, or to other changes between reporting dates, that are not reported separately. During the period, this would correspond to unrealised gains and losses on investment securities, which represented a relevant portion of other comprehensive income for large American banks. Due to differences between US Generally Accepted Accounting Principles

(GAAP) and International Financial Reporting Standard 9 (IFRS 9), US banks are more likely to mark to market securities rather than report them at amortised cost.

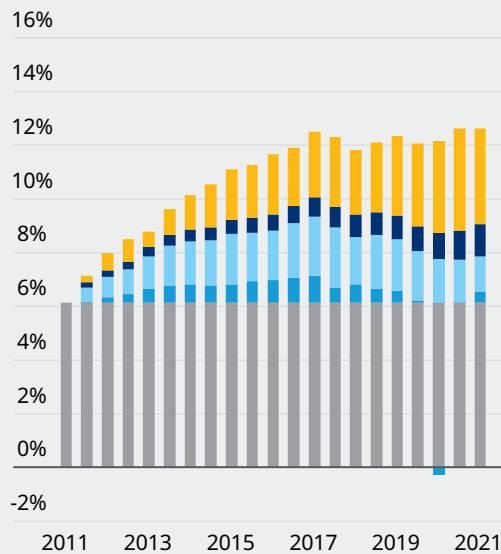
From 2017 onwards, retained earnings play an increasingly relevant portion of capital build-up for European banks, suggesting that US banks redistribute capital to shareholders more extensively than their peers in the EU, which also contributes to the higher valuation of US banks versus their EU peers.

Exhibit 12: CET1 capital ratio drivers in Europe and the Americas

Europe CET1 capital ratio^{1,2}



Americas CET1 capital ratio^{1,3}



■ CET1 raised
 ■ Retained earnings⁴
 ■ Risk weighted assets^{4,5}
 ■ 2011 CET1 capital ratio
■ Other changes to CET1^{4,5}

1. The graph shows the fully phased-in initial Basel III framework for the data points up to and including the end of 2018 and the actual framework in place at the reporting date for all data points thereafter; 2. Europe sample based on 35 Group 1 banks; 3. Americas sample based on 16 Group 1 banks; 4. Cumulative contribution since 2011; 5. Contribution through reduction of RWA; 6. Other changes include changes in regulatory adjustments to CET1 capital and any other changes in CET1 capital between two reporting dates that are not reported separately.

Source: Basel Committee on Banking Supervision (2022), 'Basel III Monitoring Report'

INFO BOX

Differences in risk weighted assets between US and EU banks

Risk-sensitive regulation follows the logic that not all bank exposures generate the same risk and, therefore, the portion of capital to be set aside must be different.

Basel III provides two frameworks for calculating risk weights for credit risk: the standardised approach (SA) and approaches relying on internal models that are supposed to be more accurate and also more risk-sensitive. Internal rating-based (IRB) models have been widely adopted in the EU compared to the US, where their popularity is limited as entities are subject to an output floor (“Collins floor”). EU regulators have devoted significant effort to assess the reliability of the of the internal models of major European banks and introduce measures to increase the homogeneity of approaches across jurisdictions and banks.

Between the EU and US there are stark differences in RWA density; in Europe it stands at ~35% for IRB Banks and 51.2% for SA banks,²⁵ and in the US it stands at ~51% for large banks.²⁶ This is explained partly by the widespread use of IRB models. Regardless, significant literature evidences the heterogeneity of RWA density across and within countries, identifying as possible driving forces behind such dispersion banks’ business models, the credit quality of asset portfolios, and institutional and accounting differences.²⁷ For instance, when comparing the RWA variability generated by the IRB approach to the SA in the EU, the former is not significantly higher.

25 EBA Staff papers series, September 2020, Time to go beyond RWA variability for IRB banks: an empirical analysis.

26 Dodd-Frank Act Supervisory Stress Test Results, Fed statistics.

27 EBA Staff papers series, September 2020, Time to go beyond RWA variability for IRB banks: an empirical analysis.

2.1.1 RISK-BASED CAPITAL REQUIREMENTS

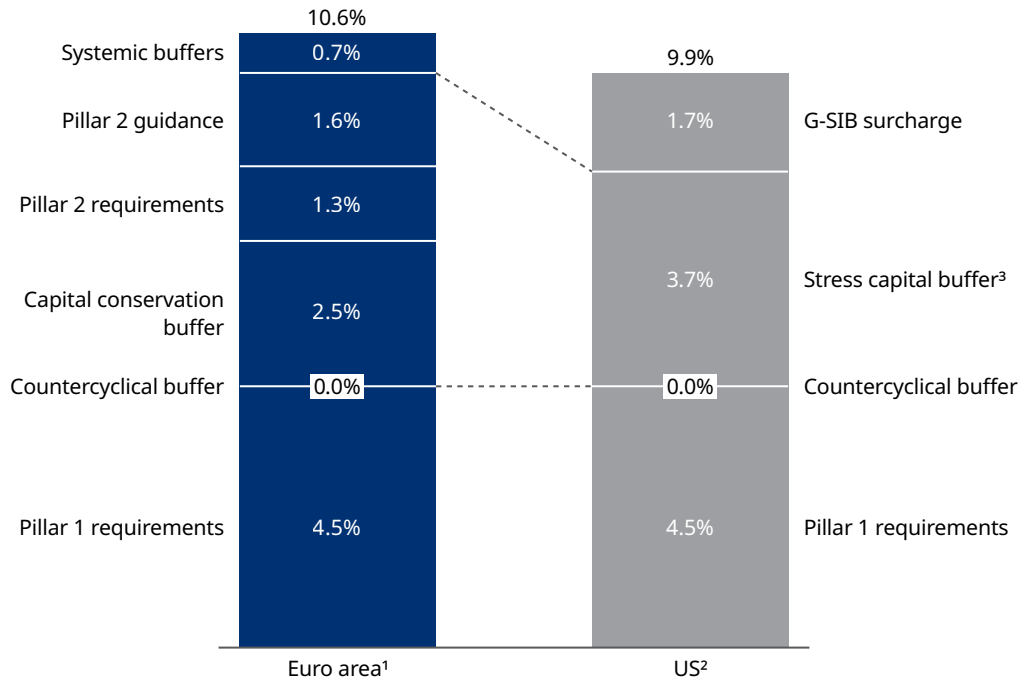
The interaction of different business models, market structures, and regulatory and supervisory approaches result in average minimum capital requirements and buffers in the EU being approximately 1.3 percentage points higher than in the US. Over the last three years, 2020 to 2022, capital requirements for European banks were on average 10.9%, compared to 9.7% in the US, this amounts to a difference of about 1.3 percentage points. In the last supervisory exercise corresponding to 2022, the minimum requirement on average for CET1 in the EU was 10.6%, compared to 9.9% in the US. Per-bank requirements (and the corresponding gap compared to US) vary according to business model and size, such as in the case of global systemically important banks (G-SIB), the US “G-SIB Surcharge” is higher than the EU equivalent for this segment, resulting in higher overall requirements for this segment.

The EU currently operates a complex capital buffer framework. The US, on the other hand, has enacted several reforms focused on simplifying and easing requirements, leading in 2020 to the introduction of a single stress capital buffer (SCB). Effectively, capital requirements in the US have four components:

- The **minimum CET1 ratio**, which is equivalent to the EU’s Pillar 1 requirement and is the same (4.5%) across jurisdictions.
- The **countercyclical buffer**, which has its equivalent in the EU framework. It is set at 0% in the US and close to 0% in the EU and expected to increase driven by the domestic component of the CCyB.
- The **stress capital buffer**, which would group together EU Pillar 2 requirements and the capital conservation buffer. In practice, the US avoids overlap by setting the capital conservation buffer as a floor for the stress capital buffer, while the EU calculates Pillar 2 requirements separately to the capital conservation buffer (CCoB). The average of the SCBs across banks is 3.7%, compared to 5.4% in the EU (the sum of Pillar 2 and the CCoB).
- The **G-SIB surcharge**, which can be compared to the EU systemic buffers (1.7% versus 0.7%, or 2.6% versus 1.0%, for the G-SIB segment in US and EU respectively). The higher figure is explained by the size and complexity of US G-SIBs compared to EU institutions. The systemic capital layer, which includes the systemic risk (SyRB), and the G-SIB and O-SIB (other systemically important banks) buffers, has been criticised due to the overlap with other requirements and its unpredictability.

Moreover, it is worth noting that the US opts to frame entity-specific capital reserves as “buffers” rather than “requirements.”

Exhibit 13: Breakdown of CET1 capital requirements of Europe versus US in 2022



1. Based on sample of 108 banks participating in 2021 SREP determining 2022 capital levels; 2. Based on sample of 34 US large banks participating in 2022 Dodd Frank Act Stress Test; 3. US' entity-specific Stress capital buffer (determined annually based on DFAST results) includes the Capital conservation buffer, Projected Stress Test Losses, and Q4-Q7 Dividend prefunding; 2. Capital requirements and buffers have been re-ordered to facilitate comparability with the US.

Source: ECB 2021 SREP results, Federal Reserve Dodd-Frank Act Stress Test 2022

INFO BOX

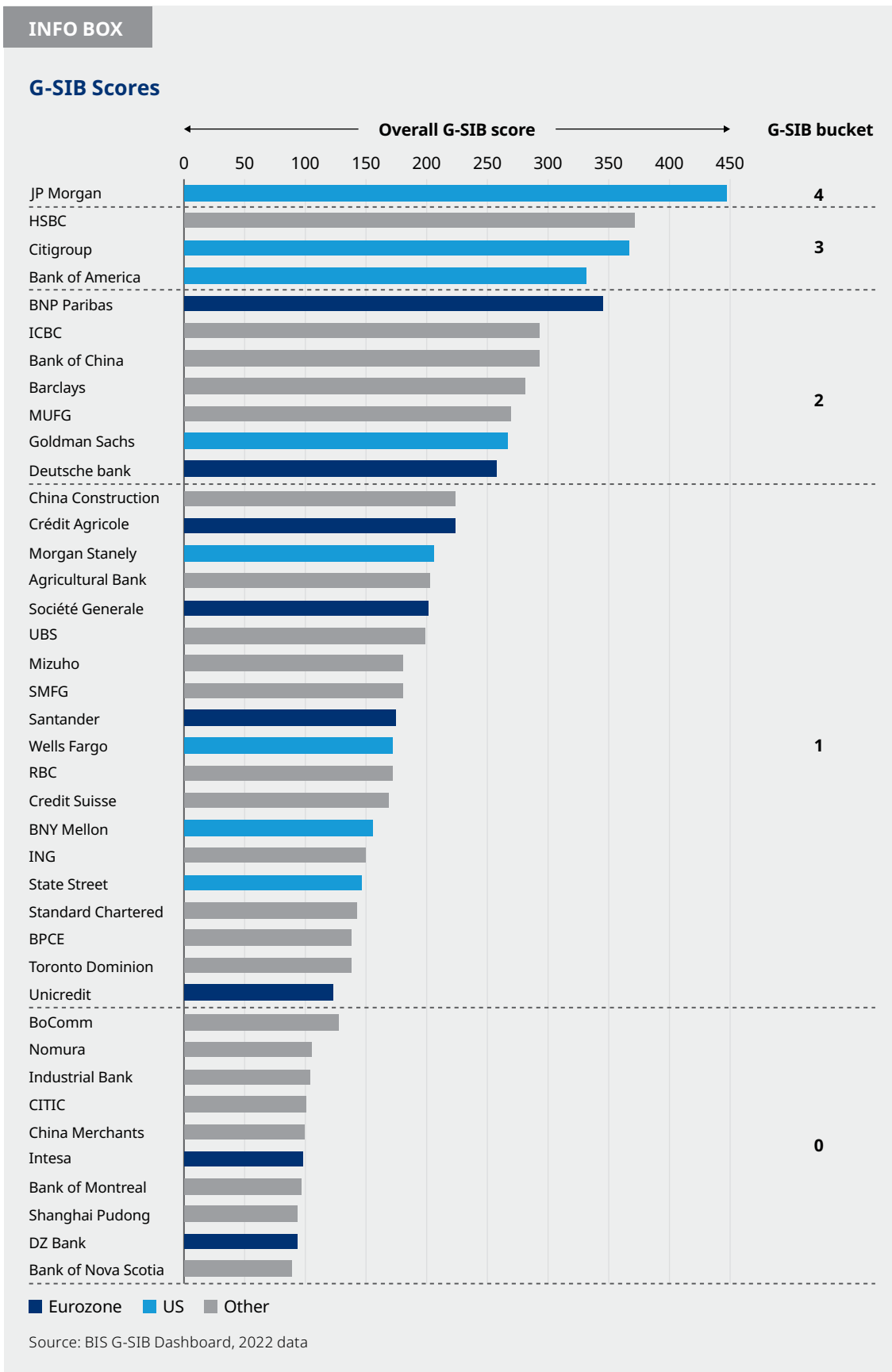
Comparison of European and American capital requirements

