

# Evolution and Impact of the finalization of EU's Banking Package

*An overview of the endorsed changes, how it will impact banks and the underlying financial service sector*

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## Introduction

The global financial crisis of 2007-2008 exposed significant weaknesses in the global banking system, highlighting deficiencies in capital adequacy, risk management, and liquidity management. These failures necessitated a comprehensive overhaul of regulatory frameworks to restore confidence in financial institutions and prevent future crises. Over the past two decades, iterative enhancements to capital requirement frameworks, led by the Basel standards, have reshaped the regulatory landscape.

The Capital Requirements Regulation (CRR) III, part of the European Banking Package, introduces new requirements for banks to strengthen their capital adequacy and risk management practices. A quantitative analysis of the impact of CRR III on banks have been conducted by among other EBA, distinguishing between banks that use the standardized approach for calculating their own funds requirements and those that rely on internal models.

This article explores the evolution of capital requirement regulations, focusing on the introduction of new regulatory frameworks, the resultant impacts on banks and financial markets, the operational and compliance challenges faced by institutions, and the broader implications for economic stability and resilience. Additionally, the article highlights the critical areas of change, including quantitative evaluations, enhanced risk management practices, and the growing integration of sustainability goals into regulatory oversight.

## Progression of Capital Regulation Reforms

### Future Outlook

The focus is shifting towards ESG considerations and emerging risks.



### CRD VI and CRR III Adoption

In 2024, the EU adopted CRD VI and CRR III, aligning with the latest Basel standards.



### Basel III Finalization

Additional Basel III reforms were finalized in 2019, enhancing risk sensitivity.



### CRD IV and CRR Implementation

The EU adopted CRD IV and CRR in 2013, aligning with Basel III standards.



### Basel III Introduction

Basel III was introduced in 2010 to strengthen banking regulations.



### Financial Crisis

The global financial crisis of 2007-2008 exposed critical weaknesses in the banking system.



## Overview of New Requirements and Changes

### Basel III Reforms (2010)

The Basel III framework represents a critical step in global financial regulation, introduced to address the weaknesses in the banking system that became evident during the 2008 financial crisis. Its objective is to enhance the resilience of individual banks and the financial system as a whole, with an emphasis on capital adequacy, leverage control, and liquidity management. Key measures include:

#### Enhanced Capital Requirements

Basel III significantly raised the minimum CET1 ratio from 2% to 4.5% of risk-weighted assets (RWAs). This ensures that banks maintain a higher proportion of high-quality capital, specifically common equity, which is better able to absorb losses compared to other forms of capital. In addition to the minimum capital requirements, Basel III introduced a set of buffer requirements to act as a cushion and a safeguard against periods of economic downturns, allowing banks to continue operating without breaching minimum capital thresholds. It restricts capital distribution (e.g., dividends, share buybacks) when banks dip into the buffer, ensuring that banks retain sufficient capital during stress.

#### Leverage Ratio

Basel III introduced a simple, non-risk-based leverage ratio to complement the risk-based capital requirements. The leverage ratio is calculated as Tier 1 capital as a share of the total exposure (on- and off-balance-sheet items). The 3% threshold prevents banks from becoming excessively leveraged, which could amplify risks during periods of financial instability. This approach ensures that banks maintain a baseline level of capital, regardless of the riskiness of their assets.

#### Liquidity Standards

To address liquidity risks highlighted during the financial crisis, Basel III introduced two key standards to ensure that banks can meet their short-term and long-term funding obligations:

**Liquidity Coverage Ratio (LCR):** The LCR requires banks to hold enough high-quality liquid assets (HQLAs)—such as cash, central bank reserves, and government securities—to cover net cash outflows over a 30-day stress period. This ensures that banks remain solvent during short-term

liquidity disruptions and can avoid the kind of liquidity crunches experienced during the crisis.

$$LCR = \frac{HQLAs}{Net\ Cash\ Outflows\ (30\ days)} \geq 100\%$$

**Net Stable Funding Ratio (NSFR):** The NSFR is designed to promote stable funding over a one-year horizon, encouraging banks to rely on more stable, longer-term sources of funding instead of short-term liabilities. By aligning the maturity profile of assets and liabilities, the NSFR reduces the risk of funding mismatches that could lead to liquidity crises.

$$NSFR = \frac{Available\ Stable\ Funding\ (ASF)}{Required\ Stable\ Funding\ (RSF)} \geq 100\%$$

#### Additional Measures and Objectives

Basel III introduced additional capital surcharges for globally and domestically systemically important banks (G-SIBs and D-SIBs), recognizing their potential to destabilize the global financial system. Additionally, it has further introduced revisions to the calculation of RWAs under the Internal Models Approach (IMA) aimed to ensure that capital requirements reflect the true risk associated with trading books and counterparty exposures.

