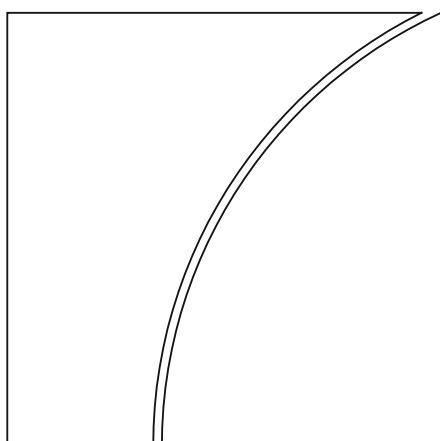


Basel Committee on Banking Supervision



Methodology of Basel III monitoring analyses

October 2025



Queries regarding this document should be addressed to the Secretariat of the Basel Committee on Banking Supervision (e-mail: qis@bis.org).

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Conventions used in this document

billion thousand million

trillion thousand billion

lhs, rhs left-hand scale, right-hand scale

Group 1 banks are those that have Tier 1 capital of more than €3 billion and are internationally active. All other banks are considered Group 2 banks.

The term "country" as used in this publication also covers territorial entities that are not states as understood by international law and practice but for which data are separately and independently maintained.

Quantitative Impact Study Group of the Basel Committee on Banking Supervision

Chair Martin Birn, Secretariat of the Basel Committee on Banking Supervision,
Bank for International Settlements, Basel

The representatives in *italics* are members of the analysis team and provided analytical support at the Secretariat.

Argentina	Griselda Amalia Martiarena	Central Bank of Argentina
Australia	Duncan McEwin	Australian Prudential Regulation Authority
Belgium	Sabina Bernardo	National Bank of Belgium
Brazil	Felipe Rocha	Central Bank of Brazil
Canada	Alex Pande Kelly Broderick-Sander	Office of the Superintendent of Financial Institutions
China	Shijie Zhou	China Banking and Insurance Regulatory Commission
France	Nicolas Olano	French Prudential Supervision and Resolution Authority
Germany	Ingo Torchiani Michael Schoeppe	Deutsche Bundesbank Federal Financial Supervisory Authority
India	Manoj Kumar Poddar	Reserve Bank of India
Indonesia	Tony	Indonesia Financial Services Authority (OJK)
Italy	Mauro Marinelli	Bank of Italy
Japan	Asuka Watanabe Toko Nakai	Bank of Japan Financial Services Agency
Korea	KyuSik Kim	Financial Supervisory Service
Luxembourg	Natalia Katilova	Commission de Surveillance du Secteur Financier
Mexico	Estefania Guadalupe Arellano Martínez Daniela Montes de Oca	Bank of Mexico National Banking and Securities Commission
Netherlands	Monique Smit	De Nederlandsche Bank
Saudi Arabia	Mohammad Alsuhaibani	Saudi Central Bank
Singapore	Sandy Ho	Monetary Authority of Singapore
South Africa	Tebogo Ntseane	South African Reserve Bank
Spain	David Barra	Bank of Spain
Sweden	Andreas Borneus	Finansinspektionen
Switzerland	Philippe Brügger	Swiss Financial Market Supervisory Authority FINMA
Türkiye	Aydan Aydin Inan	Banking Regulation and Supervision Agency
United Kingdom	Faith Bannier Simeon Ebechidi	Bank of England/Prudential Regulation Authority

United States	Dennis Mawhirter Logan Herman Paul Vigil Benjamin Pegg	Board of Governors of the Federal Reserve System Federal Reserve Bank of New York Federal Deposit Insurance Corporation Office of the Comptroller of the Currency
European Central Bank	Pär Torstensson Kallol Sen	European Central Bank European Central Bank Single Supervisory Mechanism
Observers	Lampros Kalyvas Alberto Gilesi Peik Granlund	European Banking Authority European Commission Finnish Financial Supervisory Authority
Secretariat	Verena Seidl Rebeca Anguren Renzo Corrias Carsten Folkertsma Markus Grimpe Pradeep Kumar Monika Spudic <i>Bettina Farkas</i> <i>Helga Koo</i> <i>Jeta Limani</i> <i>Lea Neugebauer</i> <i>Eleonora Scognamiglio</i> <i>Giulia Tagliani</i> <i>Markus Zoss</i>	Bank for International Settlements

1. General remarks

Most of the monitoring analyses of the Basel Committee on Banking Supervision are now presented as dashboards on the Committee's website. This document provides additional background information on the methodologies used in dashboards, monitoring reports and other analyses (together referred to as "the Basel III monitoring analyses"). It will be updated whenever methodologies change and whenever the publication of more in-depth explanations for existing methodologies is deemed appropriate.

The Committee welcomes any feedback and questions on this document and its monitoring analyses at qis@bis.org. Due to the terms of the exercise, however, it is not possible to provide analysts and researchers with data at a more granular level compared to what is presented in the analyses on the Committee's website.

1.1 Scope of the monitoring exercise

At its 12 September 2010 meeting, the Group of Governors and Heads of Supervision (GHOS), the oversight body of the Committee, announced a substantial strengthening of existing capital requirements and fully endorsed the agreements it had reached on 26 July 2010.¹ These capital reforms, together with the introduction of two international liquidity standards, are collectively referred to as "initial phase of Basel III reforms" or in short "initial Basel III" within the Committee's Basel III monitoring analyses. On 7 December 2017, the GHOS finalised the Basel III reforms² with a number of revisions that seek to restore credibility in the calculation of risk-weighted assets (RWA) and capital ratios of banks (referred to as "final Basel III" in the Basel III monitoring analyses). The Committee monitors and evaluates the impact of these capital, leverage and liquidity requirements on a semi-annual basis. The Committee believes that the information contained in the Basel III monitoring reports and dashboards will provide relevant stakeholders with a useful benchmark for analysis.

Generally, all but two of the 27 Committee member countries participate in the Basel III monitoring exercises.³ The analyses are based on data submitted by the participating banks and their national supervisors in reporting questionnaires and in accordance with the instructions prepared by the Committee.⁴ The questionnaires covered components of eligible capital, the calculation of all aspects of RWA, the calculation of a leverage ratio and components of the liquidity metrics. Table A.1 in Annex A shows which standards are relevant for the different Basel III regimes (initial Basel III, transitional final Basel III and the fully phased-in final Basel III framework). The main difference between the transitional and the fully phased-in final Basel III frameworks is the level of the output floor which was 50% in 2023 (transitional final Basel III framework) and 72.5% in 2028 (fully phased-in final Basel III framework). The Basel III monitoring analyses reflect the finalisation of the market risk framework published in January 2019⁵ since the end-2018 reporting date.

¹ See the 26 July 2010 press release "The Group of Governors and Heads of Supervision reach broad agreement on Basel Committee capital and liquidity reform package", www.bis.org/press/p100726.htm, and the 12 September 2010 press release "Group of Governors and Heads of Supervision announces higher global minimum capital standards", www.bis.org/press/p100912.htm.

² Basel Committee on Banking Supervision, *High-level summary of Basel III reforms*, December 2017, www.bis.org/bcbs/publ/d424_hlsummary.pdf; Basel Committee on Banking Supervision, *Basel III: finalising post-crisis reforms*, December 2017, www.bis.org/bcbs/publ/d424.htm.

³ The access of the Central Bank of the Russian Federation to all BIS services, meetings and other BIS activities has been suspended. Hong Kong, SAR does not provide data for this exercise as the largest banks are part of groups that are consolidated in other jurisdictions.

⁴ See www.bis.org/bcbs/qis/.

⁵ Basel Committee on Banking Supervision, *Minimum capital requirements for market risk*, January 2019 (rev February 2019), www.bis.org/bcbs/publ/d457.htm.

1.2 Sample of participating banks

1.2.1 Definition of the overall sample

The Basel III monitoring analyses provide data separately for Group 1 banks and Group 2 banks. Group 1 banks are those that have Tier 1 capital of more than €3 billion and are internationally active. All other banks are considered Group 2 banks. The decision to which group a bank belongs is taken by the national supervisor. While data availability from supervisory reporting was rather stable over time, the number of banks providing data on the final Basel III framework declined, in particular for Group 2 banks. Therefore, the sample of banks for which the impact of the final Basel III framework could be assessed was usually significantly smaller than the full sample.⁶

For some banks, data relating to some parts of the Basel III framework were unavailable. Accordingly, these banks are excluded from individual topics of the Basel III monitoring analyses due to incomplete data.

Banks were asked to provide data at the consolidated level as of 30 June and 31 December of each year.⁷ Subsidiaries are not included in the analyses to avoid double-counting. For Group 1 banks, members' coverage of their banking sector was very high, reaching 100% coverage for some countries. Coverage for Group 2 banks was lower and varied across countries and reporting dates.

1.2.2 Identification of the G-SIB subsample

The Global Systemically Important Banks (G-SIBs)⁸ are among those banks that are subject to a strictly positive G-SIB surcharge at a particular reporting date. For reporting dates until end-June 2017, the fully phased-in G-SIB surcharge was used instead.

1.2.3 Regional groupings

The Basel III monitoring analyses show some of the results for three regional groupings – Europe, the Americas and the rest of the world. The “High-level results and cumulative impact” dashboard provides detail on the composition of these country groupings.

1.2.4 Balanced and unbalanced data sets

In many cases, time series data are provided both for a balanced and an unbalanced data set. The balanced data set represents only those banks that reported necessary data from the first reporting date shown in a particular analysis (frequently June 2011, labelled “H1 2011”) to the most recent reporting date, to make more meaningful period-to-period comparisons. The balanced data set also includes banks that merged with another bank in the balanced data set, provided data are available for all periods between the first reporting date included in an analysis and the last reporting date before the merger.⁹ In cases where a merger bank is included in a balanced data set, the sample sizes for the different periods can differ for one time series.

