



GARP Benchmarking Initiative (GBI)<sup>®</sup>

## ECB Pillar 2

# Benchmarking Study

Assessing Potential Double-Counting Across  
Existing Capital Requirements and CRR3

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# 1. BACKGROUND



Financial institutions are required to hold capital to protect against the risks and financial shocks that they are exposed to on a day-to-day basis. The Basel Accord lays out three pillars which apply to banks to ensure sufficient capitalization and prudent risk-taking. These are Pillar 1, a set of minimum capital requirements; Pillar 2, a firm-specific capital requirement supplementing Pillar 1 to account for idiosyncratic or portfolio-specific risks which is subject to supervisory review; and Pillar 3, the use of public disclosures to strengthen market discipline and encourage sound practices. In this paper we will focus on Pillar 1 and Pillar 2.

Pillar 2 requirements are often referred to as P2R and that terminology will be used throughout this document. For European banks, Pillar 2 capital requirements are set through the Supervisory Review and Evaluation Process (SREP) undertaken regularly by the European Central Bank (ECB). This is in addition to capital set through Pillar 2 guidance, or P2G, which is based on how firms perform vis-à-vis the EU's annual stress testing exercise. The ECB undertakes the SREP process bilaterally with each bank it supervises, which makes it challenging for firms to assess how their Pillar 2 capital requirements compare to peers.

The latest iteration of the Basel Accords — referred to as Basel 3 — presents significant changes to the capital framework for banks, notably reducing reliance on internal models. As the capital framework transitions to Basel 3, there are concerns around potential overlap, or double counting, of risks between the new Pillar 1 and existing Pillar 2 capital requirements. The term “overlap” refers to a situation where a risk factor and/or risk driver which was previously capitalized under Pillar 2 is now fully or partially captured by Pillar 1 under the new Basel 3 framework. Another concern is the need to “re-baseline” firms’ Pillar 2 requirements. Because Pillar 2 requirements are set as a percentage of risk-weighted assets (RWAs), any change to RWAs resulting from Basel 3 will automatically, or mechanistically, feed into Pillar 2 requirements.

The concepts of double counting and re-baselining have gained prominence given that certain regulators have acknowledged them as risks. In particular, the Prudential Regulatory Authority (PRA) committed to conduct a review of Pillar 2 requirements to “address double counting and unwarranted increases or decreases in capital arising from changes in RWAs as a result of the implementation of the Basel 3.1 standards.”<sup>1</sup> Regulators in other jurisdictions have not formally committed to reviewing these issues; however, the European Banking Authority (EBA) has considered the interaction of CRR3 (e.g. the transposition of Basel 3 in Europe) and Pillar 2 requirements in certain, albeit limited, instances.<sup>2</sup>

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1. [PS9/24 – Implementation of the Basel 3.1 standards near-final part 2](#) | Bank of England

2. [EBA publishes an Opinion on the interaction between the output floor and Pillar 2 requirements](#) | European Banking Authority

GARP Benchmarking Initiative (GBI)<sup>®</sup>, in conjunction with the Association for Financial Markets Europe (AFME), conducted a data-driven benchmarking study working with a sample of eight banking entities<sup>3</sup> supervised by the ECB to understand where there may be double counting and/or missing risk across Pillar 1 and 2 resulting from the transposition of Basel 3 in Europe via CRR3.

Given the sensitive nature of the underlying data, all information was collected leveraging GBI's proprietary portal to ensure data security and privacy. Information and findings are presented in an aggregated, anonymized fashion and have been subject to strict disclosure protocols. Parts of the study were approved for public disclosure, allowing GBI to share its findings and promote greater understanding and awareness of this important topic.

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3. BNPP, Deutsche Bank, Intesa Sanpaolo, Société Générale and 4 EU-based subsidiaries of non-EU banks.

## 2. KEY FINDINGS



### Key Finding 1

The weighted average P2R for participating banks is 2%, which is 20% of legally binding capital requirements (i.e., Pillar 1 and P2R).

### Key Finding 2

Total Pillar 1 RWAs across the sample increased by 16.2% on transitioning to CRR3<sup>4</sup>. Taking the weighted average P2R of 2% across the sample, and using a constant P2G of 1.3% for all banks<sup>5</sup>, this increase will result in an increase in EUR 6.3bn of P2R capital and EUR 4bn of P2G capital. To neutralize the Pillar 2 increase, P2R and P2G would need to be reduced, or re-baselined, by an average of 28bps and 18bps respectively.

### Key Finding 3

Overlap, or double counting, across current P2R Internal Capital Adequacy Assessment Process (ICAAP) estimates and CRR3 Pillar 1 Requirements was challenging for firms to quantify; therefore, a judgmental approach was taken. Based on expert judgement, there is a perceived overlap of 6.9% of existing P2R with new CRR3 Pillar 1 requirements. Removing this overlap would require a 12bps reduction in P2R. Importantly, this is assuming any mechanistic P2R increase has been neutralized through re-baselining.

### Key Finding 4

The largest portion of this overlap is for Credit Risk (58.6%), followed by Operational Risk (21.8%) and Market Risk (17.3%). The remaining 2.2% of perceived overlap relates to “Other” Pillar 2 risks.

