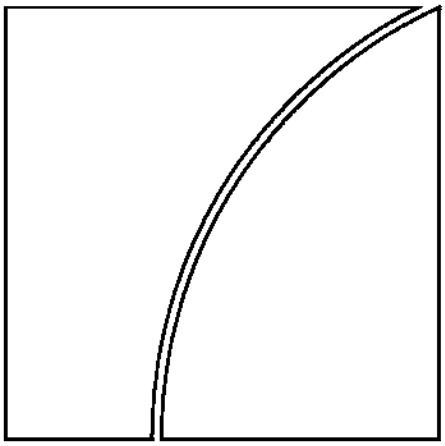
Basel Committee
on Banking Supervision



Results of the comprehensive quantitative impact study

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Results of the comprehensive quantitative impact study

Executive summary

The Basel Committee on Banking Supervision ("the Committee")[1] conducted a comprehensive quantitative impact study (QIS) to ascertain the impact of its new requirements to raise the quality and level of the capital base, to enhance risk capture, to contain excessive leverage and to introduce new liquidity standards for the global banking system – collectively referred to as "Basel III" – originally introduced in July and December 2009. The Group of Governors and Heads of Supervision (GHOS), the oversight body of the Committee, confirmed the design and calibration of these reforms at its July and September 2010 meetings. This report summarises the results of the comprehensive QIS by providing aggregated analysis of bank data collected by national supervisors.

Comprehensive QIS information was submitted by individual banks to their national supervisors on a voluntary and confidential basis. A total of 263 banks from 23 Committee member jurisdictions participated in the study, including 94 Group 1 banks and 169 Group 2 banks.[2] Members' coverage of their banking sector was very high for Group 1 banks, reaching 100% coverage for some jurisdictions, while comparatively lower for Group 2 banks and varied across jurisdictions. Banks participating in the study were requested to submit consolidated data as of 31 December 2009. Some follow-up requests were undertaken in order to refine and enhance original submissions and to reflect the 26 July and 12 September GHOS agreements. The Committee appreciates the significant efforts banks and national supervisors contributed to this data collection exercise.

The Committee directed the comprehensive QIS effort to focus on a number of specific items:

- Changes to the definition of capital that result in a new capital standard, referred to as common equity Tier 1 (CET1), a reallocation of deductions to CET1 and changes to the eligibility criteria for Tier 1 and total capital;
- Increases in risk-weighted assets resulting from changes to the definition of capital, securitisation, trading book and counterparty credit risk requirements;
- The international leverage ratio;
- The capital conservation buffer above the CET1 minimum; and
- Two international liquidity standards – the liquidity coverage ratio and the net stable funding ratio.

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[1] The Basel Committee on Banking Supervision is a committee of banking supervisory authorities which was established by the central bank Governors of the Group of Ten countries in 1975. It consists of senior representatives of bank supervisory authorities and central banks from Argentina, Australia, Belgium, Brazil, Canada, China, France, Germany, Hong Kong SAR, India, Indonesia, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. It usually meets at the Bank for International Settlements (BIS) in Basel, Switzerland, where its permanent Secretariat is located.

[2] Group 1 banks are those that have Tier 1 capital in excess of €3 billion, are well diversified, and are internationally active. All other banks are considered Group 2 banks.

With the exception of the transitional arrangements for non-correlation trading securitisation positions in the trading book, this report does not take into account any transitional arrangements such as phase-in of deductions and grandfathering arrangements, unless noted otherwise. Rather, the estimates presented assume full implementation of the final Basel III package, based on data as of 31 December 2009. No assumptions have been made about banks' profitability or behavioural responses, such as changes in bank capital or balance sheet composition, since then or in the future. For this reason the QIS results are not comparable to current industry estimates, which tend to be based on forecasts and consider management actions to mitigate the impact, as well as incorporate estimates where information is not publicly available.

Key results[3]

Overall impact on risk-based capital requirements

Including the effect of all changes to the definition of capital and risk-weighted assets, as well as assuming full implementation, the impact of the GHOS agreement reveals an average decrease for Group 1 banks from an 11.1% gross CET1 ratio (gross of current deductions, based on current risk-weighted assets) to an average net CET1 ratio of 5.7%, a decline of 5.4 percentage points. Comparing gross to net CET1 for Group 2 banks reveals an average decline in ratios from 10.7% to 7.8%, or just 2.9 percentage points, which is considerably less than the decline seen in Group 1 banks.

Calculated on the same basis, the capital shortfall for Group 1 banks in the QIS sample is estimated to be between €165 billion for the CET1 minimum requirement of 4.5% and €577 billion for a CET1 target level of 7.0% had the Basel III requirements been in place at the end of 2009. As a point of reference, the sum of profits after tax prior to distributions across the same sample of Group 1 banks in 2009 was €209 billion. The amount of additional CET1 capital required for Group 2 banks in the QIS sample is estimated at €8 billion in order to reach the CET1 minimum of 4.5%.[4] For a CET1 target level of 7%, Group 2 banks would need an additional €25 billion; the sum of their profits after tax prior to distributions in 2009 was €20 billion.

Definition of capital

CET1 capital of Group 1 banks would fall by an average of 41.3%. Group 2 banks, on average, would experience a decline of 24.7% in CET1 capital. The Tier 1 capital ratios of Group 1 banks would on average decline from 10.5% to 6.3%, while total capital ratios would decline from 14.0% to 8.4%. The decline in other capital ratios is also less pronounced for Group 2 banks. Tier 1 capital ratios would decline from 9.8% to 8.1% and total capital ratios would decline from 12.8% to 10.3%.

Changes in risk-weighted assets

Overall risk-weighted assets would increase by 23.0% for Group 1 banks. The main drivers of this increase are charges against counterparty credit risk and trading book exposures.

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[3] Unless noted otherwise, the analysis of overall changes in risk-weighted assets and capital ratios only features banks that were able to provide quality data on **all** relevant aspects of the Basel III framework.

[4] For both samples, the estimated shortfall may be understated as some institutions, which are likely to have a shortfall, were excluded from the analysis due to data issues.

Accordingly, banks that have significant exposures in these areas influence the average increase in risk-weighted assets heavily. Some banks also experience a larger than average increase in risk-weighted assets due to securitisation exposures in their banking books. Since Group 2 banks are less affected by the revised counterparty credit risk and trading book rules, their risk-weighted assets would increase by an average of just 4.0%. As a whole, the changes in risk-weighted assets have less impact on banks' capital positions than changes to the definition of capital.

Leverage ratio

The weighted average leverage ratio using the new definition of Tier 1 capital and the measure of exposure agreed by the GHOS for testing during the parallel run period is 2.8% for Group 1 banks and 3.8% for Group 2 banks.