⁶ Also note that while all these banks provided data on the final Basel III credit and operational risk standards, some of them were unable to provide data on some other aspects of the final framework. To that extent, it was assumed that capital requirements would remain unchanged compared with the initial Basel III framework.

⁷ Banks in Japan report on a biannual basis as of the end of March (for the collection of end-June data) and the end of September (for the collection of end-December data) to correspond to the fiscal years. Further, the data for Canada reflect a reporting date of 30 April for end-June data and of 31 October for end-December data to correspond to Canadian banks' fiscal years. The same holds true for some individual banks in other jurisdictions.

⁸ See the website of the Financial Stability Board (www.fsb.org/work-of-the-fsb/market-and-institutional-resilience/global-systemically-important-financial-institutions-g-sifis/) for the lists of G-SIBs of each year.

⁹ Please note that, due to data availability, the reporting date at which a merger is reflected in the monitoring data is not always the first reporting date after the merger becomes legally effective.

The size of the balanced data set for a given reporting date differs for the various analyses. For the purposes of the balanced data set, grouping criteria (Group 1, Group 2 or G-SIB) are applied based on the banks' properties at the most recent reporting date in the series or, in the case of a merger, the properties of the merged entity at the most recent reporting date.

For the unbalanced data set as well as for point in time analyses, grouping criteria are applied based on the banks' properties at a particular reporting date. Therefore, a bank may be included in the sample for some reporting dates but not for others, and it may be included in different subsamples at different reporting dates.

1.3 Methodology

1.3.1 Aggregation

Average amounts in the Basel III monitoring analyses have been calculated by creating a composite bank at a total sample level, which effectively means that the total sample averages are weighted. For example, the average common equity Tier 1 (CET1) capital ratio is the sum of all banks' CET1 capital for the total sample divided by the sum of all banks' RWA for the total sample. Similarly, the average fully phased-in Basel III Tier 1 leverage ratio is the sum of all banks' fully phased-in Tier 1 capital for the total sample divided by the sum of all banks' Basel III leverage ratio exposures for the total sample.

1.3.2 Levels of risk-based capital requirements

Minimum required capital (MRC) and capital shortfalls can be computed based on banks' minimum and target requirement levels. While the *minimum* levels reflect a risk-based 4.5% CET1, a 6% Tier 1 and an 8% total capital requirement as well as a 3% requirement for the Basel III leverage ratio, the *target* level also accounts for the capital conservation buffer (ie resulting in a 7% CET1, an 8.5% Tier 1 and a 10.5% total capital requirement), as well as any applicable G-SIB surcharge or buffer. Under the final Basel III framework, the target capital requirements also include the G-SIB buffer on the leverage ratio in all periods, while this buffer is only included in current target capital requirements in periods in which it was applicable to the relevant bank.¹⁰ The analyses do not reflect any additional capital requirements under Pillar 2 of the Basel Framework. Since the end-2017 reporting date, they reflect any higher loss absorbency requirements for domestic systemically important banks, any countercyclical capital buffer requirements and any other higher domestic Pillar 1 requirements to the extent these have been reported. The analyses also reflect any additional Pillar 1 RWA as reported by banks and their supervisors.

1.3.3 Metrics

Risk-weighted assets

Current RWA refer to the current regulatory framework as defined in Section 1.3.4. To the extent data are available, all data for the current framework consistently reflect the impact of the output floor in the Basel II framework and any national floors in place. The Basel III output floor is reflected in all calculations for the fully phased-in final Basel III framework, and its national implementation is reflected for the relevant reporting dates (ie starting with the 30 June 2023 reporting date or later, depending on the banks' jurisdiction).

For banks that could not provide data on the impact of the revised standards for securitisation, credit valuation adjustment (CVA) or market risk at a particular reporting date, it was assumed that the respective RWA would remain unchanged relative to current rules in the assessment of the overall impact of the final Basel III framework. Such banks were however excluded from the analysis of the relevant policy topic.

¹⁰ The buffer was introduced on 1 January 2023 or later.

Minimum required capital

Because the suite of post-crisis reforms includes revisions to RWA, expected loss (EL) amounts and the Basel III leverage ratio framework, the analysis of the final Basel III framework mainly focuses on MRC as a broad and integrated capital impact measure to aggregate the results. At the bank level, MRC is defined in this report as the sum of:

- the relevant target capital ratio level as defined in Section 1.3.2 times RWA, after consideration of all relevant floors;
- any capital effects from the treatment of EL amounts for credit risk and provisions at the relevant tier of capital, taking into account the split between defaulted and non-defaulted assets for those jurisdictions that require such a split;
- any capital effects from deductions which are an alternative to a 1,250% risk weighting treatment in certain national implementations of the Basel Framework; and
- for the purposes of the overall impact analysis, any incremental capital requirement (above the risk-based requirements including any floors) resulting from the Basel III leverage ratio.

This calculation is conducted for both the current *baseline* and the *revised* regimes.

Leverage ratio

The current leverage ratio exposure measure is generally calculated according to the national implementation of the Basel Framework applicable to a bank at the relevant reporting date. Temporary exclusions from the leverage ratio exposure measure in the context of Covid-19 have been added back to both the current and the fully phased-in leverage ratio exposure measures for the calculation of changes in MRC from the final Basel III framework at the relevant reporting dates. This separates the impact of the implementation of the final framework from the impact of the exclusions expiring. The exclusions have also been added back for the analysis of the combined shortfalls and for the analysis of the interactions between the regulatory measures. However, the standalone analysis of the leverage ratio consistently reflects exclusions as applicable at the relevant reporting dates.

Combined shortfalls

In addition, a combined shortfall analysis at the three tiers of the Basel III capital ratios is conducted at the target level. The combined net shortfall at any capital tier is calculated as the difference (where positive) between the total required capital (accounting for both the risk-based requirements and the Basel III leverage ratio) at a given capital tier and the actual capital of the same tier held, net of any shortfall stemming from higher capital tiers. The last term is included since any higher tier capital (eg CET1) raised to meet a specific higher tier capital shortfall (eg CET1 shortfall) can also be used to meet any possible specific shortfall of a lower tier capital (eg any *additional* Tier 1 shortfall caused by risk-based and/or Basel III leverage ratio Tier 1 capital requirements).¹¹ Any excess capital in one bank has not been used to offset shortfalls of other banks. The example in Box A illustrates the methodology.

No assumptions have been made about banks' profitability or behavioural responses, such as changes in bank capital or balance sheet composition, since the reporting date or in the future. For this reason, the Basel III monitoring results are not comparable to industry estimates, which are often based on assumptions and forecasts and factor in future management actions expected to be undertaken.

¹¹ This methodology assumes that shortfalls for the additional Tier 1 and Tier 2 capital categories will be covered by issuing the least costly type of instrument (either additional Tier 1 or Tier 2 capital depending on the category).

Example for the shortfall calculation

Assume a bank in a country shows aggregated shortfalls as follows:

- €40 billion for the CET1 capital ratio requirement;
- An incremental €20 billion for the Tier 1 capital ratio requirement (ie an aggregated €60 billion, €40 billion plus €20 billion); and
- An incremental €25 billion for the total capital ratio requirement (ie an aggregated €85 billion, €40 billion plus €20 billion plus €25 billion).

In other words, the bank needs €85 billion of capital in total. Other banks in that country with excess capital positions would have no influence on the bank's shortfall.

However, if the bank in a shortfall position were to raise €42 billion in CET1 capital with respect to its corresponding shortfall, the bank's CET1 shortfall would be eliminated along with €2 billion (€42 billion less €40 billion) in Tier 1 capital shortfalls, leaving €18 billion (€20 billion less €2 billion) in additional Tier 1 capital shortfall and the €25 billion in additional total capital shortfall.

If the same banks were to raise €62 billion in additional CET1 capital (again with respect to its corresponding shortfall), then both the CET1 and Tier 1 shortfalls would be eliminated leaving €23 billion in total capital shortfall (€25 billion less the €2 billion leftover after satisfying the CET1 and Tier 1 capital shortfalls).

1.3.4 Measuring the impact of changes to the Basel III framework

Throughout the Committee's Basel III monitoring analyses, reforms are frequently shown in terms of: (i) changes in minimum required capital (MRC); (ii) impact on capital ratios; and (iii) estimated capital shortfalls. The Basel III monitoring analyses disregard any effects stemming from changes in accounting frameworks that may influence capital requirements and eligible capital. Both current and future prudential policies are evaluated based on the accounting framework and corresponding regulatory adjustments in place at the respective reporting date.

Reference points

Unless otherwise noted, the assessment of the final Basel III framework compares the fully phased-in final Basel III framework with the current Basel Framework as implemented by the national supervisor. Basis of the comparison is a static balance sheet with the structure as at the relevant reporting date. For example, the results do not consider bank profitability, changes in capital or portfolio composition or other management responses to the policy changes between the relevant reporting date and the point in time when a policy enters into force.

Changes in minimum required capital

Changes in MRC are hence calculated as follows:

$$\% \Delta MRC = \frac{MRC_{revised} - MRC_{baseline}}{MRC_{baseline}}.$$

Therefore, this formula reflects, among other elements:

- changes to the calculation of RWA (at the asset class or risk type level RWA before output floors);
- changes to capital resulting from changes in the calculation of EL amounts for credit risk and the treatment of provisions;

- changes resulting from the move from the national implementation of the transitional Basel I-based floor (as collected through supervisory reporting systems) to the aggregate output floor under the final Basel III framework; and
- changes to the definition of the Basel III leverage ratio exposure measure for all banks and to its level for G-SIBs (see above for the treatment of Covid-19-related exclusions).