- Credit Risk overlap relates primarily to Default and Migration Risk (81.1%). The bulk of perceived overlap is linked to the introduction of the CRR3 Output Floor.<sup>6</sup> This implies a reduction in Model Risk which some firms already accounted for in P2R.
- Within Market Risk, half the banks identified Credit Valuation Adjustment or CVA (78.2%) as the risk category with the most significant overlap, linked to the conservative methodology under CRR3. Other identified areas of overlap relate to conservative methodologies for the trading book, such as Fundamental Review of the Trading Book (FRTB).
- Under Operational Risk, Clients, Products, and Business Practices (41.2%) is identified as the most significant area of overlap. The “Other” (25.7%) risk category is identified as the second largest area of overlap. Drivers for overlap relate to some firms already accounting for Model Risk within Operational risk, with others attributing overlap to the removal of the Advanced Measurement Approach (AMA) resulting in a material increase in Pillar 1.

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4. N.B. results include a fully phased-in Output Floor and do not include the impact of CRR3 transitionals or more recent developments on FRTB.

5. [Aggregated SREP results](#) published by the ECB on December 19, 2023

6. Basel 3 introduces an Output Floor, whereby firms must calculate Pillar 1 requirements based on both internally modeled and standardized approaches. Firms must hold capital equivalent to at least 72.5% of the standardized approach, or in other words “flooring” Pillar 1 requirements at this level. The objective of the Output Floor is to minimize the capital benefit firms can obtain through modeling, thereby arguably addressing model risk.

### Key Finding 5

Model Risk is a driver of the broader P2R “Other” risk for some banks and for others it is embedded within a particular risk category. This is observed for Operational Risk where an explicit charge is taken, while for other risk categories Model Risk is an inherent contributor to the P2R charge. A significant portion of perceived overlap (55.5%) is deemed to relate to Model Risk. Most Model Risk related overlap is mostly driven by the introduction of the Output Floor. As noted, reversion to AMA and already accounting for Model Risk are other drivers.

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The remainder of this paper provides a more granular explanation of the study and is organized into the following sections:

- **Section 3** describes how data was collected, including principles, limitations, and assumptions.
- **Section 4** provides more detailed results from the analysis that was conducted.

# 3. DATA COLLECTION



The study was undertaken in Q4 2024 with participation from eight banking entities that are either institutions headquartered in the EU or with a European presence supervised by the ECB.

The data used in this study is a combination of data from publicly available sources (such as Pillar 3 disclosures and annual reports) and data provided by participating banks. To ensure completeness and consistency, all data sourced was as of end-2023. This allowed banks to use data generated for exercises such as their ICAAP, while facilitating better comparisons. Additionally, using the previous year-end data allowed disclosures such as Pillar 3 disclosures and annual reports to be leveraged, thereby enhancing the reliability and comparability of the analysis.

Certain outcomes of the SREP process — specifically SREP scores, qualitative feedback provided by the ECB, and P2G — are considered Confidential Supervisory Information (CSI) and cannot be shared by firms without approval from the ECB. Considering this, the study used the average P2G of 1.3%<sup>7</sup> as a constant value across all participating banks.

Data provided by the participating banks includes:

- A Basel QIS monitoring report which contained an assessment of the impact of CRR3 on Pillar 1 capital requirements. Where a participating bank was not part of the QIS exercise, the bank provided impacts based on internal assessments.
- ICAAP capital requirements for end-2023 — based on ECB short-term exercise (STE) ICAAP reporting templates. The capital requirements were broken down by a common risk taxonomy agreed at the start of the study.
- Judgement-based inputs on the overlap of risks in the existing Pillar 2 and the new Pillar 1.

While the analysis is based on firm-level data sourced from participating banks, all findings shown in this report are on an aggregated and anonymized basis.

## 3.1 Risk Taxonomy

GBI worked with participating banks to agree on a common risk taxonomy. The risk taxonomy was created across Credit Risk, Market Risk, Operational Risk, Interest Rate Risk in the Banking Book (IRRBB), and Other Pillar 2 risks. Institutions used this taxonomy to break down internal ICAAP assessments, and subsequently to assess the extent of overlap between Pillar 1 under CRR3 and existing Pillar 2 capital requirements.

**Note:** All the risk buckets defined may not be applicable to all the banks. Consequently, banks were instructed to use the closest risk bucket corresponding to their portfolio to allocate their ICAAP capital.

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7. [Aggregated SREP results published by the ECB](#) on 19 December 2023

## 3.2 Benchmarking Approach

Data collected can be categorized into top-down indicators and CRR3 read across.

**Top-Down Indicators:** This data was used to establish a baseline benchmark of firms by identifying (a) the contribution of Pillar 1 and P2R to total capital requirements, and (b) the change expected to Pillar 1 RWA in transitioning from the current framework to CRR3. The data collected for top-down indicators were:

- Pillar 1 RWA under the current framework — sourced from Pillar 3 disclosures for 31 December 2023.
- Pillar 1 RWA under CRR3 — provided by participating banks through the Basel 3 QIS data or equivalent internal estimates.
- Pillar 2 requirements / P2R (as a percentage of RWA under the current framework) — sourced either from Pillar 3 disclosures or from annual reports as of December 31, 2023.

Capital requirements were benchmarked for P2R. This was done by determining the proportion of P2R in total capital requirements that were legally binding (defined as the sum of Pillar 1 and P2R) as well as the proportion of P2R in Pillar 2 capital requirements (defined as the sum of P2R and P2G). P2G was assumed to be 1.3% for all banks based on the average P2G for 2024 disclosed by the ECB in December 2023.

**CRR3 Read Across:** Banks were asked to review each category in the risk taxonomy for possible overlaps between existing P2R and CRR3 requirements. In assessing these overlaps, banks were asked to review for a fully phased in Output Floor and assume anticipated model permissions are granted. CRR3 transitionals and delays to FRTB implementation were not included or assessed. Where banks identified an overlap, they were asked to provide a percentage estimate of the extent of overlap based on expert judgement. This data was used to estimate the magnitude of offsets needed for P2R to avoid double counting risks in Pillar 1 and Pillar 2 under CRR3.

