The Future of Capital Requirements

The Road to Basel IV

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Client Update
Basel Committee Finalizes Post-Crisis Capital Reforms

On December 7, 2017, the Basel Committee on Banking Supervision (the “Basel Committee”) announced that it had finalized all outstanding reforms under its Basel III framework (the “2017 Reforms”). Often referred to as “Basel IV” due to their capital implications, the 2017 Reforms are a central element of the Basel Committee’s response to the financial crisis and complement the initial phase of the Basel III reforms to the global regulatory framework announced in 2010. The 2017 Reforms are focused primarily on calibrating the capital adequacy (as opposed to the liquidity) components of the Basel III framework to enhance their comparability across banks and across jurisdictions.

Impact studies conducted since the Basel III framework was finalized in 2010 revealed wide variation in risk-weighted assets (“RWAs”) — the denominator of the risk-based capital ratios — across banks that could not be explained solely by differences in the riskiness of banks’ portfolios. These studies generated regulatory skepticism about how banks determine risk weights and highlighted difficulties in how accurately banks could model risks in certain asset classes. With the 2017 Reforms, the Basel Committee seeks to address these issues and more generally ensure credibility in the calculation of RWAs.

This Client Update first describes potential impacts of the 2017 Reforms and then provides a high-level overview of these developments. We anticipate publishing a series of more in-depth Client Updates on each of the major subject areas described below. Please follow the links to join us for a detailed Basel IV Update webcast series on January 22 and January 24.

POTENTIAL IMPACTS

In its report of the results of the cumulative quantitative impact study (“QIS”), the Basel Committee claims that the 2017 Reforms do not significantly increase overall capital requirements. The QIS was based on data as of December 2015, obtained from 248 banks, including 96 large internationally active (“Group 1”) banks and 152 smaller, regional (“Group 2”) banks.
On average, minimum required Tier 1 capital at the target level decreases by 0.5% for Group 1 banks and increases by 3.8% for Group 2 banks. Average risk-based capital ratios increase by 0.2 percentage points for Group 1 banks and by 0.1 percentage points for Group 2 banks.

However, while the average change is not dramatic, the effects vary drastically across individual banks, ranging from a Tier 1 capital increase of 43.4% to a drop of 27.8%. Ignoring these outliers, the 75th percentile to the 25th percentile is a Tier 1 capital spread from 17.3% to –9.1%. European banks are likely to bear a disproportionate share of the increase in minimum capital requirements; the European Banking Authority anticipates a 15.2% (€39.7 billion) rise in Tier 1 capital requirements for the region’s lenders.¹

Of course, the ultimate impact of the new reforms will depend on how regulators in each jurisdiction choose to implement the finalized Basel III framework. In a joint press release on December 7, 2017, the U.S. federal banking regulators announced their support for the finalization of the reforms, but stated that any proposed changes based on the agreement would be made through the standard notice-and-comment rulemaking process. It remains to be seen whether the general aversion to international accords sometimes attributed to the Trump Administration will impact adoption of the 2017 Reforms in the United States.

**OVERVIEW OF THE INDIVIDUAL REFORMS**

While the initial phase of Basel III focused largely on the composition of capital (the numerator of risk-based capital ratios) and the ratios themselves, the 2017 Reforms focus on the calculation of RWAs (the denominator of the risk-based capital ratios). Overall, the reforms increase the detail in the standardized approach, constrain the estimates used in the internal modeling approaches, and further limit the benefits that may be realized by using the internal modeling approaches. All of the reforms, except for the output floor (discussed below), are scheduled for implementation on January 1, 2022.

**Standardized Approach for Credit Risk**

Under the Basel III standardized approach for credit risk, supervisors establish the risk weights that banks apply to categories of their exposures (e.g., loans and investment securities) to determine RWAs. Most banks around the world apply the standardized approach. As a result, a large portion of the 2017 Reforms focus on increasing the granularity and risk-sensitivity of the standardized approach for many categories of assets.