Changes in capital ratios

The impact of the reforms is also expressed in terms of its impact on capital ratios reflecting changes due to the reforms in both the numerator (through any effects on the treatment of EL amounts and provisions) and the denominator (through changes in RWA). Note that a rise in the capital ratio between the current and final Basel III frameworks may sometimes occur together with a positive change in minimum required capital or vice versa, which might seem non-intuitive at first glance. The reasons for such results are sample differences between both analyses due to data availability, as well as the different treatment of elements that affect the numerator of the capital ratio in the calculation of MRC.

1.3.5 Frameworks

Current rules

Data for the current rules reflect the actual national implementation of the regulatory framework applicable to a bank at a particular reporting date since the 2019 reporting dates when the initial Basel III framework had been fully phased-in in all jurisdictions, disregarding some minor national adjustments. Given an internationally comparable definition of all Basel III capital tiers did not exist in the Basel II standards, the data reflect the transitional initial Basel III standard¹² for reporting dates up to and including end-2018. The transitional arrangements in the initial Basel III framework that were applicable at a particular reporting date (see Box B), either according to the Basel standard (until end-2018) or according to the actual national implementation (from 2019 onwards), are reflected in these data.

Due to different implementation schedules in the jurisdictions providing data and differences between national rules and the corresponding Basel standard, this means that different banks may have been subject to different current rules at a given reporting date. Furthermore, for a given bank the applicable current rules will in general have changed over time.¹³ For example, the data for “current rules” reflect the actual national implementation of the *final* Basel III framework starting with the bank- and potentially topic-specific¹⁴ implementation date (ie from the June 2023 or later reporting dates).

Fully phased-in initial Basel III framework

The fully phased-in initial Basel III framework generally refers to the Basel III framework published in December 2010 and revised in June 2011¹⁵ and assumes that all phase-in arrangements of the initial Basel III framework had already expired. For reporting dates up to and including end-2018, the data reflect the fully phased-in Basel standard while for all later reporting dates, they reflect the fully phased-in actual national implementation of the framework. The reason is that the initial Basel III framework has been fully phased-in in all jurisdictions at end-2018, disregarding some minor national adjustments. Note that as soon as all transitional arrangements have expired, data for the fully phased-in initial Basel III frameworks are the same as for the current rules.

¹² The initial Basel III framework generally refers to the Basel III framework published in December 2010 and revised in June 2011. See Table A.1 in Annex A for details on the policy documents that are part of the initial Basel III framework.

¹³ See www.bis.org/bcbs/dashboards.htm?m=99&dashb_tabs=RCAP for implementation schedules.

¹⁴ In many countries, for example the revised standards for market risk will be or have been implemented after the elements of the final Basel III framework for other risk types.

¹⁵ See Table A.1 in Annex A for details on the policy documents that are part of the final Basel III framework.

Fully phased-in final Basel III framework

The fully phased-in final Basel III framework generally refers to the Basel III framework finalised by the GHOS on 7 December 2017.¹⁶ Data are available since the end-2017 reporting date. For reporting dates before the national implementation of the final Basel III framework was applicable to a bank and topic (ie *at least* up to and including end-2022), the data reflect the Basel standard. For all subsequent periods, the data reflect the national implementation of the final Basel III framework that applied to the bank and topic at a particular reporting date. For all reporting dates, the calculation assumes that all phase-in arrangements of the final Basel III framework had already expired.

Box B

Phase-in provisions for risk-based capital requirements

The initial Basel III framework includes the following phase-in provisions for capital ratios:

- Regulatory adjustments (ie possibly stricter sets of deductions that apply under Basel III) were fully phased in by 1 January 2018;
- Capital instruments that no longer qualify as non-common equity Tier 1 or Tier 2 capital were phased out beginning 1 January 2013. Fixing the base at the nominal amount of such instruments outstanding on 1 January 2013, their recognition is capped at 90% from 1 January 2013, with the cap reducing by 10 percentage points in each subsequent year;
- An additional 2.5% capital conservation buffer above the regulatory minimum capital ratios, which must be met with CET1 capital, was phased in by 1 January 2019; and
- The additional loss absorbency requirement for G-SIBs, which ranges from 1.0% to 2.5%, was fully phased in by 1 January 2019. It is applied as an extension of the capital conservation buffer and must be met with CET1.

The final Basel III framework as amended by the 27 March 2020 press release includes phase-in provisions for the output floor, which will start at 50% on 1 January 2023, rise in annual steps of 5% and be fully phased in at the 72.5% level from 1 January 2028. Furthermore, the increase in RWA can be capped at 25% during the phase-in period at national discretion.

Table A.2 in Annex A includes a detailed overview of the Basel Committee's phase-in arrangements for the initial Basel III framework, Table A.3 for the final Basel III framework.

1.3.6 Time series analysis and comparisons

To provide additional operational capacity for banks and supervisors to respond to the immediate financial stability priorities resulting from the impact of Covid-19, the Committee decided not to collect Basel III monitoring data for the end-June 2020 reporting date. Therefore, only data from supervisory reporting were collected. Analyses that fully or partially use data from the monitoring exercise use banks' end-December 2019 data points also for the end-June 2020 reporting date. Analyses that *fully* use data from the monitoring exercise show no change between end-December 2019 and end-June 2020, and the change for the full year 2020 is shown between the end-June 2020 and end-December 2020 data points.

1.3.7 Treatment of changes in exchange rates over time

Most participating banks provide data in the currency of their home country, although some prefer to use a foreign currency that is used for accounting or regulatory reporting instead. For all analyses that involve only one point in time, these amounts are converted to euros using the exchange rate at this reporting date.

¹⁶ See Table A.1 in Annex A for details on the policy documents that are part of the final Basel III framework.

For all analyses that involve several points in time, the Committee usually uses fixed exchange rates as of the last reporting date included in the time series (referred to as “exchange rates as at the *current* reporting date”). Some analyses are also provided using the historic exchange rates of the various reporting dates in the series (“exchange rates as at the reporting dates”). While the impact of the methodological choice is typically largest for series showing currency amounts, it also affects series of ratios or indices through the impact on the relative weight of the banks in the sample.

1.3.8 Presentation

To preserve confidentiality, some of the analyses are presented using box plot charts. The median value is represented by a horizontal line, with 50% of the values falling in the 25th to 75th percentile range shown by the box. The upper and lower end points of the thin vertical lines generally show the range of the entire sample; in some cases, arrows at the top of the vertical line indicate banks with values outside the range shown in the graph. Finally, weighted averages are represented by dots.

Some dashboards allow for selection of the start and end dates for presentation of the time series. It is important to note that the selection of these dates only affects the display, while the determination of the balanced data set, the identification of the G-SIBs in the sample as well as the FX adjustment remain based on the full length of the underlying time series.

1.4 Data quality

For the Committee’s monitoring exercise, participating banks submitted comprehensive and detailed non-public data on a voluntary and best-efforts basis. On jurisdictional level, there may be ongoing mandatory data collection, which also feeds into these analyses. National supervisors worked extensively with banks to ensure data quality, completeness and consistency with the published reporting instructions. In addition, particular attention has been paid to the reconciliation of reported data with existing data from supervisory reporting systems. Banks are included in the various analyses only to the extent that they were able to provide data of sufficient quality to complete the analyses.

1.5 Interpretation of results

The following caveats apply to the interpretation of results shown in the Basel III monitoring analyses:

- When comparing results to previously published reports and dashboards, sample differences as well as minor revisions to data from previous periods need to be taken into account. Sample differences also explain why results presented for a given reporting date or as part of the unbalanced time series may differ from the relevant data points in analyses showing the time series for the balanced data set as described above.
- The actual impact of requirements that are covered in analyses but were not yet applicable at a particular reporting date will almost certainly be less than shown in the Basel III monitoring analyses. This is due to banks’ difficulty to assess the exact impact of the framework before its full implementation and interim adjustments made by the banking sector to changing economic conditions and the regulatory environment. Banks may use or have used approximations when the implementation of an accurate impact assessment would be too costly. Due to the static balance sheet assumption, the results are not comparable to industry estimates, which tend to be based on forecasts and consider management actions to mitigate the impact, as well as incorporate approximations where information is not publicly available. Generally, the analyses of future rules becomes more precise the closer the reporting date is to the relevant implementation date.
- Until the end-2021 reporting date and except for the results for the transitional initial Basel III framework, the Basel III capital amounts shown in the Basel III analyses assume that all non-

qualifying capital instruments are fully phased out (ie it is assumed that none of these capital instruments will be replaced by eligible instruments). As such, these amounts underestimated the amount of Tier 1 capital and Tier 2 capital held by a bank, as they do not give any recognition for non-qualifying instruments that were actually phased out until 1 January 2022. The treatment of non-qualifying capital instruments also affected figures reported in the analyses of the Basel III leverage ratio.

- Given that the output floor of the final Basel III framework only applies to overall capital requirements, it is not applied to individual risk types or asset classes in the Basel III monitoring analyses. To this extent, the results are not comparable to analyses in other reports, which may apply the output floor at more granular levels than required by the final Basel III framework.
- Several G-SIBs report conservative assumptions under the revised market risk framework.¹⁷ Therefore, the results for market risk since the end-2020 reporting date only reflect 20%¹⁸ of the contribution from equity investments in funds subject to the “other sector bucket” treatment, while all other changes from the revised market risk framework are included in the calculations as reported. This also impacts a number of other banks, albeit to a significantly smaller extent. For the June 2019 to June 2020 reporting dates where this methodology was not yet available, the monitoring analyses reflect results based on the “reduced estimation bias” methodology. For three banks using conservative assumptions under the revised market risk framework, the impact from the revised market risk impact was set to zero. This is consistent with the tables labelled “reduced estimation bias” in the respective PDF reports on the Committee’s website.
- Some capital requirements, such as Pillar 2 requirements for all periods and most buffers until the June 2017 reporting date, are not considered in the Basel III monitoring analysis. This tends to give more importance to leverage ratio requirements relative to risk-based requirements, compared with the actual situation where those additional requirements would be considered.

