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Fourth time around?

European banks confront "Basel IV"

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Executive summary

Many banks, especially in Europe, are struggling to produce sufficient returns on equity. This is partly due to the stringent capital and liquidity requirements banks have been subjected to over the past decade. The Basel III regulatory framework, defined in 2011 and now nearly fully effective, required banks to hold considerably higher capitalization levels and wider liquidity buffers. On top of this, the Basel Committee has recently issued new regulatory proposals, which it refers to as a "recalibration" of Basel III, but which bankers are calling "Basel IV." These proposals pose a new and potentially even greater challenge to banks' viability than all the regulatory measures of the past six years put together.

This report examines the aggregated impact of the current reform proposals on banks' required capital. Our estimations are based on publicly available market estimates of the increases in required capital resulting from credit risk, market risk, operational risk, and credit-value adjustment risk. We have analyzed these estimates and supplemented them with our analysis of "Basel IV" to derive an aggregated impact range.

Our analysis indicates that European banks would face major capital shortages under the proposed regulations, with shortfalls of 30 to 50 percent of currently available capital. As such, implementation of the proposals — as they stand today — seems unrealistic.

Still, simply waiting for the final version of the "Basel IV" regulations is not an option for bank executives. Even if significant amendments are made to the new proposals, the increase in capital requirements — potentially as much as 20 percent for some banks — will put further pressure on the profitability of most European banks.

Senior bankers will be forced to reconsider their business model, including their approach to capital management, portfolio composition, product structures, and the extent to which they rely on their balance sheets to generate income. If they do not consider "Basel IV" sufficient justification to make drastic strategic changes, it might be the beginning of the end for European banking.

Time to "recalibrate"

Since 1988, the Basel Committee on Banking Supervision (BCBS) has been shaping the agenda of senior bankers. That year, the BCBS introduced Basel I, a first set of regulations on minimum capital requirements for banks. In 2004, the BCBS established the "three pillars" concept in the Basel II framework, consisting of minimum capital requirements, supervisory review, and transparent disclosure of information, while further regulating how banks manage risk. Following the 2008–09 financial crisis, the committee set out the rules for Basel III, with the goal of improving the overall resilience of the global financial industry. This involved further strengthening of capital requirements and more careful scrutiny of banks' funding and liquidity. These requirements will be completely phased in by 2019.

Recently, an additional set of reforms has been proposed, intended to revise how banks measure and quantify the different types of risk they face. The committee calls these reforms a "recalibration" of Basel III, but among bankers they are commonly referred to as "Basel IV." Whereas Basel III focused on capital levels and quality, the new proposals concentrate on the estimation of banks' risk-weighted assets (RWA). These reforms include proposed revisions to the BCBS's standardized approaches as well as how bankers develop and apply their internal models for assessing their risks. A key component of "Basel IV" is the introduction of minimum requirements, or capital floors, for RWA. *Exhibit 1, next page,* outlines the most important changes and recalibrations proposed by the new regulations.[1]

Most senior bankers have yet to deal with the potential consequences of "Basel IV."

The overall goals of these proposed reforms are to limit variation in RWA and improve comparability across banks, strengthen the sensitivity of Basel III's standardized approach to risk, and ensure the adequacy of banks' internal models for assessing their risk. The BCBS has indicated that it plans to finalize proposed reforms by the end of 2016.

Most senior bankers are aware of the existence of the "Basel IV" proposals, but they have yet to deal with the potential consequences. Bankers may not fully understand the individual elements of the reform package, or they may not combine the results of the studies they conduct on individual types of risk into a holistic view.

Exhibit 1
Summary of consultative "Basel IV" proposals: Key changes to capital requirements

Capital output floors

RWA (using internal model approaches) floored by a percentage of RWA as determined through the standardized approaches

Capital output floors applied to total RWA or to each major risk category

Current suggestions for the calibration of the floor in the range of 60% to 90%

Final design and calibration pending

Credit risk

Revised standardized approach including broadly revised risk weights and additional due diligence requirements

Constraints on the use of internal models (for some credit portfolios) and introduction of parameter input floors

Operational risk

Replacement of existing approaches by a new standardized approach

Fundamental assumption that operational risk is related to size

Use of the "unadjusted business indicator" as a measure of operational risk exposure combined with collection and analysis of historical loss data

Market risk

Revised boundary of the trading book and stricter approval of internal models

Sensitivities-based analysis as new standardized approach, which also serves as a floor for the internal model approach

Internal model approach with expected shortfall based on stressed calibration as key metric and considering product-specific liquidity horizon

CVA risk

Abolishment of the internal models-based approach

Introduction of a standardized market risk-based approach (CVA sensitivities)

Enhancement of the existing basic approach to be applied by banks not using the market risk-based approach

Note: This is a subset of elements with key impacts on banks' business models. Other elements from BCBS that are also considered part of the "Basel IV" reform package include proposals on counterparty credit risk and securitization, among others. We consider Pillar 1 proposals to represent the core of "Basel IV." CVA = credit-value adjustment.