EU CAPITAL REQUIREMENTS	US EQUIVALENT
<p>Pillar 1 capital requirements: Generic 4.5% minimum capital requirement according to Basel III standards.</p>	<p>Minimum CET1 capital ratio: Generic 4.5% minimum capital requirement according to Basel III standards.</p>
<p>Countercyclical capital buffer (CCyB): Designed to counter procyclicality in the financial system, consisting of a domestic CCyB element (determined per country) and an institution-specific element (currently slightly above 0%).</p>	<p>Countercyclical capital buffer (CCyB): System-wide buffer, currently set at 0%.</p>
<p>Capital conservation buffer (CCoB): Additional capital buffer set to 2.5% in line with Basel III guidance, under the logic that it is set to avoid breaches of minimum capital requirements during periods of stress when losses are incurred.</p>	<p>Stress capital buffer requirement: Determined by considering entity-specific ST results and applying a floor of 2.5% in line with the standard capital conservation buffer established by Basel III.</p>
<p>Pillar 2 requirement and guidance: Additional bank-specific capital requirements and guidance based on individual risk levels (guidance is non-binding, however in practice it establishes the minimum expectations of supervisors and entities are unlikely to breach it).</p>	
<p>Systemic buffers: The systemic buffers cover the systemic risk (SyRB), the G-SIB and the O-SIB buffers.</p> <ul style="list-style-type: none"> • Systemic risk buffer (SyRB): To address systemic risks not covered by other buffers, determined at sector-level or institution-level, or even per subset of exposure. • G-SIB or O-SIB buffer: Entity-specific buffer requirement set for banks identified as G-SIB or O-SIB. Required buffer amount is determined based on set of indicators measuring systemic importance. The G-SIB buffer is calculated according to Basel assessment (corresponding to US method 1). 	<p>G-SIB surcharge: Applies to G-SIB institutions. Determined as the maximum of the method 1 score (based on Basel assessment of systemic importance) and method 2 score, which also considers an entity's use of short-term wholesale funding. Method 2 has historically resulted in higher values.</p> <p>The difference compared to European G-SIBs is explained by the size and complexity of US G-SIBs, and the use of method 2.</p>

■ Similar level ■ Higher level ■ Lower level

Capital requirements and buffers have been re-ordered to facilitate comparability with the US.

Source: European Systemic Risk Board, European Central Bank, FED



The process of establishing capital requirements and buffers at the entity level shares common attributes across both jurisdictions. However, the US model could be considered simpler, more quantitatively deterministic, and more transparent to external parties in comparison with the EU process, where regulators have wider discretion. Additionally, there is a degree of overlap in the EU between measures imposed by the different local authorities, such as risk weight floors.

- **The US process to determine capital requirements is relatively simpler and relies on stress-test results.** In the US, the SCB is determined by considering stress-test (ST) results and applying a floor of 2.5% in line with the capital conservation buffer established by Basel III. The approach followed by the EU differs depending on the component. Pillar 2 requirements are mainly based on the ICAAP assessment and supervisory benchmarking, while Pillar 2 Guidance is determined according to stress test results, with supervisors placing banks in one of four buckets according to the depletion of their capital ratios and their risk profile.
- **Qualitative guidance on risk governance for banks is more relevant in the EU than in the US.** The Supervisory Review and Evaluation Process (SREP) evaluation combines quantitative and qualitative information provided by the bank, along with meetings and inputs from on-site supervision. EU supervisors have more discretion and can penalise poor governance practices or other business risks through higher capital requirements as well as qualitative requirements. In the US, this is less common and supervisors there are more likely to resort to other prudential measures such as imposing business limitations or mitigation plans. Additionally, the Comprehensive Capital Analysis and Review (CCAR) process is currently being revised, and the qualitative assessment of capital plans is to be phased out. Hence, more importance will be attached to quantitative elements, as opposed to the qualitative evaluation of aspects, such as the strength of the firm's capital planning practices.
- **The process and bank-level minimum requirements and buffers are less transparent in the EU compared to the US.** The EU publishes the consolidated Pillar 2 requirement (P2R) of every supervised bank or banking group and detail on other requirements are available. Pillar 2 guidance is not disclosed. This contrasts with the detailed reports of the US Dodd-Frank Act Stress Test (DFAST) results at bank-level and the methodology notes associated with the process.

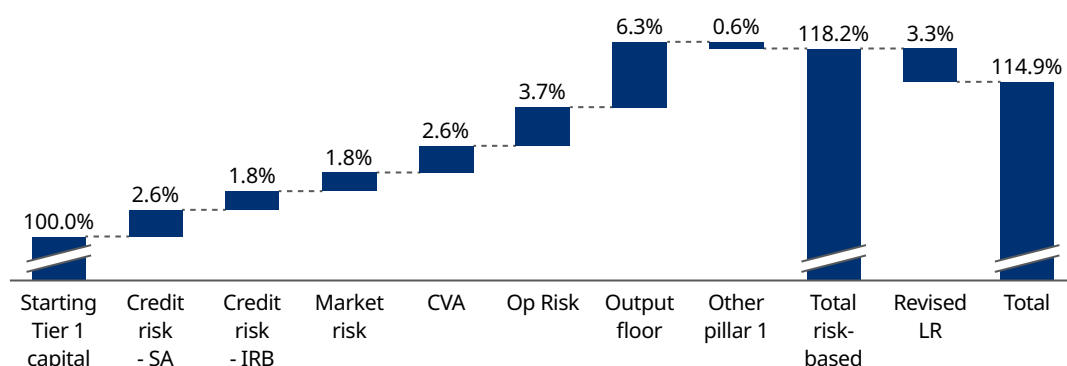
In addition to capital requirements, EU banks are subject to additional supervisory exercises with an impact on capital requirements. For example, the Targeted Review of Internal Models (TRIM) project was a large-scale multi-year supervisory initiative launched by the ECB with the aim of confirming the adequacy of the approved Pillar 1 internal models.

The expected developments in capital requirements are likely to impact EU banks to a greater extent. The current enhancements to Basel III increase standardisation and prescriptiveness for risk-based capital requirements. The main impact on European banks will be the constraint on the use of internal models due to the application of the Basel III the output floor — consequently, banks with a lower risk density as a result of the use of internal models will face higher requirements. The impact on US banks will be less significant,

as entities have a higher risk density and are already subject to a stricter output floor (“Collins floor”).²⁸ According to the EBA’s Basel III monitoring exercise,²⁹ by the end of December 2021 the minimum required Tier 1 capital would increase by 15% on average across the entire banking sector (and by 24.7% for EU G-SIBs), without applying EU-specific amendments — the impact on CET 1 ratio will be of 250bps (290bps for G-SIBs). In the US, the implementation of enhancements to Basel III is anticipated by the Fed to mean an increase in aggregate Basel capital requirements of 5-10%. Both estimations are subject to significant uncertainty.

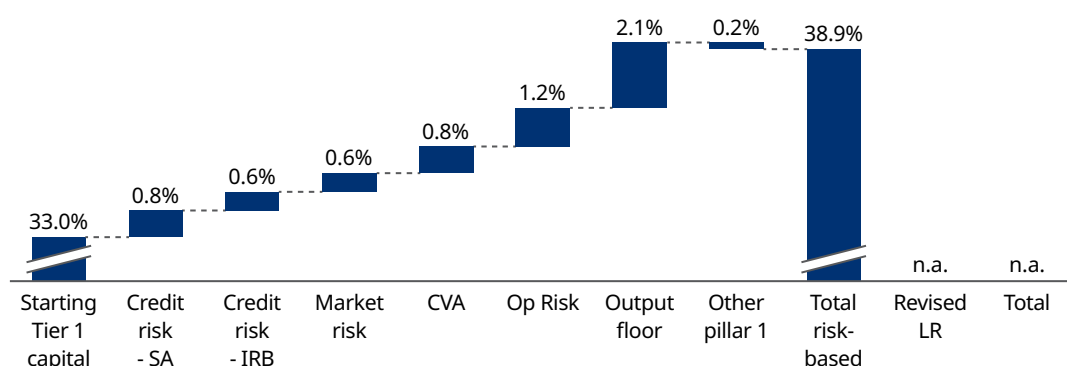
Exhibit 14: Overview of the impact of Basel III enhancements — change in total Tier 1 minimum required capital

As a percentage of the overall current Tier 1 MRC, due to the full implementation of Basel III (2028) — all banks



Source: EBA, Basel III Monitoring Exercise — Results based on data as of 31 December 2021, EBA/Rep/2022/21

Exhibit 15: Overview of the impact of Basel III enhancements — change in RWA density



Source: Oliver Wyman analysis based on EBA, Basel III Monitoring Exercise and Supervisory banking data

²⁸ The “Collins floor” is not directly comparable to the Basel III output floor, as the approach differs in detail. Still, the benefit of applying internal models has been limited in the US since the Dodd-Frank Act came into force.

²⁹ “BASEL III MONITORING EXERCISE”- Results based on data as of 31 December 2021, EBA/Rep/2022/21.