2. Regulatory capital requirements and TLAC

2.1 Risk-based capital ratios

Capital ratios are provided for the different frameworks specified in Section 1.3.5. The analysis on the evolution of Basel III CET1 capital ratios shows the various drivers of capital ratio changes. Starting with the June 2011 CET1 capital ratio, the cumulative effect on the ratio of CET1 capital raised, retained earnings and other increases in CET1 capital (such as any reduction in regulatory adjustments) is added to the capital ratio. Furthermore, the impact of cumulative reductions in RWA has a positive impact on capital ratios, while the impact of cumulative increases in RWA is subtracted from the baseline capital ratio. “Other changes to CET1” shown in the analysis include changes in regulatory adjustments to CET1 capital and any other changes in CET1 capital between two reporting dates that are not reported separately.

¹⁷ Specifically, the banks are treating all trading book positions in equity investment in funds that may no longer be allowed to be modelled, using the most conservative standardised approach, ie the “other bucket” treatment subject to the highest applicable risk weights. They assumed that they are unable to use other treatments such as the index treatment or the mandate-based approach as set out in MAR21.36.

¹⁸ This assumption is based on moving some equity investments in funds subject to the “other sector bucket” treatment to the “look-through” treatment, which would result in lower delta, vega and curvature requirements and higher diversification benefits.

2.2 Impact of the final Basel III framework on minimum required capital

2.2.1 Basis of calculation

This section describes the calculation of the impact of the final Basel III framework on minimum required capital for reporting dates starting in 2017. In some analyses, the Committee also refers to the results for H2 2015 that are based on the Committee's cumulative Quantitative Impact Study and are not fully comparable from a methodological point of view, in particular since all changes from the revised market risk framework were already added to MRC under the current rules such that they were not reflected in the *change* in MRC.

The Committee's analyses include the impact of the amended minimum capital requirements for market risk published in January 2019. Until end-June 2018, they are based on consultative documents, while since the end-2018 reporting date, they are based on the final standard. The analyses also include the targeted revisions to the CVA framework published in July 2020 since the end-2020 reporting date.

Since the Committee did not collect the relevant data through its Basel III monitoring exercise for the end-June 2020 reporting date, results for H1 2020 use data from banks as of end-2019 and supervisory data for June 2020. Consequently, the change in MRC for the various risk types is kept constant from end-2019 to June 2020, but the basis on which these changes are calculated is updated for end-June 2020 based on supervisory data.

The higher impact for Group 1 banks and G-SIBs since end-2020 may be partially driven by the different treatment of the outlier banks that were previously excluded with their market risk results. Furthermore, measures taken by some jurisdictions during the Covid-19 pandemic that reduce current capital requirements but leave capital requirements under the fully phased-in final Basel III standard unaffected could explain parts of the observed increase in the impact.

Note that starting with the June 2023 reporting date, some jurisdictions started implementing the final Basel III framework. Banks that are subject to the final Basel III framework already are expected to show zero impact for credit and operational risk. The impact for market risk will generally remain non-zero if the revised market risk framework is implemented at a later stage. Finally, the output floor will result in a strictly positive impact during the phase-in period for banks that are constrained by the floor. Such banks may also still show a negative impact for the leverage ratio if they had otherwise been constrained by the leverage ratio, even if the leverage ratio framework itself is already fully implemented.

2.2.2 Presentation of results

The analyses include the following items to provide an additional breakdown of the total change in MRC:

- *Total* shows overall changes in Tier 1 MRC, including the risk-based requirements (ie including output floors) and the Basel III leverage ratio.
- *Total: risk-based capital requirements* shows changes to the risk-based Tier 1 MRC (ie excluding the Basel III leverage ratio).
- *Credit risk* shows the change in Tier 1 MRC due to the revisions to the standardised and internal ratings-based (IRB) approaches for credit risk,¹⁹ including the effect from migration of approaches²⁰ and changes to the securitisation framework.

¹⁹ The credit risk MRC impact since the end-December 2019 reporting date reflects the split between defaulted and non-defaulted assets in the treatment of EL amounts and provisions for those jurisdictions that require such a split. Because of this methodological change, banks in these jurisdictions may show slightly increased credit risk MRC impacts. This is most pronounced for banks in the European regional breakdown since European Union rules require the aforementioned split.

²⁰ Migration of approaches refers to the application of a different approach for determining risk weights than the one currently used because of the revisions which remove certain modelling approaches for selected (sub-)asset classes.

- CVA shows the change in Tier 1 MRC due to the revisions to the CVA framework.²¹
- *Market risk* shows the change in Tier 1 MRC due to the revisions to the market risk framework.
- *Operational risk* shows the change in Tier 1 MRC due to the revisions to the operational risk standards.
- *Output floor* presents the change in the level of Tier 1 MRC due to the aggregate output floor when the total RWA fall below the threshold level of 72.5%. The impact is measured relative to the current national implementation of the Basel I-based transitional floor set out in the Basel II framework, as reported by member countries.
- *Other Pillar 1* presents the change in Tier 1 MRC due to changes to Pillar 1 requirements not specifically captured in the reporting template, including requirements by individual jurisdictions which are not based on a Basel Committee standard.
- *Leverage ratio* shows the change in Tier 1 MRC resulting from the changes to the Basel III leverage ratio framework (see Section 2.3.2 for details). Note that increases to risk-based Tier 1 MRC and leverage ratio Tier 1 MRC do not add up, since the total MRC increases only to the extent the risk-based or leverage ratio requirement exceeds the other capital measure. Therefore, the leverage ratio column is adjusted to capture this effect (which can be positive or negative, even where the leverage ratio Tier 1 MRC remains unchanged). This results in an overall *incremental* leverage ratio change in MRC which can be either positive or negative. This mechanism is described in Box C.

Note that from the H1 2023 reporting date some jurisdictions implemented the G-SIB buffer in their leverage ratio frameworks. This is reflected in the current MRC baseline, resulting in a lower leverage ratio impact compared with earlier periods.

²¹ Targeted revisions to the revised CVA framework were published in July 2020. See Basel Committee on Banking Supervision, *Targeted revisions to the credit valuation adjustment risk framework, July 2020*, www.bis.org/bcbs/publ/d507.htm.

Aggregation of changes in risk-based and leverage ratio MRC

Example 1 shows an illustrative bank that is currently constrained^① by the Basel III leverage ratio, resulting in an additional Tier 1 MRC. Under the revised framework, the additional requirement is instead “charged” by the risk-based Tier 1 MRC with the total change indicated by ΔRB . This replacement effect is represented as a negative effect in leverage ratio Tier 1 MRC to avoid double-counting, as shown by the blue arrow (ΔLR) in the diagram. Example 2 shows an alternative case where the bank is still constrained by the Basel III leverage ratio after the reforms. In this case, the contribution of the leverage ratio Tier 1 MRC is the net of (i) the additional leverage ratio Tier 1 MRC in the revised framework ($\Delta LR'$); and (ii) the replacement effect captured by the risk-based Tier 1 MRC (ΔLR), which may be positive or negative.

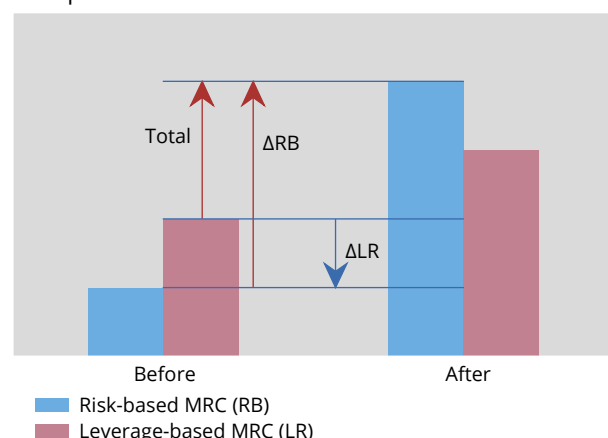
Note that even for banks that already adopted the final leverage ratio standards there may be a non-zero contribution of the leverage ratio Tier 1 MRC.

^① A requirement is called constraining if it imposes the largest amount of MRC among the requirements under consideration (here risk-based and leverage ratio). A requirement is binding on a bank if the resulting MRC are higher than a bank’s corresponding actual Basel III capital amounts.

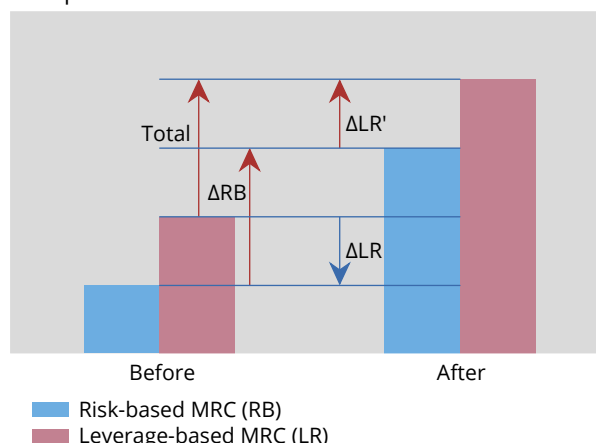
Aggregation of changes in risk-based and leverage ratio MRC

Graph A

Example 1



Example 2



2.3 Leverage ratio

2.3.1 Overall results

The results regarding the Basel III leverage ratios are provided using the following measures for the numerator and the denominator:

- *numerator*: the numerator includes two alternative measures of Tier 1 capital:
 - *initial Basel III Tier 1*, which is the Tier 1 capital eligible under the national implementation of the Basel III framework in place in member countries at the reporting date, including any phase-in arrangements; and

- *fully phased-in final Basel III Tier 1*, which is the fully phased-in Basel III definition of Tier 1 capital, since 2019 under the relevant national implementation, without considering any transitional arrangements set out in the in the Basel III framework.
- *denominator*: the Basel III leverage ratio exposure measure is calculated on the basis of the 2014 or 2017 (final) definition as applicable (see Box D).