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Among other things, the 2017 Reforms:

- Provide for a more detailed risk weighting (rather than a flat risk weight) for certain categories of exposures, including covered bonds, project finance, and residential and commercial real estate, potentially resulting in lower risk weights for less risky portfolios;

- Reduce reliance on external credit ratings by introducing more granular standardized risk weights for jurisdictions (like the United States) that do not permit reference to external credit ratings, potentially opening the door for lower risk weights in the United States for many types of exposures;\(^2\)

- Bifurcate regulatory retail exposures into transactors,\(^3\) which are subject to a 45% risk weight, and revolvers,\(^4\) which are subject to a 75% risk weight and introduce a 10% “credit conversion factor”\(^5\) for unconditionally cancelable commitments (previously such commitments were subject to a 0% “credit conversion factor”), thereby imposing capital requirements for the first time for many types of credit facilities, including certain types of credit cards and charge cards; and

- Introduce a more risk-sensitive methodology for measuring potential future exposure for securities financing transactions that allows banks to take into account the risk-mitigating benefits of correlation and diversification, which is expected to decrease the risk-based capital requirements in respect of securities lending transactions.

Historically, outside of the United States, banks that applied an internal modeling approach could disregard the standardized approach. As discussed below, with the introduction of a capital floor, all banks now must calculate RWAs under the standardized approach. The QIS predicts that the revisions to the standardized approach will decrease the minimum required capital for Group 1 banks by an average of 1.9% and for Group 2 banks by 2.0%. As indicated above, however, the potential impact of the standardized approach revisions varies significantly across banks, with at least one bank expected to experience a 533.8% increase in minimum required capital and at least one bank expected to experience a 42.1% decrease in minimum required capital.

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\(^2\) Currently, the Basel III framework provides for granular risk weights only if the risk weighting regime relies on external credit ratings. Section 939A of the Dodd-Frank Act does not permit U.S. federal banking regulators to reference external credit ratings, which had made it difficult for U.S. federal banking regulators to adopt those aspects of the Basel III framework.

\(^3\) A transactor is any facility, such as a credit card or charge card, where the balance has been repaid in full at each scheduled repayment date for the previous 12 months.

\(^4\) A revolver is any other regulatory retail facility.

\(^5\) Credit conversion factors are used to convert off-balance sheet credit exposures into on-balance sheet equivalents.
The QIS also estimates particularly large average decreases in minimum required capital for real estate exposures, with a projected 3.5% decrease for Group 1 banks and a 1.8% decrease for Group 2 banks.

**IRB Approaches for Credit Risk**

Basel III’s internal ratings-based approaches for credit risk (“IRB”), consisting of the Foundation IRB (“F-IRB”) and the Advanced IRB (“A-IRB”), allow banks that qualify to use their internal models to estimate certain parameter inputs (e.g., probability of default and loss given default) into the Basel Committee’s IRB RWA models. The 2017 Reforms introduce constraints to banks’ ability to estimate several of those risk parameters.

Among other things, the 2017 Reforms:

- Remove the option to use A-IRB for exposures to financial institutions and certain large corporate exposures;
- Remove the option to use IRB for any type of equity exposures;
- Apply floors on banks’ IRB parameters inputs;
- Impose greater specification of the practices banks may use to estimate their model parameters; and
- Remove the 1.06 scaling factor applied to RWAs determined by the IRB approaches to credit risk.

The QIS predicts that the revisions to the IRB approaches will increase the minimum required capital for Group 1 banks by an average of 2.0% and for Group 2 banks by 6.7%. As with the revisions to the standardized approach, the potential impact of the IRB revisions varies greatly across banks, with one bank expected to experience a 64% increase in minimum required capital and another bank expected to experience a 43.4% decrease in minimum required capital.

As mentioned above, the IRB revisions are likely to impact European banks more than U.S. banks, as some European banks currently exclusively use IRB. In contrast, after the enactment of the Dodd-Frank Act’s Collins Amendment, U.S. banks must not have capital requirements lower than those as calculated under the standardized approach.

**Operational Risk Framework**

The 2017 Reforms streamline the current framework by replacing the existing advanced measurement approaches and three standardized approaches for operational risk with a single risk-sensitive, but fundamentally standardized, approach.
The revised framework is based on two basic assumptions: (1) operational risk increases at an increasing rate with a bank’s income, and (2) banks with greater historical operational risk losses are more likely to experience operational risk losses in the future.

Accordingly, the new standardized approach for operational risk determines operational risk capital requirements based on the product of two components:

- “Business Indicator Component,” a progressive measure of a bank’s income (i.e., as a bank income increases, this component increases at a higher than proportionate rate); and
- “Internal Loss Multiplier,” a risk-sensitive component that reflects a bank’s historical internal losses.