Source: BCBS; PwC Strategy& analysis

With the aim of clarifying the impact of the proposed regulations, we analyzed the implication of these reforms for more than 100 European banks (*see “Methodology,” page 19*). This analysis gives banks a perspective on how the current proposals will affect the industry, outlines ways to soften the potential impact, and suggests key areas that banks should focus on when preparing for the eventual implementation of “Basel IV.”

Double whammy

Many senior bankers have expressed concerns about the possible impact of “Basel IV,” and rightly so. The effect of the current proposals on required capital (which are still in a consultative status) would be extreme — first, because of the increase in RWA due to the “Basel IV” proposals and, second, because banks’ minimum capital ratios are increasing in parallel due to Basel III.

The RWA impact

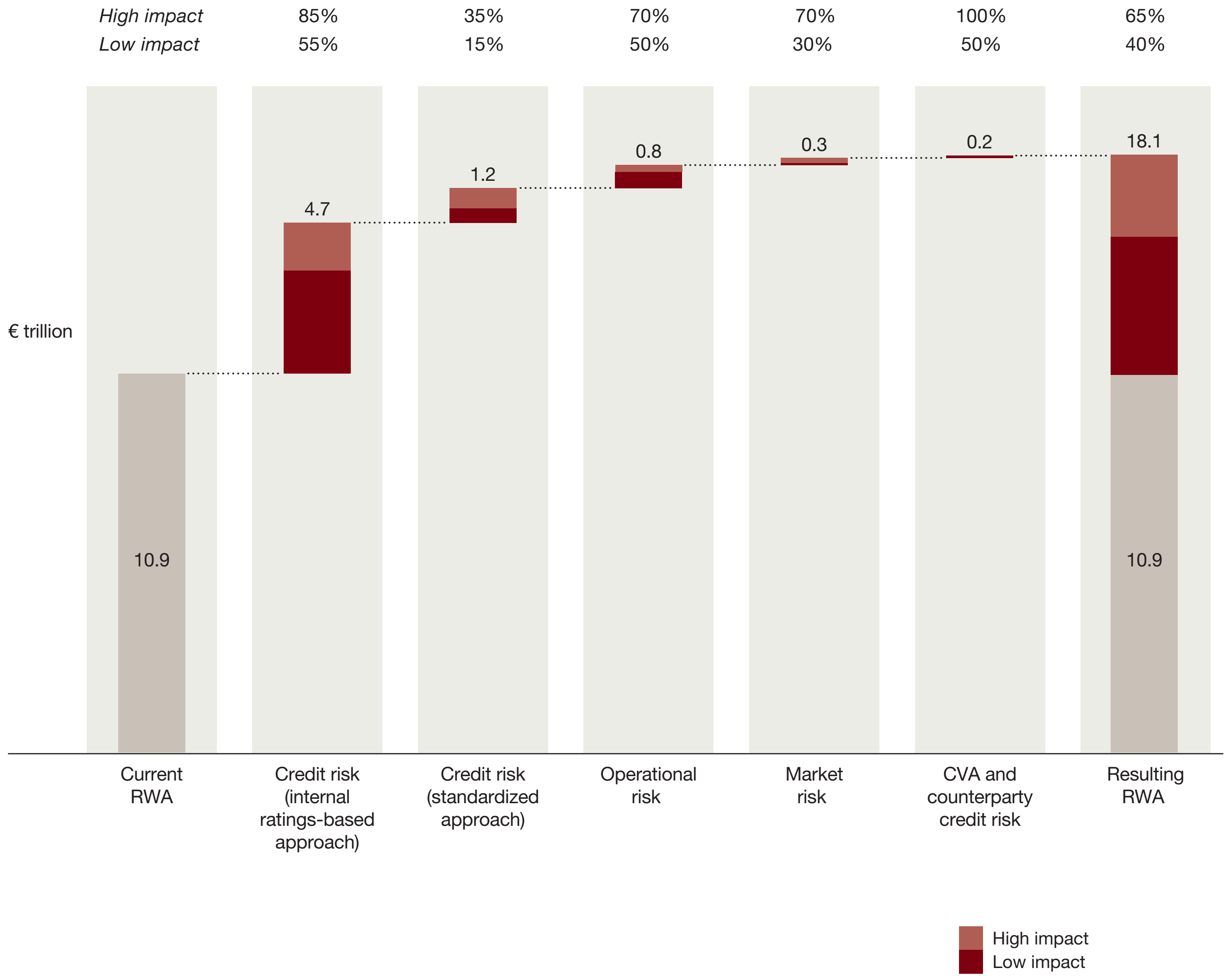
In total, “Basel IV” will increase the RWA of European banks by 40 to 65 percent, or as much as €7 trillion (US$7.7 trillion) in aggregated RWA for all the banks we studied. *Exhibit 2, next page,* breaks down the overall impact on RWA by the different risk types banks face. The impact is primarily driven by increases in credit risk RWA. Other risks included are operational risk, market risk, and credit-value adjustment (CVA) risk — the risk banks face given potential changes in the creditworthiness of their trading counterparties.

The effect of the current proposals on required capital would be extreme.

The sharp increase in credit risk RWA is due to a combination of the large share of credit in banks’ portfolios and the stringency of the new rules for credit risk. The size of the impact for credit risk depends on the composition of the credit portfolio across asset classes (corporate loans, mortgages, etc.) and the extent to which banks currently use internal models to calculate RWA for these asset classes.