Liquidity standards

The new liquidity standards result in an average liquidity coverage ratio of 83% and 98% for Group 1 and Group 2 banks, respectively. The average net stable funding ratio is 93% and 103%, respectively.

1. General remarks

At its 12 September 2010 meeting, the Group of Governors and Heads of Supervision (GHOS), the Committee's oversight body, announced a substantial strengthening of existing capital requirements and fully endorsed the agreements it reached on 26 July 2010.[5] These capital reforms, set out in the document *Basel III: A global regulatory framework for more resilient banks and banking systems,*[6] together with the introduction of two international liquidity standards as outlined in the *International framework for liquidity risk measurement, standards and monitoring,*[7] deliver on the core of the global financial reform agenda presented to the Seoul G20 Leaders summit in November 2010. The comprehensive quantitative impact study seeks to measure the impact of these capital and liquidity requirements, collectively referred to as "Basel III".

The remainder of this note is structured as follows:

- Section 1 provides an overview of the sample and data quality issues;
- Section 2 shows the total impact of the Basel III proposals on the risk-based capital ratios;
- Section 3 evaluates the impact of changes to the definition of capital;
- Section 4 discusses the changes in risk-weighted assets;
- Section 5 presents the leverage ratio findings;
- Section 6 presents a capital conservation analysis; and
- Section 7 presents an analysis of the impact of the liquidity standards.

1.1 Scope of the impact study

Twenty-three of the 27 Committee member jurisdictions participated in the QIS. The estimates presented are based on data submitted by the participating banks to national supervisors in the QIS workbooks and in accordance with the instructions prepared by the Committee in February 2010.[8] The results were initially submitted to the Secretariat of the Committee in May 2010.

The purpose of the study was to allow the Committee to assess the impact on participating banks of the capital and liquidity proposals set out in the following documents:

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[5] 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).

[6] Basel Committee on Banking Supervision, *Basel III: A global regulatory framework for more resilient banks and banking systems*, December 2010.

[7] Basel Committee on Banking Supervision, *International framework for liquidity risk measurement, standards and monitoring*, December 2010.

[8] Basel Committee on Banking Supervision, *Instructions for the comprehensive quantitative impact study*, February 2010.

- *Revisions to the Basel II market risk framework* ("the Revisions")[9] and *Guidelines for computing capital for incremental risk in the trading book* ("the Guidelines");[10]
- *Enhancements to the Basel II framework* ("the Enhancements")[11] which include the revised risk weights for re-securitisations held in the banking book;
- *Strengthening the resilience of the banking sector* ("the Resilience document")[12], including
    - The changes to the definition of capital;
    - The introduction of a leverage ratio;
    - The capital conservation buffer above the CET1 minimum;
    - The changes to the treatment of counterparty credit risk; and
- *International framework for liquidity risk measurement, standards and monitoring* ("the Liquidity document").[13]

Based on the agreements announced on 26 July 2010, the Committee conducted a follow-up data collection exercise in September 2010 to collect a limited amount of data from the participating banks, allowing the Committee to more precisely present in this report the impact of changes agreed by the GHOS on capital and liquidity standards.[14]

1.2 Sample of participating banks

A total of 263 banks from 23 Committee member jurisdictions participated in the study, including 94 Group 1 banks and 169 Group 2 banks. Of these banks, 91 Group 1 banks and 158 Group 2 banks participated in the follow-up data collection exercise.[15] Banks were asked to provide data as of 31 December 2009 at the consolidated level. As in previous impact studies conducted by the Committee, Group 1 banks are those that have Tier 1 capital in excess of €3 billion, are well diversified and are internationally active. All other banks are considered Group 2 banks. Subsidiaries of other banks were excluded from the analyses to avoid double counting.

As shown in Table 1, 20 member jurisdictions provided data for Group 1 banks and 19 member jurisdictions provided data for Group 2 banks. Members' coverage of their banking sector was very high for Group 1 banks, reaching 100% coverage for some jurisdictions, while coverage for Group 2 banks was comparatively lower and varied across jurisdictions.

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9 Basel Committee on Banking Supervision, *Revisions to the Basel II market risk framework*, July 2009.

10 Basel Committee on Banking Supervision, *Guidelines for computing capital for incremental risk in the trading book*, July 2009.

11 Basel Committee on Banking Supervision, *Enhancements to the Basel II framework*, July 2009.

12 Basel Committee on Banking Supervision, *Strengthening the resilience of the banking sector*, consultative document, December 2009.

13 Basel Committee on Banking Supervision, *International framework for liquidity risk measurement, standards and monitoring*, consultative document, December 2009.

14 Basel Committee on Banking Supervision, *Instructions for the follow-up data collection for the comprehensive quantitative impact study*, September 2010.

15 Not all banks provided data on all parts of the Basel III framework in the comprehensive QIS.

Table 1

Number of banks submitting data for the comprehensive QIS, including the follow-up data collection exercise

Jurisdiction	Group 1	Group 2
Australia	4	1
Belgium	2	2
Brazil	2	0
Canada	6	2
China	5	5
France	5	6
Germany	9	59
Hong Kong	0	7
India	3	6
Italy	2	20
Japan	9	7
Korea	5	3
Luxembourg	0	1
Mexico	0	3
Netherlands	4	14
Saudi Arabia	3	0
Singapore	3	0
South Africa	3	3
Spain	2	5
Sweden	4	2
Switzerland	2	6
United Kingdom	5	6
United States	13	0
Total	**91**	**158**

This report presents aggregated results of the comprehensive QIS based on revised data provided to the Basel Committee Secretariat by 26 July 2010 including additional data pertaining to the definition of capital, liquidity and counterparty credit risk that was collected between July and October 2010. Despite efforts by national supervisors and banks, there still remain a limited number of banks that are excluded from the overall exercise or for individual sections of the QIS due to incomplete data.

1.3 Methodology

The impact assessment was carried out by comparing banks' capital positions under Basel III to the current regulatory framework implemented by the national supervisor.[16] To maintain the confidentiality of results, most charts show box plots separately for Group 1 and Group 2 banks including the median (the thin red horizontal line), the upper and lower quartiles (defined by the blue box) and the minima and maxima (the end points of the thin blue vertical line) of the relevant distribution.

Unless noted otherwise, the reported average amounts in this document 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 capital ratio is the sum of all banks' common equity Tier 1 capital for the total sample divided by the sum of all banks' risk-weighted assets for the total sample.

With the exception of the transitional arrangements for non-correlation trading securitisation positions in the trading book, this report does not take into account any transitional arrangements, such as phase-in of deductions and grandfathering arrangements, unless noted otherwise.