Judgmental estimates of perceived overlap (provided in percentage terms) were applied to ICAAP capital amounts for each risk category and for each bank.<sup>8</sup> The amount of overlap derived was then aggregated across the population of banks for each risk type and risk category. The aggregated amounts were used to identify the most material risk categories for each risk type where overlap was perceived to exist. Overlap percentages were applied to P2R capital amounts to derive the decrease required to offset overlaps.

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8. Because ICAAP capital requirements include both Pillar 1 and Pillar 2 risks, P2R overlap values are likely to be understated. Although this is a data limitation, the inclusion of Pillar 1 risks are likely to result in overlap values understated and therefore more conservative in nature.

# 4. RESULTS



The study results are divided into top-down indicators and CRR3 read across.

## 4.1 Top-Down Indicators

As expected, Pillar 1 capital requirements constitute most of the legally binding capital requirements across all banks in the sample, accounting for 80% of capital requirements. The weighted average P2R across all banks in the sample is 2% and formed the remaining 20% of legally binding capital requirements. P2R is also just under two-thirds (61%) of Pillar 2 capital requirements. P2G is also just under two-thirds (61%) of Pillar 2 capital requirements.

**Figure 1** Split of Legally Binding Capital Requirements

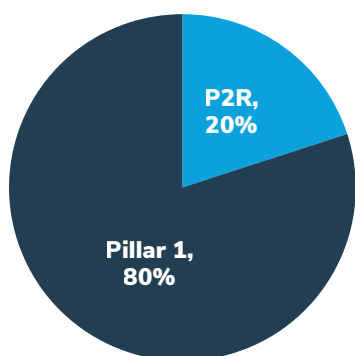
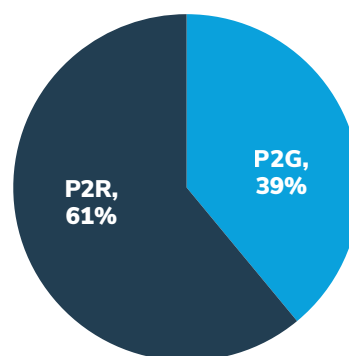


**Figure 2** Split of Total Pillar 2 Capital Requirements



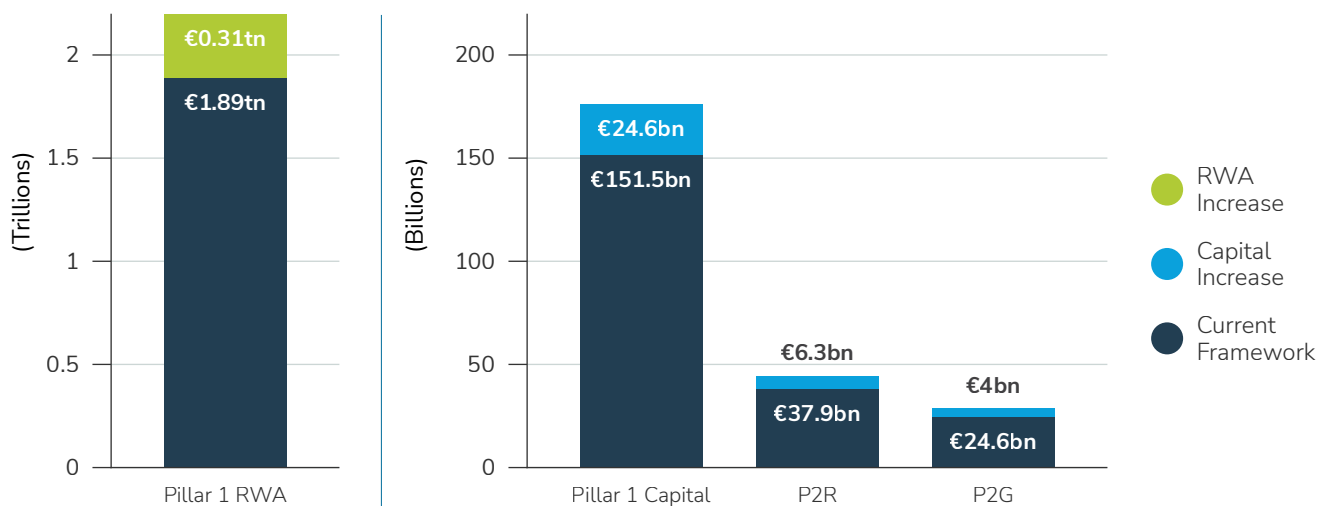
## 4.2 CRR3 Read Across

### RWA Inflation and Pillar 2 (P2R/P2G) Re-Baselining

Total Pillar 1 RWA across all banks in the sample increased by 16.2% on transitioning to CRR3. As P2R and P2G are both calculated as a percentage of Pillar 1 RWA, the increase in Pillar 1 RWA from CRR3 will lead to higher P2R and P2G capital requirements if no other changes are made, as can be seen in Figure 3. This is before accounting for overlaps in underlying risks between current Pillar 2 requirements and the new Pillar 1.

Taking the weighted average P2R of 2% across the sample of banks in the study, the 16.2% increase in Pillar 1 RWA will require banks to collectively hold an extra EUR 6.3bn of P2R capital. Similarly, P2G will increase by EUR 4bn.

**Figure 3** Impact of RWA Increase Driven by CRR3 on Pillar 2 Capital



To neutralize any mechanistic increase, P2R and P2G would need to be re-baselined by an average of 28bps and 18 bps respectively.