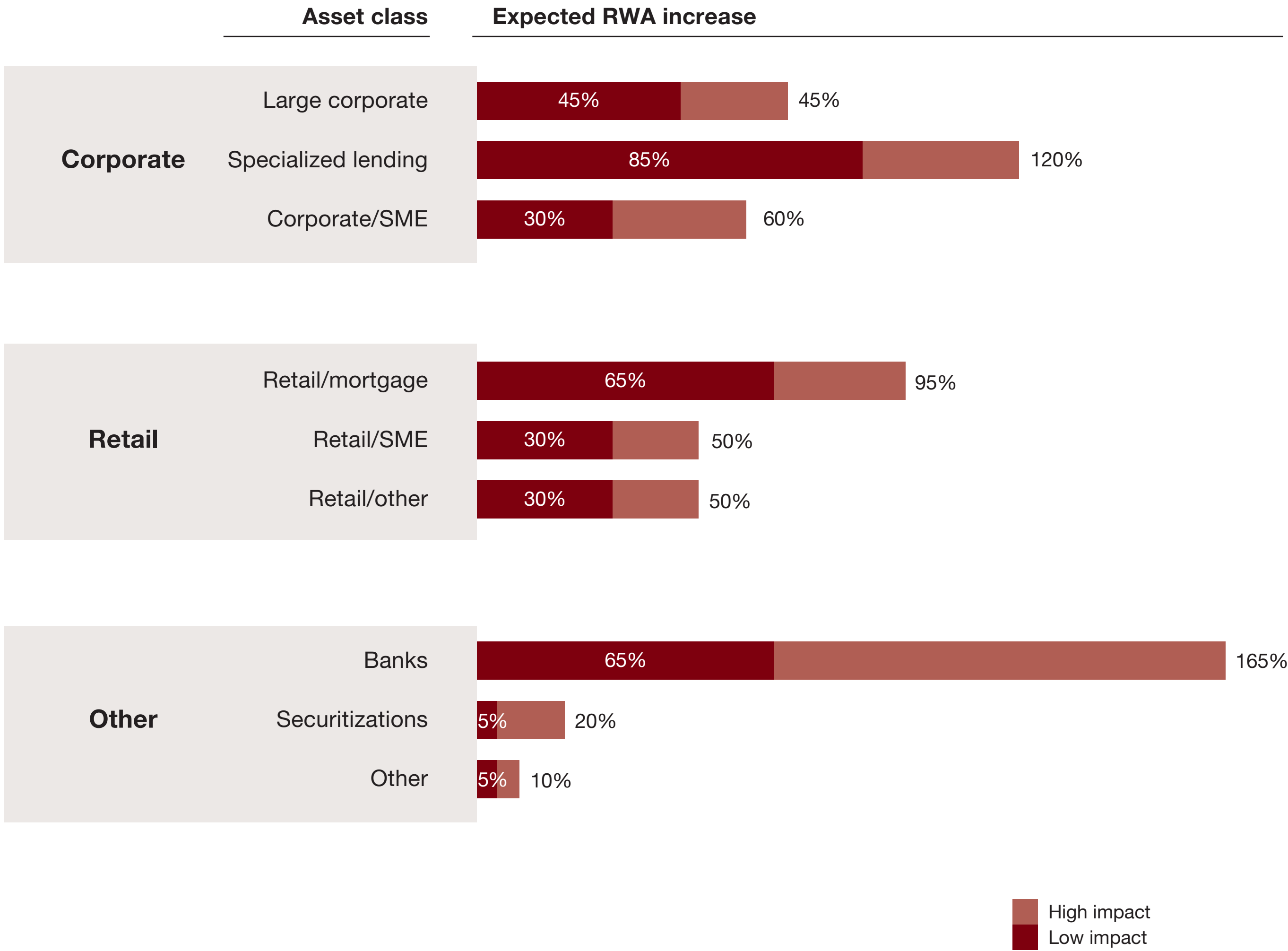
Banks using internal models to assess RWA typically have lower current risk weights for their credit exposures than they would have under a standardized approach. Under “Basel IV,” these banks will face strict restrictions on the inputs for their internal models for some asset classes and will be forced to use standardized approaches for others. If the resulting RWA is still low, a floor may be applied based on the estimated amount of RWA from a standardized approach. Combined, these restrictions, reclassifications, and floors most severely impact RWA for exposures to specialized lending, mortgages, and large corporate loans (*see Exhibit 3, page 10*).

Exhibit 2
Estimated impact on risk-weighted assets



Source: PwC Strategy& analysis

Exhibit 3
Estimated increases in credit risk RWA



Note: Impact relative to starting value for asset class.

Source: BCBS; EBA; PwC Strategy& analysis

In terms of bank types, our analysis indicates that the largest institutions are most likely to experience a high impact, because larger banks tend to rely more on internal models to assess RWA. The restrictions on these models and the transition to standardized approaches will likely increase RWA more for these institutions than for banks that currently use standardized approaches and therefore already face higher risk weights.