Broadly, the new standardized approach results in an average decrease in operational risk capital of 25% for Group 1 banks and an average increase of 6.9% for Group 2 banks. The Basel Committee explains the increase in minimum operational risk capital (“ORC”) for Group 2 banks as driven by the different country samples. European banks make up a much larger proportion of Group 2. This supports the general findings of the QIS that the bulk of the adverse impact of the 2017 Reforms falls on European banks.

Moreover, as with the other components discussed above, these averages belie the large variation among banks. For Group 1 banks in the middle 25th to 75th percentiles, the changes in minimum ORC range from −24.7% to 20.7%. At the extremes, one Group 1 bank would see a 296% increase in its minimum ORC; another would see a 66.1% decrease. For Group 2 banks, the spread is −13.7% to 23.9%; at the extremes, one Group 2 bank would see a 238.3% increase in its minimum ORC and another would see a 67.3% decrease in its minimum ORC.

It is unclear how the U.S. federal banking regulators will implement these changes. In particular, the U.S. capital rules do not require most banks (i.e., those that determine their capital requirements based only on the standardized approach to capital) to separately hold capital for operational risk (because operational risk is then considered to be encompassed within the more capital-punitive standardized framework). Thus, it would seem logical that the new operational risk capital framework would be adopted for U.S. advanced approaches institutions only.

### Leverage Ratio Framework

Currently, under the Basel III risk-based capital framework, global systemically important banks (“G-SIBs”) are required to hold a special buffer of capital known as the G-SIB surcharge. G-SIBs in breach of the G-SIB surcharge face restrictions on dividends and other payouts.

The 2017 Reforms introduce a similar construct in the context of the leverage ratio. This new G-SIB leverage ratio surcharge is set at 50% of a G-SIB’s risk-based G-SIB surcharge, and is divided into five ranges (similar to the capital conservation buffer). For example, a G-SIB subject
to a 2% risk-based G-SIB surcharge would be subject to a 1% leverage G-SIB surcharge. As under the risk-based G-SIB surcharge, a G-SIB that failed to meet these requirements would face limitations on capital distributions. In the example above, if the G-SIB failed to meet its minimum leverage ratio of 3% plus its leverage G-SIB surcharge of 1% (i.e., a leverage ratio below 4%), it would be subject to limitations on dividends and other payouts. As with the capital conservation buffer, the precise limitations would depend on the extent of the shortfall.

In addition, the 2017 Reforms also make certain modifications to the calculation of the denominator of the Basel III leverage ratio, including by:

- Modifying the way in which derivatives are reflected in the exposure measure to align with the standardized approach to counterparty credit risk (SA-CCR) framework finalized by the Basel Committee in 2014;
- Permitting national discretion in periods of “exceptional macroeconomic circumstances” to exempt central bank reserves from the leverage ratio denominator on a temporary basis (in contrast to pending bi-partisan legislation in the U.S. Senate that would permit U.S. custody banks to exclude cash on deposit at certain central banks up to certain limits, regardless of macroeconomic circumstances); and
- Updating the treatment off-balance sheet exposures, consistent with the revisions to the standardized approach to credit risk.

The QIS predicts that the modifications to the leverage ratio denominator will decrease the minimum required Tier 1 capital for Group 1 banks by an average of 0.9% and increase the minimum required Tier 1 capital for Group 2 banks by 0.2%. As with the other 2017 Reforms, the potential impact of the modifications to the leverage ratio denominator varies greatly, with one bank expected to experience a 7.2% increase in minimum required capital and another bank expected to experience a 14.5% decrease in minimum required capital.

Output Floor

The Basel II framework introduced a capital floor as part of transitional arrangements for banks using an IRB approach for credit risk and/or an advanced measurement approach for operational risk. Under this transitional capital floor, banks’ capital ratios were subject to a floor of 80% of capital requirements as calculated under the older Basel I framework.