1.4 Data quality

Banks submitted very comprehensive and detailed non-public data on a voluntary and best-efforts basis. National supervisors and their QIS teams worked extensively with banks to ensure data quality, completeness and consistency with the published QIS instructions. Unless noted otherwise, the analysis of overall changes in risk-weighted assets and capital ratios only features banks that were able to provide quality data on **all** relevant aspects of the Basel III framework.

In looking at the liquidity-related data provided by many banks, the Committee identified some areas where there may be differences between jurisdictions in interpreting the instructions and the additional guidance published. While these differences in interpretation led the Committee to work on clarifications of definitions and reporting instructions, some differences remain. As a result, not all elements of the data are comparable across banks.

1.5 Interpretation of results

It should be noted that the actual impact of the new requirements by the time they are implemented will likely be lower as the banking sector adjusts to a changing economic and regulatory environment. Indeed, the QIS results do not consider banks' profitability or make any assumptions about banks' behavioural responses, such as changes in capital or portfolio composition and strategy as well as other management actions, to the policy changes since end-2009 or in the future. For this reason, the QIS 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 estimates where information is not publicly available.

[16] With the exception of the United States where some banks provided current data on a Basel II basis.

2. Overall changes in regulatory capital ratios

Table 2 shows the overall change in common equity Tier 1 (CET1) capital ratios if all the Committee's final rules, both for the definition of capital and for the calculation of risk-weighted assets, were fully implemented as of 31 December 2009. Group 1 banks' average CET1 capital ratios under the new regime would have fallen by almost half from an average gross CET1 capital ratio of 11.1% to 5.7% when deductions and changes in risk-weighted assets are taken into account (a decline of 5.4 percentage points). For Group 2 banks, the new net CET1 capital ratios would decline to 7.8% from 10.7%, indicating that the measures have a considerably greater impact on the larger banks.

These declines are mainly attributable to the new definition of capital deductions and filters not previously applied at the common equity level of Tier 1 capital in most jurisdictions (numerator) and to a lesser but still significant extent to increases in risk-weighted assets (denominator). The CET1 ratios presented in the table compare gross CET1 amounts (before the application of deductions and filters) in relation to banks' current risk-weighted assets (column "Gross") with net amounts in relation to new risk-weighted assets and the application of deductions and filters (column "Net"). The results show significant variation across banks (Chart 1).

Tier 1 capital ratios of Group 1 banks would on average decline from 10.5% to 6.3%, while total capital ratios would decline from 14.0% to 8.4%. Meanwhile, as with CET1, Group 2 banks would experience a more modest decline in Tier 1 capital ratios from 9.8% to 8.1% and a decline in total capital ratios from 12.8% to 10.3%.

It is important to keep in mind that the analysis of overall changes in capital ratios features 74 Group 1 and 133 Group 2 banks that were able to provide quality data on all relevant aspects of the Basel III framework. The exclusion of some banks, which were not able to provide all data, leads to an upward bias in the average capital ratios presented in Table 2.

Table 2

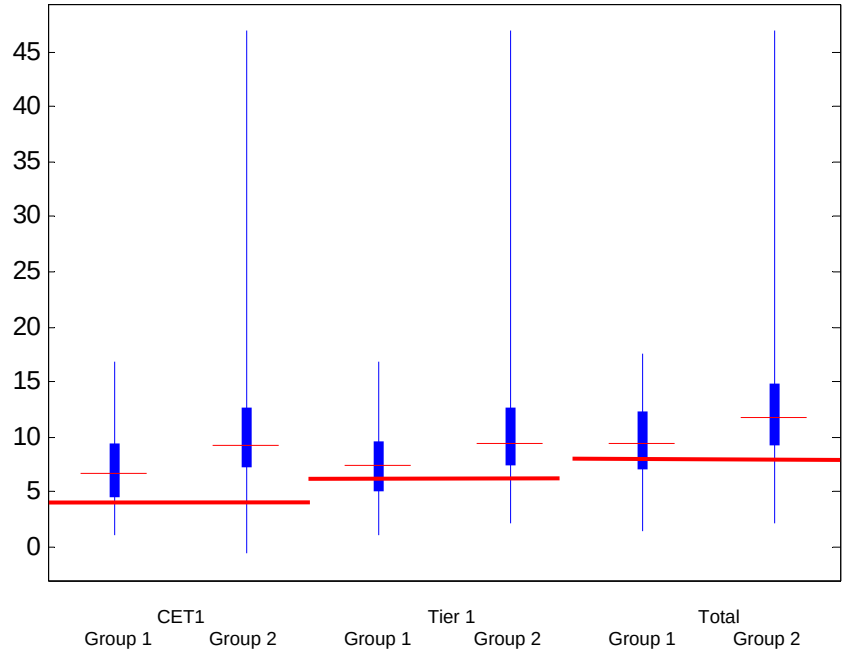
Average capital ratios by banking group, in percent

	Number of banks	CET1		Tier 1		Total	
		Gross	Net	Current	New	Current	New
Group 1	74	11.1	5.7	10.5	6.3	14.0	8.4
Group 2	133	10.7	7.8	9.8	8.1	12.8	10.3

"Gross CET1" is the ratio of gross CET1 (without deductions) relative to **current** risk-weighted assets. "Net" columns show net CET1 (with deductions) relative to **new** risk-weighted assets.

Chart 1

New net CET1, Tier 1 and total capital ratios, in percent[17]



Under the Basel III framework, the minimum requirement for CET1, the highest form of loss absorbing capital, will be raised to 4.5% after the application of stricter adjustments. This minimum CET1 capital ratio will be phased in by 1 January 2015. Further, a capital conservation buffer above the regulatory minimum requirement was calibrated at 2.5% and will have to be met with common equity, after the application of deductions, by 1 January 2019.

Table 3 provides information on the additional amount of capital that Group 1 and Group 2 banks would need between 31 December 2009 and 2019 to meet the target CET1 capital under Basel III, assuming a fully phased-in target CET1 requirement as at the end of 2009. Since complete data on the total changes in capital and risk-weighted assets are only available for 74 Group 1 banks and 133 Group 2 banks, it was assumed that those items for which no information on the change in risk-weighted assets was available would remain constant for a particular bank.

Assuming a fully phased-in risk-based capital requirement, the amount of additional CET1 capital required for Group 1 banks in the QIS sample to meet the 4.5% CET1 minimum requirement is €165 billion. For Group 2 banks, of which the coverage is considerably smaller, the shortfall is estimated at €8 billion.[18] For a CET1 target of 7%, Group 1 banks would need an additional €577 billion and Group 2 banks in the QIS sample would need an additional €25 billion. As a point of reference, the sum of profits after tax prior to distributions across the Group 1 and Group 2 banks in the same sample in 2009 was €209 billion and €20 billion, respectively.