"Basel IV" also restricts the use of internal models for operational risk and market risk — and again, the impact for these risk types is expected to be highest for banks that have been relying on internal models. For operational risk, a standardized approach is prescribed in which RWA increases with bank size and with the bank's historical incidence of operational losses. As such, banks that faced substantial operational losses in the past — due to rogue trading, for example — would expect to see their required capital for operational risk increase.

Finally, RWA for CVA risk is likely to increase significantly above current levels, driven by the mandatory application of the standardized approach, even though the absolute impact on capital required for CVA risk will be moderate for most banks. Still, it may have strategic implications for banks' trading operations.

Impact on capital requirements

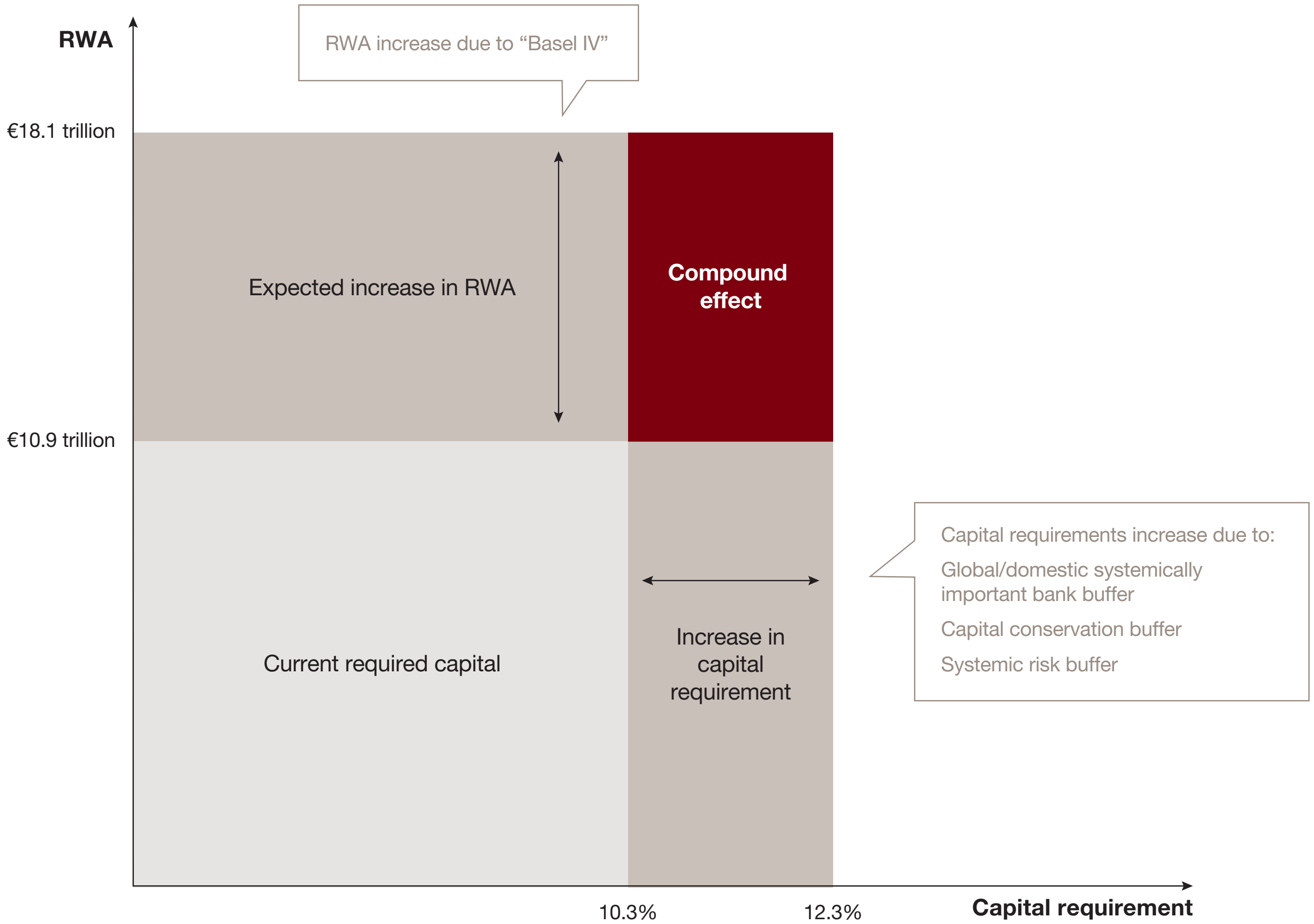
While banks are contemplating the impact from the proposed reforms, the Basel III capital requirements are still being phased in, leading to even higher minimum capital ratios.[2] We expect the average capital requirement for Single Supervisory Mechanism (SSM) banks — which are subject to supervision by the European Central Bank (ECB) — to increase from the current 10.3 percent to approximately 12.3 percent once the Basel III requirements are fully implemented.[3]

Compounding effect

This parallel development of increasing RWA under "Basel IV" and rising capital thresholds under Basel III will have a significant compounding effect on the required capital for European banks (*see Exhibit 4, next page*).