The 2017 Reforms introduce a revised output floor that similarly aims to limit the amount of capital benefit that banks can derive from calculating RWAs under internal models (similar to the Collins Amendment floor in the United States, which requires U.S. banks subject to the “advanced approaches” to calculate RWA under both the standardized approach and the

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6 For more discussion about the bill, see this [Client Update](#).
advanced approaches and apply the more punitive of the two). Under the new floor, banks using an internal models approach must calculate RWA as the higher of:

- Total RWAs calculated using the approaches for which the bank has supervisory approval (e.g., an IRB approach); and
- 72.5% of the total RWAs calculated using only the standardized approach.

In addition, regardless of whether a bank is actually subject to the standardized approach, banks will be required to disclose their RWAs under the revised standardized approaches. The Basel Committee anticipates releasing a forthcoming consultation paper on these disclosure requirements. The output floor reform will be implemented beginning on January 1, 2022 at 50% of RWAs, as calculated using the standardized approaches, and increases by 5% annually through 2026. The final floor of 72.5% will be implemented on January 1, 2027.

According to the QIS, the Basel Committee estimates that the output floor will be the binding constraint for 32.4% of Group 1 banks, compared to 19.7% of banks under the Basel II transitional capital floor. As mentioned above, European banks are expected to experience the greatest increases in minimum capital requirements.

**CVA Risk Framework**

The initial Basel III reforms in 2010 introduced a capital charge for credit valuation adjustment (CVA) risk. The 2017 Reforms seek to enhance that framework by:

- Increasing risk-sensitivity by taking into account the exposure component of CVA risk along with its associated hedges;
- Strengthening its robustness by removing the use of an internally modeled approach (leaving a “standardized approach” and a “basic approach”); and
- Improving its consistency by re-calibrating the remaining frameworks to be consistent with the approaches used in the revised market risk capital framework finalized by the Basel Committee in early 2016.

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7 CVA risk is the potential for mark-to-market losses of derivative instruments resulting from the deterioration in the creditworthiness of a counterparty.
Delay of Revised Market Risk Capital Framework

As a part of the 2017 Reforms, the Basel Committee also announced that it would delay implementation of its Revised Market Risk Capital framework, sometimes referred to as the “Fundamental Review of the Trading Books” (finalized in early 2016), from 2019 to January 2022.

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Please do not hesitate to contact us with any questions.

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Agenda

• Background
  – What is a Capital Ratio?
  – Road to Basel III/IV

• Basel III, Part One

• Basel III, Part Two (Basel IV)

• Implementation of Basel III in the U.S.
  – Collins Amendment
  – Interaction with Other Proposals
What is a Capital Ratio?
**What is a Capital Ratio?**

**Basic Components**

- The numerator is some measure of qualifying capital.
- The denominator is some measure of asset risk.
- Types of capital ratios:
  - A risk-based capital ratio reflects supervisory assessments of risk associated with assets. The denominator of a risk-based capital ratio consists of “risk-weighted assets” (RWA).
  - A leverage capital ratio generally is used as a backstop to a risk-based capital ratio. In a leverage capital ratio, the denominator is the balance sheet amounts of a firm’s assets (with limited exceptions).
*Timeline reflects Basel Committee on Banking Supervision (Basel Committee) actions, not U.S. implementation
Basel I and II

**Basel I**

- Established a minimum ratio of capital to RWA of 8%.
- Later revised to more precisely define general provisions / general loan loss reserves, recognize netting and incorporate market risk.
  - Market risk amendments permitted banks to use internal models to measure market risk capital requirements.

**Basel II**

- Introduced a three pillar framework:
  - Pillar One: minimum capital requirements
  - Pillar Two: supervisory review of capital adequacy and internal assessment processes
  - Pillar Three: Effective use of disclosure to strengthen market discipline.
- Banks permitted to use internal models to measure credit risk requirements.
Basel III, Part One
Focus of Basel III, Part One

The first phase of Basel III focused on strengthening the following components of the framework:

- Improving the quality of regulatory capital (i.e., common equity tier 1 capital);
- Improving the quantity of capital (i.e., increasing the minimum ratios);
- Re-calibrating certain aspects of the framework (market risk, counterparty credit risk and securitization);
- Introducing macroprudential elements, including a countercyclical capital buffer (CCyB), establishing a large exposure framework and a surcharge for global systemically important banks (GSIBs);
- Introducing a leverage ratio; and
- Introducing quantitative liquidity requirements (liquidity coverage ratio and net stable funding ratio).
Impact on Capital Levels

Key Observations

- Significant increases in capital ratios.
- Increase in levels of common equity tier 1.
- Increases level off after phase-in.

\[ \text{CET1, Tier 1 and total capital ratios} \]

Source: Basel Committee on Banking Supervision. See Table C.5, Table C.6 and Table C.7 for underlying data and sample size.