Additionally, EU supervisors are taking a different approach to climate-related risks compared to the US, which will likely to translate into more stringent capital requirements. Addressing the climate challenge is one of the main objectives for this decade and has been identified as a priority for banks and bank supervision. Climate-related risks to banks' balance sheets are, however, difficult to estimate. Such incidents are high-impact but low-probability within the time horizon of a typical bank loan of, on average, five years. It is therefore challenging to cover these loans through risk-based capital requirements or stress tests, and the role of climate for the banks' strategy and the vulnerability of overall business models (and that of bank clients) might need to be appreciated through different tools. The international debate on how this could be best achieved is still ongoing. However, it seems like EU regulators will opt for surcharges from a risk perspective and the US will tilt to a model which, while recognizing the relevance of climate risk, gives entities more discretion as to how to incorporate it in internal risk management policies and procedures.^{30,31}

2.1.2. NON-RISK-BASED CAPITAL REQUIREMENTS

Both the EU and US apply a minimum leverage ratio of 3%. However, the comparison is not fully meaningful given the structure and density of risks of balance sheets and the impact of accounting considerations. In 2013, Basel III established a minimum leverage ratio requirement (Pillar 1 requirement) of 3.0%. In contrast to risk-based capital requirements, the leverage ratio is based on (gross) exposure levels, rather than risk-weighted values. It complements risk-based minimum capital requirements, acting as a non-risk-adjusted backstop for banks to comply with simultaneously. Differences in accounting frameworks, such as in the netting of derivative positions and the treatment of securities financing transactions, play a relevant role in this ratio and make comparability across jurisdictions complicated. Both the US and the EU have transposed the 3% requirement. In the US, the "supplementary leverage ratio" applies to banks with total assets of more than \$250 billion, while the EU the requirement has a wider scope, applying all EU banks. Given the lower risk density of EU banks, the leverage ratio is comparatively more restrictive than for US peers.

The EU will apply additional surcharges to the leverage ratio, which, depending on the scope of application, could result in higher (unweighted) capital requirements. In 2021, the revised Capital Requirements Directive and Regulation (CRD V and CRR II) introduced additional own funds requirements for the leverage ratio, allowing competent authorities to impose P2R-LR and P2G-LR limits if the risk of excessive leverage is perceived to not be covered by P1R-LR. In contrast, in the US there are no additional leverage requirement driven by differences in the risk profile, under the rationale that leverage is not risk-sensitive by design. Additionally, in 2023, the EU will introduce a buffer requirement for G-SIBs, which is

30 Federal Deposit Insurance Corporation, April 2022, "Statement of Principles for Climate-Related Financial Risk Management for Large Financial Institutions," Proposed policy statement.

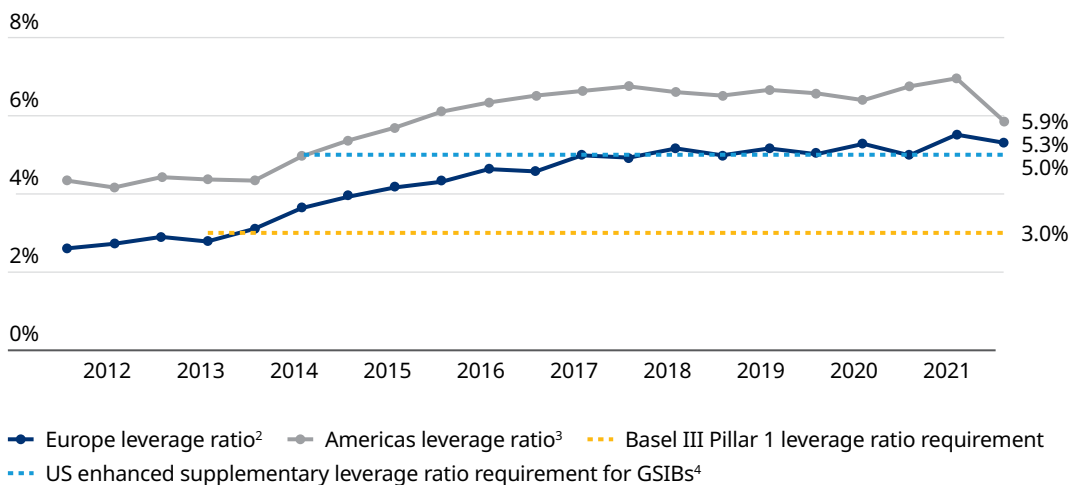
31 Federal Reserve Chairman Jerome Powell in a conference on 12 January 2023 highlighted that the focus of climate risk stress tests would be "about assuring that the large financial institutions understand all of the risks that they're taking, including the risks that may be inherent in their business model regarding climate change over time" and will be a separate exercise to the stress tests used to set capital requirements.

likely to be similar to the enhanced supplementary leverage ratio of 5% applied in the US to G-SIBs. The European Commission is also considering a re-evaluation of the application of a surcharge to O-SIBs as part of the comprehensive 2022 review of the macroprudential toolbox.

EU banks face more pressure to meet the leverage ratio requirements, as the requirements were transposed earlier in the US, and differences in the business model make it more burdensome for EU entities to increase leverage ratio. The US adopted the minimum leverage ratio requirement in 2014, while in the EU the requirement only became binding in 2021. The US requirement complemented the existing national leverage ratio requirement of 4% for all banks, which had been in place since 1981, resulting in a lower incremental capital requirement for US entities. Historically, EU leverage ratio levels have been lower than in the US due to differences in business models and regulatory frameworks. As a result, leverage ratios of US banks have stabilised since 2017 (excluding the impact of the pandemic), while EU leverage ratios continue to increase, indicating pressure on EU banks to expand capital reserves.

Exhibit 16: Leverage ratio evolution in the EU and US

% of total assets

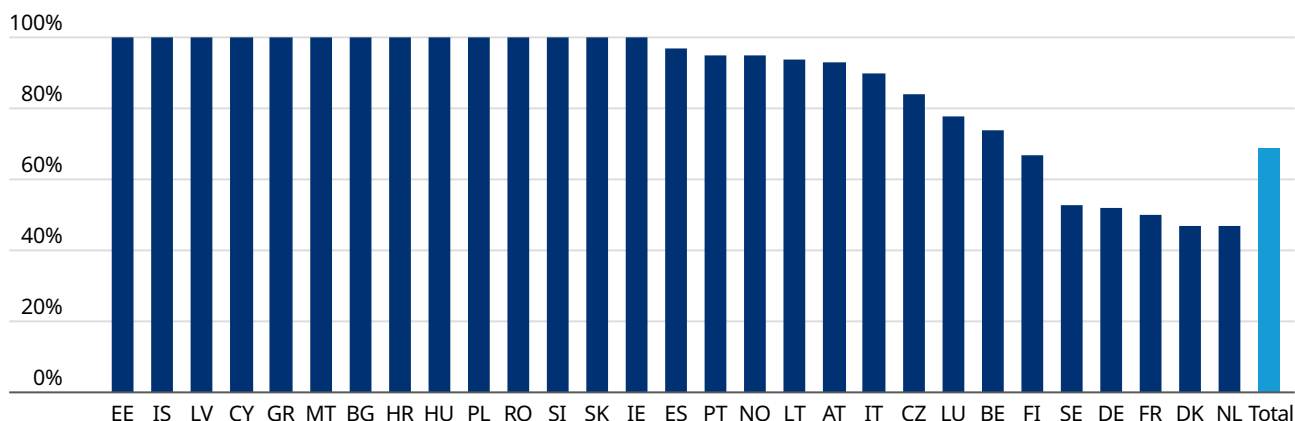


1. Based on consistent sample of Group 1 banks. Exchange rates as of June 30, 2021 reporting date. Data points from H1 2011 to H2 2012 use the original definition of the leverage ratio. Data points from H1 2013 to H1 2017 use the definition of the leverage ratio set out in the 2014 version of the framework. Note that the data points for H1 2013 use an approximation for the initial definition of the Basel III leverage ratio exposure where gross instead of adjusted gross securities financing transaction values are used. Data points from H2 2017 onwards use the final definition of the leverage ratio to the extent data are available. Since the Committee did not collect the relevant data through its Basel III monitoring exercise for the end-June 2020 reporting date, the adjustment from initial to final leverage ratio exposure measure was calculated based on H2 2019 data; 2. Europe sample based on 24 Group 1 banks; 3. Americas sample based on 13 Group 1 banks; 4. Only applicable for US banks with consolidated assets over \$250 billion.

Source: Basel Committee on Banking Supervision (2022), 'Basel III Monitoring Report', Bank for International Settlements, Federal Reserve

Risk-based capital requirements generally remain the binding requirement, but the leverage ratio limits the usability of buffers. The leverage ratio could restrict banks with relatively low risk asset levels more than the risk-based capital requirements. A recent European Systemic Risk Board (ESRB) analysis³² assesses the usability of capital buffers in relation to the leverage ratio requirement. It establishes that, in aggregate for the European Union, 69%³³ of the combined capital buffer requirement is usable, which translates into a drop of approximately 2.2%³⁴ of risk-adjusted capital requirements compared to minimum capital requirements. In other words, the CET1 ratio and total capital ratios cannot fall below 8.4% and 12.9%³⁵ respectively if they are to remain in compliance with the leverage ratio requirements.

Exhibit 17: Leverage ratio interaction — combined buffer requirements (CBR) usability by country



Sample includes 163 banks. Aggregate buffer usability per country is calculated based on the sum of the weighted bank specific buffer usability in each country. The bank-specific weightings are given by the ratio of a bank's nominal CBR to the total amount of CBR in each country. The leverage ratio interaction is based on banks' CET1 component of the leverage ratio requirement, which is defined as the nominal Tier 1 leverage ratio requirement minus the stock of available AT1.

Source: ESRB (2021), Report of the Analytical Task Force on the overlap between capital buffers and minimum requirements, page 35

32 ESRB, 2021, "Report of the Analytical Task Force on the overlap between capital buffers and minimum requirements."

33 ESRB, 2021, "Analytical Task Force on the overlap between capital buffers and minimum requirements," page 35.

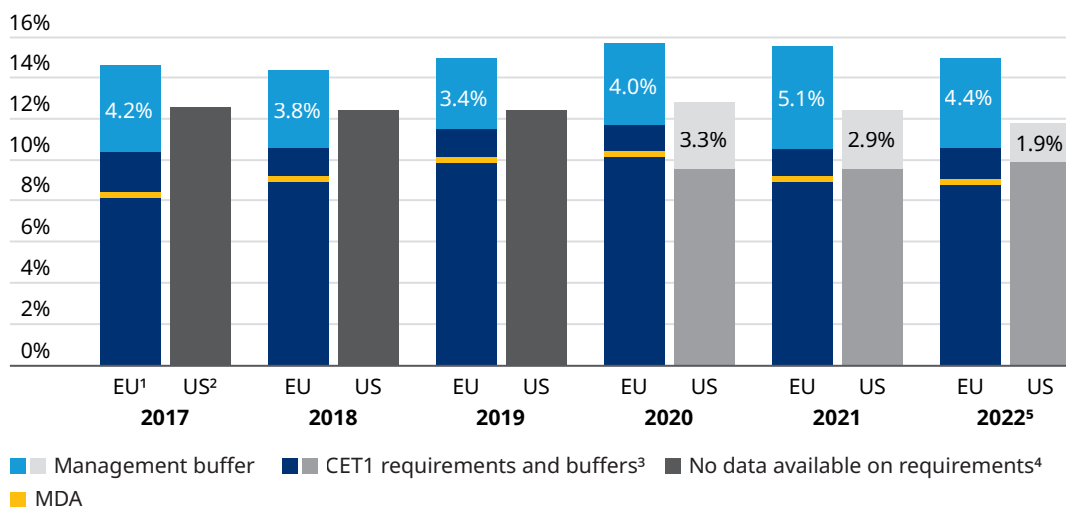
34 Combined capital requirement is defined as the sum of the capital conservation buffer, the systemic buffers and the countercyclical buffer (3.2% = 2.5% + 0.7% + 0% according to 2021 SREP results). 69% of this buffer has been estimated to be usable, thus risk-adjusted capital requirements can drop by 2.2% before breaching the leverage ratio.