As a result, the banks included in our study will need to increase their capital to an aggregated €1.9 trillion to €2.2 trillion under "Basel IV," up from the current required amount of €1.1 trillion[4] (*see Exhibit 5, page 13*). Thus, the amount of capital required by regulation approximately doubles, and far exceeds the industry's available levels

Exhibit 4
Increase in required capital

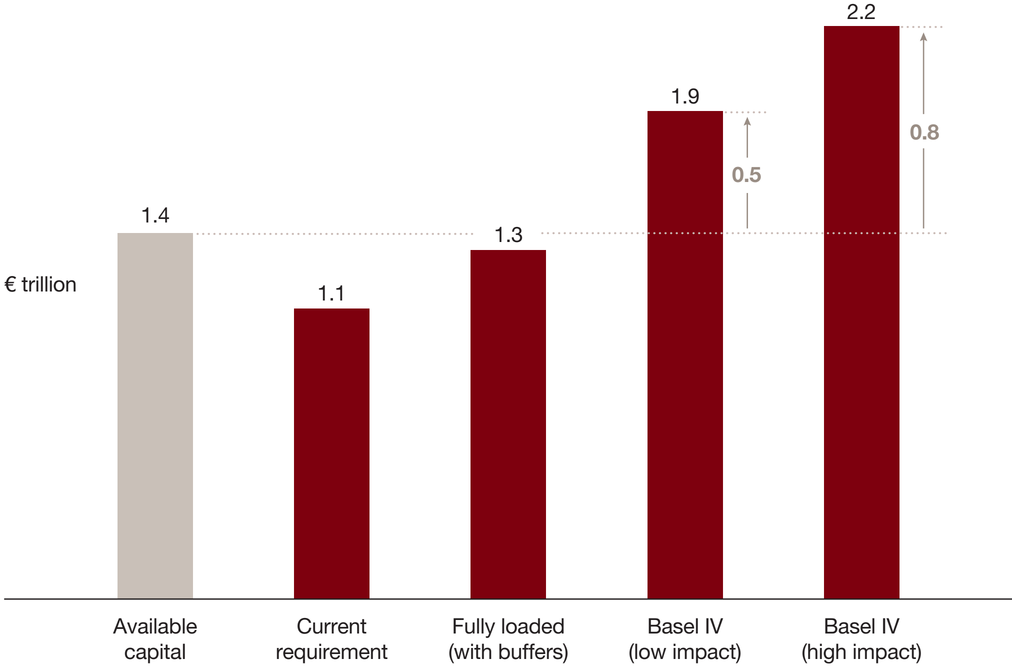


Source: PwC Strategy& analysis

of excess capital. Nearly all banks would face capital shortfalls, with an aggregate shortfall of €500 billion to €800 billion, and a shortfall for the average bank of between €4.8 billion and €8.0 billion.

Exhibit 5

Aggregated current and future required capital for European banks



	Available capital	Current requirement	Fully loaded (with buffers)	Basel IV (low impact)	Basel IV (high impact)
Average bank shortfall		–	€0.5 billion	€4.8 billion	€8.0 billion
# banks with shortfall		–	34	87	94

Source: PwC Strategy& analysis

Reality check

These proposed heightened capital requirements would force many banks to raise additional capital. Building up this required capital by retaining earnings is unrealistic for most banks, given the operating profit banks earned in the first half of 2015. If this level of profitability stays the same, banks would need four to six years to meet the new capital requirements, exceeding the expected time line for the implementation of "Basel IV" and hampering new investments in growth.

Alternatively, banks could consider raising capital externally. However, the potential for further rights issues is dim, given the modest performance of European bank stocks in the recent past. Banks without access to equity capital markets will face particular challenges. The higher capital requirements will also lead to an inevitable decline in banks' return on equity — more than 25 percent in the low-impact scenario — and would reduce their attractiveness to investors even further.

As a third option, banks could aim to enhance their profitability by reducing operating expenses. However, they would have to achieve cost reductions of 20 to 35 percent to remain at current return-on-equity levels. That would be highly ambitious, especially in light of the cost reduction programs that most institutions have already carried out in recent years.

In short, it is highly unlikely that European banks can bear the burden of the additional requirements of the "Basel IV" proposals in their current form.

Given these unrealistic capital requirements, it is expected that the final rules will be watered down — in part because of concerns raised by both the G20 and the European Council. We expect that the impact on required capital for European banks will not exceed 10 to 20 percent. To achieve this reduced impact, however, substantial adjustments to the current proposals would be required. There are various potential elements where adjustments to the current proposals are expected:

We expect that the impact on required capital will not exceed 10 to 20 percent.

- **Revised capital floors.** Based on the current proposals, a floor is applied to RWA at banks using internal models. This floor would be a percentage of the RWA (60 to 90 percent) that would be applicable if the risk of the same assets had been assessed using the standardized approach. Applying such a floor reduces the sensitivity of RWA to the actual underlying risk of the assets, with especially low-risk assets being penalized with higher risk weights. This encourages banks to invest in higher-risk assets, and eventually perhaps even to discard at least some of their internal models entirely. Moreover, the leverage ratio already serves as a backstop for capital at banks with high shares of low-risk assets.[5] In view of these arguments, it is possible that these floors would be reduced or deleted entirely in the revised proposals.