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1 The solid lines depict the relevant minimums, the dotted lines the minimums plus the capital conservation buffer. See Table A.4 for the relevant levels.

2 Exchange rates as of 30 June 2018.

3 See Table B.1 for the composition of the regions.
Impact on Capital Levels

Key Observations

• Change driven by numerator (capital) rather than denominator (RWA).
• Changes level off after phase-in.

Determinants of changes

1 The solid lines depict the relevant minimums, the dotted lines the minimums plus the capital conservation buffer. See Table A.4 for the relevant levels.
2 Exchange rates as of 30 June 2018.
3 See Table B.1 for the composition of the regions.

Source: Basel Committee on Banking Supervision. See Table C.5, Table C.6 and Table C.7 for underlying data and sample size.
Basel III, Part Two
Focus of Basel III, Part Two

• The Basel Committee noted key issues with Basel III implementation, most notably the “excessive variability of risk-weighted assets.”

• The second phase of Basel III focused on addressing this issue primarily by:
  – Enhancing the robustness and risk sensitivity of the standardized approaches for credit risk, credit valuation adjustment (CVA) risk and operational risk; and
  – Constraining the use of internal models.

• Basel III, Part Two is sometimes referred to as Basel IV.
  – Basel IV most commonly refers to the set of changes discussed on slides 13-14.
  – Basel IV is also closely tied with other post-2010 changes to the U.S. capital adequacy framework, including the proposed Stress Capital Buffer (SCB) discussed on slides 18-20.
Summary of Changes

Key changes to the Basel III standardized approach include:

- Increased granularity and risk sensitivity;
- Reducing reliance on credit ratings; and

Key changes to the Basel III IRB approaches include:

- Removing the option to use the advanced IRB approach for certain asset classes;
- Adopting “input” floors to enforce conservatism in model parameters; and
- Providing greater specification of parameter estimation practices.
Summary of Changes

Other changes include:

• Revising the CVA framework to enhance risk sensitivity, robustness and consistency;

• Introducing a single standardized approach for operational risk, based on a bank’s income and historical losses;

• Introducing a leverage buffer; and

• Introducing a standardized “output” floor.
  – RWA is floored at 72.5% of total RWA calculated using only the standardized approaches.
U.S. Implementation Considerations
Section 171(b)(2) of the Dodd-Frank Act

The minimum risk-based capital requirements established under this paragraph shall not be less than the generally applicable risk-based capital requirements, which shall serve as a floor for any capital requirements that the agency may require, nor quantitatively lower than the generally applicable risk-based capital requirements that were in effect for insured depository institutions as of the date of enactment of this Act.

The term “generally applicable risk-based capital requirements” means—

(A) the risk-based capital requirements, as established by the appropriate Federal banking agencies to apply to insured depository institutions under the prompt corrective action regulations implementing section 38 of the Federal Deposit Insurance Act, regardless of total consolidated asset size or foreign financial exposure; and

(B) includes the regulatory capital components in the numerator of those capital requirements, the risk-weighted assets in the denominator of those capital requirements, and the required ratio of the numerator to the denominator.
Common Equity Tier 1 Ratios (June 30, 2019)

U.S. GSIB Common Equity Tier 1 Ratios

<table>
<thead>
<tr>
<th>Bank</th>
<th>Standardized Approach</th>
<th>Advanced Approaches</th>
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<tbody>
<tr>
<td>JPMorgan Chase</td>
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<td>Citigroup</td>
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<td>Bank of America</td>
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<td>Goldman Sachs</td>
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<td>Wells Fargo</td>
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<td>State Street</td>
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<td>12.3</td>
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<tr>
<td>Bank of New York Mellon</td>
<td>12.4</td>
<td>11.1</td>
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Data as of 6/30/2019
Stress Capital Buffer Proposal