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[17] The thick red horizontal lines indicate the 4.5%, 6% and 8% minimum capital requirements for CET1 capital, Tier 1 capital and total capital, respectively. The thin red horizontal lines indicate the median for the respective capital and bank category.

[18] For both samples, it is recognised that this estimated shortfall is understated and incomplete to the extent institutions with shortfalls have been excluded from the analysis.

No assumptions have been made about banks' profitability or behavioural responses, such as changes in bank capital or balance sheet composition, since end-2009 or in the future. For this reason the QIS results are not comparable to current industry estimates, which tend to be based on forecasts and consider management actions to mitigate the impact, as well as incorporate estimates where information is not publicly available.

Table 3

Estimated overall CET1 shortfall, participating Group 1 and Group 2 banks, in € billions

	Group 1 banks	Group 2 banks
Number of banks	87	136
CET1 shortfall – 4.5%	165	8
CET1 shortfall – 7.0% (2019)	577	25

The shortfall is calculated as the sum across individual banks where a shortfall is observed. The calculation includes all changes to RWA (eg definition of capital, counterparty credit risk, trading book and securitisation in the banking book). For banks where complete data on the total change in RWA were not available, it was assumed that RWA for missing items would remain constant.

3. Definition of capital

3.1 Change in eligible capital

For Group 1 banks, the change in net CET1 capital compared to gross CET1 capital amounts to -41.3%. With an average change of -24.7%, the impact is smaller for Group 2 banks as compared to their Group 1 counterparts. The decline in both groups' Tier 1 and total capital is more modest and largely due to changes in capital instrument eligibility.

Table 4

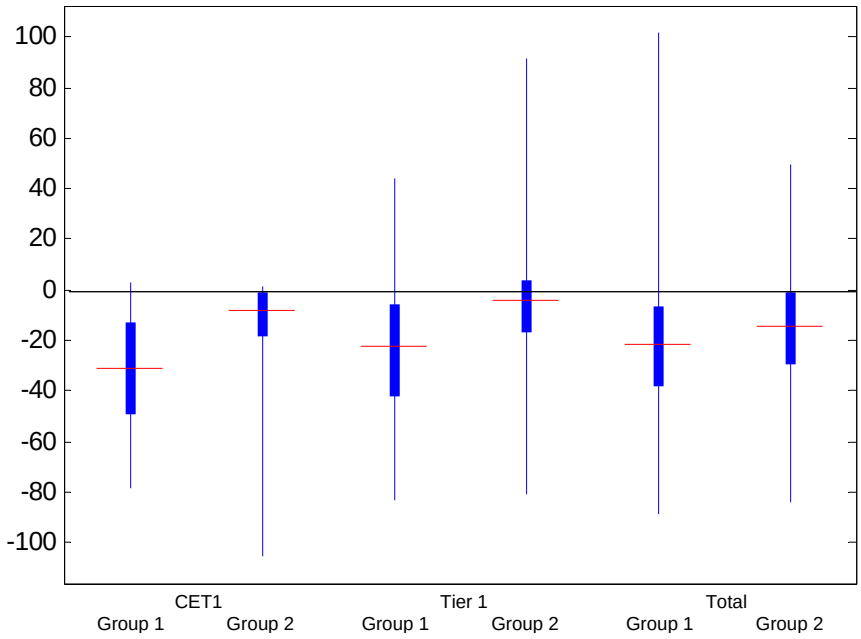
Capital impact of new definition of capital, in percent

	Number of banks	Change in RWA*	Change in CET1 capital**	Change in Tier 1 capital	Change in total capital
Group 1	87	7.3	-41.3	-30.2	-26.8
Group 2	136	3.2	-24.7	-14.1	-16.6

* Change in current overall risk-weighted assets as a result of proposed changes to the definition of capital, ie from applying a risk-weighting treatment to exposures currently being deducted from capital or vice versa. All changes in risk-weighted assets unrelated to the definition of capital are not considered. ** The column "Change in CET1 capital" compares gross CET1 capital (without deductions) with net CET1 capital.

Chart 2

Change in the levels of CET1[19], Tier 1 and total capital, in percent



3.2 Impact of deductions on common equity Tier 1 capital

Table 5 provides additional analyses of the difference between gross and net CET1 capital for Group 1 and Group 2 banks, separating the impact of the various deductions applied to gross CET1.

For the Group 1 banks, the reduction in CET1 capital is driven primarily by deductions of goodwill (-19.0%), deferred tax assets (-7.0%) and holdings in other financial institutions (-4.3%).[20] Minority interest (-2.0%) has a large impact in jurisdictions where these interests were included in the current predominant form of Tier 1 capital. That said, the contribution of individual deductions to the overall change in CET1 varies widely across banks. Generally, other deductions, for example those related to own shares, pension fund assets and securitisation gains on sale, are less significant than the aforementioned deduction categories. The category "Excess above 15%" refers to the deduction of the amount by which the aggregate of the three items subject to the 10% limit for inclusion in CET1 capital (significant investments in the common shares of unconsolidated financial institutions, mortgage servicing rights (MSRs) and deferred tax assets (DTAs)) exceeds 15% of a bank's common equity component of Tier 1, calculated after all deductions from CET1.

[19] The change in CET1 capital compares gross CET1 capital (without deductions) with net CET1 capital.

[20] For deferred tax assets, the impacts presented in Table 5 include the impact of items fully deducted from CET1 (eg loss carry forwards) as well as those in excess of the 10% individual threshold under the basket (eg temporary differences). For holdings in other financial institutions, impacts include reciprocal cross-holdings in common equity as well as small investments and significant investments in the common equity of other financial institutions where these investments exceed the 10% individual thresholds.

Similar to the Group 1 banks, the primary drivers of the overall Group 2 bank change in CET1 capital relate to deductions for goodwill (-9.4%), holdings of other financial institutions (-5.5%), deferred tax assets (-2.8%) and intangibles (-2.3%). Again, the contribution of individual deductions to the overall change varies across banks.

Table 5

CET1 deductions and minority interest as a percentage of new CET1 capital gross of deductions

	Number of banks	Goodwill	Intangibles	Financials	DTA	MSRs	Excess above 15%	Other*	Total	Minority interest**
Group 1	87	-19.0	-4.6	-4.3	-7.0	-0.4	-2.4	-3.6	-41.3	-2.0
Group 2	136	-9.4	-2.3	-5.5	-2.8	0.0	-1.0	-3.7	-24.7	-2.1

* Other includes deductions related to investments in own shares, shortfall of provision to expected losses, cash flow hedge reserve, cumulative changes in own credit risk, pension fund assets, securitisation gains on sale and deductions from additional Tier 1 capital to the extent they exceed a bank's additional Tier 1 capital and, therefore, have to be taken from CET1 capital. ** Minority interest is not included in CET1 capital gross of deductions and the total deductions.