Box D

Basel III leverage ratio framework

Under the January 2014 and December 2017 versions of the Basel III leverage ratio framework,^① the Basel III leverage ratio exposure measure (the denominator of the Basel III leverage ratio) includes:

- on-balance sheet assets, excluding securities financing transactions (SFTs) and derivatives;
- SFTs, with limited recognition of netting of cash receivables and cash payables with the same counterparty under strict criteria;
- derivative exposures at replacement cost (net of cash variation margin meeting a set of strict eligibility criteria) plus an add-on for potential future exposure;
- written credit derivative exposures at their effective notional amount (net of negative changes in fair value that have been incorporated into the calculation of Tier 1 capital) reduced by the effective notional amount of purchased credit derivatives that meet offsetting criteria related to reference name, level of seniority and maturity;
- off-balance sheet exposures, obtained by multiplying notional amounts by the credit conversion factors in the standardised approach to credit risk, subject to a floor of 10%; and
- other exposures as specified in the Basel III leverage ratio framework.

^① Basel Committee on Banking Supervision, *Basel III leverage ratio framework and disclosure requirements*, January 2014, www.bis.org/publ/bcbs270.htm. The Committee agreed to revisions to the leverage ratio framework in December 2017, see Basel Committee on Banking Supervision, *Basel III: finalising post-crisis reforms*, December 2017, www.bis.org/bcbs/publ/d424.htm. Please note that the Basel III analyses do not consider the treatment of client cleared derivatives exposures as revised by the Committee in June 2019.

Data points from H1 2011 to H2 2012 use the original definition of the leverage ratio. Data points from H1 2013 to H1 2017 use the definition of the leverage ratio set out in the 2014 version of the framework. Note that the data points for H1 2013 use an approximation for the initial definition of the Basel III leverage ratio exposure where gross instead of adjusted gross securities financing transaction values are used. Data points from H2 2017 onwards use the final definition of the leverage ratio to the extent data are available. Since the Committee did not collect the relevant data through its Basel III monitoring exercise for the end-June 2020 reporting date, the adjustment from initial to final leverage ratio exposure measure was calculated based on H2 2019 data.

2.3.2 Impact on Basel III leverage ratio MRC measure due to the final standards

The changes in leverage ratio MRC at the target level due to the revisions to the Basel III leverage ratio capture the change in the definition of the Basel III leverage ratio exposure measure and the introduction of a G-SIB buffer on top of a 3% leverage ratio minimum, which amounts to 50% of the G-SIB surcharge on risk-based capital requirements. The Committee calculates both the overall MRC changes (which include the impact of the G-SIB buffer) as well as the changes in MRC due to the changes in the leverage ratio exposure measure only.

The main driver of the change in MRC is the introduction of the G-SIB buffer in the final Basel III framework, even though at individual level some banks might be materially impacted by the change of the leverage ratio exposure measure. Note that many banks, in particular Group 2 banks, have already

adopted the final standards in more recent reporting periods. For these banks, the change in MRC shown is zero.

2.4 Combined shortfall amounts under the final Basel III framework

This analysis shows the regulatory capital shortfalls for the Group 1 and Group 2 bank samples assuming fully phased-in requirements according to the final Basel III standards. Results for the Basel III monitoring exercises (data as of end-December 2017 through to the current reporting period) are compared with the results of the previous cumulative QIS, using data as of end-December 2015.²²

2.5 Total loss-absorbing capacity requirements for G-SIBs

The Committee also collects data on additional total loss-absorbing capacity (TLAC) for G-SIBs. Surplus is indicated as positive and shortfall as negative. The shortfall is incremental to any risk-based and leverage ratio shortfall discussed above.

When performing the shortfall calculation, exempted leverage ratio exposures are added back to the exposure measure resulting in a higher leverage ratio requirement. This particularly affects G-SIBs for which higher leverage ratio requirements are set.

3. Level and composition of regulatory capital

3.1 Level of capital

The analysis shows the level of regulatory capital under the fully phased-in initial Basel III framework for the data points up to and including end-2018 and the actual framework in place at the reporting date for all data points thereafter. The analyses use the exchange rates as at the current reporting date; therefore, values for earlier periods may change as new reporting dates are being added.

The strong percentage increases in additional Tier 1 capital are driven by the low absolute levels in 2011, in particular for the rest of the world region.

3.2 Profits, dividends and capital raised

The dividend payout ratio is calculated as common share dividends divided by profits after tax, using a rolling 12-months window to improve comparability across countries with different dividend payment patterns. Profit after tax, common share dividends and CET1 raised are shown with their actual six-month values.

²² Basel Committee on Banking Supervision, *Basel III Monitoring Report – Results of the cumulative quantitative impact study*, December 2017, www.bis.org/bcbs/publ/d426.htm. See Section 2.2.1 for details on the H2 2015 and H1 2020 data points.

3.3 Composition of capital

The analysis of the composition of capital shows the fully phased-in initial Basel III framework for the data points up to and including end-2018 and the actual framework in place at the reporting date for all data points thereafter.

3.4 Regulatory adjustments

The analysis of regulatory adjustments to regulatory capital uses the following definitions:

- “Deferred tax assets (DTAs)” refer to DTAs that are deducted in full under Basel III (ie they exclude DTAs that are related to temporary differences, which are only deducted when they exceed a threshold).
- “Deferred tax assets above threshold” refer to DTAs that are related to temporary differences, which are only deducted when they exceed a 10% threshold.
- “ECL provisioning” refers to adjustments due to the introduction of expected credit loss provisioning in the accounting framework applicable to a bank.
- “Financials” refers to investments in the capital or other TLAC liabilities of banking, financial and insurance entities that are outside the scope of regulatory consolidation and where the bank does not own more than 10% of the issued common share capital of the entity (CAP30.22), reciprocal cross-holdings in the capital or other TLAC liabilities of banking, financial and insurance entities (CAP30.21) and significant investments in the capital or other TLAC liabilities of banking, financial and insurance entities that are outside the scope of regulatory consolidation when they exceed the threshold (CAP30.29).
- “Goodwill” and “Intangibles” refer to the adjustments according to CAP30.7.
- “CET1 deduction above the 15% limit” pertains to significant investments in the common shares of unconsolidated financial institutions, mortgage servicing rights, and DTAs due to timing differences that do not separately exceed the 10% category thresholds but in the aggregate exceed the 15% basket threshold (CAP30.33).
- “Other” includes adjustments related to investment in own shares, shortfall of provisions to expected losses, cash flow hedge reserves, cumulative changes in fair value due to changes in own credit risk, net pension fund assets, securitisation gains on sale, mortgage servicing rights when they exceed the threshold and deductions from additional Tier 1 capital to the extent they exceed a bank’s additional Tier 1 capital.

4. Components and determinants of risk-based capital requirements

4.1 Share of different risk types in overall MRC under current rules

MRC figures in this analysis are based on the Tier 1 target capital ratio. Where applicable, MRCs under the initial Basel III framework reflect the effect of the 1.06 scaling factor applied to IRB credit RWA, and deductions assigned to the securitisation and related entities asset classes. Overall non-securitisation credit risk is defined as the sum of the asset classes corporate, bank, retail, sovereign, partial-use and related entities. The following definitions apply:

- Exposures subject to partial use of the standardised approach for credit risk that cannot be assigned to a specific asset class, as well as past-due items under the standardised approach, are listed separately as “partial use”.
- “Related entities” includes capital requirements specified in Part 1 of the Basel II framework.
- The category “other” includes capital requirements for other assets; reconciliation differences; and additional capital requirements due to regulatory calculation differences.
- The term “reconciliation differences” refers to the difference between MRC reported at the entire bank level and the sum of MRC reported for the individual asset classes.

For each reporting date, a table provides data on relative sizes of asset classes in terms of exposures as well as MRC for both Group 1 and Group 2 banks according to current rules at the reporting date. The sample differs considerably from the balanced data set, resulting in differences for the values at the reporting date. The average risk weight suggests the relative riskiness of the different asset classes as measured by the current rules. Both the numerator (12.5 times MRC) and the denominator (exposure amounts) of this ratio include exposures under the IRB and standardised approaches for credit risk.²³ Since a common exposure measure for credit, market and operational risk does not exist, the size in terms of exposure and the average risk weight are only defined for asset classes subject to a credit risk treatment. The following definitions apply:

- “Regulatory difference” includes shortfall (positive) of provisions over expected loss amounts for exposures subject to the IRB approach for credit risk.
- “Other” includes the reconciliation asset class and other Pillar 1 capital requirements.

4.2 Credit risk

4.2.1 Impact of revisions to the standardised and IRB approaches for credit risk on MRC

The credit risk dashboard shows the changes in minimum required capital (MRC) due to the revised standardised and IRB approaches. In addition, it presents the composition of banks’ credit risk RWA, average risk weights and the impact on risk parameters for exposures under the IRB approach.