35 Based on 2021 SREP CET1 and total capital requirements (10.6% and 15.1%).

2.1.3. MANAGEMENT BUFFER

On top of capital requirements, EU banks hold a management buffer which is on average 1.8 percentage points higher than their US peers. EU banks are more prone to hold capital above requirements and buffers due to supervisory restrictions, uncertainty regarding capital requirements, and limited ability to raise capital. Management buffers held by EU banks over the 2017-2022 period averaged 4.1%, exhibiting a slightly rising trend, with banks currently holding 4.4% compared to 4.2% in 2017. US banks, on the other hand, have been decreasing buffers over the same period (on average), winding up at 1.9% by the end of 2021.

Exhibit 18: Evolution of CET1 management buffers held by banks in the EU and US



1. Based on sample of banks participating in SREP; 2. Based on sample of US large banks participating in Dodd Frank Act Stress Test; 3. EU capital requirements reported as simple average; 4. Capital requirements and buffers only available for the US from 2020 onwards; 5. Latest available (2022 Q1); all other data points are respective to the Q4 of that year.

Source: European Central Bank, Federal Reserve Supervision and Regulation Report — Banking system conditions, Supervisory banking statistics, SREP results, Dodd-Frank Act Stress Test Publications — Large bank capital requirements

Supervisory pressure, both through formal restrictions and informal requirements, is a significant factor in explaining the higher capital buffer in the EU. For example, the ECB adopted more stringent restrictions for dividend pay-outs and share buybacks during the COVID-19 crises, whereas the US Federal Reserve applied a case-by-case approach. Moreover, European banks suppose that the ECB expects a management buffer to avoid the risk of breaching P2G (although dividend restrictions are not an automatic implication of breaching P2G), which effectively leads to an additional implicit buffer requirement in order to preserve dividend stability.

Uncertainty regarding capital requirements and supervisor discretion prompt European banks to hold higher levels of capital. As mentioned in the previous section, the approach to establishing capital requirements is less transparent in the EU than in the US, and the EU supervisor is more prone to shape banks' risk management through higher capital requirements. Additionally, supervisors place less importance on predictability while having strong expectations that banks anticipate effects of future regulations on capital needs. The current buffer held by EU institutions could be partly explained by the expectation of additional requirements driven by the full implementation of Basel III.

Due to depressed market valuations and limited investor appetite, raising additional capital is not easy (nor cheap) for EU banks. The European banking sector is increasingly disfavoured by some investors due to depressed earnings performance and an uncertain outlook. Meanwhile, on the supply side, capital markets in the EU are not as deep as in the US, also due to an incomplete capital markets union, placing EU banks at a structural funding disadvantage versus their US peers. As EU banks find it harder to raise capital at reasonable cost, they instead opt for earnings retention and other buffers, signalling robustness to the market.

2.2. SAFETY NET ARCHITECTURE CONTRIBUTIONS

Since the global financial crisis, jurisdictions have strengthened their safety net architectures to alleviate banking crises, reducing reliance on public funding. Following the introduction of the resolution framework from the Financial Stability Board (FSB) in 2014, many governments revised their financial safety net architecture. A core aspect of the FSB's Key Attributes (KA) of Effective Resolution Regimes for Financial Institutions is that jurisdictions should establish a privately financed fund for deposit insurance and resolution. Or, jurisdictions should make available a funding mechanism that can provide temporary resolution financing under the condition of ex-post repayment by the industry. Moreover, the KA includes a bail-in concept, which prescribes that a certain level of banks' private resources should be available and used for resolution before public funding is used. The following sections compare the implications of EU and US resolution funding and deposit schemes (Section 2.1.1), and loss-absorbing capacity requirements (Section 2.2.2).

2.2.1. PUBLIC RESOLUTION FUNDS AND DEPOSIT GUARANTEE SCHEMES

The target size of bank-funded deposit insurance or resolution structures in the EU stands at approximately 2.4% of covered deposits, compared to 1.35% in the US.

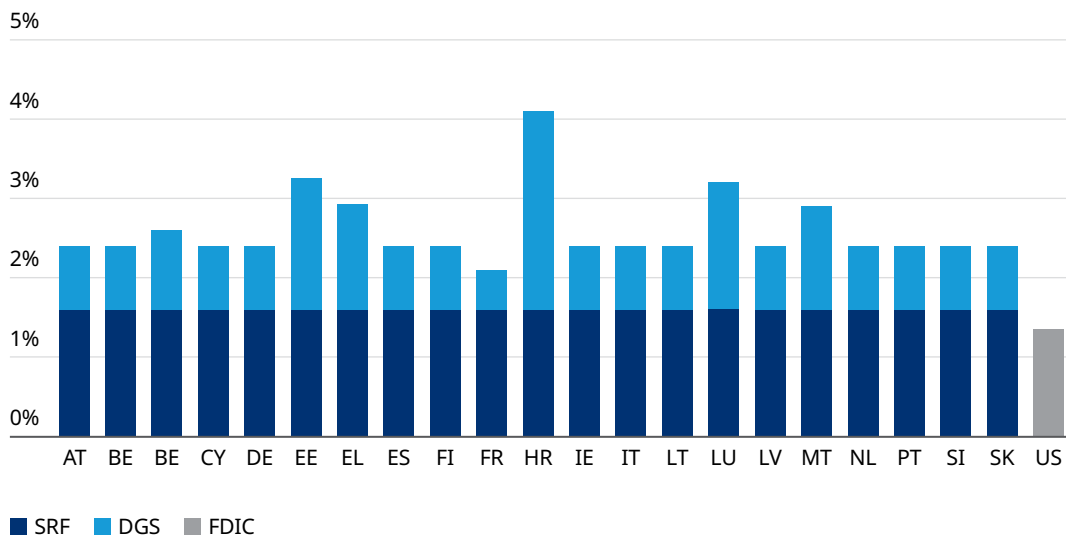
EU banks must contribute to both national and regional deposit insurance or resolution structures:

- **EU-level structures:** All EU banks contribute annually to the Single Resolution Fund (SRF), which is targeted to cover at least 1% of covered deposits. In 2022, the target for contributions was set at 1.6%,³⁶ compared to 1.35% in 2021. This target has consistently been above 1% (the aspirational target) since inception. The European Stability Mechanism (ESM), which is also part of the EU safety net structure as backstop to the SRF, raises funds from financial institutional investors through bonds and bills sales, which are guaranteed by all ESM member countries, so it does not entail direct costs for covered banks, although any drawings would need to be ex-post repaid by the banking sector.
- **National Deposit Guarantee Schemes (DGS):** EU banks must also contribute to national schemes. While EU member states set the target sizes for their respective DGS, the general target level prescribed by the EU Directive is at least 0.8% of covered deposits by 2024, which corresponds to the target for most member states. Upon approval by the European Commission, lower target levels are also possible in special cases, and can go down to 0.5%, as is the case for France. Some countries have already fulfilled their funding obligations completely, partly due to significant existing funding levels before the EU implemented its DGS rule in 2014. However, the majority of member countries are still building their national deposit insurance funds.

³⁶ Annual SRF levies (ex-ante contributions), 2022.

In comparison, the US safety net framework requires an ex-ante deposit contribution to a single fund, the Financial Deposit Insurance Corporation (FDIC). The size of its Depositors Insurance Fund (DIF) is established by the regulatory minimum target of 1.35%,³⁷ which is raised through annual contributions by insured banks. The 1.35% minimum acts as the effective target to calculate contributions, even if the aspirational target is set at 2% of insured deposits. Additionally, the Title II of Dodd-Frank also established the Orderly Liquidation Authority Fund, which is a credit line that can be accessed when a bank does not hold sufficient bail-in resources. In contrast to the pre-funded DIF, the received funding is only to be repaid afterwards, so that there are no related ex-ante costs prior to bank failure.

Exhibit 19: Target size of bank-funded deposit insurance or resolution structures
% of covered deposits



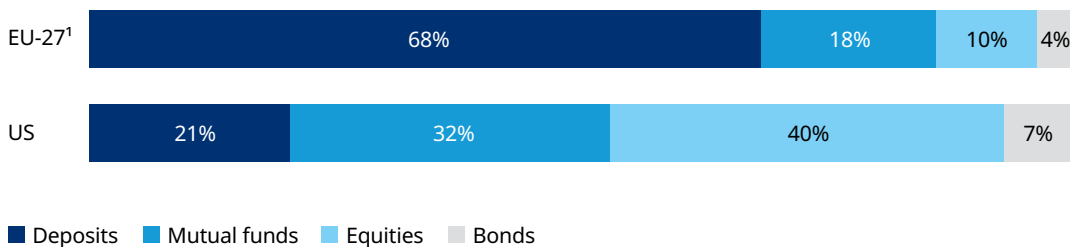
Based on target to calculate contributions.

Source: European Banking Authority (2020); FDIC; SRM ex-ante contribution calculation; Annual reports SRF and FDIC

While deposit insurance coverage is wider in the US than in the EU, structural differences in savings result in a comparable volume of covered deposits, amounting in the EU to €7 trillion and in the US to €9 trillion (\$10 trillion) overall coverage. EU national deposit guarantee schemes ensure deposit protection of up to €100,000 per person, per bank. The FDIC, meanwhile, covers deposits of up to \$250,000. However, in the EU, deposit savings account for 68% of total personal financial assets, whereas personal financial assets in the US are mainly invested in equities and mutual funds. Indeed, only 21% of personal financial assets in the US are deposits, explaining the relatively small difference in the total volume of covered deposits.

³⁷ FDIC annual report, 2021.

Exhibit 20: Personal financial assets breakdown



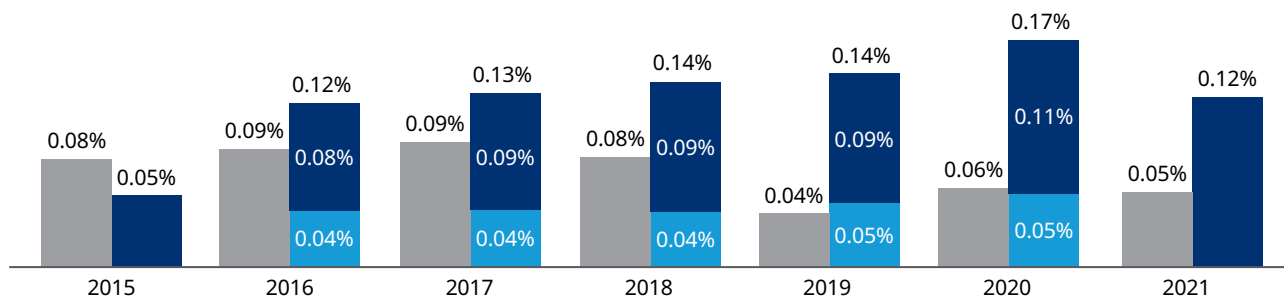
1. EU-27 data excluding Cyprus and Malta.