4. Changes in risk-weighted assets

4.1 Overall results

Table 6 presents the change in risk-weighted assets attributable to the introduction of Basel III and separated into the following items:

- **Definition of capital:** This column measures the change in risk-weighted assets as a result of proposed changes to the definition of capital, ie from applying a risk-weighting treatment to exposures currently being deducted from capital or vice versa.
- **Counterparty credit risk (CCR):** This column measures the increased capital charge for counterparty credit risk and the higher capital charge that results from applying a higher asset value correlation parameter against exposures to financial institutions under the IRB approaches to credit risk. The calculation uses a modified version of the December 2009 proposed bond equivalent capital charge for mark-to-market losses associated with a deterioration in the credit worthiness of a counterparty (ie credit valuation adjustment – CVA – risk) and a threshold of US$100 billion for applying the increased asset value correlation to regulated financial institution exposures. As this does not reflect all refinements since the initial proposal, the impact of the final rules will likely be overestimated to some extent.
- **Securitisation in the banking book (Sec BB):** This column measures the increase in the capital charge for securitisations in the banking book.
- **Stressed value-at-risk (sVaR):** This column measures the impact of the new stressed value-at-risk capital requirement in the trading book.

- **Equity standard measurement method (SMM):** This column measures the impact of the higher capital charge for certain equity exposures subject to the standardised measurement method in the trading book.
- **Incremental risk charge and securitisations in the trading book (IRC and Sec TB):** This column measures the impact of the incremental risk capital charge and the increase in capital charges for securitisations held in the trading book.

Overall risk-weighted assets increase by 23.0% for Group 1 banks. The main drivers of this increase are charges against counterparty credit risk and trading book exposures. Accordingly, banks that have significant exposures in these areas influence the average increase in risk-weighted assets heavily. Some banks also experience a larger than average increase in risk-weighted assets due to securitisation exposures in their banking book. Since Group 2 banks are less affected by the revised counterparty credit risk and trading book rules, risk-weighted assets increase by an average of just 4.0%.

Table 6

Change in risk-weighted assets, in percent

	N	Overall	Def. of capital	CCR	Sec BB	sVaR	Equity SMM	IRC and Sec TB
Group 1 banks	74	23.0	6.0	7.6	1.7	2.3	0.2	5.1
Group 2 banks	133	4.0	3.2	0.3	0.1	0.3	0.1	0.1

The average impact of the trading book and counterparty credit risk rules could not be estimated by all banks in the sample. Therefore, the sample of banks is smaller than the sample in Table 4 and the average definition of capital impact is different.

The changes in risk-weighted assets for counterparty credit risk and securitisations in the banking book are explained in the following sections. The Annex includes a more detailed technical analysis of the changes in risk-weighted assets resulting from the new trading book framework.

4.2 Counterparty credit risk

The calculation uses a modified version of the December 2009 proposed bond equivalent CVA charge and a threshold of US$100 billion for applying the increased asset value correlation parameter to regulated financial institution exposures. The recalibration also removes the five times multiplier initially proposed in the consultative document but does not reflect any of the changes to the calculation of CVA in the final rules text.[21] As with other new requirements, the results vary across banks depending on their business model.

[21] As noted above, this does not reflect all revisions since the initial proposal. Therefore, the impact from the final rules will likely be overestimated to some extent.

The number of banks included in the counterparty credit risk (CCR) analysis is smaller than the number taking part in the QIS as CCR is relevant only to banks engaged in OTC derivatives activities or securities financing transactions (SFTs).

Based on the sample banks included in this analysis, the new CCR requirements resulted in an 11.0% average increase in credit risk-weighted assets for Group 1 banks and a significantly smaller 1.1% increase in credit risk-weighted assets for Group 2 banks. As shown in Table 6, the increase relative to overall risk-weighted assets is 7.6% for Group 1 banks and 0.3% for Group 2 banks.

4.3 Securitisations in the banking book

The Committee introduced several Pillar 1 enhancements to the Basel II securitisation banking book framework in July 2009. Specifically, higher risk weights were introduced for resecuritisation exposures and credit conversion factors for short-term liquidity facilities to off-balance sheet conduits were increased. The effect of these enhancements was captured in the scope of the QIS data collection.

For Group 1 banks, the revised treatment of securitisations would increase overall risk-weighted assets by 1.7%. As expected, the overall change in risk-weighted assets for Group 2 banks (a 0.1% increase) was very modest overall. Importantly, these changes do not reflect the transition from a deduction to a risk-weighting treatment for securitisation exposures in some jurisdictions. Such effects have been attributed to changes in the definition of capital (see Section 3).

5. Findings regarding the leverage ratio

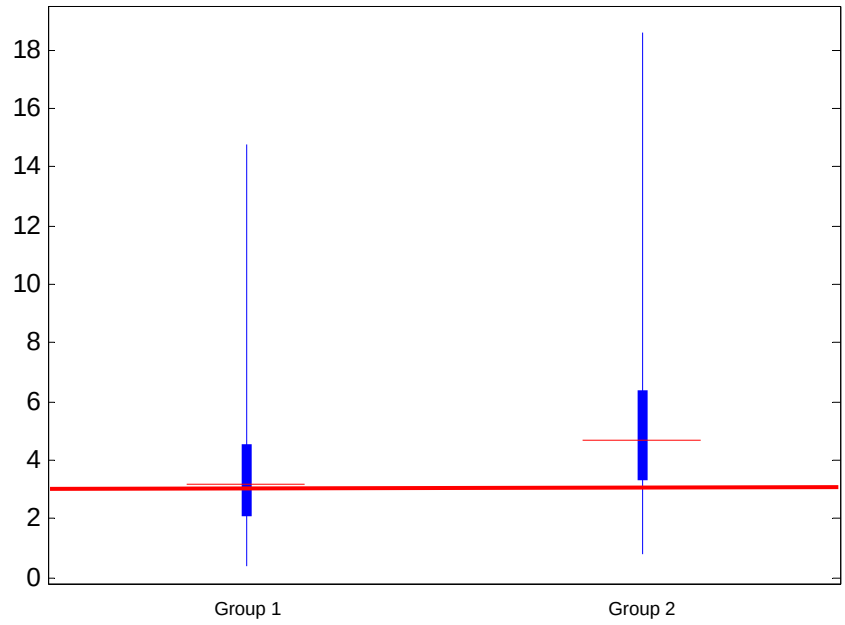
This section presents the July 2010 GHOS agreement for a supplementary leverage ratio. The calculations use the new definition of Tier 1 capital as the numerator of the ratio and the measure of exposure agreed by the GHOS for testing during the parallel run period as the denominator of the ratio. In the exposure calculation, a 100% credit conversion factor generally applies to off-balance sheet exposures, with the exception of a 10% credit conversion factor being applied to unconditionally cancellable commitments. Basel II netting and potential future exposure calculated according to the current exposure method under Basel II are used for all derivatives.