Proposed Risk-Based Stress Capital Buffer

- The proposed rule introduces two separate capital conservation buffers (standardized and advanced approaches).
- The standardized stress capital buffer used in the standardized approach capital conservation buffer is the sum of:
  - The largest difference between starting CET1 and projected CET1 over the 9-quarter planning horizon; and
  - The ratio of common stock dividends to projected risk-weighted assets for quarters 4 through 7.
- The standardized stress capital buffer is floored at 2.5%.
- The advanced approaches capital conservation buffer is based on a fixed 2.5% of advanced approaches RWA.
Proposed Stress Leverage Buffer

- The proposed rule introduces a new stress leverage buffer requirement that functions in the same way as the capital conservation buffer.
- The stress leverage buffer is defined as:
  - The largest difference between starting tier 1 capital and projected tier 1 capital over the 9-quarter planning horizon; and
  - The ratio of common stock dividends to projected total consolidated assets for quarters 4 through 7.
- Unlike the risk-based capital conservation buffer, the stress leverage buffer is not subject to a 2.5% floor.
Interactions Between Basel IV and Other U.S. Frameworks

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<tr>
<th>Standard</th>
<th>2019</th>
<th>2020</th>
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<td>GSIB Surcharge</td>
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<td>CCyB</td>
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<td>Recalibration timing less clear</td>
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<td>&quot;enhanced&quot; supplementary leverage ratio</td>
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<td>Applicability timing less clear</td>
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<td>Current Expected Credit Losses (CECL)¹</td>
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<td>Standardized Approach for Counterparty Credit Risk</td>
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<td>Fundamental Review of the Trading Book (FRTB) (internal models approach)</td>
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<td>FRTB (standardized approach)</td>
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<td>Revised Credit Risk Framework</td>
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<td>Other Basel Committee standards²</td>
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¹ Awaiting U.S. specific guidance on application to stress testing
² Securitization framework, long-term treatment of provisions, interest rate risk in the banking book, investment fund framework

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Among other things, the 2017 Reforms:

- Provide for a more detailed risk weighting (rather than a flat risk weight) for certain categories of exposures, including covered bonds, project finance, and residential and commercial real estate, potentially resulting in lower risk weights for less risky portfolios;

- Reduce reliance on external credit ratings by introducing more granular standardized risk weights for jurisdictions (like the United States) that do not permit reference to external credit ratings, potentially opening the door for lower risk weights in the United States for many types of exposures;\(^2\)

- Bifurcate regulatory retail exposures into transactors,\(^3\) which are subject to a 45% risk weight, and revolvers,\(^4\) which are subject to a 75% risk weight and introduce a 10% “credit conversion factor”\(^5\) for unconditionally cancelable commitments (previously such commitments were subject to a 0% “credit conversion factor”), thereby imposing capital requirements for the first time for many types of credit facilities, including certain types of credit cards and charge cards; and

- Introduce a more risk-sensitive methodology for measuring potential future exposure for securities financing transactions that allows banks to take into account the risk-mitigating benefits of correlation and diversification, which is expected to decrease the risk-based capital requirements in respect of securities lending transactions.

Historically, outside of the United States, banks that applied an internal modeling approach could disregard the standardized approach. As discussed below, with the introduction of a capital floor, all banks now must calculate RWAs under the standardized approach. The QIS predicts that the revisions to the standardized approach will decrease the minimum required capital for Group 1 banks by an average of 1.9% and for Group 2 banks by 2.0%. As indicated above, however, the potential impact of the standardized approach revisions varies significantly across banks, with at least one bank expected to experience a 533.8% increase in minimum required capital and at least one bank expected to experience a 42.1% decrease in minimum required capital.

\(^2\) Currently, the Basel III framework provides for granular risk weights only if the risk weighting regime relies on external credit ratings. Section 939A of the Dodd-Frank Act does not permit U.S. federal banking regulators to reference external credit ratings, which had made it difficult for U.S. federal banking regulators to adopt those aspects of the Basel III framework.

\(^3\) A transactor is any facility, such as a credit card or charge card, where the balance has been repaid in full at each scheduled repayment date for the previous 12 months.

\(^4\) A revolver is any other regulatory retail facility.

\(^5\) Credit conversion factors are used to convert off-balance sheet credit exposures into on-balance sheet equivalents.
The QIS also estimates particularly large average decreases in minimum required capital for real estate exposures, with a projected 3.5% decrease for Group 1 banks and a 1.8% decrease for Group 2 banks.