### CRD IV and CRR (2013)

In Europe, the implementation of the Basel III standards through the Capital Requirements Directive IV (CRD IV) and the Capital Requirements Regulation (CRR) represented a significant step toward enhancing the stability and resilience of the EU banking sector. These frameworks not only aligned European regulations with global Basel III standards but also introduced provisions tailored to address the unique characteristics and challenges of the European banking market. Below is an elaboration on the key provisions:

#### Risk Governance

CRD IV requires banks to establish dedicated risk committees, particularly for large or systemically important institutions. These committees ensure that risk management is a central focus at the management and the board level and are tasked with overseeing the institution's overall risk profile and strategy. Members of these committees must possess adequate expertise in risk management to provide effective oversight.

The Directive further introduced clearer accountability standards for senior management, emphasizing their

responsibility for ensuring prudent risk management practices. This includes:

- Ensuring adequate internal controls are in place,
- Aligning risk-taking with the institution's risk appetite and regulatory requirements, and
- Enhancing personal accountability through the introduction of fit and proper assessments for senior managers and directors.

These measures aim to promote a stronger risk-aware culture within banks, reducing the likelihood of governance failures that contributed to the 2008 financial crisis.

### Capital Buffers

CRD IV introduced the systemic risk buffer (SRB) to address risks posed by globally and domestically systemically important banks (G-SIBs and D-SIBs). This buffer ranges from 1% to 3.5% of RWAs, depending on the institution's size, interconnectedness, and systemic importance and ensures that institutions with a significant impact on the financial system maintain extra layers of capital to absorb losses and prevent systemic shocks.

To address macroprudential risks, the Countercyclical Buffer (CCyB) was implemented. This buffer ranges from 0% to 2.5% of RWAs and is designed to dampen excessive credit growth and financial cycles. National regulators can adjust the buffer level depending on the state of the economy, effectively countering systemic risks arising from credit bubbles.

Alongside the SRB and CCyB, the capital conservation buffer (CCB) of 2.5% of RWAs was fully adopted to ensure that banks maintain a robust capital base during periods of economic stress.

### Transparency and Disclosure

Under CRR, European banks must adhere to Pillar 3 disclosure requirements, ensuring greater transparency about their:

- Capital structure,
- Risk-weighted assets (RWAs),
- Liquidity metrics, including the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR), and
- Leverage ratios and exposure breakdowns.

Furthermore, CRD IV introduced standardized templates for disclosure in order to foster comparability across institutions, enabling regulators, investors, and other

stakeholders to assess and compare the financial health and risk profiles of different banks.

As part of the CRD IV/CRR, EU also introduced detailed reporting frameworks:

- **COREP (Common Reporting):** Focuses on capital adequacy, leverage, and liquidity metrics.
- **FINREP (Financial Reporting):** Covers broader financial reporting requirements under International Financial Reporting Standards (IFRS).

These measures ensure that banks operate with greater transparency, fostering trust among stakeholders, including depositors, investors, and regulators.

### Enhanced Definitions for Prudential Consolidation

Recent updates to prudential consolidation requirements enhance oversight across financial entities, particularly addressing the growing influence of fintech firms. The framework now explicitly includes financial groups led by fintech companies, ensuring they receive the same regulatory scrutiny as traditional banking groups. This expansion captures risks associated with innovative financial products and business models that might otherwise escape oversight. Key definitions have been refined, with the term "Ancillary Services Undertaking" now covering entities supporting financial activities such as IT systems, payment processing, and data analytics. Additionally, "Parent Undertaking" and "Subsidiary" definitions now align with international accounting standards, eliminating regulatory discrepancies and ensuring consistent group-level supervision. These updates promote a uniform application of prudential rules across various financial groups, reducing regulatory gaps and enhancing cross-border supervision and cooperation.

### Changes to Own Funds Provisions

The revisions to own funds provisions represent a critical enhancement to the regulatory framework, aimed at strengthening capital adequacy assessments and closing loopholes that could lead to regulatory arbitrage. Below is an in-depth explanation of the changes.