An important element to understanding the results of the leverage ratio section of the QIS is the terminology used to describe a bank's leverage. Generally, when a bank is referred to as having more leverage, or being more leveraged, this refers to a multiple of exposures to capital (ie 50 times) as opposed to a ratio (ie 2.0%). Therefore, a bank with a **high** level of leverage will have a **low** leverage ratio.

The average leverage ratio is 2.8% and 3.8% for Group 1 and Group 2 banks, respectively, indicating that large banks are considerably more leveraged than smaller banks. As with other policy changes presented in this report there is significant variation within the Group 1 and Group 2 bank samples (Chart 3). The thick red line in the chart indicates the 3% minimum leverage ratio, the thin red horizontal lines indicate the median for the respective bank group.

Chart 3

Leverage ratios, in percent



Independent of the risk-based ratio, approximately 42% of the Group 1 banks and 20% of the Group 2 banks in the sample would have been constrained by a 3% leverage ratio as of 31 December 2009 assuming the new definition of Tier 1 capital was already in place.

6. Capital conservation

6.1 Conservation ratio

The conservation ratio is defined as: 1 – (distributions / profit after tax). Profit after tax is prior to expensed distributions, and distributions (net of Tier 1 injections) include the following elements: ordinary share dividends, other coupons and dividend payments on Tier 1 instruments, common stock buybacks, other Tier 1 buybacks or repayments (gross), and discretionary staff compensation and bonus payments.

In certain cases the ratio can be a negative number or over 100%. To ensure that the ratio is bounded between zero and 100%, certain adjustments were made. When distributions are greater than profit after tax, the ratio is set equal to 0% as the bank has conserved none of its profits (this avoids negative conservation ratios). In instances where distributions are negative (ie the bank has made a net injection of funds) the ratio is set to 100%.

6.2 Sample

The analysis covers 21 Basel Committee member jurisdictions and is confined to Group 1 banks. Banks for which data were missing for any item needed in the calculation of the conservation ratio are excluded from the sample. The conservation ratios are calculated for the period from 2004 to 2009, resulting in a total sample of 371 observations.

6.3 Analysis

Summary statistics for the conservation ratio are presented for the period 2004 to 2009 in Table 7. In the years preceding the crisis the mean and median conservation ratio is stable at 62% to 70%. Capital conservation ratios increased significantly after the start of the crisis, with the median conservation ratio rising to 90% or higher in 2008 and 2009.

Table 7

Conservation ratios summary statistics, all data in percent

	2004	2005	2006	2007	2008	2009
25th Percentile	41.9	37.7	47.5	43.4	70.0	61.0
Median	64.9	66.4	70.2	67.6	100.0	91.3
Mean	62.7	62.5	69.4	63.4	82.1	76.0
75th Percentile	87.0	84.6	100.0	88.0	100.0	100.0

Combining the time series data in Table 7, Chart 4 presents the full sample distribution (371 observations). The mean conservation ratio is around 70% (around 40% of the sample is comprised of observations from 2008 and 2009). The high number of observations in the "90% to 100%" range is due to net capital injections including public sector capital injections, which are reported as having a conservation ratio of 100% in this analysis.

Chart 4

Histogram of conservation ratios, 2004–2009, in percent

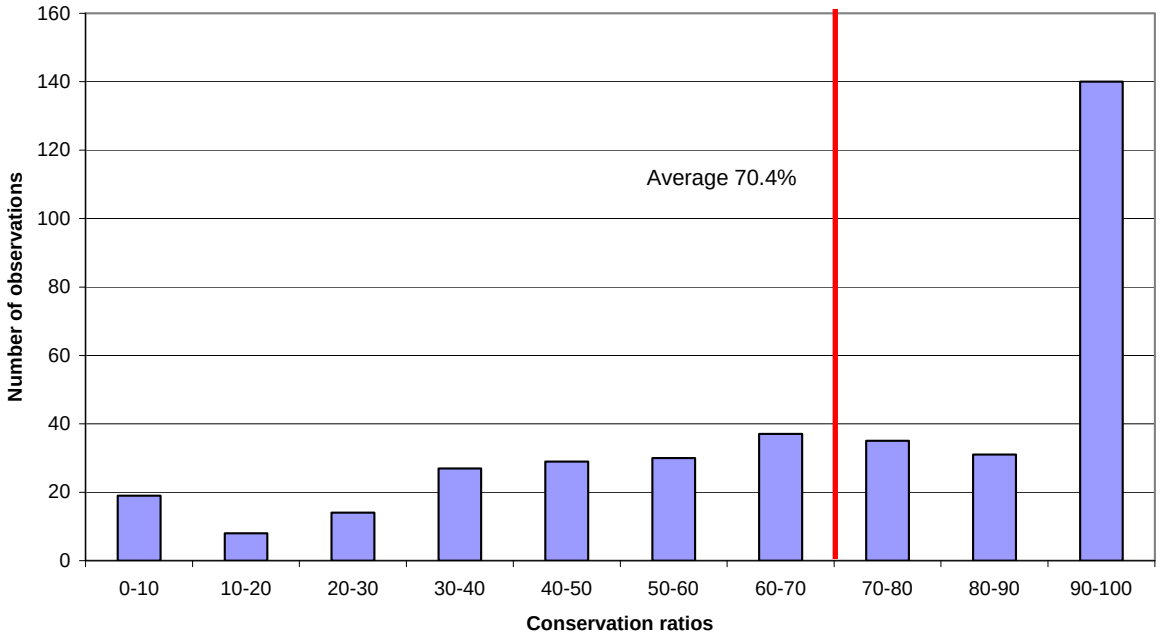


Table 8 examines how the conservation ratios vary according to the profitability and Tier 1 capitalisation of banks. It is expected that a bank with higher profits (defined as profit after

tax to risk-weighted assets) and higher Tier 1 capital ratios would on average have a lower conservation ratio. In Table 8 banks are sorted into quartiles based along these two dimensions (relative Tier 1 capitalisation and profitability). Each cell of the matrix calculates the average conservation ratio for banks in that combination of profitability and capitalisation quartile.

The data show that banks in the lowest Tier 1 quartile and lowest profit quartile tend to conserve more than banks in the highest Tier 1 ratio and profit quartiles. Banks that are both in the highest profit and capitalisation quartile have an average conservation ratio of 56.6%, which compares to the average conservation ratio of banks in the lowest profit and capitalisation cell of 81.6%.