- **No mandatory application of the standardized approach.** In the current "Basel IV" proposals, banks are required to use the standardized approach for certain exposures — such as for loans to the largest corporates or to banks — instead of their internal models. This proposed rejection of internal models would make lending to these borrowers both less sensitive to the borrower's risk profile and substantially more expensive. As a result, only the riskiest borrowers will still obtain bank funding. In addition, banks may decide not to develop internal risk models for these exposures, such that they will have less transparency into their overall risk profile. Combined, these factors are expected to increase the risk in the overall banking sector. As an alternative, BCBS could impose restrictions to internal models but still give banks the latitude to use those models.

- **Recalibration of standardized approaches.** In addition to prohibiting or restricting the use of internal models, the "Basel IV" proposals amend the prescribed standardized approaches. For example, for operational risk, required capital would rise progressively with bank size, resulting in significant increases in RWA. Reconsidering these amendments would have only a moderate effect on reducing the impact from "Basel IV" proposals, but it could be a relatively safe first step.

Now what?

Whatever the final terms of the “Basel IV” proposals are, most European banks will need to increase capital levels. Even a 10 to 20 percent increase in capital requirements would imply a capital shortfall for many banks. In addition, raising more capital will make the already poor profitability of European banks even worse.

To mitigate the impact of the new requirements on their institutions, senior bankers in Europe must take the proposals into account now. Once the final reforms are published, capital markets will expect banks to develop a plausible and workable strategy for complying with the new capital requirements while delivering appropriate returns to shareholders.

In our experience, many bankers tend to focus on the technical aspects of “Basel IV,” rather than taking a step back and developing a truly strategic perspective on the proposals. They should assess the strategic impact of the proposals along four key areas — capital management, portfolio composition, product structure, and operational adjustments — and combine this assessment into a holistic strategic response.

- **Capital management.** The first step is to conduct an assessment of the future impact of “Basel IV” on the bank’s RWA and capital ratios. Plans for managing the bank’s capital will need to be revised and potential gaps closed by measures to raise capital or deleverage the balance sheet — especially for banks that have limited access to equity capital markets or that have credit portfolios with long durations. Investors will expect banks to have a capital plan ready once the final BCBS proposals are presented.
- **Portfolio composition.** Capital planning needs to go hand in hand with a strategic review by each line of business. To illustrate, as some components of RWA become less risk-sensitive under “Basel IV,” banks could shift capital toward higher-risk assets that offer higher margins. Banks should also consider a transformation toward business models that are less dependent on their own balance sheet for generating revenues. This would allow the banks to generate income without facing high capital requirements.[6]

Similarly, trading institutions should review their market risk portfolios and exit instruments traded with their own capital if they lack the scale or knowledge to participate competitively. This is particularly advisable with illiquid or high-risk instrument classes. Ultimately, “Basel IV” is expected to invoke further rightsizing efforts across the industry and a market segmentation into large global players — realizing scale advantages — and those specializing in specific asset portfolios.

- **Product structure.** Banks currently incorporate a wide set of risk drivers in their internal models to determine credit risk RWA. “Basel IV” would likely make banks adapt their product and pricing structures to reflect the new regulatory drivers for calculating RWA risk. For instance, RWA for residential mortgages will be assessed by the value of the underlying collateral rather than by the creditworthiness of the borrower. As a result, banks may consider pricing mortgages based on loan-to-value ratios instead of borrower income and credit history.

- **Operational adjustments.** The list of operational adjustments required to comply with “Basel IV” is long. The changes range from modeling and data requirements to the approval process for internal models to enhanced due diligence requirements for assessing credit risk. Given the scope and complexity of the proposed reforms, banks must understand early on how they will affect operations.

Act in advance

In addition to understanding the technical regulatory details of the "Basel IV" reforms, senior bankers are well advised to step back and develop a perspective on their strategic impact, which will depend largely on the bank's current business model. Banks that focus on a single line of business, such as specialized lending or commercial real estate, and that use internal models to calculate RWA will likely need a more drastic strategic response to the new rules than would a captive financial-services company that uses the standardized approach to RWA calculations today.

Irrespective of their current business, very few European banks will be in a position to fully absorb the impact of "Basel IV" through traditional measures such as raising additional capital or cost cutting. A shift in the degree to which banks are using their balance sheets to conduct business will be required, and that will likely force them to create a very different balance sheet structure and devise a fundamentally different way to make money. The sooner banks embark on this complex transition, the greater the strategic advantage they will gain over their slower peers.

Methodology

Our study analyzed the 103 banks that participated in the 2015 European Banking Authority transparency exercise, with German, Italian, Spanish, and French institutions representing more than half of the sample.[7] Altogether, these banks carry an aggregate RWA of €10.9 trillion. Credit risk makes up, on average, 85 percent of the banks' RWA, operational risk makes up 10 percent, and the remaining 5 percent consists of market and CVA risk (*see Exhibit A, next page*).