Source: Retail Investments Analytic (2020)

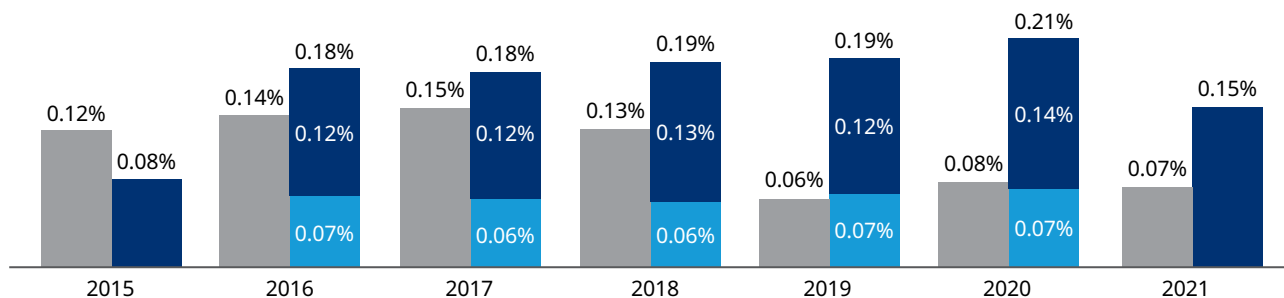
Given that SRF and domestic deposit schemes are relatively recent mechanisms, EU banks face higher costs associated with setting up the funds compared to simply maintaining the safety net — on average, contributions to schemes as a percentage of RWAs correspond to 0.14% in the EU versus 0.07% in the US, and as a percentage of covered deposits to 0.19% in the EU versus 0.11% in the US. In the US, the Financial Deposit Insurance Corporation (FDIC) was established in 1933. While its scope and objective have expanded over the years, the contributions required to maintain the fund are less significant than those needed to build the SRF and national DGS. The EU build-up period is ambitious compared with that in the US. The EU aims to build the SRF over a period of eight years (targeting 0.125 percentage points per annum assuming a linear build-up and contributions calculated for a target of 1% coverage), which contrasts with the restoration plan recently launched by the FDIC to increase the fund reserve ratio from 1.27% to 1.35% in 8 years (targeting 0.01 percentage point per year). Moreover, the relative maturity of the FDIC compared to SRF is also made evident in its reporting standards, with the FDIC placing more emphasis on financial performance, including investment returns which alleviate contribution demands on banks.

Exhibit 21: Comparison of burden of contributions in EU and the US

Contributions over RWA



Contributions over covered deposits



■ SRF ■ DGS ■ FDIC

Data on DGS contributions not available for 2015 and 2021. DGS contributions calculated as the difference in fund assets.

Source: European Banking Authority; SRM ex-ante contribution calculation; FDIC; Annual reports SRF and FDIC, ECB Supervisory Banking statistics, Federal Reserve Bank of St Louis

Contributions to the SRF have been criticised for imposing considerable cost to EU banks. The methodology to calculate SRF contributions has been criticised and contested in court several times. In a recent paper,³⁸ the Centre for European Policy Studies claims that the current approach is excessively complex, lacking in transparency, and not fully coherent with other relevant elements of EU legislation. Consequently, institutions are cannot easily calculate their own contributions, making it more complicated to predict future contributions. Moreover, a small number of banking groups make up most total contributions. The top 20 largest banking groups together account for almost two thirds (65%) of contributions, with the six largest French banking groups being responsible for about a third (32%) of all contributions, which is comparable to all 14 other large banking groups combined. It is worth noting that the banks facing heavier contributions are also the most active EU banks in the wholesale area.

³⁸ Centre for European Policy Studies, 2021, "How to refine the contributions to the single resolution fund? Proposal for an alternative methodology."

There are proposals in development to make Europe's deposit guarantee scheme more uniform across banking union states. However, progress has been slow as member states highlight moral hazard implications, caused by heterogeneous risk levels across the EU. Since 2015, proposals have been in development to set up a European Deposit Insurance Scheme (EDIS), which would complete the European Banking Union package. The EDIS was to replace national DGSSs, providing a stronger and harmonised deposit insurance coverage across EU member states and reducing local vulnerabilities and interdependencies between sovereigns and domestic banks. However, member states have, to date, not been able to reach a final decision on the EDIS framework and remit.

2.2.2. LOSS-ABSORBING CAPACITY REQUIREMENT

Both US and EU G-SIBs must comply with Total Loss Absorbing Capacity (TLAC) requirements of 18%. In 2015, the FSB established the TLAC standard with the objective of ensuring failing G-SIBs have sufficient loss-absorbing and recapitalisation capacity available for authorities to implement an orderly resolution that minimises impacts on financial stability, maintains the continuity of critical functions, and avoids exposing public funds to loss. Both the US and EU transposed the standard to their respective regulatory framework with minimal adjustments. The TLAC standard defines a minimum requirement of at least 18% as from 2022 onwards. In line with the TLAC term sheet, CET1 regulatory capital used to meet Minimum TLAC must not be used to also meet regulatory capital buffers and eligible liabilities should be subordinated to TLAC-excluded liabilities, such as deposits and structured products. The approaches of both jurisdictions to this requirement are comparable.

In addition to the TLAC requirement, the EU has introduced a minimum requirement for own funds and eligible liabilities (MREL) to further enhance loss-absorbing capacity, which is wider in scope and represents an additional burden for EU banks. While in the US only G-SIBs must comply with TLAC targets, in the EU Institutions under the remit of the SRB must meet a target MREL³⁹ (115 institutions including those directly supervised by the EBC and other cross-border groups).⁴⁰ MREL is calculated as the sum of loss-absorption amount (LAA) and recapitalisation amount (RCA). Additionally, a Market Confidence Charge (MCC) can be applied. The LAA reflects the losses that the bank should be capable of absorbing. The RCA is the amount necessary to recapitalise the institution for it to continue to comply with its conditions for authorisation and carry on the activities for which it is authorised under the relevant legislation. Entities that would be wound up in normal insolvency procedures have an LAA, but no RCA. The MREL requirement is enhanced by the subordination requirement, which seeks to improve resolvability and reduce the risk of breaching the no-creditor-worse-off (NCWO) principle. The subordination requirement applies to G-SIBs and material subsidiaries of non-EU G-SIBs, banks with total assets exceeding €100 billion (Top Tier Banks) and other banks chosen by the respective national resolution authority (Other Pillar 1 Banks), along to a second group of banks (non-Pillar 1 banks) are subject to a subordination requirement upon the decision of the resolution authority.

³⁹ SRB, 2022, "Minimum Requirement for own funds and Eligible Liabilities."

⁴⁰ SRB, 2022, "Banks under the SRB's remit."

MREL requirements are higher than US TLAC requirements. The MREL subordination requirement is broadly akin to TLAC — both US TLAC and MREL subordination requirements apply a senior exemption of up to 3.5% RWA.⁴¹ On the other hand, the scope of the instruments that can be used to meet total MREL requirements is broader. Across both jurisdictions’ capital buffers must be met in addition to MREL targets. Currently, applying 2022 targets and excluding capital buffers, MREL subordination requirements are approximately 0.8 percentage points lower than US TLAC requirements and total MREL requirements are 3.9 percentage points higher, assuming that the senior exemption is being accounted for in both jurisdictions.

Exhibit 22: Overview of EU MREL⁴² and US TLAC⁴³ requirements

	EU MREL 2024 Targets		EU MREL 2022 Targets		US TLAC Targets (2022)	
	Excl. CBR	Incl. CBR	Excl. CBR	Incl. CBR	Excl. CBR	Incl. CBR
Total Subordination	23.2%	26.4%	21.9%	25.1%	18.0%	22.0%
	17.9%	21.1%	17.2%	20.4%		

The framework to establish MREL requirements is highly complex and supervisor-led, in contrast with the US approach. The regulatory framework for MREL is established across numerous legislative texts: EU Bank Recovery and Resolution Directive 2014/59/ EU (BRRD); Regulation 806/2014/EU establishing a Single Resolution Mechanism (SRMR); and the Capital Requirements Regulation (CRR) and Capital Requirements Directive (CRD) (the Banking Package). In the US, the framework for TLAC is largely reflected in one text: the Dodd Frank Act. The SRB plays a relevant role in determining MREL and subordination requirements as it can apply bank-specific adjustments related to balance sheet depletion, binding restructuring plans, and recovery options. There are numerous occasions where the SRB has discretion to adjust MREL and subordination requirements. These include, but are not limited to:

- Reflecting that, following resolution, the entity sustains sufficient market confidence (market confidence charge).
- Reflecting that, following resolution, the risk profile of the entity may change and consequently the Pillar 2 requirements might differ (projected post-resolution Pillar 2 requirement).
- Preserving neutrality of MREL with regard to the resolution strategy chosen (SPE or MPE).
- Reflecting the transfer of assets when the preferred resolution strategy relies primarily on a transfer tool.

41 Under the FSB TLAC term sheet and SRB policy, the relevant authorities may permit senior liabilities to account toward the subordinated requirement up to an amount equivalent to 3.5% RWA.

42 “SRB MREL Dashboard,” Q2 2022, page 2, page 3., footnote 6, footnote 10.

43 Based on US GSIB 10q filings 2022Q2, weighted according to RWAs.

The determination of adjustments is subject to stringent conditions to ensure equal treatment and a level playing field for all institutions in the Banking Union. This results in a highly complex framework that, in practice, limits the predictability of requirements. The approach contrasts significantly with the US's, where TLAC minimum requirements are set at 18% across all eligible entities. US banks complement minimum requirements estimating Resolution Capital Execution Need (RCEN), which considers peak cumulative losses in the resolution period, and Resolution Capital Adequacy and Positioning (RCAP), which considers theoretical distress loss and runway losses. Both factors are estimated by entities as part of resolution planning, with the supervisor verifying the soundness of the approach.

In addition to risk-weighted requirements, EU and US firms must comply with leverage ratio requirements associated with loss-absorbing capacity. In the case of MREL, the requirement is calibrated at a level commensurate to recapitalizing a failing bank to restore compliance with the leverage ratio requirement. LAA and RCA are computed not only as a percentage of the total risk exposure amount (TREA), but also as a percentage of the Leverage Ratio Exposure Measure (LRE), based on a different calibration. MREL is therefore expressed as two ratios that must be met in parallel: (i) as a percentage of TREA (the MREL-TREA); and (ii) as a percentage of the LRE (the MREL-LRE). Each may have to be met in part or in full with subordinated resources in the respective metric, as determined by the SRB. The usability of the capital buffer requirement is unrestricted by the leverage-based MREL. Pillar 1 subordinated MREL requirements in relation to the Leverage Ratio Exposure Measure are calibrated as 6.75% for G-SIBs and 5% for Top Tier Banks and Other Pillar 1 Banks and adjusted upwards depending on the same considerations as risk-based requirements. This compares to a minimum TLAC Leverage Ratio Exposure of 6.75%.