### Broader Definitions of Indirect and Synthetic Holdings

The scope of indirect and synthetic holdings was expanded to include eligible liabilities instruments (e.g., subordinated debt and senior non-preferred bonds). These instruments,

which are critical for meeting the Minimum Requirements for Own Funds and Eligible Liabilities (MREL), are now fully integrated into capital calculations. This further ensures that all components of a bank's capital structure are accounted for, reducing the risk of underestimating exposures or overstating capital adequacy.

### Updated CET1 Deduction Thresholds

EU incorporated EU Regulations 2019/630 and 2019/876 which among other entails that the threshold calculations for Common Equity Tier 1 (CET1) deductions were revised to reflect updates introduced by these regulations. Specifically, the treatment of deferred tax assets (DTAs), significant investments in financial sector entities, and other CET1 deduction thresholds was refined to ensure consistency with the evolving regulatory landscape. This reduces the potential for discrepancies and ensures that deductions accurately reflect risks.

The updates provide a more accurate and comprehensive assessment of a bank's CET1 capital, aligning it with modern risk profiles.

### Introduction of Article 88b – Treatment of Minority Interests

The introduction of Article 88b in the regulatory framework aims to clarify the treatment of minority interests within subsidiaries that operate outside the European Union. Minority interests, also known as non-controlling interests, refer to the portion of equity held by investors other than the parent company in a subsidiary. Proper recognition of these interests is crucial when calculating a banking group's own funds under prudential regulations.

Since banking groups often have subsidiaries in third countries (i.e., jurisdictions outside the EU), there was a need to ensure that the recognition of minority interests aligns with EU prudential standards. The lack of clarity in prior regulations created risks of inconsistencies, particularly where third-country prudential frameworks differ from the EU's Capital Requirements Regulation (CRR) and Capital Requirements Directive (CRD). Consequently, Article 88b aligns the treatment of minority interests in third-country subsidiaries with EU standards to prevent regulatory arbitrage and ensure a level playing field for multinational banking groups.

### Objectives and Impact of the Updates

These updates aim to harmonize the treatment of key capital components and consolidation requirements across jurisdictions and financial entities, reducing the risk of

regulatory gaps or discrepancies. By refining the definitions and thresholds for CET1 deductions and expanding the scope of indirect and synthetic holdings, regulators can more accurately assess the adequacy of a bank's capital buffer.

### Key Features of the Output Floor

The output floor, introduced under Basel III final reforms, is a critical measure aimed at ensuring a minimum level of risk-weighted assets (RWAs) and enhancing the credibility of internal models used by banks. It addresses inconsistencies and variability in RWA calculations that arise from the use of internal models versus standardized approaches. Here's an elaboration on its key features:

#### Minimum Threshold

The output floor requires that RWAs calculated using a bank's internal models must not fall below 72.5% of the RWAs calculated under standardized approaches.

This measure sets a baseline level of conservatism in capital requirements, ensuring that internal models do not result in overly optimistic assessments of risk, which could undermine the stability of individual banks and the financial system. This further, encourages banks to improve the accuracy and reliability of their internal risk assessment models and expected to prevent significant discrepancies in capital requirements among banks using internal models versus those using standardized methods.

#### Phased Implementation

Recognizing the significant changes required, the output floor is being phased in gradually to allow banks time to adapt their capital planning and internal models.

The **output floor** is aimed to be gradually introduced over a five-year transition period starting in 2025, as per the European Commission's CRR3/CRD VI proposal.

Year	Output Floor Level (% of Standardized Approach)
2025	50%
2026	55%
2027	60%
2028	65%
2029	70%
2030	72,5% (Final Level)

This means that by **2030**, banks using internal models must ensure that their risk-weighted assets (RWAs) cannot fall

below 72.5% of what would have been calculated under the standardized approach.

The transition period is aimed to ensure that banks have sufficient time to adjust capital buffers and risk-weighted asset calculations, reduce sudden capital shortfalls and allows banks to manage regulatory capital more efficiently.