**Figure 4** Re-Baselining P2R for CRR3

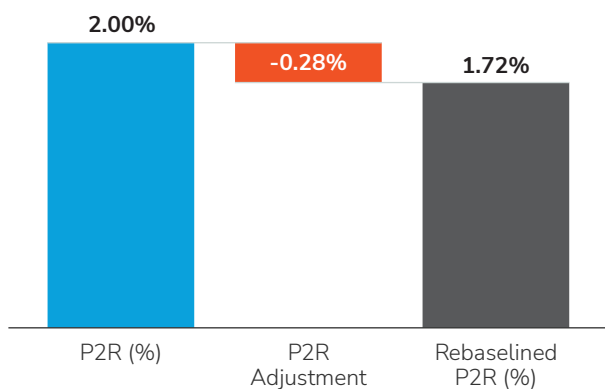
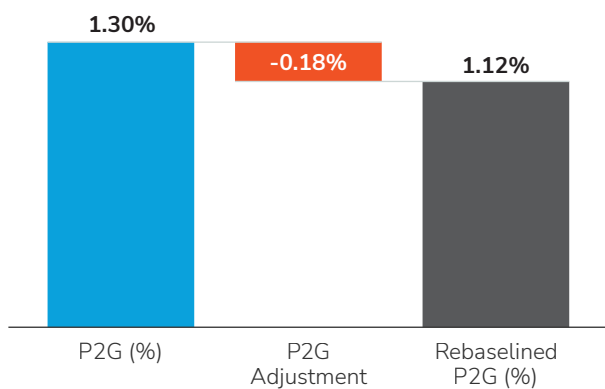


**Figure 5** Re-Baselining P2G for CRR3

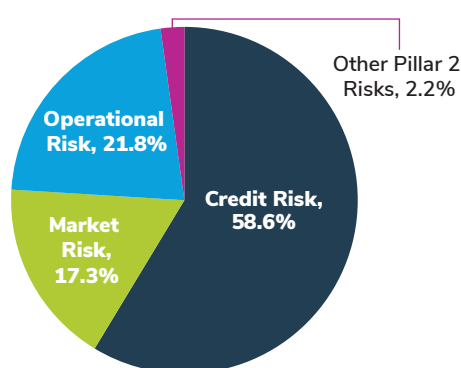


## Overlap Between Existing Pillar 2 and New Pillar 1 Requirements

Culled from judgement-based input provided by banks, there is a perceived overlap of 6.9% of existing P2R with the new Pillar 1 requirements. To remove this overlap, a 12bps reduction in P2R is needed given the RWA increases from the new Pillar 1 requirements.

The largest portion of this overlap is for Credit Risk (58.6%), followed by Operational Risk (21.8%) and Market Risk (17.3%). The remaining 2.2% of perceived overlap relates to “Other” Pillar 2 risks. The following sections of this paper go into further detail on each risk category and specific drivers of overlap.

**Figure 6** Overlap of Pillar 2 With New Pillar 1 by Risk Type



### Credit Risk

Most Credit Risk overlaps relate to Default and Migration Risk (81.1% of total Credit Risk overlaps), followed by Counterparty Credit Risk (10.7%) and Securitization Risk (8.1%).

Within Default and Migration Risk, most banks attributed the driver of this overlap to the Output Floor. These firms would have seen the Output Floor act as a binding constraint. Given the Output Floor by its very nature introduces Pillar 1 capitalization based on a less sophisticated non-modeled Standardized Approach, firms categorized this as a reduction in their Model Risk.

Model Risk is a term that can be understood differently by different stakeholders. At a more granular level it can be the risk of an individual model not performing as expected, or more holistically, it can be the aggregate risk that a firm is exposed to using multiple models or deterministic quantitative methods. Within this study, firms considered Model Risk in both senses and captured in their ICAAPs accordingly.

Other areas of overlap were linked to Counterparty Credit Risk (CCR), in particularly Wrong Way Risk and concentration risk, where more conservative methodologies within the new Standardised Approach for CCR (SA-CCR) now capture these risks within Pillar 1.

**Figure 7** Number of Banks Identifying Overlaps for Credit Risk

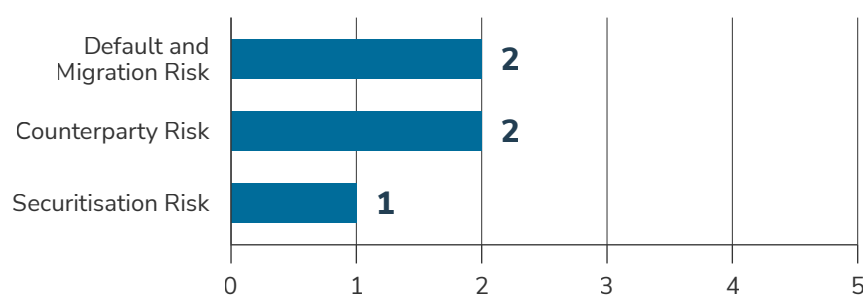
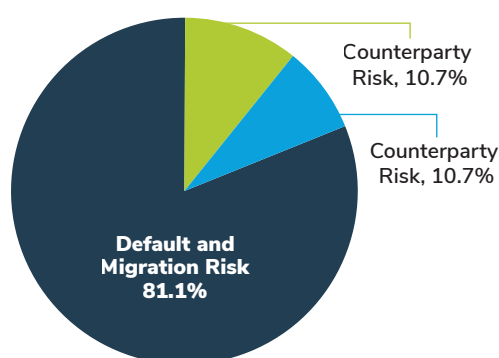


**Figure 8** Overlaps Between P2R and New Pillar 1 for Credit Risk



## Market Risk

A large number of banks within the sample identified CVA as the market risk category with the most significant overlap (78.2% of total Market Risk overlaps). This is linked to the punitive methodology under the Basic Approach CVA (BA-CVA) and Standardized Approach (SA-CVA) — BA-CVA and SA-CVA<sup>9</sup> under CRR3.