**IRB Approaches for Credit Risk**

Basel III’s internal ratings-based approaches for credit risk (“IRB”), consisting of the Foundation IRB (“F-IRB”) and the Advanced IRB (“A-IRB”), allow banks that qualify to use their internal models to estimate certain parameter inputs (e.g., probability of default and loss given default) into the Basel Committee’s IRB RWA models. The 2017 Reforms introduce constraints to banks’ ability to estimate several of those risk parameters.

Among other things, the 2017 Reforms:

- Remove the option to use A-IRB for exposures to financial institutions and certain large corporate exposures;
- Remove the option to use IRB for any type of equity exposures;
- Apply floors on banks’ IRB parameters inputs;
- Impose greater specification of the practices banks may use to estimate their model parameters; and
- Remove the 1.06 scaling factor applied to RWAs determined by the IRB approaches to credit risk.

The QIS predicts that the revisions to the IRB approaches will increase the minimum required capital for Group 1 banks by an average of 2.0% and for Group 2 banks by 6.7%. As with the revisions to the standardized approach, the potential impact of the IRB revisions varies greatly across banks, with one bank expected to experience a 64% increase in minimum required capital and another bank expected to experience a 43.4% decrease in minimum required capital.

As mentioned above, the IRB revisions are likely to impact European banks more than U.S. banks, as some European banks currently exclusively use IRB. In contrast, after the enactment of the Dodd-Frank Act’s Collins Amendment, U.S. banks must not have capital requirements lower than those as calculated under the standardized approach.

**Operational Risk Framework**

The 2017 Reforms streamline the current framework by replacing the existing advanced measurement approaches and three standardized approaches for operational risk with a single risk-sensitive, but fundamentally standardized, approach.
The revised framework is based on two basic assumptions: (1) operational risk increases at an increasing rate with a bank's income, and (2) banks with greater historical operational risk losses are more likely to experience operational risk losses in the future.

Accordingly, the new standardized approach for operational risk determines operational risk capital requirements based on the product of two components:

- “Business Indicator Component,” a progressive measure of a bank’s income (i.e., as a bank income increases, this component increases at a higher than proportionate rate); and
- “Internal Loss Multiplier,” a risk-sensitive component that reflects a bank’s historical internal losses.

Broadly, the new standardized approach results in an average decrease in operational risk capital of 25% for Group 1 banks and an average increase of 6.9% for Group 2 banks. The Basel Committee explains the increase in minimum operational risk capital (“ORC”) for Group 2 banks as driven by the different country samples. European banks make up a much larger proportion of Group 2. This supports the general findings of the QIS that the bulk of the adverse impact of the 2017 Reforms falls on European banks.

Moreover, as with the other components discussed above, these averages belie the large variation among banks. For Group 1 banks in the middle 25th to 75th percentiles, the changes in minimum ORC range from −24.7% to 20.7%. At the extremes, one Group 1 bank would see a 296% increase in its minimum ORC; another would see a 66.1% decrease. For Group 2 banks, the spread is −13.7% to 23.9%; at the extremes, one Group 2 bank would see a 238.3% increase in its minimum ORC and another would see a 67.3% decrease in its minimum ORC.

It is unclear how the U.S. federal banking regulators will implement these changes. In particular, the U.S. capital rules do not require most banks (i.e., those that determine their capital requirements based only on the standardized approach to capital) to separately hold capital for operational risk (because operational risk is then considered to be encompassed within the more capital-punitive standardized framework). Thus, it would seem logical that the new operational risk capital framework would be adopted for U.S. advanced approaches institutions only.

**Leverage Ratio Framework**

Currently, under the Basel III risk-based capital framework, global systemically important banks (“G-SIBs”) are required to hold a special buffer of capital known as the G-SIB surcharge. G-SIBs in breach of the G-SIB surcharge face restrictions on dividends and other payouts.