We estimated the RWA impact of "Basel IV" in a top-down manner for the key risk types: credit risk, operational risk, market risk, and CVA risk[8] (*see Exhibit B, page 21*). For each risk type, we identified the ranges of estimated impact based on numerous studies published by a broad selection of institutions and professional service firms and supplemented them with our internal analysis of the combined proposals.[9]

For all risk types other than credit risk, the estimates of the impact range were applied directly to current RWA. To illustrate, this means that RWA for CVA was increased by 50 percent to reflect low impact and by 100 percent to reflect high impact.

For credit risk, we applied a more granular analysis. Based on detailed credit data derived from the ECB transparency exercise, we estimated the RWA impact for each type of credit exposure (such as mortgage, retail, or large corporate loans) and method of assessing the risk (internal model versus standardized). For all exposures assessed under the standardized approach, we assumed an impact range on RWA of 10 to 30 percent, in line with public studies. To reflect the differences in approach in the "Basel IV" proposals for exposures under internal models, we applied different approaches for each asset class.

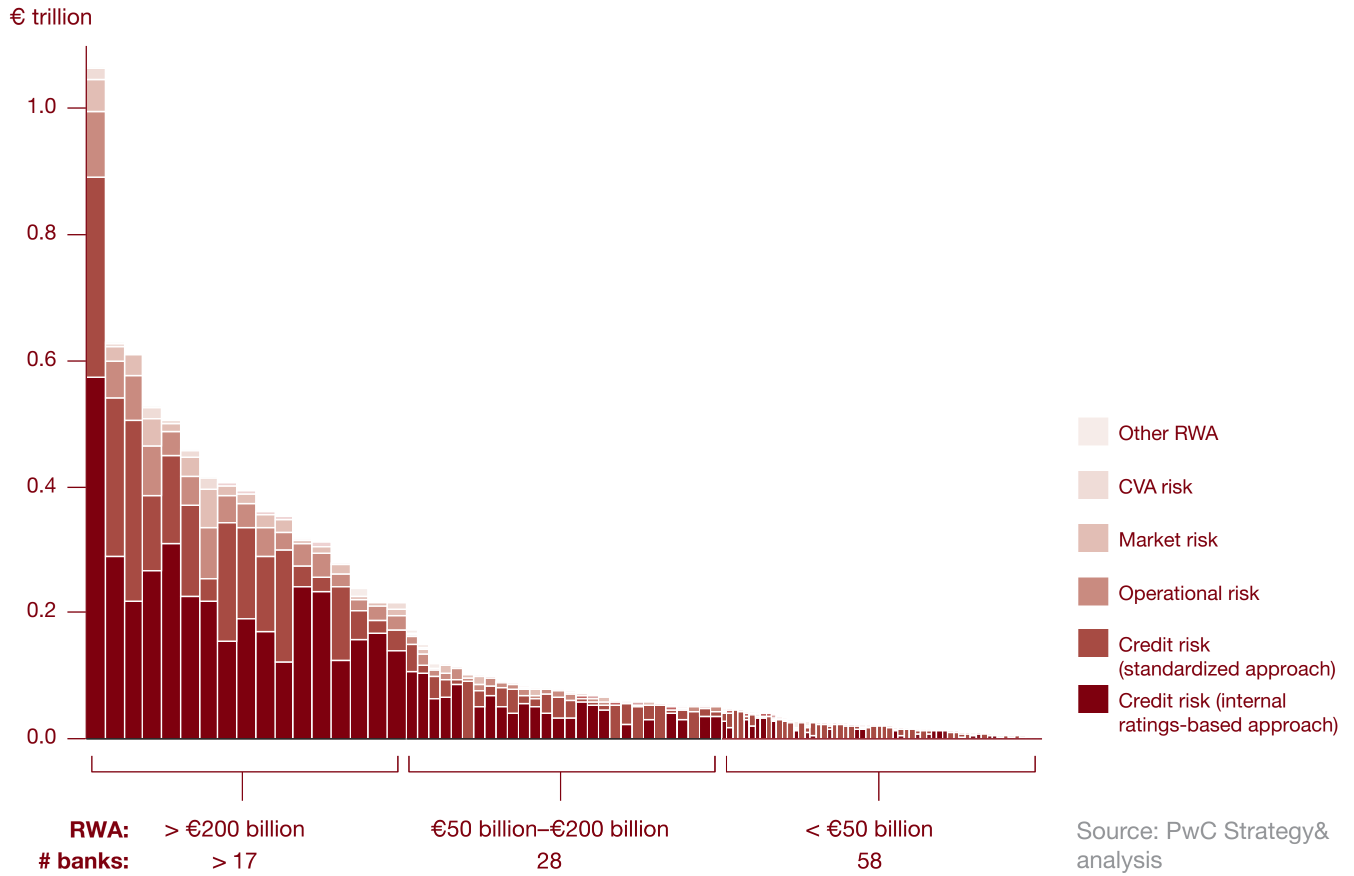
Mortgage, small and medium-sized enterprise, and other corporate loans: To estimate the increase for credit risk exposures assessed under internal models, we applied a floor of 60 percent relative to the risk weights that would be applicable under the revised standardized approach for those exposures. This floor of 60 percent is based on the current BCBS proposals, which suggest capital floors of 60 to 90 percent; we took the more realistic end of this spectrum.