Incremental Risk Charge (IRC) is the second largest area of overlap (7.4%), owing to the more punitive methodology employed when moving from the current market risk methodology to the unmodeled standardized, SA-DRC or internal model IMA-DRC approaches under FRTB. General Position Risk (6.9%) is also identified as an overlap by half the banks in the study, with some of this being driven by Basis Risk.

Half the banks identified some overlap for the “Other” (6%) risk category under Market Risk. Part of this is described as relating to Risks Not in VaR (RNIV)/Risk Not in the Model (RNIM) under the current framework which had explicit capital requirements introduced in the FRTB such as Non-Modelable Risk Factor and/or Residual Risk Add-On capital. One bank in the study identified a modest overlap for Banking Book Market Risk (1.9%) relating to Structural FX.

9. BA-CVA and SA-CVA are both non-modeled approaches for capturing CVA risk. While both approaches are prescribed, BA-CVA is the more penal of the two with SA-CVA being slightly more risk-sensitive.

Interestingly, there were underlaps identified for certain aspects of Market Risk as shown below in Figure 10. Contrary to the concept of overlap, an underlap refers to a situation where a risk factor and/or risk driver which was previously capitalized under Pillar 1 is now not captured under CRR3.

**Figure 9** Number of Banks Identifying Overlaps for Market Risk

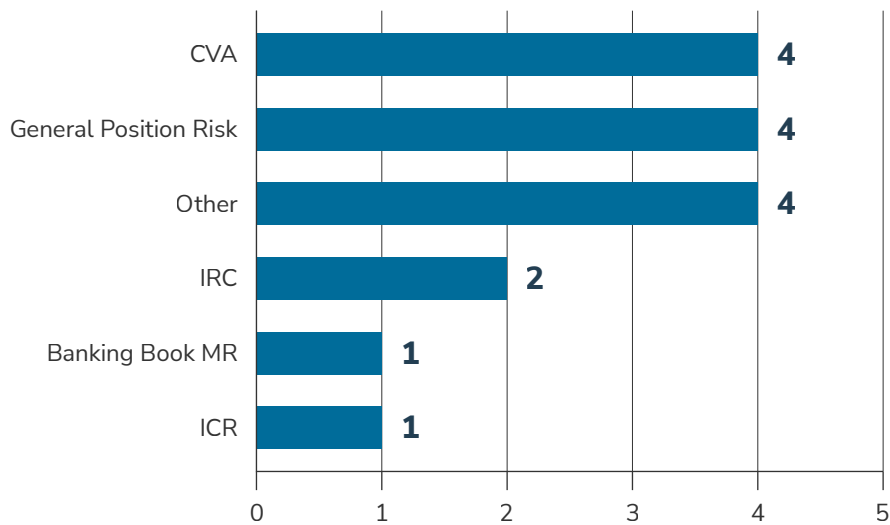


**Figure 10** Number of Banks Identifying Underlaps for Market Risk

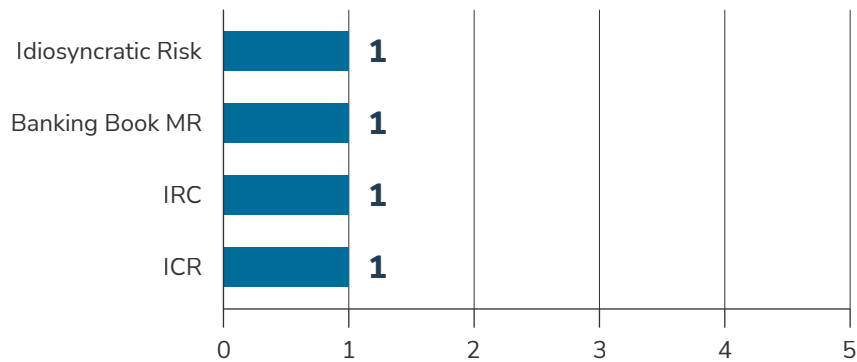
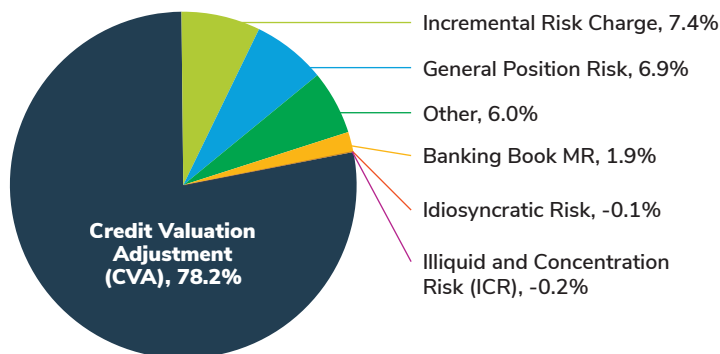


**Figure 11** Overlaps Between P2R and New Pillar 1 for Market Risk



## Operational Risk

Clients, Products, and Business Practices (41.2% of total Operational Risk overlaps) is identified as the most significant area of overlap. The “Other” (25.7%) risk category is identified as the second largest area of overlap. The remaining risk categories under Operational Risk contributed to the residual portion of overlap (33.1%).