Building loss-absorbing capacity is more costly for EU banks. EU banks face less favourable conditions than their US peers. According to the Bank for International Settlements (BIS), average senior bail-in bond risk premiums (compared to senior non-bail-in bonds) were estimated to be twice as high for EU banks (0.3 percentage points) than for US banks (0.14 percentage points),⁴⁴ potentially reflecting the higher risk levels perceived for EU bail-in bonds.⁴⁵ The study identifies the bail-in risk premium (BIRP) by matching bail-in bonds with comparable non-bail-in bonds issued within the same banking group. This matched-bond BIRP is then analysed across time, and for a cross-section of banks, including the largest US and EU banks. One of the observations of the paper suggests that the BIRP is large enough to affect bank behaviour. Hence, the higher risk premium to which EU banks are subject could explain why banks might opt to rebalance their funding mix in favour of equity, thus

⁴⁴ Estimations are based on an observation period covering March 2016 to January 2019.

⁴⁵ BIS, 2019, "Believing in bail-in? Market discipline and the pricing of bail-in bonds," Working Paper No. 831.

lowering their leverage. Given the US introduced the TLAC requirement earlier, US banks have been forerunners in growing TLAC-eligible reserves and now hold excess TLAC reserves. On the other hand, EU banks are expected to continue to increase their bail-in bond issuance in the coming years to close the MREL shortfall, estimated as of 2021 Q4 at €32.6 billion, according to the Single Resolution Board.

Exhibit 23: Comparison of bail-in risk premium between EU and US

Bail-in risk premium

Economy	Mean	Std Dev	N
EU (excluding UK)	0.300	0.252	2333
United States	0.139	0.295	1645

1. The BIRP is equal to the difference between the option-adjusted spread of matched bail-in and non-bail-in bond pairs, averaged across each bail-in bond.

Source: Bank for International Settlements (2019), "Working Paper No 831: Believing in bail-in? Market discipline and the pricing of bail-in bonds"

2.3. REGULATORY-INDUCED OPERATING COSTS

EU banks face higher operating costs resulting from regulation due to more burdensome compliance and supervisory requirements than in the US. Despite recent harmonisation efforts, differences in banking regulation and supervision across member states remain. There are significant differences in the level of maturity, so EU frameworks are relatively prescriptive to account for these differences, resulting in a higher burden for banks. In comparison, the US framework is more established, and has been increasingly focused in recent years on promoting efficiency to reduce the compliance burden on banks. The following sections offer a deep dive into the costs incurred by EU and US banks in relation to compliance (Section 2.3.1) and supervisory processes (Section 2.3.2).

2.3.1. COMPLIANCE COSTS

The main compliance cost driver in Europe is the high level of regulatory reforms in recent years, increasing change-the-bank (CTB) costs. In Europe, regulatory scrutiny on anti-money laundering (AML) has intensified substantially since the 1990s, spurred by ongoing regulatory reforms and highly publicised cases. For example, the EU introduced the Fifth and Sixth Anti-Money Laundering Directives (AMLDs) in 2018 and 2021, which both further expanded the scope and requirements of anti-financial crime management regulations. As a result, many banks in the EU are now in the growth or peak phase of the lifecycle of compliance functions, demanding high CTB resources while focusing in parallel on run-the-bank (RTB) activities. By comparison, the US anti-financial crime regulatory framework is more mature. US banks are entering the streamline phase, characterised by relatively lower relative costs but higher absolute costs than before the advent of regulatory reform. In the US, compliance regulation came on the scene with the Bank Secrecy Act in 1970. The focus in recent years has shifted towards advancing anti-financial crime management. For example, the 2020 Anti-Money Laundering Act is designed to modernise the Bank Secrecy Act, propagating technological innovation for sound compliance management. It should also be noted that US compliance requirements take effect beyond the US jurisdiction, as banks with an international footprint that are subject to US requirements implement those requirements for those business activities that have no US connection.

INFO BOX

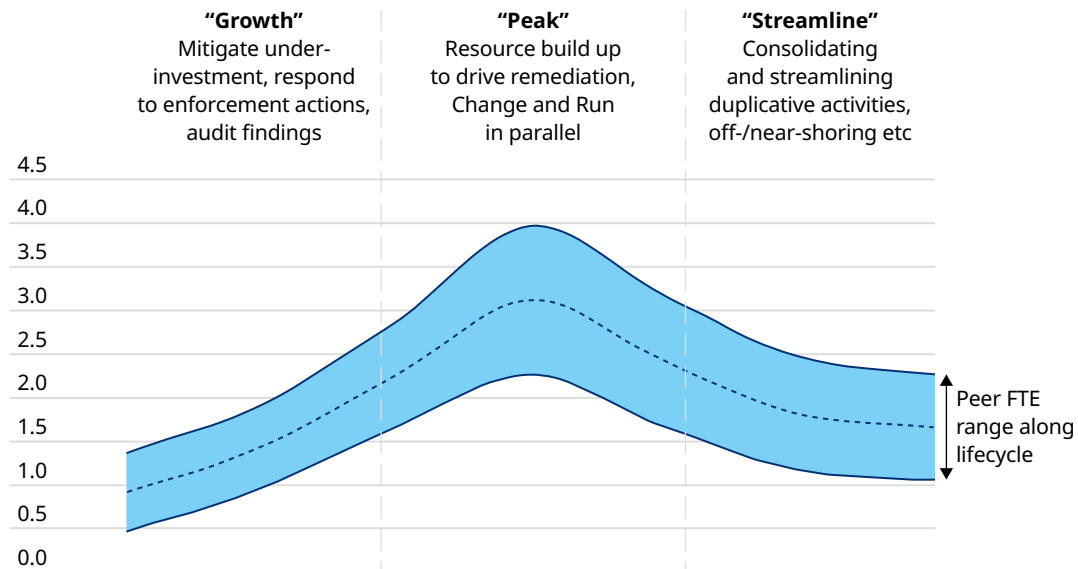
Breakdown of compliance costs by risk type and function

Risk type	Function
Anti-Money Laundering (AML)	Measures to detect, report and prevent money laundering schemes, where criminals convert illegally obtained money into legitimate income.
Sanctions	Controls for addressing sanctions risk, by analysing customers' and other business partners' profiles and transactional records against global lists of sanctioned parties.
Fraud, Bribery, and Corruption	Actions to counter fraud, bribery and corruption, and managing related risks, including rules and guidance for bank personnel and ensuring implementation thereof.
Know-Your-Customer (KYC)	Efforts by banks to verify the identity of customers to help combat financial crime and money laundering, for example, through customer due diligence checks, administering customer files, and screening and monitoring transactions for suspicious activities.
Policies and Regulatory	Costs related to screening the regulatory radar, and anticipating and engaging with (potential) changes in regulations and policies.
Risk assessment and reporting	Costs for risk assessment across the three lines of defence and for reporting and disclosure.
Remediation-related expenses	Expenses relating to banks, addressing any of the penalties or remediation requirements by supervisory bodies for banks that have failed to comply with regulations. This includes payment of fines, settlements, and efforts for corrective measures.

Source: Oliver Wyman

Exhibit 24: Benchmark — Observed FTE lifecycle of compliance functions

Fin crime and compliance (internal FTE)/Total group FTE (%)



The Oliver Wyman benchmarks are normalised for org differences and design decisions (size, org set-up, technology spend and locations of operations in first line). External change-the-bank (CTB) staff/contractors are not included.

Anti-financial crime compliance costs are estimated to be twice times higher in the EU than in the US.⁴⁶ The 2022 report "True Cost of Financial Crime Compliance" by LexisNexis Risk Solutions estimates annual Anti-Financial Crime (AFC) compliance costs in Europe at over \$50 million, compared to approximately \$20 million in North America for mid-sized to large entities (\$10 billion or more in assets). This expenditure has shifted more towards labour costs. Compliance costs in the EU predominantly relate to Anti-Money-Laundering (AML) and Know-Your-Customer (KYC) activities (part of overall anti-financial crime compliance), which generate significant personnel costs, as well as infrastructure and systems costs (maintenance and investments). The need to keep abreast of changing AML regulations obliges banks to update internal processes and infrastructure regularly. A recent Oliver Wyman survey of compliance-related costs at eight major EU banks highlighted a 78% increase in these costs in the second line of defence alone.

The relevant differences in regulation across EU member states result in higher complexity, putting banks that operate across intra-EU borders at a partial disadvantage. As the EU relied on the AML directive, member states had wider flexibility in translating the directives into national regulations. A 2019 report by the European Commission⁴⁷ concluded that there are significant differences in financial crime regulations between member states. Additionally, EU countries vary in the maturity level of their regulations, as some countries started regulatory reform earlier than others. For example, the Netherlands have a relatively more mature framework, resulting in lower CTB costs compared to German peers, where the regulatory agenda took longer to adapt. Furthermore, different levels of exposure to financial crime risk among countries also play a role. For instance, Nordic countries, which have traditionally been associated with low financial risk, have lately become increasingly targeted by financial crime. This is reflected in higher risk scores: Finland's Basel AML Index⁴⁸ increased from 2.57 in 2018 to 3.06 in 2021. As a result, national authorities have tightened their scrutiny. For example, AML supervision became one of the strategic focus areas of the Finnish Financial Supervisory Authority in 2020, after having established a dedicated division for AML supervision in 2019. Major Nordic banks have thus started to make significant investments in their AML capabilities, such as real-time transaction monitoring augmented by artificial intelligence.

Compliance costs are expected to increase further due to increasing regulatory involvement at EU level over the coming years. Under the Sixth AMLD, an EU AML authority will become operational in 2024, and will be responsible for setting common European AML standards and ensuring more homogeneous supervision, working in tandem with national authorities. While the long-term aim is to make the European AFC regulatory framework more uniform, this development is likely to create an additional layer of complexity, and possibly additional costs in the medium term, as the transition unfolds. Moreover, to cater for the fragmented market, EU regulations are likely to push for increasing collaboration between banks and national authorities in addressing financial crime.

46 LexisNexis Risk Solutions, 2020, "True Cost of Financial Crime Compliance Global Report".

47 European Commission, 2019, "Report from the Commission to the European Parliament and the Council on the assessment of the risk of money laundering and terrorist financing affecting the internal market and relating to cross-border activities."

48 The Basel AML index measures the level of money laundering risk per jurisdiction on a scale of 0 (low risk) to 10 (high risk).

2.3.2. SUPERVISION COSTS

The EU supervisory action is characterized as being relatively formalistic and more reliant on qualitative assessment compared to the US. The EU has devoted significant effort to defining the methodology and the process that governs supervisory action, given the need for consistency across national and regional agencies. Consequently, supervisory processes are highly detailed and prescriptive compared to the US, which are more bank-led. Additionally, given the different degree of maturity levels of the banking sector across EU member states, the EU places more relevance on ensuring that institutions have adequate arrangements, strategies, processes, and mechanisms, as well as capital and liquidity in place for sound management and adequate risk coverage, giving, in practice, more relevance to “qualitative” elements, which in the US is less relevant.