### Implications of the Output Floor

The introduction of the output floor has wide-ranging implications for banks, regulators, and the broader financial sector. Below is a detailed analysis of these implications:

<p><b>Improved Comparability Across Institutions</b></p>	<p>By tying internal model calculations to standardized approaches, the output floor enhances comparability between banks, regardless of whether they use internal or standardized methods. Furthermore, it is aimed to reduce competitive advantages that may arise from aggressive use of internal models, ensuring that all institutions operate under a consistent framework of capital requirements.</p>
<p><b>Enhanced Confidence in Risk-Based Capital Requirements</b></p>	<p>The floor mitigates the risk of underestimating RWAs due to overly optimistic assumptions or weaknesses in internal modelling. This bolsters stakeholder confidence in the reliability of banks' risk-based capital metrics. Furthermore, by ensuring a minimum level of conservatism in capital requirements, the output floor provides greater assurance to investors, depositors, and market participants about the soundness of financial institutions.</p>
<p><b>Reduction in Excessive Variability</b></p>	<p>Internal models often produce significant variability in RWA calculations due to differences in assumptions, data inputs, and methodologies. The output floor acts as a safeguard, reducing excessive variability and improving the consistency of capital requirements across banks. Standardizing the minimum RWA threshold enhances transparency, making it easier for regulators and stakeholders to understand and compare the risk profiles of banks.</p>

### Fostering Financial Stability

By ensuring a minimum capital base, the output floor strengthens the ability of banks to withstand economic and financial shocks and a consistent application of the output floor across institutions reduces systemic vulnerabilities, particularly during periods of stress when discrepancies in capital adequacy can amplify risks.

### Challenges and Considerations

While the output floor brings significant benefits, it also presents challenges that need to be addressed.

Banks heavily reliant on internal models may face higher capital requirements, necessitating adjustments to their capital strategies or risk-weighted asset calculations. Furthermore, smaller banks or banks in certain jurisdictions may find it challenging to meet the higher capital requirements, potentially impacting their ability to lend, and effective implementation of the floors requires close coordination between national regulators to ensure consistency and address cross-border challenges.

### Revisions to Credit Risk Approaches

Regulatory reforms in credit risk methodologies under Basel III finalization have introduced significant changes to both the Standardized Approach (SA) and the Internal Ratings-Based (IRB) Approach. These revisions aim to improve risk sensitivity, comparability, and capital adequacy across financial institutions while limiting excessive variability in risk-weighted assets (RWA).

#### Standardized Approach (SA)

The Standardized Approach for credit risk has undergone refinements to enhance its risk sensitivity and alignment with real economic risks. As announced by the European Commission, the new provisions applies from 1<sup>st</sup> of January, 2025.

#### Risk Weights Enhancement

Under the revised SA, risk weights for credit exposures are now determined using external credit ratings where available or loan-to-value (LTV) ratios for real estate loans. This replaces the previous flat risk weights, making capital requirements more proportionate to actual credit risk.

For unrated corporate exposures, a new risk-weighting framework based on revenue and leverage ratios has been introduced to improve risk differentiation.

### Granularity in Corporate and Specialized Lending Portfolios

With the new revised SA, enhance granularity has been introduced for corporate and specialized lending portfolios. Furthermore, Corporate Exposures now have differentiated risk weights based on financial metrics, reducing reliance on a one-size-fits-all approach and Specialized Lending, such as project finance, object finance, and commodity finance, is now assigned specific risk weights, improving accuracy in capital requirements.

### Real Estate Provisions

Under the revised SA, Income-Producing Real Estate (IPRE) exposures now have dedicated risk weights that consider the cash-flow dependency of these assets. This means that instead of a generic real estate risk weight, loans secured by properties that generate rental income are assigned risk weights based on LTV ratios and the stability of cash flows. This further ensures that risk measurement better reflects potential losses in stress scenarios.

### Internal Ratings-Based (IRB) Approach

The IRB approach, which allows banks to use their internal models for credit risk assessment, has also undergone significant revisions to improve comparability and reduce excessive risk-weight variability across institutions.

### Introduction of Input Floors

Input floors have been introduced for key risk parameters for the purpose of reducing the risk of underestimation of capital requirements due to overly optimistic model assumptions. This includes:

- **Probability of Default (PD)** – a minimum level for PD estimates to prevent overly optimistic assessments.
- **Loss Given Default (LGD)** – limits on the minimum LGD values that banks can apply.

### Restrictions on Advanced IRB Approaches

The use of Advanced IRB (A-IRB) has been restricted for low-default portfolios, including Sovereign exposures and Large corporate borrowers (those with annual revenues exceeding €500 million). Instead, these exposures must now be assessed under the Foundation IRB (F-IRB) or Standardized Approach (SA), ensuring greater consistency across banks and preventing excessive model-based capital reductions.