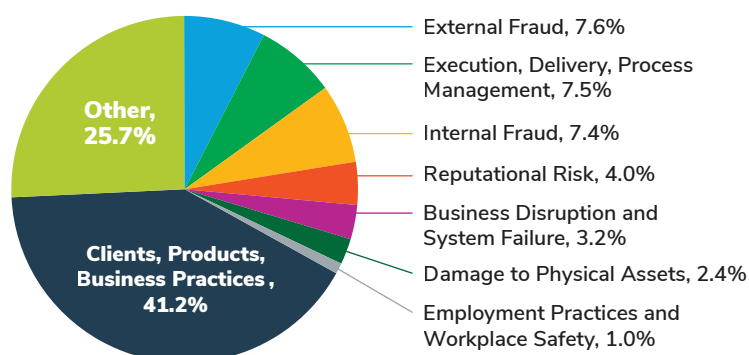
Interestingly, banks indicated that nearly a third of the overlap for the Damage to Physical Assets risk category is due to Climate Risk. Under CRR3, banks are no longer able to use internally modeled calculations for Operational Risk, previously referred to as the AMA, but rather must use the non-modeled Standardized Measurement Approach (SMA). While Climate Risk is not explicitly covered in this more basic approach, it is more punitive and covers aspects such as historic losses which now must be capitalized for in Pillar 1. This is most likely the reason that firms have identified this as an area of overlap. Overall, Climate Risk contributed just over 1% of overlaps across all the risk categories for Operational Risk.

More broadly, firms have attributed other drivers of overlap as being related to Model Risk. Some firms are already holding incremental Pillar 2 capital for Model Risk under Operational Risk based on today’s regulatory requirements. However, as modeled approaches are not permitted under CRR3, this is viewed as being redundant and duplicative with Model Risk now being captured under Pillar 1.

**Figure 12** Number of Banks Identifying Overlaps for Operational Risk



**Figure 13** Overlaps Between P2R and New Pillar 1 for Operational Risk



### Other Pillar 2 Risks

One bank in the study explicitly captured Model Risk under “Other” Pillar 2 Risks, identifying this as an area of overlap between P2R and the new Pillar 1. As described above, this overlap is driven by firms seeing the Output Floor act as a binding constraint which is viewed as a reduction in Model Risk through reversion to non-modeled Standardized Approaches. Two banks identified overlaps for the “Other” risk category — this covered a range of risks including Equity Risk and Residual Value Risk (inherent to leasing activities).

Model Risk contributed 56.5% of the overlap between P2R and new Pillar 1 for “Other” Pillar 2 Risks, while the “Other” risk category contributed the remaining 43.5%.

**Figure 14** Number of Banks Identifying Overlaps for Other Pillar 2 Risks

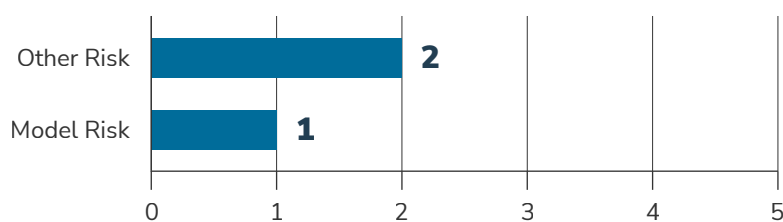
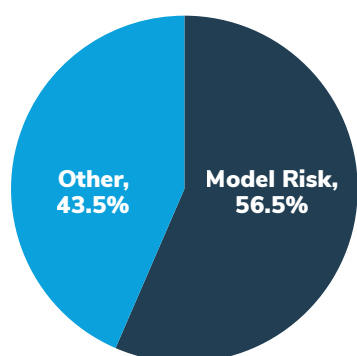


**Figure 15** Overlaps Between P2R and New Pillar 1 for Other Pillar 2 Risk



# Model Risk

While banks identified overlaps across the various risk types, a significant portion of overlap (55.5%)<sup>10</sup> relates to Model Risk. One bank identified overlaps for Model Risk under Other Pillar 2 risks, while five banks accounted for Model Risk within a given risk type or category such as Operational Risk, or Default and Migration Risk under Credit Risk.

Again, as described above, most of the Model Risk related overlap is connected to the Output Floor becoming a binding constraint. This comes through with Credit Risk and Default and Migration Risk being the largest contributor to overlaps between P2R and the new Pillar 1 requirements (85.8%).

**Figure 16** Proportion of Model Risk Related Overlaps Between P2R and New Pillar 1

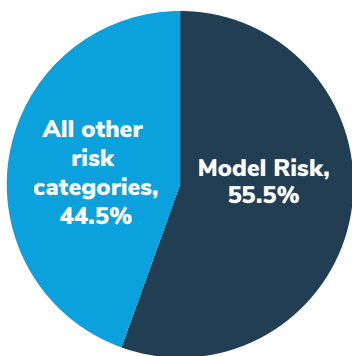
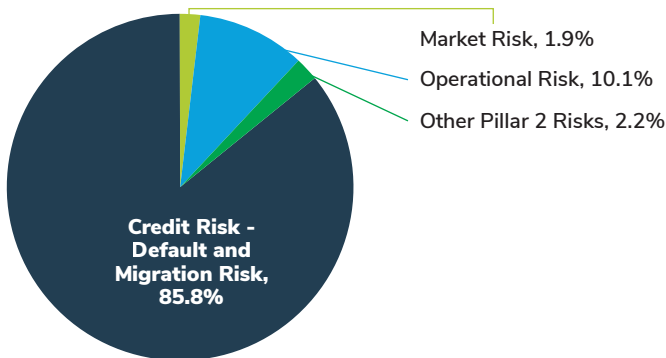


**Figure 17** Breakdown of Model Risk Related Overlaps Between P2R and New Pillar 1



10. This figure was calculated by aggregating all aspects of banks' submissions where Model Risk was explicitly cited as a risk driver or through qualitative comments provided for perceived overlaps. The main contributors are Default and Migration Risk, Market Risk, and Operational Risk.