The 2017 Reforms introduce a similar construct in the context of the leverage ratio. This new G-SIB leverage ratio surcharge is set at 50% of a G-SIB’s risk-based G-SIB surcharge, and is divided into five ranges (similar to the capital conservation buffer). For example, a G-SIB subject
to a 2% risk-based G-SIB surcharge would be subject to a 1% leverage G-SIB surcharge. As under the risk-based G-SIB surcharge, a G-SIB that failed to meet these requirements would face limitations on capital distributions. In the example above, if the G-SIB failed to meet its minimum leverage ratio of 3% plus its leverage G-SIB surcharge of 1% (i.e., a leverage ratio below 4%), it would be subject to limitations on dividends and other payouts. As with the capital conservation buffer, the precise limitations would depend on the extent of the shortfall.

In addition, the 2017 Reforms also make certain modifications to the calculation of the denominator of the Basel III leverage ratio, including by:

- Modifying the way in which derivatives are reflected in the exposure measure to align with the standardized approach to counterparty credit risk (SA-CCR) framework finalized by the Basel Committee in 2014;

- Permitting national discretion in periods of “exceptional macroeconomic circumstances” to exempt central bank reserves from the leverage ratio denominator on a temporary basis (in contrast to pending bi-partisan legislation in the U.S. Senate that would permit U.S. custody banks to exclude cash on deposit at certain central banks up to certain limits, regardless of macroeconomic circumstances); \(^6\) and

- Updating the treatment off-balance sheet exposures, consistent with the revisions to the standardized approach to credit risk.

The QIS predicts that the modifications to the leverage ratio denominator will decrease the minimum required Tier 1 capital for Group 1 banks by an average of 0.9% and increase the minimum required Tier 1 capital for Group 2 banks by 0.2%. As with the other 2017 Reforms, the potential impact of the modifications to the leverage ratio denominator varies greatly, with one bank expected to experience a 7.2% increase in minimum required capital and another bank expected to experience a 14.5% decrease in minimum required capital.

**Output Floor**

The Basel II framework introduced a capital floor as part of transitional arrangements for banks using an IRB approach for credit risk and/or an advanced measurement approach for operational risk. Under this transitional capital floor, banks' capital ratios were subject to a floor of 80% of capital requirements as calculated under the older Basel I framework.

The 2017 Reforms introduce a revised output floor that similarly aims to limit the amount of capital benefit that banks can derive from calculating RWAs under internal models (similar to the Collins Amendment floor in the United States, which requires U.S. banks subject to the “advanced approaches” to calculate RWA under both the standardized approach and the

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\(^6\) For more discussion about the bill, see this [Client Update](http://www.debevoise.com).
advanced approaches and apply the more punitive of the two). Under the new floor, banks using an internal models approach must calculate RWA as the higher of:

- Total RWAs calculated using the approaches for which the bank has supervisory approval (e.g., an IRB approach); and
- 72.5% of the total RWAs calculated using only the standardized approach.

In addition, regardless of whether a bank is actually subject to the standardized approach, banks will be required to disclose their RWAs under the revised standardized approaches. The Basel Committee anticipates releasing a forthcoming consultation paper on these disclosure requirements. The output floor reform will be implemented beginning on January 1, 2022 at 50% of RWAs, as calculated using the standardized approaches, and increases by 5% annually through 2026. The final floor of 72.5% will be implemented on January 1, 2027.

According to the QIS, the Basel Committee estimates that the output floor will be the binding constraint for 32.4% of Group 1 banks, compared to 19.7% of banks under the Basel II transitional capital floor. As mentioned above, European banks are expected to experience the greatest increases in minimum capital requirements.

### CVA Risk Framework

The initial Basel III reforms in 2010 introduced a capital charge for credit valuation adjustment (CVA) risk. The 2017 Reforms seek to enhance that framework by:

- Increasing risk-sensitivity by taking into account the exposure component of CVA risk along with its associated hedges;
- Strengthening its robustness by removing the use of an internally modeled approach (leaving a “standardized approach” and a “basic approach”); and
- Improving its consistency by re-calibrating the remaining frameworks to be consistent with the approaches used in the revised market risk capital framework finalized by the Basel Committee in early 2016.

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7 CVA risk is the potential for mark-to-market losses of derivative instruments resulting from the deterioration in the creditworthiness of a counterparty.
Delay of Revised Market Risk Capital Framework

As a part of the 2017 Reforms, the Basel Committee also announced that it would delay implementation of its Revised Market Risk Capital framework, sometimes referred to as the “Fundamental Review of the Trading Books” (finalized in early 2016), from 2019 to January 2022.

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