### Output Floor Alignment with the Standardized Approach

A new output floor ensures that IRB-based capital requirements cannot fall below 72.5% of the capital requirements calculated under the Standardized Approach. This prevents banks from excessively lowering their risk-

weighted assets through internal modeling, ensuring a more consistent level of capital adequacy across institutions.

### Specialized Lending Adjustments

The reforms introduce granular risk weights for specialized lending categories i.e.:

- Project Finance – assigned differentiated risk weights based on project risk profiles.
- Object Finance – risk weights tailored to the risks of financing assets such as aircraft, ships, or real estate.
- Commodity Finance – specific adjustments recognizing the unique risks of commodity-backed loans.

These adjustments improve the accuracy of risk assessments and capital requirements, making the approach more sensitive to the underlying credit risks.

## **Revised Frameworks for Operational Risk**

### Operational Risk (Standardized Measurement Approach)

Operational risk, which encompasses losses due to inadequate or failed internal processes, people, systems, or external events (including cyber risks and fraud), has been significantly revised under Basel III finalization. The Standardized Measurement Approach (SMA) introduces a more streamlined and risk-sensitive framework, replacing the previously used Advanced Measurement Approach (AMA) and other national variations.

### Simplified Framework – Transition from AMA to SMA

The Standardized Measurement Approach (SMA) has been introduced as a single, uniform framework for calculating operational risk capital. The new approach replaces The Advanced Measurement Approach (AMA), which allowed banks to use internal models but led to excessive variability in capital calculations and existing Standardized and Basic Indicator approaches used in different jurisdictions.

The key advantage of SMA is greater simplicity and comparability, ensuring that all banks follow a consistent methodology to measure operational risk.

### Business Indicator Component (BIC) – Risk-Sensitive Capital Calculation

The SMA determines operational risk capital requirements using the Business Indicator Component (BIC), which reflects a bank's size and operational complexity.

The BIC is a financial metric-based approach, relying on income-related indicators rather than internal models. It consists of a combination of gross income components, including interest, fee, and commission income and expenses, trading income, and other operating income.

These financial indicators act as a proxy for operational risk exposure, ensuring that larger and more complex banks hold higher operational risk capital.

$$\text{Operational Risk RWA} = \text{BIC} \times \text{ILM} \times 12.5$$

Where:

- BIC (Business Indicator Component) =  $0.11 \times \text{BI}$  (Business Indicator) for large banks ( $\text{BI} > \text{€}30 \text{ B}$ )
- ILM (Internal Loss Multiplier) adjusts the historical losses

The BIC is tiered, meaning that as a bank's income increases, its operational risk capital requirements grow non-linearly. The capital calculation follows progressive risk sensitivity, meaning that larger banks face higher marginal capital requirements due to their increased operational risk exposure. Ultimately, this prevents disproportionately low capital requirements for large institutions that historically benefited from internal models under AMA.

#### Data Governance – Strengthened Risk Management Standards

Recognizing the importance of high-quality operational risk data, Basel III finalization introduces new data governance requirements to improve accuracy, consistency, and reliability.

Banks must ensure the accurate classification and recording of operational risk losses, maintaining consistency across reporting periods to prevent artificial reductions in reported losses. To uphold data reliability, supervisors will conduct periodic reviews to verify compliance with established data quality standards. Additionally, banks are required to maintain a comprehensive audit trail for operational risk incidents, enhancing transparency in capital calculations. Data governance is now directly integrated with risk management frameworks, necessitating alignment with internal control mechanisms and board oversight. Institutions with weak data management practices may face additional supervisory requirements, including the

imposition of higher capital buffers to mitigate potential risks.

## Revised Framework for Market Risk

### Market Risk (Fundamental Review of the Trading Book - FRTB)

The Fundamental Review of the Trading Book (FRTB) introduces a more robust framework for measuring and managing market risk, addressing shortcomings in the previous Basel II.5 market risk capital framework. These revisions aim to improve risk sensitivity, enhance comparability across banks, and ensure that capital requirements accurately reflect the risk profile of trading activities.

#### Standardized and Internal Model Approaches

FRTB establishes two distinct approaches for calculating market risk capital: the Standardized Approach (SA) and the Internal Models Approach (IMA).