- The main supervisory process in the EU is the SREP, which covers a comprehensive assessment of an entity’s business model, internal governance, risks to capital, and risks to liquidity, which entails frequent on-site inspections and an annual stress-testing exercise. These are complemented by a wide range of supervisory exercises occurring simultaneously, such as Deep Dives, Joint Supervisory Team (JST) assessments, horizontal reviews, thematic reviews, model reviews, data collections, and ad hoc reporting requirements (for example, COVID-19 reporting, 2022 Climate Risk Stress Test).
- The US Large Institution Supervision Coordinating Committee (LISCC) programme engages in comprehensive horizontal examinations, firm-specific examinations, and continuous monitoring throughout the year. The Dodd-Frank Act stress tests (DFAST) and the CCAR are part of this programme.

The supervisory processes in the EU are more process-heavy, resulting in higher operational costs for banks, compared to the more streamlined approach of the Federal Reserve. Banks incur internal operational costs in complying with supervisory processes, for example through assigning personnel or external contractors to supporting ad-hoc supervisory exercises (such as preparing disclosure reports, or replying to information requests), or through developing and maintaining IT infrastructure used for supervision and monitoring. Besides the resource requirements, Single Supervisory Mechanism (SSM) banks claim to face challenges in retaining talent responsible for supervisory processes.

INFO BOX

Resources involved in the supervisory process at a typical European G-SIB

Type of supervisory activity	Average Number of Activities/year	Average FTE Involvement/activity
On-site Inspections	4–6	30
Internal Model Investigations	4–6	35
Deep Dives/Horizontal Reviews	3–6	15
Stress test	1–2	20

- Total FTE involvement can reach up to 520 FTE involvement in supervisory activities. This does not include attention to ad-hoc requests and daily supervisory and regulatory reporting.
- Inspections/IMIs can tie up resources for 12-18 months as entities typically start the process two months before by preparing the data requests, and then focus on the ex-post resolution of recommendations.

Source: Oliver Wyman analysis based on bank survey

Additionally, the EU SREP process places larger burden on small banks compared to the US. The SREP process covered 112 entities in 2020, consisting of banks with assets of at least €30 billion, and a country's top three largest banks. In comparison, in the US, financial institutions with assets of \$100 billion or more are supervised by the Large Institution Supervision Coordinating Committee.

Average supervisory fees charged to US banks are twice the amount faced by their EU counterparts. Under the Dodd-Frank Act, the Federal Reserve charges fees from banks to cover expenses accredited to supervision and regulation. In 2019, the total assessment basis amounted to \$608.1 million, with average costs per bank, based on a pool of 54 contributing banks, estimated at \$11.3 million. Similarly, the ECB also charges an annual supervisory fee to banks, which amounted to €576 million in total in 2019, of which €15.3 million relate to the 2018 deficit, and €55 million to preparatory assessments concerning Brexit. Based on the 109 large banks participating in the 2019 SREP, this equates to average fees of €5.3 million per bank. While this is lower than the average amount in the US, smaller banks (with assets of between €30 and 100 billion) are charged comparatively higher fees in the EU. Given the disparities in profitability, this means that the impact is more significant for EU banks. Additionally, EU banks also must meet the fees associated with their national competent authorities (NCAs). Both in the US and in the EU, individual fees are calculated according to a set of fee factors, related to banks' importance and risk levels. Larger banks, and/or banks with more elevated risk profiles, pay higher fees.

EU banks also face demanding reporting obligations, characterised by an extensive scope and granular data requirements, and by the involvement of many supervisory bodies. The European Banking Authority's "Study of the Cost of Compliance with Supervisory Reporting Requirements" from 2021 estimates annual costs related to reporting at €19.7 billion for the total EU banking sector, or €4.2 million on average per institution.⁴⁹ Reporting costs result from considerable reporting demands and a high level of complexity. EU banks are required to report to a range of institutions, including the ECB, SRB, national supervisory authorities, and tax and commercial authorities. Moreover, the reporting frameworks are generally extensive. FINREP and COREP, the two main regulatory reporting frameworks in Europe, have significantly increased their reporting requirements since their introduction in 2014 under the CRD IV. FINREP reporting focuses on banks' financials, and its form contains over 69 templates and 3,500 data fields, requiring detailed income statement and balance sheet data. COREP reporting focuses on banks' capital in relation to its risk levels. It has 18 templates, with the key topics being group solvency/large exposures, market risk, capital adequacy, credit risk, and operational risk. Further, capital and liquidity assessment processes (ICAAP and ILAAP processes), recovery and resolution planning, and other topics require extensive and regular reporting and engagement with the relevant authorities. Beyond EU-level requirements, banks must comply with national reporting requirements, resulting in many layered reporting processes and ad-hoc requests, and are confronted with numerous ad-hoc reporting requests from the ECB and NCAs. Moreover, the recently introduced ESG reporting requirements by the EBA are expected to add further costs for EU banks, especially larger banks, whereas the US has not yet established such requirements.

Both the EU and US are looking to streamline bank reporting, with the latter making more tangible commitments to do so in recent years. The US supervisor has narrowed reporting requirements over time, especially for smaller banks. Between 2015 and 2018, the number of items in the 041 Call Report for banks with assets of less than \$100 billion were reduced by 13%. Moreover, in 2017, a separate and more concise 051 Call Report was introduced for small banks with assets below \$1 billion. This reduced the number of reporting items for these banks by 40% compared to the previous 041 form. In 2019, the asset threshold for the simplified 051 Call Report form increased from \$1 billion to \$5 billion, so that more banks benefit from the reduced reporting requirements in the US.

⁴⁹ Based on ongoing costs and implementation costs.

3. IMPLICATIONS FOR FUNDING THE EU ECONOMY

Banks play an important role in providing funding to the EU economy, with 70% of corporate borrowing being intermediated by banks. This contrasts with the situation in the US, where 77% of corporate funding is provided through capital markets.⁵⁰ Despite efforts to stimulate and deepen the EU's capital markets including through the Capital Markets Union (CMU) action plan, banks will remain important funding providers in the medium or even the long term, considering the funding and investor landscape and the fact that European SMEs are much smaller than their US counterparts. Constraints to bank lending thus have an impact on credit provision to the economy, but also their ability to invest into efficiency, digitisation, or consolidation. At the same time, banks need to retain adequate safety buffers and should not take on inadequate risks. While times of high uncertainty call for a cautious approach, policy makers, banks, and ultimately the markets need to balance these conflicting objectives and not unduly compromise important policy objectives, such as financial stability.

The persistently weak profitability of European banks poses a risk to financial stability. Bank profitability is the first line of defense in the event of a shock, as unprofitable banks are unable to build up reserves against unexpected losses and often find it difficult and expensive to raise capital in times of need. Current low multiples reflect investors' scepticism on the future earnings-generating capacity of European banks, regardless of whether the drivers are exogenous or endogenous. Banks are therefore constrained from investing in lending expansion, upgrading their business models, or pursuing inorganic growth opportunities. Moreover, persistently low profitability could incentivise banks to take on undue risks in pursuit of superior returns, which in the past has led to increased financial fragility and required counteraction from regulators.

There is no single factor that can be identified as the root cause of the current profitability situation in European banks, nor is there a quick fix. An important underlying driver of the current situation can be traced back to the policies pursued during the GFC and the EU sovereign debt crisis. In hindsight, these have been far from optimal. At that time, the policy choices were to a significant extent dictated by the structural and institutional constraints of the Eurozone and did not adequately address the excessive leverage in the economy and its impact on bank balance sheets. Rather, a gradual strategy was pursued that maintained a high level of economic uncertainty over several years, resulting in a long-term impediment to banking sector recovery in the EU. Similarly, policy actions related to the COVID-19 pandemic have been a two-edged sword: Banks benefited from unprecedented

⁵⁰ SIFMA, 2022, "Our Markets".

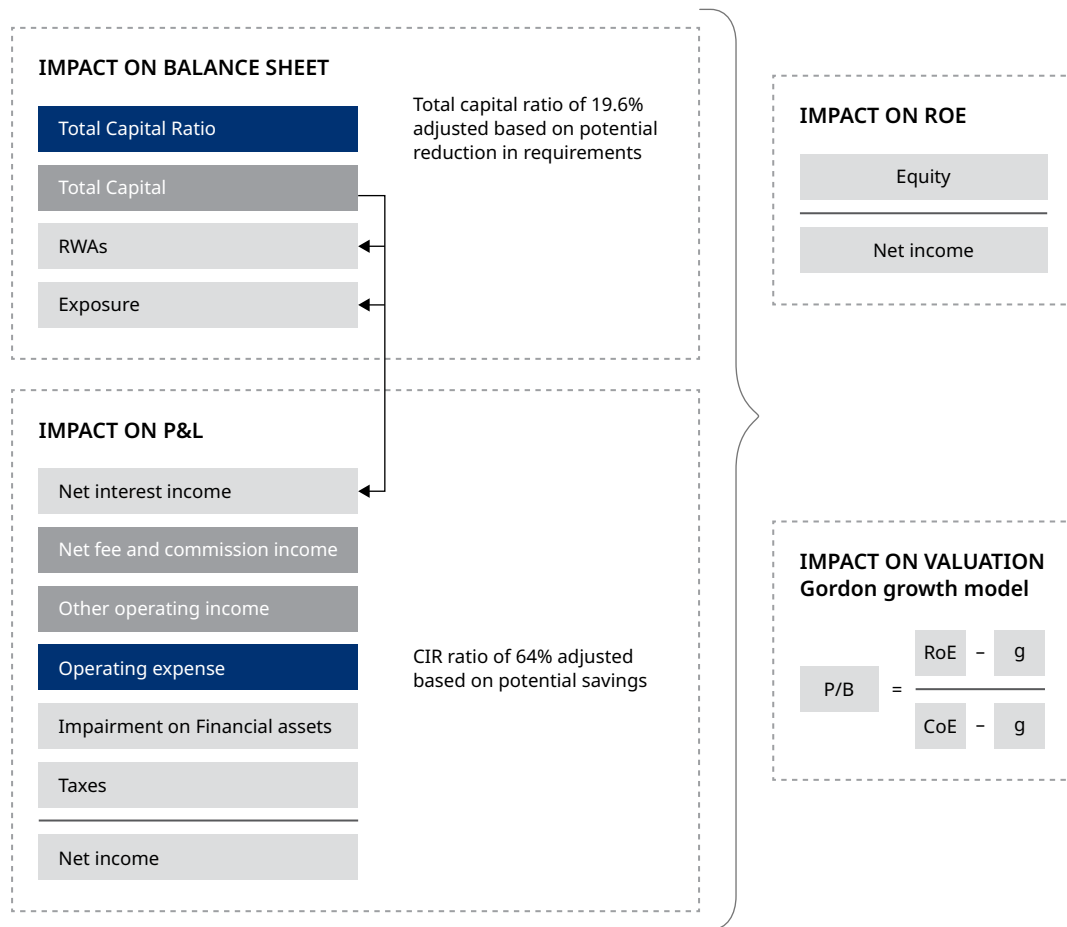
backstops awarded to their borrowers in all segments, limiting the deterioration of credit quality and the corresponding capital impact. On the other hand, forbearance measures, such as the suspension on recognition rules related to non-performing loans, temporarily had a negative impact on transparency. Combined with dividend stops, this sent mixed signals to markets and complicated capital management efforts. The expected recession will also weigh on the banking sector.

Other factors also play an important role. The EU banking system is fragmented because of regulatory, legal, tax, and operational impediments to cross-border consolidation and to expansion into attractive markets within the EU.