Key concepts in the credit risk dashboard

- **Exposure at default (EAD)** is the total value a bank is exposed to if a counterparty defaults; for a loan this is generally the lent amount, for off-balance sheet positions, such as commitments, derivatives etc, the EAD is generally projected or estimated.
- The **probability of default (PD)** and the **loss-given-default (LGD)** describe the probability with which a specific counterparty may default on its payment obligations and the percentage of the exposure the bank will be unable to recover if the counterparty defaults, respectively.
- The **risk-weighted assets (RWA)** of a bank are the weighted sum of its EADs with the weights reflecting the exposures’ riskiness (risk weights).
- While banks generally form provisions against any **expected loss (EL)** on their exposures, a bank’s capital provides a buffer against higher, ie unexpected losses. The risk weights in the calculation of RWA are a measure of such unexpected losses and the Basel risk-based capital

²³ The asset classification is mainly based on the IRB approach. Exposures subject to partial use of the standardised approach for credit risk which cannot be assigned to a specific asset class, as well as past-due items under the standardised approach, are listed separately.

framework requires banks to hold a buffer of Tier 1 capital against unexpected losses of at least 6% of its RWA.

For the determination of capital requirements for credit risk, two approaches are available. The **standardised approach** and the **internal ratings-based (IRB) approach**. Under the standardised approach, risk weights are prescribed for each exposure. Under the IRB approach, banks which fulfil certain requirements and have received supervisory approval estimate risk weights internally. Under the advanced IRB approach, the bank estimates all risk parameters, ie EAD, PD and LGD determining the risk weights, while under the foundation IRB approach, the bank estimates only one risk parameter, the PD, while the LGD and EAD are prescribed in the standard. Under the third IRB variant, the slotting approach, available for specialised lending exposures, the bank cannot estimate risk parameters but determines risk weights using the exposure's characteristics. For the calculation of the output floor, which provides a lower bound for a bank's total RWA based on standardised approaches, all banks must calculate their credit risk RWA according to the standardised approach.

Minimum required capital (MRC) in the credit risk dashboard corresponds to the Tier 1 target level, ie the minimum amount of Tier 1 capital fulfilling the capital requirement including the capital conservation buffer (8.5%). The MRC in the credit risk dashboard is before the application of the output floor; neither does it reflect, for the purpose of the credit risk dashboard, the leverage ratio requirement.

The **impact on MRC** of specific Basel III measures corresponds to the relative change in MRC in percent following the introduction of specific (set of) Basel III measures. It reflects not only the marginal change in the RWA/leverage exposure measure if banks had applied the revised Basel standard instead of the *national implementation* of the current Basel standard, but also changes to the capital measure, due to marginal changes in EL caused by the revised standard. However, as noted above, it reflects the change in a bank's MRC before the application of the output floor and does not take into account the leverage ratio requirement.

The **average risk weight** of a group of exposures is defined as the group's total RWA divided by its total EAD. In the credit risk dashboard, the average risk weight is before the application of the output floor.

4.2.2 Standardised approach for credit risk

Impact of the revisions on MRC

The analysis shows the changes in Tier 1 MRC due to the finalisation of the Basel III standards for credit risk exposures that are currently under the standardised approach. These data include exposures of banks subject to the standardised approach for credit risk as well as exposures of banks using the IRB approach for credit risk to the extent that they are subject to partial use provisions. It does not include exposures currently under the IRB approach that migrate to the standardised approach under the revised framework (eg IRB equity exposures). Note that changes in Tier 1 MRC are calculated as a percentage of current Tier 1 MRC associated with exposures currently under the standardised approach only.

4.2.3 Internal ratings-based approach for credit risk

Impact of the revisions on MRC

The analysis summarises the change in Tier 1 MRC due to the IRB revisions for all credit risk exposures that are currently under the IRB approach, regardless of which approach they are subject to under the final Basel III standards. Therefore, it includes equity exposures currently under the IRB approach, even if under the revised standards their MRC will be calculated using the standardised approach. The sample of banks included in these analyses may differ from the sample of IRB banks in other analyses. Moreover, changes

in Tier 1 MRC in this analysis are calculated as a percentage of current Tier 1 MRC associated with exposures under the IRB approach only.

Risk parameters by IRB asset classes under current rules

The analysis of IRB risk parameters under current rules is available for a sample of Group 1 banks only.

It should be noted that the share of defaulted exposures is a stock variable, which depends highly on banks' workout processes upon default. Banks may choose to sell off defaulted exposures to external parties after default or retain them on balance sheet, which would heavily impact this metric. In addition, since the share of defaulted exposures is a stock variable, it should not be confused with a default rate, which could be compared with PDs for backtesting purposes.

4.2.4 Impact of revisions to credit risk on MRC over time

Since the Committee did not collect these data through its Basel III monitoring exercise for the end-June 2020 reporting date, results for H1 2020 show the same values as for H2 2019.

The evolution of credit risk MRC impact over time can be explained by three drivers. First, every Basel III monitoring exercise is a snapshot at a given reporting period where a static balance sheet is assumed. Banks' balance sheets naturally evolve over time, which affects the MRC impact. Second, familiarity with the revised Basel III framework is naturally higher in the later reporting periods. Consequently, banks may be able to more accurately reflect the revised framework without having to rely on (often overly conservative) assumptions – the so-called "QIS bias" – in more recent reporting periods. Third, when measuring the impact over time the starting point, ie the current MRC, may have increased due to national legislation changes or supervisory practices (eg stricter supervision on asset classification under the standardised approach or more stringent model validations under the IRB approach).

4.2.5 Distribution of exposure at default and risk-weighted assets across approaches

In the dashboard showing the distribution of exposure at default (EAD) under different modelling and non-modelling approaches, "slotting" refers to the EAD that is subject to the supervisory slotting criteria approach for specialised lending.

Changes are driven by the removal of the option to use the advanced IRB approach for exposures to financial institutions and large corporates, which migrate to the foundation IRB approach, and by the removal of the option to use the IRB approach for equity exposures (included in the "Other" category), which move to the standardised approach.

"Other" includes equity exposures, equity investments in funds, failed trades and non-DVP transactions and other assets under the IRB approach for credit risk.

Additional constraints to modelling will apply due to the introduction of risk parameter floors. The risk parameter floors introduce a five basis points PD floor,²⁴ which will be binding for some IRB exposures. Furthermore, some exposures subject to the advanced IRB approach will be bound by the risk parameter floors on LGD and EAD. These risk parameter floors together with the output floor further reduce the shares of EAD and RWA that are effectively subject to unconstrained modelling; however, these effects are not shown in the graphs.

²⁴ The PD floor will be 10 basis points for certain qualifying revolving retail (QRRE) exposures.

4.2.6 Impact of the revised securitisation framework

The securitisation dashboard explores the impact of the Basel III securitisation framework.²⁵ In particular, the analysis focuses on the following issues:

- exposure trends;
- a breakdown of exposure by bank role; and
- the prevalence of “simple, transparent and comparable” (STC) vs non-STC exposures.

The Basel III securitisation framework distinguishes between STC and non-STC exposures, providing preferential capital treatment to STC exposures. Not all banks have performed STC classification for their securitisation exposures, possibly due to the effort required to assess their exposures against the STC criteria, particularly in earlier periods.²⁶ Some banks may have applied a portfolio-wide classification, assigning either all or none of their exposures as STC-eligible. Furthermore, jurisdictions have implemented or will implement the Basel III securitisation framework at different points in time, or they implemented it without the capital treatment for STC securitisations, which is optional. Under this assumption, banks that reported no or few STC exposures at earlier reporting dates may have underestimated the actual amount of STC-eligible securitisation exposures.

4.3 Counterparty credit risk and credit valuation adjustment risk

4.3.1 Counterparty credit risk

In understanding overall MRC, counterparty credit risk (CCR) is part of credit risk capital requirements. The separate analyses provide further detail on the current and revised counterparty credit risk capital requirements.

Current rules for counterparty credit risk

The analysis shows the relative composition of counterparty credit risk capital requirements by exposure calculation approach. It distinguishes the following approaches:

- standardised approaches (SA), including the SA-CCR that is the most widely used SA in more recent periods as a considerable number of jurisdictions have already implemented this new approach for calculating SA exposures for derivatives, such as the European Union (as of end of June 2021), Canada and the United States (as of June 2022);
- the internal model method (IMM) to calculate CCR exposures for derivatives and securities financing transactions (SFTs); and
- other internal model methods, including repo-VaR and the comprehensive approach using own estimates of haircuts.

Overall impact of the revised minimum capital requirements for counterparty credit risk

This analysis shows the estimated impacts from the introduction of the revised minimum capital requirements for counterparty credit risk. It reflects changes to the exposure calculation methodologies, with the introduction of the standardised approach for counterparty credit risk (SA-CCR) published in

²⁵ Basel Committee on Banking Supervision, *Revisions to the securitisation framework, amended to include the alternative capital treatment for “simple, transparent and comparable” securitisations*, July 2016, www.bis.org/bcbs/publ/d374.htm and Basel Committee on Banking Supervision, *Capital treatment for simple, transparent and comparable short-term securitisations*, May 2018, www.bis.org/bcbs/publ/d442.htm.

²⁶ To classify a securitisation exposure as STC, it must be analysed against a set of criteria that assess the risk of the underlying assets, the securitisation’s structure, and risks associated with the securitisation’s servicers and other agents with a fiduciary duty to the securitisation’s investors.

March 2014, the amendments to the comprehensive approach using supervisory haircuts (CA(SH)) and the removal of the comprehensive approach using own estimates of haircuts (CA(OE)), published in December 2017. In addition, CCR capital requirements are affected by the changes to the credit risk framework that impact the risk weights applied to CCR exposures. Both changes to the framework contribute to the impact of CCR capital requirements.