The Standardized Approach (A-SA) has been redesigned to improve risk sensitivity and usability. Unlike the previous market risk standard, which relied on broad risk weights, the revised A-SA incorporates risk sensitivities-based methods that allow for a more granular assessment of market risk. This includes sensitivity-based capital charges for risk factors such as interest rates, credit spreads, equity prices, foreign exchange, and commodities. The simplified methodologies introduced in A-SA make it more accessible for banks that lack the resources to develop complex internal models while still ensuring a more accurate risk representation compared to the previous standardized approach.

The Internal Models Approach (A-IMA) has undergone significant reforms to enhance reliability and comparability across institutions. Under the new framework, banks must meet stricter approval conditions to use internal models for market risk capital calculations. Supervisory review processes have been strengthened, requiring banks to demonstrate robust model performance, sufficient data availability, and clear documentation of risk assumptions. Additionally, banks must pass the Profit and Loss Attribution (PLA) test and back testing requirements to retain internal model approval for specific trading desks. If a desk fails these tests, it must revert to the standardized approach, reducing excessive reliance on internal models.

#### Risk Factor Expansions

FRTB introduces an expanded set of risk factors, ensuring that market risk capital calculations more comprehensively

reflect real-world trading conditions. New categories include:

Risk Factor	Explanation
<b>Inflation Risk</b>	Recognizing the growing impact of inflation-linked instruments and inflation derivatives, the framework now explicitly accounts for inflation risk factors. This ensures that banks hold adequate capital against exposure to inflation-related volatility.
<b>Cross-Currency Basis Risk</b>	The revised framework incorporates cross-currency basis risk, addressing fluctuations in foreign exchange swap markets that were previously overlooked. This adjustment improves risk measurement for banks engaging in multi-currency funding and hedging strategies.
<b>Specific EU Market Conditions</b>	To enhance region-specific risk sensitivity, FRTB introduces tailored considerations for market conditions prevalent in the EU, such as sovereign bond liquidity characteristics and credit risk differentials. These refinements ensure that capital requirements align more closely with risks observed in European financial markets.

## ESG Risks in Banking Regulation

The increasing prominence of Environmental, Social, and Governance (ESG) risks in financial markets has led to significant regulatory enhancements aimed at integrating sustainability considerations into banking practices. These regulatory reforms seek to align financial institutions with the EU's Green Deal and broader sustainability goals while ensuring financial stability in the face of climate-related and social risks.

### Key Enhancements

A major regulatory development is the requirement for banks to develop transition plans that align with EU sustainability objectives, including those outlined in the Corporate Sustainability Reporting Directive (CSRD). These transition plans ensure that banks incorporate ESG considerations into their long-term business strategies, mitigating climate-related financial risks while promoting sustainable lending and investment practices.

To reinforce ESG risk management, supervisory oversight has been strengthened, with annual Supervisory Review and Evaluation Process (SREP) assessments now incorporating ESG risk evaluations. This means that regulators will monitor

how banks integrate climate risk into their risk management frameworks, stress testing methodologies, and capital planning processes. Institutions failing to meet ESG risk management expectations may face additional supervisory scrutiny or capital requirements.

Disclosure requirements have also been refined to ensure proportionality, particularly for smaller banks. While all institutions are expected to disclose ESG-related risks, the scope and complexity of disclosure obligations vary based on the size and risk exposure of the bank. This ensures that regulatory compliance does not impose an excessive burden on smaller financial institutions while still maintaining transparency across the sector.

A significant incentive for sustainable finance has been introduced through favorable risk weight treatments for environmentally sustainable projects. Banks financing green and sustainable initiatives, such as renewable energy infrastructure or energy-efficient real estate, may benefit from lower capital requirements. This not only encourages banks to expand their sustainable lending portfolios but also facilitates the transition toward a low-carbon economy by channeling capital into green projects.

### Implications

The integration of ESG factors into banking regulations enhances risk management capabilities, as harmonized definitions and mandatory reporting requirements improve the ability of institutions to assess, monitor, and mitigate climate and social risks. The regulatory framework also serves as a catalyst for sustainability investments, actively promoting capital flows into green infrastructure and socially responsible projects.

Furthermore, the incorporation of ESG risks into the prudential framework contributes to long-term financial and environmental stability. By ensuring that banks systematically account for sustainability risks in their risk assessment processes, the regulatory system aims to reduce financial shocks arising from climate change-related disruptions, such as stranded assets and market volatility linked to environmental policy shifts.