In general however, there appears to be a stronger relationship between profitability and conservation ratios (bottom row of the table), than there is between capitalisation and conservation ratios (right-hand column of the table).

Table 8

Average conservation ratios, in percent

		Profit to RWA quartiles				
		0–25	**25–50**	**50–75**	**75–100**	**All**
T1 quartiles	75–100	89.2	74.8	65.5	56.6	71.5
	50–75	74.0	70.3	68.2	50.0	65.6
	25–50	78.6	77.0	62.5	57.4	68.9
	0–25	81.6	84.8	64.6	70.4	75.3
	All	80.8	76.7	65.2	58.6	

7. Liquidity

The Committee has further strengthened its liquidity framework by developing two *minimum* standards for funding liquidity. Both standards have been significantly revised since the December 2009 consultative proposal, based on further analysis by the Committee, feedback from the industry, and initial QIS results which gave an indication of the impact of the calibration of the standards. Revisions were made with the intent to right-size the stress scenario to capture a severe, yet not worst-case, scenario.

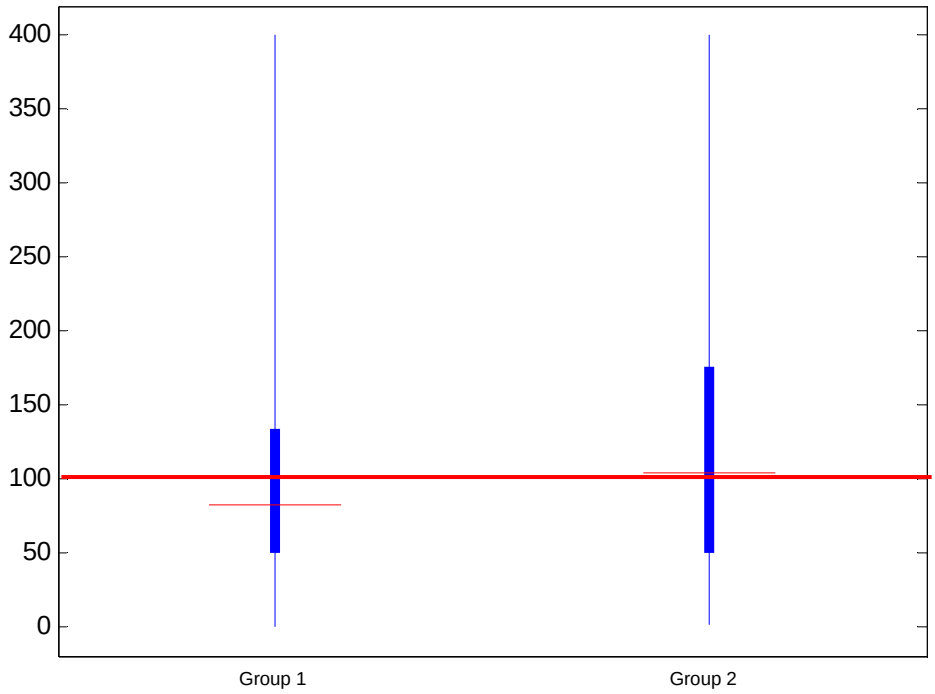
7.1 Liquidity coverage ratio

One of the standards is a 30-day liquidity coverage ratio (LCR) which is intended to promote short-term resilience to potential liquidity disruptions. The liquidity coverage ratio was designed to require global banks to have sufficient high-quality liquid assets to withstand a stressed 30-day funding scenario specified by supervisors. The LCR denominator is comprised of cash outflows less cash inflows that are expected to occur in a severe stress scenario, while the numerator consists of a stock of unencumbered, high quality liquid assets that must be available to cover any net outflow.

169 Group 1 and Group 2 banks provided sufficient data in the follow-up data collection exercise to calculate the LCR according to the final rules. The average LCR was 83% for Group 1 banks and 98% for Group 2 banks.[22] These aggregate numbers do not speak to the range of results across the banks. Chart 5 below gives an indication of the distribution of bank results; the thick red line indicates the 100% minimum requirement, the thin red horizontal lines indicate the median for the respective bank group. 46% of the banks in the QIS sample already meet or exceed the minimum LCR requirement.

Chart 5

Liquidity coverage ratio, in percent



For the banks in the sample, QIS results show a shortfall of liquid assets of €1.73 trillion as of end-2009, if banks were to make no changes whatsoever to their liquidity risk profile. This number is only reflective of the aggregate shortfall for banks that are below the 100% requirement and does not reflect surplus liquid assets at banks above the 100% requirement. Banks that are below the 100% required minimum have until 2015 to meet the standard by scaling back business activities which are most vulnerable to a significant short-term liquidity shock or by lengthening the term of their funding beyond thirty days. Banks may also increase their holdings of liquid assets.

[22] Banks' LCRs have been capped at 400%, both for the calculation of the averages and in the chart.

The key components of outflows and inflows are shown in Table 9, along with the composition of high quality assets currently held at banks depicted in Chart 6 below.

Table 9

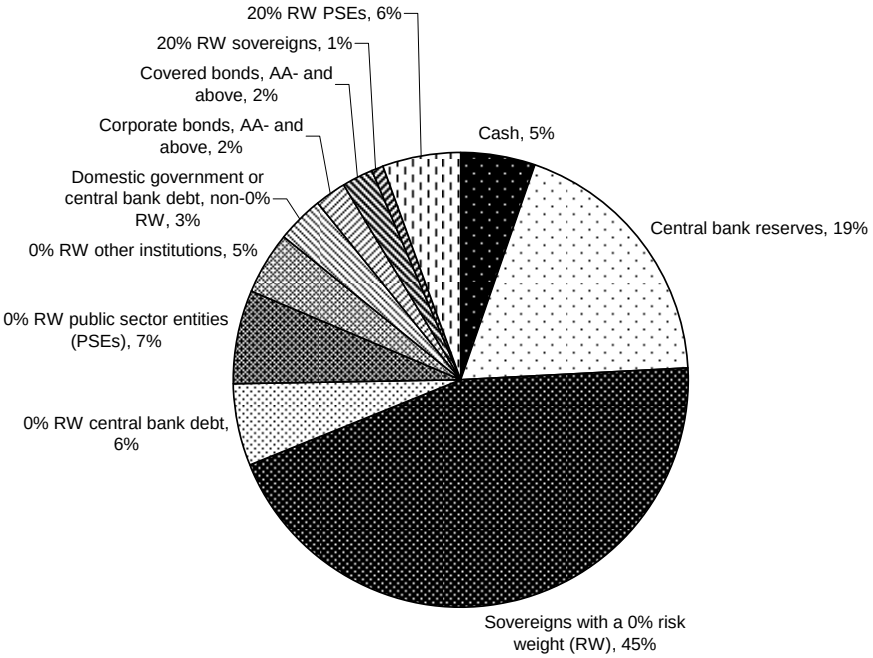
LCR outflows and inflows as a percentage of gross outflows