One of the factors that drive the change between the current SAs and SA-CCR exposures for derivatives includes the treatment of margin collateral under the current rules (ie CEM or SM). In cases where banks did not recognise the margin collateral under the rules in place at a reporting date, while they do take it into account under the SA-CCR, SA-CCR exposures decrease significantly (sometimes leading to SA-CCR exposures and consequently capital requirements close to zero). In cases where banks have already accounted for margin collateral under CEM, banks see higher exposures due to the SA-CCR framework, with greater impacts if the banks' positions are more material in risk classes that are more significantly impacted by the SA-CCR framework. Changes in the credit risk framework can amplify these impacts. Haircuts will change for SFTs currently capitalised under CA(SH), and CA(OE) will be removed from the framework. Some banks are not affected by the more conservative supervisory haircuts in the revised CA(SH), but others see their SFT exposures (and hence capital requirements) increase significantly.

Since the Committee did not collect these data through its Basel III monitoring exercise for the end-June 2020 reporting date, results for H1 2020 show the same values as for H2 2019.

4.3.2 Credit valuation adjustment risk

Overall impact of the revised minimum capital requirements for credit valuation adjustment risk

This analysis investigates the estimated impacts from the introduction of the revised minimum capital requirements for credit valuation adjustment (CVA) risk including the targeted revisions to the framework published in July 2020.²⁷

Since the Committee did not collect these data through its Basel III monitoring exercise for the end-June 2020 reporting date, results for H1 2020 show the same values as for H2 2019.

4.4 Market risk

4.4.1 Current market risk rules

The analysis shows the distribution of the share of market risk MRC in overall MRC under the current rules, ie jurisdiction-specific implementations of Basel 2.5 or the revised market risk framework. For banks that are not yet subject to the revised framework it also shows time series decompositions of reported market risk MRC by sub-component since end-June 2015.

For the subset of banks using internal models under the Basel 2.5 framework additional analysis shows the ratio of the 10-day 99th percentile stressed VaR to the current 10-day 99th percentile VaR using two sets of balanced data from Group 1 banks – one shows the time series since end-2011 for a smaller balanced sample and a second one the same ratio for a shorter-run balanced data set including banks that have provided data since 2015.

VaR models are typically based on a fixed backward-looking period, often one year, that rolls forward over time. In contrast, stressed VaRs are based on historical high volatility stress periods, such as the 2008 global financial crisis or the onset of the Covid-19 pandemic, that typically change infrequently. In both time series, the increasing trend prior to the outbreak of Covid-19 can be attributed at least

²⁷ See Basel Committee on Banking Supervision, *Targeted revisions to the credit valuation adjustment risk framework*, July 2020, www.bis.org/bcbs/publ/d507.htm.

partially to the lower volatility environment that had been observed in the markets over the several years preceding the Covid-19 pandemic, which reduced VaR without reducing SVaR. The pandemic-related volatility experienced in markets in the first quarter of 2020 increased banks' VaRs substantially more than their stressed VaRs. This led the stressed VaR/VaR ratio to decline significantly across the banks. Thus, as banks' current VaRs fall in low volatility periods, the ratio becomes elevated. However, the huge increase in volatility seen during March 2020 with the onset of the Covid-19 pandemic reversed this trend, leading to a dramatic fall in ratio for end-June 2020. Markets in 2021 were much less volatile due in part to the extraordinary official sector policy responses to the pandemic across the globe. This effect, combined with the fact that the one-year lookback periods no longer included the volatility seen in March 2020, led to the ratio rising substantially across both samples at year-end 2021. As mentioned above, from 2022 a return of volatility across all risk classes has been seen due to the war in Ukraine and its impact on energy, grain and metals markets, the tightening cycle, a bear market in equities from the record levels and considerable movements in foreign exchange as the US dollar appreciated in 2022 to levels not seen in 20 years. These developments corresponded with the largest drops in the SVaR/VaR ratios observed since both time series began.

4.4.2 Overall impact of the revised minimum capital requirements for market risk

Basel III monitoring market risk data tend to be more variable both over time and across reporting banks than that of other areas of the Basel III monitoring exercise owing to the short term and ever-changing nature of trading portfolios when compared with banking book portfolios, which are mostly held-to-maturity or revolving. In addition, while improving in data quality with each collection, the Basel III monitoring estimates for market risk under the final market risk standard are less robust than those that banks make for the banking book as the impact estimates still require significant manual intervention for many trading positions at banks that have yet to develop systems reflecting their local implementations. Although banks' estimates of the capital impact of the final standard are available since the end-2018 reporting date, banks have refined their calculations over time, which likely improved the accuracy of their estimates.

The estimates show impacts based on banks' portfolios at the respective reporting dates and do not reflect potential changes to their portfolios upon implementation of the final standard. Since the end-December 2022 reporting date, banks had the opportunity to report their capital requirements based either on the current or intended set of model-approved trading desks.

On one hand, this methodology likely overstates the ultimate impact subsequent to implementation, as banks may reduce their exposures to positions with high capital requirements. On the other hand, the methodology does not reflect the consequences of trading desks potentially failing backtesting or P&L attribution tests based on the banks' submitted desk-level VaR and P&L data, which would likely understate the impact for IMA banks whose desks are not passing these tests. It is not clear which of these countervailing effects will dominate, although market risk capital requirements are generally expected to increase significantly.

4.5 Operational risk

4.5.1 Current operational risk rules

The analysis of capital requirements under current operational risk rules shows the share of the different approaches in overall MRC for operational risk, as well as an indexed series of operational risk MRC over time. For Group 1 banks, there is a spike in the share of MRC under the Basic Indicator Approach since some banks started reporting operational risk RWAs under this approach in 2013 and eventually migrated to the Standardised Approach in 2014. Starting with the June 2023 reporting date, some banks became subject to the final Basel III standardised approach.

Furthermore, the analysis shows a 10-year series of the evolution of gross and net losses, as well as a box plot with the distribution of the share of operational risk MRC in total MRC. The outliers among Group 2 banks in the latter analysis are mostly fee business-specialised banks where operational risk is largely an exclusive risk, while outliers among Group 1 banks and G-SIBs are banks that use AMA where past loss events influence future operational risk exposure.

4.5.2 Final operational risk standards

The analyses show the impact of the final Basel III operational risk standards on MRC. They exclude current supervisory-imposed capital add-ons under Pillar 2 for certain banks in the sample that would otherwise cause the impact of the reforms to the operational risk framework on MRC compared to current MRC levels to be lower. Given that some of these Pillar 2 capital requirements may be removed or reduced, the size of the increases in MRC shown may be overstated and reductions may be understated, in particular for the Group 1 bank sample.

Unlike the calculations for earlier reporting dates, the impact calculated for the end-June 2023 and later reporting dates is based on data accounting for possible exclusion of losses no longer relevant for an AMA bank's risk exposure, and possible correction of the business indicator (eg due to divested activities, mergers or acquisitions).²⁸ In light of improved data quality, the default methodology that was used to calculate the impact of the new standardised approach was changed to be consistent with the current and future operational risk capital requirement methodologies. These allow the exclusion of divested activities from the relevant indicator component of the standardised approaches as well as the losses that are no longer relevant for AMA banks. With this change a more realistic impact of the new standardised approach will be achieved.

5. Interactions between risk-based, output floor and leverage ratio capital requirements

5.1 Interactions between risk-based, output floor and leverage ratio capital requirements under the final Basel III standards

The interactions between Tier 1 risk-based, output floor and Basel III leverage ratio capital requirements are analysed to gain deeper insight into which capital requirement component of the framework is constraining for the banks in the sample. The *constraining* requirement in this analysis refers to the requirement that imposes the largest amount of Tier 1 MRC among the three requirements mentioned above. Accordingly, the Tier 1 MRC for a bank is determined as the highest of the requirement under the risk-based framework, the requirement using the output floors and the requirement measured using the Basel III leverage ratio.

All analyses include the capital conservation and G-SIB buffers as applicable. Note that in contrast to the analyses presented in other dashboards, the risk-based capital requirements here denote the risk-based capital framework *prior* to the application of any output floor. Also note that while all banks are by definition constrained by one of the measures, this only results in a shortfall for very few of them.

Pillar 2 requirements are not considered in the analysis. For reporting dates until end-2022, D-SIB buffers as well as any domestic leverage ratio buffers are also not considered in the calculations.

²⁸ As the new standardised approach is not yet applied in all of the jurisdictions that take part in this exercise, it is still possible that the reported corrections do not reflect the full potential of adjustments as these are used just at the time when banks must apply the rules.

Starting with the end-June 2023 reporting date, the calculations for the dashboards reflect both D-SIB buffers on risk-based capital requirements and any buffers on the leverage ratio requirement to the extent they are Pillar 1 requirements. In the sample used in the dashboards, this results in the leverage ratio becoming more constraining.

Since this section, by looking at final Basel III, takes a long run perspective, consistently with Section 2.2, temporary Covid-19-related exemptions to the leverage ratio have been re-included in the leverage ratio exposure measure while they were in place. This results in a significantly larger share of banks bound by the leverage ratio. For a detailed analysis on the effect of the temporary leverage ratio exemptions please refer to the special feature in the September 2021 Basel III monitoring report.²⁹

5.2 Relationship between the Basel III leverage ratio and risk-based capital requirements

The analysis shows the interaction between the initial Basel III Tier 1 leverage ratios (horizontal axis) and the Basel III Tier 1 risk-weighted capital ratios (vertical axis). The dashed horizontal line represents a Tier 1 target risk-based capital ratio of 8.5%,³⁰ whereas the dashed vertical line represents a Basel III Tier 1 leverage ratio of 3%. The ratios are generally calculated assuming transitional initial Basel III standards. For banks already subject to the final Basel III framework, final Basel III rules as applicable to these banks at these reporting dates are used.