These regulatory changes mark a decisive step toward embedding sustainability into financial markets, ensuring that ESG risks are not only monitored but also proactively managed within banking institutions. Through transition plans, supervisory oversight, proportional disclosures, and risk-based incentives, regulators are shaping a more resilient and sustainable financial system.



## Quantitative Analysis of Regulatory Changes

The EU Banking Package introduces significant regulatory changes aimed at strengthening financial stability and resilience across the banking sector. By enhancing capital requirements, risk management frameworks, and supervisory practices, it seeks to align EU regulations with international standards while addressing emerging risks. This assessment will evaluate its impact on banks' operations, capital planning, and strategic decision-making.

### Capital Requirements

According to the EBA's Basel III Monitoring Reports, European banks will require an additional €60-70 billion in Tier 1 capital by 2025 to comply with the revised Basel III/CRR III standards. This increase primarily stems from more stringent capital definitions, additional buffers, and recalibrated risk weightings for certain asset classes.

Risk-weighted asset (RWA) inflation is estimated at 15-20% for banks reliant on internal models due to:

- Output floor requirements phasing in by 2030, which will set a minimum threshold for RWA calculations based on standardized approaches.
- Higher risk weightings for specialized lending exposures, equity investments, and unrated corporate exposures.
- Stricter capital treatment of operational risk, leading to a 20-30% increase in RWA for operational risk for some institutions.

The impact will vary across institutions:

- Large, systemically important banks (GSIBs) are expected to face a capital shortfall of €40-50 billion, as their diversified portfolios and advanced modeling capabilities mitigate some RWA inflation.
- Mid-sized and smaller banks could require €20-30 billion, given their heavier reliance on standardized approaches and lack of diversification in credit portfolios.

### Profitability Impact

Return on equity (ROE) is expected to decline by 2-3% across European institutions due to increased capital requirements, lower risk-taking ability, and higher compliance costs.

Smaller banks face a more significant impact:

- Regional and smaller banks may experience a 4-5% decline in ROE, as they have limited avenues for capital

optimization and are disproportionately affected by risk-weight inflation.

- Larger banks (GSIBs and D-SIBs) may see a 1-2% ROE reduction, as their ability to optimize risk-weighted assets and leverage scale economies provides some cushion.

Cost of capital is expected to rise by 30-50 basis points, leading to increased pricing pressure on lending and lower margins on traditional banking products. Furthermore, stricter capital requirements may reduce the ability to take on higher-yielding, riskier assets, potentially reducing NII by 5-7% in affected portfolios.

### ESG Growth

ESG-aligned portfolios are anticipated to grow by 30% over the next decade, with sustainable finance expected to reach €7-9 trillion in European markets by 2035. Furthermore, Green bonds and sustainable loans are expected to grow at an annual CAGR of 15-20%, driven by:

- Regulatory incentives such as lower capital charges for green assets.
- Mandatory sustainability disclosures under the EU Green Taxonomy and Sustainable Finance Disclosure Regulation (SFDR).
- Increased investor demand, with ESG-focused funds capturing 60-70% of net new asset inflows by 2030.

The ECB's climate stress tests indicate that banks with high carbon-intensive exposures may face capital surcharges of 5-10% and approximately €2-3 trillion in corporate lending is expected to shift towards green and transition financing in the next decade.

The introduction of Green supporting Factors (GSF) in capital requirements may incentivize further ESG portfolio reallocation and stricter climate risk stress tests could require additional capital buffers for banks with high fossil fuel exposure, potentially leading to a 50-100 basis point increase in funding costs for high-carbon borrowers.

### Quantitative Impact

To conclude with a quantitative assessment, assuming a Large EUR Bank using Internal Models, the following might be a potential high-level impact:

Metric	Pre-CRR III	Post-CRR III
RWA (Internal models)	€300 billion	Adjusted RWA = $\max(\text{€}300\text{B}, 0.725 \times \text{€}400\text{B}) = \text{€}290\text{B} \rightarrow$

		€290B (no immediate change)
RWA (Standardized)	€400 billion	However, removal of internal models for CVA and equity risk adds €20 billion in RWA
CET1 Ratio	14%	12.1% (assuming capital remains constant).
Capital Shortfall		€25 billion to restore CET1 to 14%.

resilience. However, the increased complexity of compliance, operational challenges, and elevated capital burdens pose significant hurdles for banks. To address these challenges, institutions must:

- Leverage advanced technologies for regulatory compliance and risk management,
- Align strategic priorities with evolving market and regulatory landscapes, and
- Embrace ESG-driven approaches to balance profitability with sustainability goals.