Nevertheless, we can assess the impact of EU banking regulation on banks' lending capacity and ultimately their market valuation in a simplified model. To this end, we analyse the connection between the EU's funding targets defined in recent EU initiatives, such as the Next Generation EU programme, with the corresponding capital needs that banks would face if they deployed their lending capacity to fill the funding gap. We also assess what such a lending expansion would mean for bank profitability and market valuations.

Compared to their US peers, the incremental regulatory impact on European banks amounts to a gain of 0.8-1.0 percentage points in RoE and translates into a gain of 0.11-0.12 uplift on their price-to-book ratio. In a stylised scenario, we simulate the impact of bringing the capital holdings of EU banks to the level of their US peers. A balance sheet and P&L representation of a typical EU universal bank has been estimated to assess the impact on lending volumes and profitability. The main cause of the increase in profitability would be a reduction in contributions to resolution and deposit insurance schemes, as target coverage and annual contributions are currently almost double those of US banks. Revision of capital requirements and the review of regulatory influence on management buffers as well as MREL requirements would also have a significant cumulative impact on profitability. The incremental compliance and supervisory incremental costs have not been estimated due to the complexity of finding adequate data. Regardless, while the interaction with the supervisor absorbs significant management attention and operational resources, the resulting investment is not significant in relation to the overall cost base of a typical EU bank.

Exhibit 25: Visual representation of the model to assess the impact of regulatory-induced costs

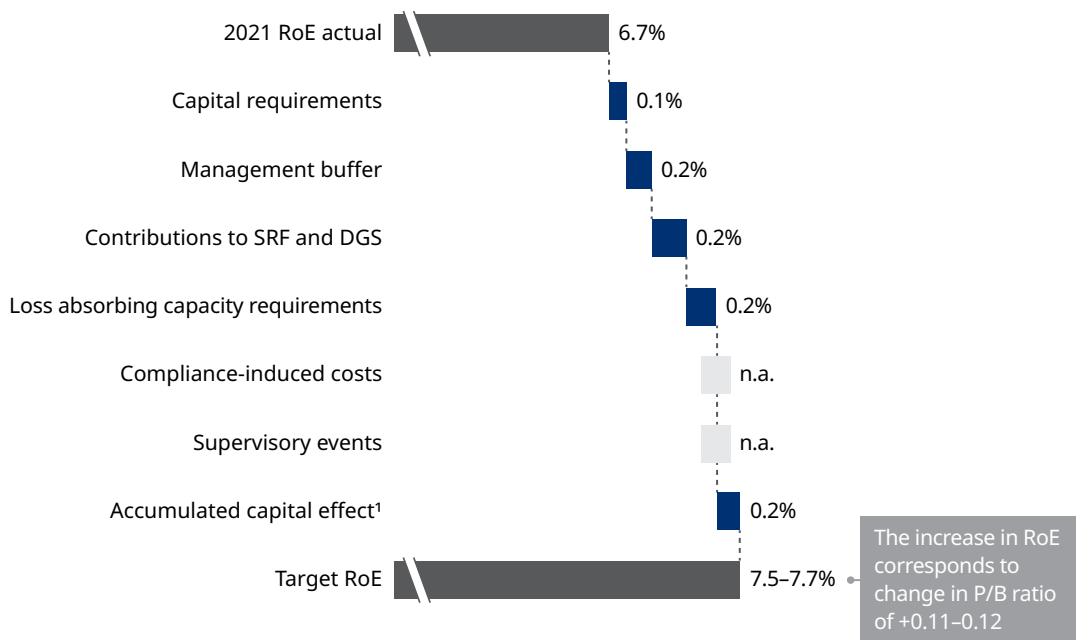


All figures based on Supervisory banking statistics for 2021 (SSM banks).

Source: SSM banks, 2021 results

Exhibit 26: Impact analysis — simulating the RoE impact of regulatory-induced capital and cost measures

Uplift in ROE by driver



Approach to estimating drivers

	Driver	Methodology
Capital Constraints	Regulatory requirements	Difference between US and EU capital requirements and buffers Average for years since data across both jurisdictions is available (2019-2021)
	Management buffer	Difference between US and EU management buffer (defined as actual CET1 ratio minus capital requirements and buffers) Average for years since data on capital requirements is available (2019-2021)
	Leverage ratio cap	Cap applied if resulting capital ratios fall below leverage requirements Estimated based on usability of buffer (section 2.1.2) Min CET ratio: 8.4%, Min Total capital ratio: 12.9%
Safety net architecture contributions	Contributions to SRF and DGS	Difference of magnitude of contributions to SRF and DGS compared to FDIC (average 2015-2021 for SRF and DGS, 2016-2020 for DGS) Factor applied to the portion 2021 contributions represented of operating income
	Loss absorbing capacity requirements	Difference between 2022 MREL and TLAC requirements
Compliance and Supervisory costs	Compliance	Not estimated due to limited availability of comparable data and materiality, regardless it would have an upward impact on the result
	Supervisory events	

1. Refers to the effect of incorporating all capital impacts jointly

In a theoretical and stylised scenario, and assuming corresponding demand from solvent borrowers, up to €4.0-4.5 trillion of additional lending could be unlocked if capital levels and regulation-induced costs for EU banks were closer to those of their US peers. Such additional lending volume would exceed the financing that small- and medium-sized enterprises (SMEs) would need to enable Europe's green and digital transformation. The European Commission estimates that, each year up to 2030, approximately €336 billion of additional investment is required in the energy system alone to meet the 55% emission reduction target,⁵¹ which amounts to approximately €3.0 trillion. The Multiannual Financial Framework and the Next Generation EU fund will cover €750 billion, and the remaining investment gap of about €2.25 trillion will be bridged by the private sector. The increase in lending would certainly help to foster economic recovery and to channel investment.

However, in the absence of additional policy measures, credit demand is unlikely to be sufficient to facilitate such a lending market expansion and the associated effects on economic growth. There are demand-side effects that today constrain banks from deploying such lending capacity in a way that does not unduly weaken their risk profile, particularly as the number of additional viable borrowers is limited. While Eurozone lending surveys paint a differentiated picture across the Eurozone, a perceived lack of growth and investment opportunities in the corporate and SME sectors weigh negatively on lending demand, as does a shortage of equity — which is an issue banks cannot solve alone. For SMEs, prior analysis shows a financing gap amounting to €1.1 trillion, of which only €0.3 trillion corresponds to debt, and the rest to equity.⁵² This is consistent with the observation that previous measures to incentivise bank lending, such as the ECB's targeted longer-term refinancing operations (TLTRO) programmes, have had a limited impact on credit demand from viable borrowers outside real estate, and particularly in the SME sector.

In addition, the ECB's TLTRO operations have so far created a RoE uplift of at least 0.2 percentage points when compared to a scenario in which TLTRO facilities were not available. The outstanding TLTRO volume of €2,190 billion by the end of 2021 creates additional yearly earnings of €11 billion for the Eurozone banking sector.⁵³ This benefit effectively offsets about half of the RoE impact of the additional safety net contributions that EU banks need to make compared to their US peers, or the additional aggregate compliance costs EU banks are facing. Given the changed economic environment and recent ECB decisions on the TLTRO programme, these benefits are set to disappear.

Any review of the regulatory implications faced by EU banks must not therefore be performed in isolation and should consider broader policy aspects that need to be addressed so that banks can deploy their lending potential effectively.

51 European Commission, 2020, "Commission Staff Working Document — Impact Assessment- Stepping up Europe's 2030 climate ambition Investing in a climate-neutral future for the benefit of our people," page 70.

52 Oliver Wyman analysis (FiCompas, 2020, Gap analysis of SME financing, SAFE report of 2021).

53 Da Silva, et al., 2021, "Paying Banks to Lend? Evidence from the Eurosystem's TLTRO and the euro area Credit Registry," Banque de France, Working Paper 848.

GLOSSARY

Term/Acronym	Definition
ABS	Asset-Backed Security
AFC	Anti-Financial Crime
AML	Anti-Money Laundering
AMLDs	Anti-Money Laundering Directives
BIRP	Bail-in Risk Premium
bps	Basis Points
CBR	Combined Buffer Requirement
CCAR	US Comprehensive Capital Analysis and Review
CCoB	Capital Conservation Buffer
CCyB	Countercyclical Capital Buffer
CET1	Common Equity Tier 1
CIR	Cost Income Ratio
CMU	Capital Market Union
COE	Cost of Equity
COREP	Common Reporting Framework
CRD IV	Capital Requirements Directive IV
CTB	Change-The-Bank
DCM	Debt Capital Markets
DFAST	Dodd-Frank Act Stress Test
DGS	Deposit Guarantee Schemes
DIF	US Deposit Insurance Fund
EBA	European Banking Authority
EBF	European Banking Federation
ECB	European Central Bank
ECM	Equity Capital Markets
EDIS	European Deposit Insurance Scheme
EGRRCPA	Economic Growth, Regulatory Relief, and Consumer Protection Act
ESM	European Stability Mechanism
ESRB	European Systemic Risk Board
EU	European Union
FDIC	US Federal Deposit Insurance Corporation
FINREP	Financial Reporting Framework
FRB	Federal Reserve Board
FSB	Financial Stability Board
FTE	Full Time Equivalents
GFC	Great Financial Crisis
GSE's	Government-Sponsored Enterprises

Term/Acronym	Definition
G-SIB	Global Systemically Important Bank
G-SII	Global Systemically Important Institution
HMDA	Home Mortgage Disclosure Act
ICAAP	Internal Capital Adequacy Assessment Process
IFRS	International Financial Reporting Standards
ILAAP	Internal Liquidity Adequacy Assessment Process
IMF	International Monetary Fund
IRB	Internal Ratings-Based
KA	FSB's Key Attributes of Effective Resolution Regimes
KYC	Know-Your-Customer
M&A	Mergers and Acquisitions
MDA	Maximum Distributable Amount
MREL	Minimum Requirement of own funds and Eligible Liabilities
NCA	National Competent Authorities
NII	Net Interest Income
O-SIB	Other Systemically Important Bank
O-SII	Other Systemically Important Institution
P&L	Profit and Loss
p.p	Percentage Points
P2R	Pillar 2 Requirements
RoE/ROE	Return on Equity
RTB	Run-The-Bank
RWA	Risk-Weighted Assets
SA	Standardised Approach
SCB	Stress Capital Buffer
SME	Small and Medium-sized Enterprises
SRB	Single Resolution Board
SREP	EU Supervisory Review and Evaluation Process
SRF	Single Resolution Fund
SSM	Single Supervisory Mechanism
ST	Stress Test
SyRB	Systemic Risk Buffer
TLAC	Total Loss Absorbing Capacity
TLTRO	Targeted Longer-Term Refinancing Operation
TREA	Total Risk Exposure Amount
US GAAP	US Generally Accepted Accounting Principles

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European Banking Federation is the voice of the European banking sector, bringing together 33 national banking associations in Europe that together represent a significant majority of all banking assets in Europe, with 3,500 banks – large and small, wholesale and retail, local and international – while employing approximately two million people. Launched in 1960, the EBF is committed to a single market for financial services in the European Union and to supporting policies that foster economic growth.

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