# 5. CONCLUSIONS



It's clear that Pillar 2 capital requirements and their interaction with the forthcoming Basel 3 framework is an area that warrants further investigation. GBI's findings begin to shed light on this important topic, including the need to re-baseline Pillar 2 requirements to avoid mechanistic increases in capital and the extent to which there may be duplicative or overlapping requirements for the same underlying risks.

Certain aspects of data collection and analysis were challenging owing to the lack of transparency in the existing ECB SREP process as well as the fact that firms have not yet implemented the new requirements. Nonetheless, it is helpful to establish a preliminary baseline to understand how firms consider their internal ICAAP estimates and where double counting is perceived to exist. GBI intends to repeat its analysis annually, continuing its productive collaboration with AFME, to support firms as they implement Basel 3 and mature their thinking for how best to approach internal ICAAP estimates.

While some jurisdictions such as Canada, Japan, and Hong Kong have already implemented Basel 3, others like the United Kingdom and the United States have paused implementation. Europe finds itself in a middle ground, having implemented parts of the framework relating to banking book reforms via CRR3 while trading book reforms are pending. Matters are further complicated by the fact that not all jurisdictions have Pillar 2 requirements — notably the United States.

In today's world, capital is an increasingly scarce commodity for financial institutions. Following on from the Global Financial Crisis, changes to the Basel Accords increased the quality and quantum of capital among other enhanced prudential requirements. This has resulted in constrained balance sheets with financing becoming increasingly serviced outside of the banking sector. Pillar 2 capital requirements represent an important factor for regulators to consider when calibrating the final shape and design of their regulatory frameworks.

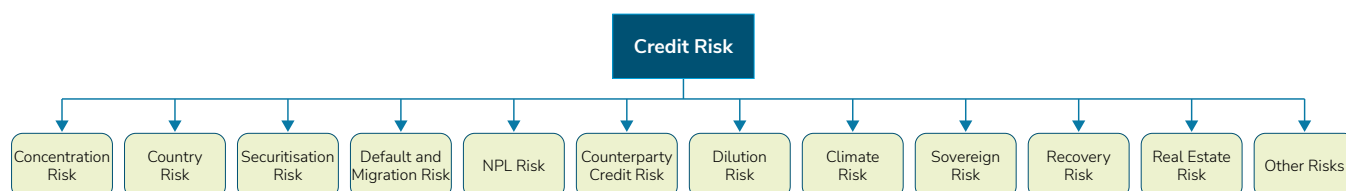
# 6. APPENDIX



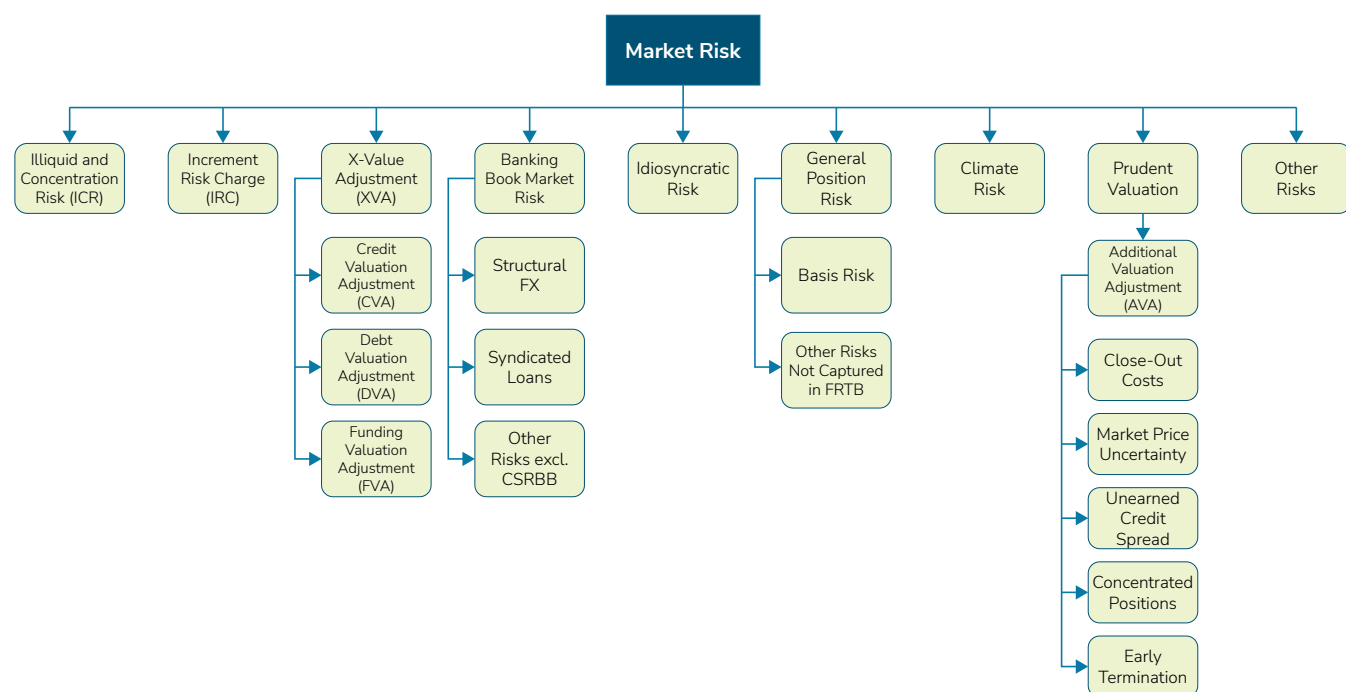
## Risk Taxonomy

The diagrams below show the risk taxonomy that was agreed upon with the banks participating in this study.