Metric	Standardized Approach Banks	Internal Model Banks
RWA Increase	10-15%	20-30%
CET1 Ratio Decline	0.5-1.0 percentage points	1.5-3.0 percentage points
Capital Shortfall	Moderate (€1-5 billion)	Significant (€5-20 billion+)
Rising Interest Rate Risk	Less sensitivity due to fixed risk weights	Higher Rates increase credit risk weights (e.g. mortgage, amplifying the output floor's impact)
Shift to safer assets	Banks reallocating to sovereign bonds (low risk weights) would see smaller RWA increases under the standardized approach but still face floor constraints under internal models.	
Cost of Compliance	Banks may need to raise €200-300 billion in additional capital globally	
	£10-20 million for updated systems	€50-100 million for model adjustments and reporting
Sector-wide impact	Return on Equity (ROE) could decline by 1-2% for internal model banks	
	Smaller banks using standardized approaches may gain a relative advantage due to lower compliance complexity	
	Reduced model flexibility could lead to homogenized risk assessments across the sector	

By adopting forward-looking strategies, banks can achieve long-term competitiveness and sustainability, contributing to a more stable, innovative, and resilient financial system. These measures will position the sector to effectively navigate future challenges in an ever-changing regulatory environment.

The output floor is a cornerstone reform under Basel III finalization, aimed at addressing weaknesses in the RWA calculation framework and enhancing the stability of the global banking system. By setting a minimum threshold tied to standardized approaches, it promotes comparability, transparency, and conservatism in capital requirements. While its implementation poses challenges, the phased timeline and supervisory review process provide a structured approach to achieving long-term benefits for the financial sector.

The changes to credit risk approaches under Basel III finalization aim to strike a balance between risk sensitivity and regulatory comparability. While banks adopting the Standardized Approach now benefit from more refined risk weights, IRB banks face tighter restrictions on model-driven capital relief. The introduction of input and output floors ensures a more uniform, risk-sensitive, and transparent capital framework, ultimately enhancing the resilience of the global banking system.

The Standardized Measurement Approach (SMA) marks a significant shift in how banks calculate and manage operational risk capital. By eliminating internal modelling, Basel III finalization ensures greater comparability and consistency across institutions. The introduction of the Business Indicator Component (BIC) provides a scalable and risk-sensitive framework, while enhanced data governance strengthens the accuracy and transparency of operational risk reporting. These changes collectively improve capital adequacy, risk management, and financial stability across the banking sector.

## Conclusion

The evolution of capital requirement regulations highlights a global commitment to enhancing financial stability and

The Fundamental Review of the Trading Book (FRTB) represents a significant step toward improving the accuracy, consistency, and robustness of market risk capital calculations. By refining the Standardized Approach (A-SA) and enforcing stricter conditions for the Internal Models Approach (A-IMA), the framework enhances transparency and comparability across institutions. Additionally, the expansion of risk factors ensures that trading book capital requirements better reflect the complexities of modern financial markets, reducing systemic vulnerabilities and strengthening the resilience of the global banking system.

The European Banking Authority (EBA) has estimated that the output floor could increase EU banks' RWAs by 18–25% on average, with internal model banks facing the largest hikes. Furthermore, Banks with significant mortgage portfolios or low-default portfolios (e.g., sovereign debt) are disproportionately affected, as internal models previously allowed lower risk weights for these assets. This further entails that the CRR III will disproportionately impacts banks using internal models, with RWA increases of 20–30% and CET1 ratio declines of 1.5–3.0 bps. Standardized approach banks face milder increases (10–15% RWA) but must adapt to stricter risk-weighting rules.

The quantitative analysis reveals that, banks using the standardized approach will face moderate increases in capital requirements while banks relying on internal models may face significant increases due to the output floor and restrictions on model usage. However, the overall impact will depend on the specific risk profiles and portfolios of individual banks.

The finalization of Basel III and the EU Banking Package is expected to drive further consolidation within the banking sector, particularly benefiting institutions with streamlined portfolios and strong capital buffers. Stricter regulatory requirements may pose challenges for smaller or more complex banks, pushing them towards mergers or strategic realignments to remain competitive. As a result, the regulatory landscape will not only enhance financial stability but also reshape the structure of the banking market, favouring well-capitalized and efficiently managed institutions.



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