To apply the floor, we had to determine the risk weights that would be applicable if the credit exposures — currently assessed with internal models — had been assessed under a standardized approach. As a reference, we applied the average risk weight in a country applicable for those types of loans assessed under the standardized approach. The average is number-weighted, so that all banks in our study from the same country count equally.

Specialized lending exposures: The applied floor for these exposures has been set at 100 percent, as the "Basel IV" proposals require banks to apply the standardized approach to these exposures. As the reference for the value under the standardized approach, we applied the risk weights for exposures to corporates under the standardized approach.

(Continues)

Exhibit A
Current RWA of banks in study sample as of the first half of 2015



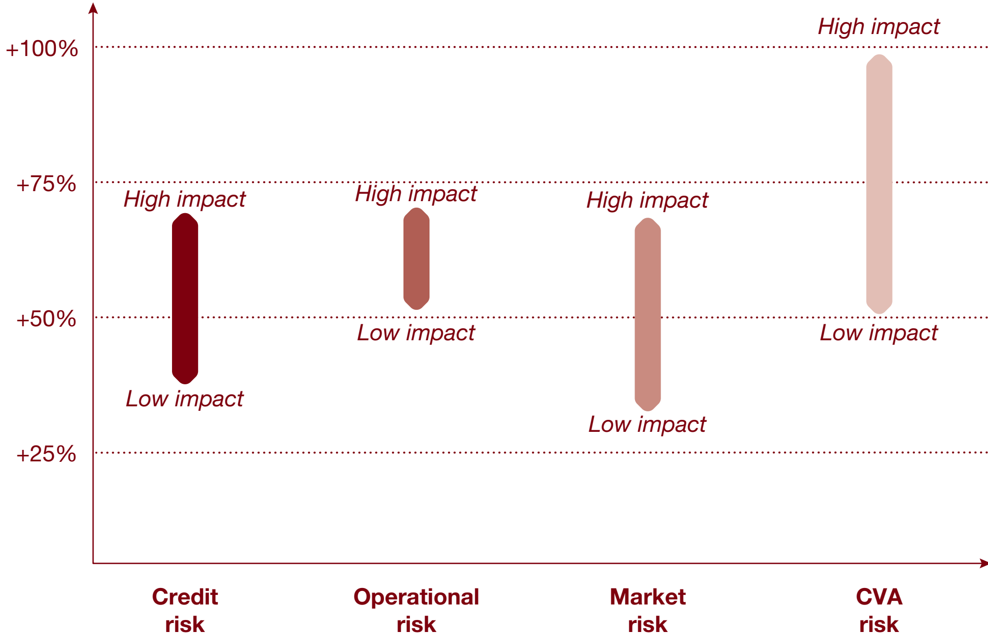
Source: PwC Strategy& analysis

Large corporate exposures: This portfolio can consist of two types of corporate exposures: the largest corporates (with assets exceeding €50 billion), and slightly smaller corporates that still earn revenues above €200 billion. Exposures to the first set of large corporates would be fully transitioned to the standardized method, so we applied standardized risk weights. Exposures to the second type of corporates are expected to face a 60 percent floor, combined with restrictions on the inputs to the model. To reflect this combination, we applied an 80 percent floor to the entire portfolio of large corporates.

Bank exposures: For exposure to banks, the estimated impact from "Basel IV" on RWA ranges between a low of 30 percent and a high of 50 percent. This reflects the significant changes in the standardized approach specifically for bank exposures and the proposal to require the standardized approach for all bank exposures.

All ranges are indicative only, and revisions to the BCBS proposals may alter the appropriate ranges for the expected impact.

Exhibit B
Impact on RWA



Source: PwC Strategy& analysis

Endnotes

1. PwC Germany has published detailed summaries (in German and in English) on the full range of the new proposals. (In addition, the firm has created a YouTube channel in both German and English.)

2. Basel III capital requirements being phased in include the global/domestic systemically important bank buffer (1 to 3 percent), capital conservation buffer (2.5 percent), and countercyclical buffer (as much as 2.5 percent). National regulators are also imposing a systemic risk buffer of as much as 3 percent on their countries' banks.

3. Current average supervisory review and evaluation process (SREP) requirement for SSM banks.

4. Assuming a current SREP requirement of 10.3 percent (based on ECB SSM SREP document) and an additional systemic risk and countercyclical buffer of 2.0 percent.

5. The leverage ratio sets the minimum capital required relative to banks' assets, rather than risk-weighted assets, so low-risk assets also count for this ratio.

6. "Strategy& European Banking Outlook 2016: It's time to radically rethink business models," Strategy&, July 2016.

7. In consequence, all calculations and data shown are as of the first half of 2015, if not explicitly stated otherwise.

8. We recognize that "Basel IV" proposals go beyond these risks (for example, counterparty credit risk), though additional risks appear moderate in terms of their impact on banks' overall business models.

9. Including publications from Barclays, BCBS, Bloomberg, Börsen-Zeitung, Bundesverband deutscher Banken, Deutsche Bank, DZ Bank, ISDA, PwC US, Reuters, and Risk Control Limited.

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