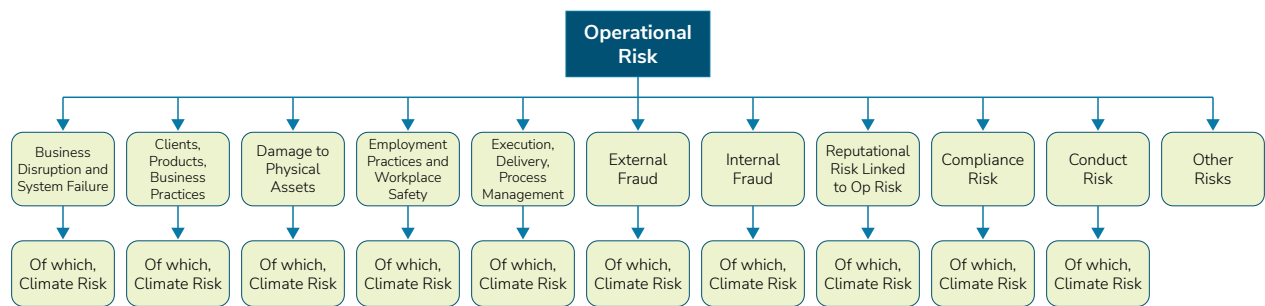
### Credit Risk



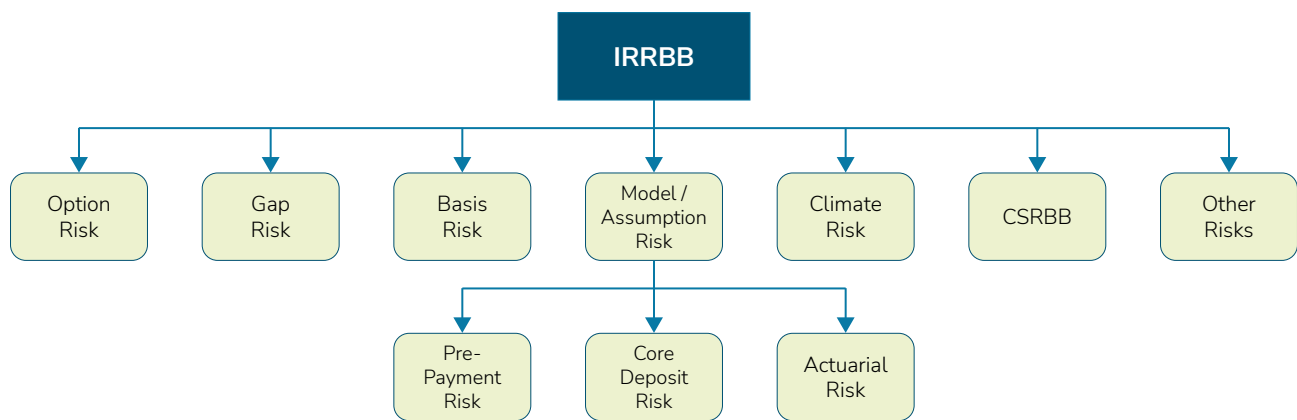
### Market Risk



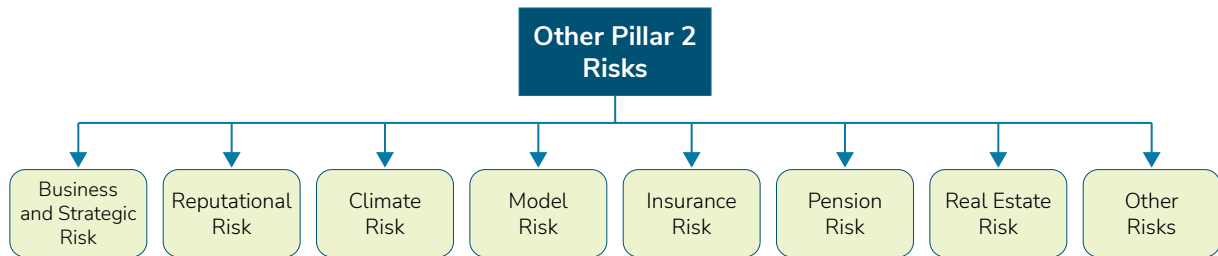
# Operational Risk



# Interest Rate Risk in the Banking Book (IRRBB)



# Other Pillar 2 Risks





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## About the Author

**Katherine Wolicki** is the Global Head of Engagement and Outreach at GARP Benchmarking Initiative (GBI). GBI plays a key role in supporting evidence-based policymaking through the provision of industry benchmarking studies. Prior to this she was with HSBC for 12 years where she led the global financial and model risk regulatory policy and engagement team for risk. The team was responsible for the external regulatory interface for the traded risk, treasury risk management, and global risk analytics functions, as well as the provision of guidance on regulatory risk matters, regulatory policy interpretation, and industry engagement. Wolicki has an MA in International Economic Relations from American University and a Maîtrise in European and International Law from the University of La Reunion.

## About GARP Benchmarking Initiative (GBI)

GBI was launched by GARP in 2012 for banks to compare risk measures against realistic benchmark portfolios. They quickly pivoted to becoming an independent, non-partisan platform conducting cross-border benchmarking studies with efficiency, security, and transparency. Today, GBI is a trusted partner for collecting and analyzing sensitive data in today's rapidly changing and interconnected marketplace, with over 100 quantitative and qualitative studies completed on a range of timely risk management topics.

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