The diagonal line represents points where an 8.5% Basel III Tier 1 target risk-based capital ratio results in the same amount of required Basel III Tier 1 capital as a Basel III Tier 1 leverage ratio of 3%. By construction, it also represents a multiple of $8.5\%/3\% \approx 2.83$ between RWA and the Basel III leverage ratio exposure measure. Therefore, for banks plotted above the diagonal line, the Basel III Tier 1 leverage ratio requires more Tier 1 capital than the Tier 1 risk-based capital ratio (ie the Basel III Tier 1 leverage ratio becomes the constraining requirement).³¹ For banks plotted below the diagonal line, the target Tier 1 risk-based capital ratio requires more capital than the leverage ratio (ie the Tier 1 capital ratio remains the constraining requirement).

6. Liquidity

6.1 Liquidity Coverage Ratio

One of the two liquidity standards introduced by the Committee is the 30-day Liquidity Coverage Ratio (LCR), which promotes short-term resilience against potential liquidity disruptions. The LCR requires global banks to have sufficient high-quality liquid assets to withstand a stressed 30-day funding scenario specified by supervisors. The LCR numerator consists of a stock of unencumbered, high-quality liquid assets (HQLAs) that must be available to cover any net outflow, while the denominator comprises cash outflows minus cash inflows (subject to a cap at 75% of outflows) that are expected to occur in a severe stress scenario. The LCR was revised by the Committee in January 2013 and came into effect on

²⁹ Basel Committee on Banking Supervision, *Basel III monitoring report*, September 2021, www.bis.org/bcbs/publ/d524.htm.

³⁰ Calculated as the sum of a 6.0% Tier 1 minimum capital ratio plus 2.5% capital conservation buffer.

³¹ Note that the effect of the G-SIB surcharge is not taken into account here. As the G-SIB surcharges only apply to the risk-based requirement under the initial Basel III framework, the relevant proportion between RWA and total leverage ratio exposure that determines whether the Basel III leverage ratio is constraining or not and hence the slope of the diagonal line would be different by bank.

1 January 2015. The minimum requirement increased to 100% as of January 2019, which marks the end of the phase-in of the LCR minimum requirement.

The shortfall is reflective only of the aggregate shortfall for banks that are below the 100% LCR requirement and does not reflect any surplus at banks above the 100% requirement.

6.2 Net Stable Funding Ratio

The second liquidity standard introduced by the Basel III reforms is the Net Stable Funding Ratio (NSFR), a longer-term structural ratio designed to reduce funding risk by requiring banks to fund their activities with sufficiently stable sources of funding to mitigate the risk of future funding stress.

The analyses show the NSFR as calculated under different versions of the NSFR framework (released in December 2010, January 2014 and October 2014, respectively). Calculations performed according to the final standard approved by the Committee in October 2014³² start with the end-December 2014 reporting period. Since the Committee did not collect NSFR data through its Basel III monitoring exercise for the end-June 2020 reporting date, the relevant data points show the same values as for end-December 2019.

The shortfall is reflective only of the aggregate shortfall for banks that are below the 100% NSFR requirement and does not reflect any surplus stable funding at banks above the 100% requirement.³³

6.3 Liquidity Coverage Ratio and Net Stable Funding Ratio shortfalls over time

These analyses show the weighted average LCR, weighted average NSFR and shortfalls associated with each standard for a consistent sample of banks across reporting periods since end-December 2012.³⁴ Given the different samples of banks, results for a given period in this analysis may differ from the ones in the LCR and NSFR standalone analyses. Samples for LCR and NSFR may differ.

For the evolution of the LCR and its drivers, starting with the June 2012 LCR, the cumulative effect on the LCR of an increase in HQLA is added to the LCR, while the impact of cumulative increases in net outflows is subtracted from the baseline LCR.

For the evolution of the NSFR and its drivers, starting with the June 2012 NSFR, the cumulative effect on the NSFR of an increase in ASF is added to the NSFR, while the impact of cumulative increases in RSF is subtracted from the baseline NSFR.

³² See Basel Committee on Banking Supervision, Basel III: the net stable funding ratio, October 2014, www.bis.org/bcbs/publ/d295.htm.

³³ The shortfall in stable funding measures the difference between balance sheet positions after the application of available stable funding factors and the application of required stable funding factors for banks where the former is less than the latter.

³⁴ In the balanced sample, only those banks are included in this analysis that are reporting LCR and NSFR data for each reporting period since end-December 2012. LCR and NSFR samples are different.

Annex: Basel III standards and phase-in arrangements

Definition of different Basel III regimes			Table A.1
	Initial Basel III framework	Transitional final Basel III framework	Fully phased-in final Basel III framework
Definition of capital	<i>Basel III: A global framework for more resilient banks and the banking system, www.bis.org/publ/bcbs189.htm</i>		
Credit risk	<i>Basel III: A global framework for more resilient banks and the banking system, www.bis.org/publ/bcbs189.htm Capital requirements for bank exposures to central counterparties, www.bis.org/publ/bcbs227.htm</i>	Basel III: finalising post-crisis reforms, www.bis.org/bcbs/publ/d424.htm Capital requirements for bank exposures to central counterparties, www.bis.org/publ/bcbs227.htm Capital requirements for banks' equity investments in funds, www.bis.org/publ/bcbs266.htm	
Operational risk	Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework, www.bis.org/publ/bcbs128.htm	Basel III: finalising post-crisis reforms, www.bis.org/bcbs/publ/d424.htm	
Market risk	Revisions to the Basel II market risk framework, www.bis.org/publ/bcbs158.htm Guidelines for computing capital for incremental risk in the trading book, www.bis.org/publ/bcbs159.htm	Minimum capital requirements for market risk, www.bis.org/bcbs/publ/d457.htm	
Counterparty credit risk	Basel III: A global framework for more resilient banks and the banking system, www.bis.org/publ/bcbs189.htm	The standardised approach for measuring counterparty credit risk exposures, www.bis.org/publ/bcbs279.htm	
CVA	Basel III: A global framework for more resilient banks and the banking system, www.bis.org/publ/bcbs189.htm	Basel III: finalising post-crisis reforms, www.bis.org/bcbs/publ/d424.htm Targeted revisions to the revised CVA framework published in July 2020 are since the end-2020 reporting date. www.bis.org/bcbs/publ/d507.htm	
Securitisation	Basel III: A global framework for more resilient banks and the banking system, www.bis.org/publ/bcbs189.htm	Revisions to the securitisation framework, www.bis.org/bcbs/publ/d374.htm	
Floor	Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework, www.bis.org/publ/bcbs128.htm	Output floor of 50%, gradually increasing Basel III: finalising post-crisis reforms, www.bis.org/bcbs/publ/d424.htm	Output floor of 72.5%, Basel III: finalising post-crisis reforms, www.bis.org/bcbs/publ/d424.htm
Leverage ratio	Basel III: A global framework for more resilient banks and the banking system, www.bis.org/publ/bcbs189.htm ; Basel III leverage ratio framework and disclosure requirements, www.bis.org/publ/bcbs270.htm	Basel III: finalising post-crisis reforms, www.bis.org/bcbs/publ/d424.htm ; Leverage ratio treatment of client cleared derivatives www.bis.org/bcbs/publ/d467.htm	

Basel III minimum requirements, buffers and initial Basel III phase-in arrangements

Shading indicates transition periods – all dates are as of 1 January.

Table A.2

	2015	2016	2017	2018	As of 2019
Leverage ratio	Parallel run until 1 Jan 2017 Disclosure started 1 Jan 2015			Migration to Pillar 1	
Minimum CET1 ratio	4.5%	4.5%	4.5%	4.5%	4.5%
Capital conservation buffer		0.625%	1.25%	1.875%	2.50%
G-SIB surcharge		Phase-in			1.0%–2.5%
Minimum common equity plus capital conservation buffer	4.5%	5.125%	5.75%	6.375%	7.0%
Phase-in of deductions from CET1 (including amounts exceeding the limit for DTAs, MSRs and financials)	40%	60%	80%	100%	100%
Minimum Tier 1 capital	6.0%	6.0%	6.0%	6.0%	6.0%
Minimum total capital	8.0%	8.0%	8.0%	8.0%	8.0%
Minimum total capital plus capital conservation buffer	8.0%	8.625%	9.25%	9.875%	10.5%
Capital instruments that no longer qualify as Tier 1 capital or Tier 2 capital	Phased out over 10-year horizon beginning 2013				
Liquidity coverage ratio	60%	70%	80%	90%	100%
Net stable funding ratio				Introduce minimum standard	100%

Final Basel III phase-in arrangements

Shading indicates transition periods – all dates are as of 1 January.

Table A.3

	2023	2024	2025	2026	2027	2028
Revisions to the standardised and internal ratings-based approaches to credit risk	Introduce					
Revised CVA and market risk frameworks	Introduce					
Revised operational risk framework	Introduce					
Output floor	50%	55%	60%	65%	70%	72.5%
	Increase in RWA subject to 25% cap at national discretion.					
Leverage ratio exposure measure and G-SIB surcharge	Introduce					

Minimum and target risk-based capital and leverage ratio requirements

Fully phased-in final Basel III standards, in per cent

Table A.4

	Fully implemented risk-based requirement			Fully implemented leverage ratio requirement	
	Minimum	Target non-G-SIBs	Target G-SIBs	Minimum all banks and target non-G-SIBs	Target G-SIBs
CET1 capital	4.5	7.0	8.0–9.5		
Tier 1 capital	6.0	8.5	9.5–11.0	3.0	3.5–4.25
Total capital	8.0	10.5	11.5–13.0		