Category	Group 1 banks	Group 2 banks
Outflows to…		
Unsecured retail and small business customers	9.7%	18.1%
Unsecured non-financial corporates	15.9%	21.4%
Unsecured financial institutions	27.6%	26.3%
Unsecured sovereign, central bank, public sector entities (PSEs) and other counterparties	9.7%	6.6%
Secured funding	2.4%	1.2%
Collateral, securitisations and own debt	24.9%	10.9%
Credit and liquidity facilities	2.3%	2.7%
Other cash outflows including derivative payables	7.3%	12.8%
Total outflows*	**100.0%**	**100.0%**
Inflows from…		
Retail and small business customers	2.5%	8.4%
Non-financial corporates	3.2%	5.9%
Financial institutions	7.8%	16.9%
Other entities	0.8%	1.1%
Secured lending	7.5%	6.1%
Asset-backed commercial paper (ABCP), conduits, structured investment vehicles (SIVs) and own account, performing security cash flow	1.3%	1.6%
Other cash inflows including derivative receivables	6.1%	15.9%
Total inflows**	**22.2%**	**40.5%**

* May contain rounding differences. ** For the purposes of this table, the 75% cap is only applied to the "total inflow" category. Therefore, the percentages in the inflow categories do not add up to the "total inflow" category.

Chart 6

Composition of holdings of liquid assets of banks



7.2 Net stable funding ratio

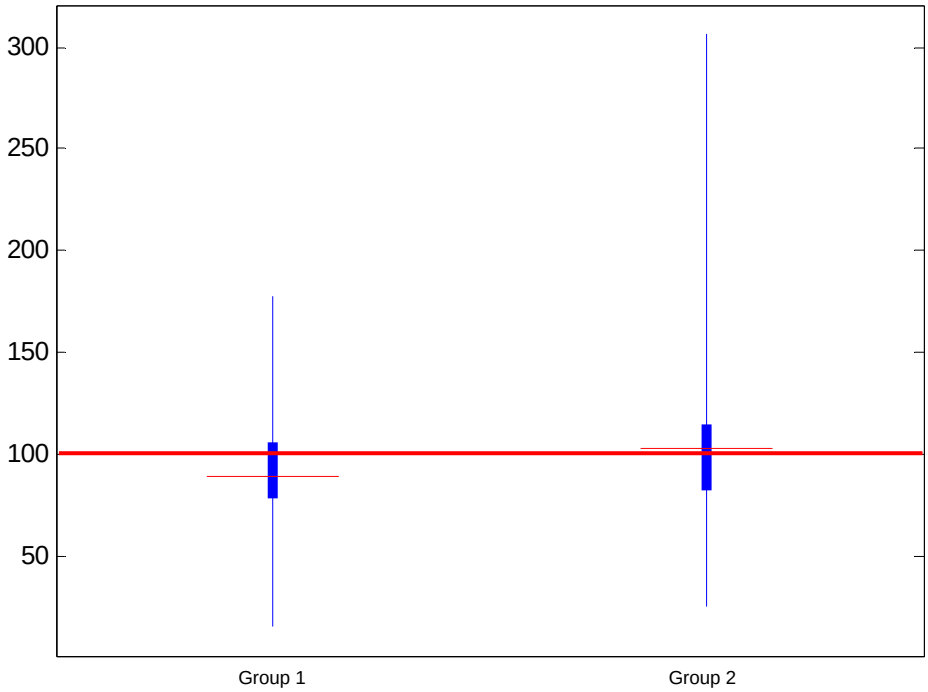
The second standard is the net stable funding ratio (NSFR), a longer-term structural ratio to address liquidity mismatches and provide incentives for banks to use stable sources to fund their activities.

The NSFR for Group 1 banks is 93% on average. For Group 2 banks, the average NSFR is higher than that of the Group 1 sample at 103%. Chart 7 shows the distribution of results for Group 1 and Group 2 banks; the thick red line indicates the 100% minimum requirement, the thin red horizontal lines indicate the median for the respective bank group. [23]

[23] One bank was removed from Chart 7 due to a result that greatly exceeded the scale of the chart.

Chart 7

Net stable funding ratio, in percent



166 Group 1 and Group 2 banks provided sufficient data in the follow-up data collection exercise to calculate the NSFR according to the final proposals. 43% of these banks already meet or exceed the minimum NSFR requirement, with 67% of them at an NSFR of 85% or above.

QIS results show that banks in the sample had a shortfall of stable funding of €2.89 trillion at the end of 2009, if banks were to make no changes whatsoever to their funding structure. This number is only reflective 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. Banks that are below the 100% required minimum have until 2018 to meet the standard and can take a number of measures to do so, including by lengthening the term of their funding, reducing maturity mismatch, or scaling back activities which are most vulnerable to liquidity risk in periods of stress.

It should be noted that the shortfalls in the LCR and the NSFR are not additive, as decreasing the shortfall in one standard may result in a similar decrease in the shortfall of the other standard, depending on the steps taken to decrease the shortfall.

Annex

Changes in risk-weighted assets in the trading book

With regard to the trading book, the scope of the QIS included consideration of the following treatments: (i) the stressed VaR; (ii) the capital charge for incremental risk; and (iii) the capital charges for securitisation exposures, including the correlation trading portfolio. The capital charges for securitisations that are not included in the correlation trading portfolio have generally been calculated as the larger of the capital charges for net long and net short positions. This is in line with the transitional treatment to be applied from 31 December 2011 to 31 December 2013 as announced in the Committee's 18 June 2010 press release.[24] After the transition period, the capital charge will change to the sum of the capital charges for the net long and net short positions. However, applying this treatment now would substantially overstate the impact as many legacy positions will roll off or be managed down. To the extent capital charges for the correlation trading portfolio are calculated using a comprehensive risk model, they include the impact of the 8% floor of the standardised measurement method.

The original QIS questionnaire and instructions did not reflect subsequent decisions by the Committee regarding three interpretive issues: (i) the application of market value to derivative positions; (ii) the application of off-setting under the standardised measurement method; and (iii) the application of the maximum possible loss principle. Furthermore, the original data collection was not sufficient to assess the impact of basing the standardised approach capital charges for securitisations outside the correlation trading portfolio on the maximum of the capital charges for net long and net short positions during the transitional period. While some banks provided additional data in a follow-up study in May 2010, not all banks were able to provide these data. For banks that did not provide data in the follow-up study or could not fully reflect the three interpretive issues in their calculations, capital charges for securitisation exposures outside the correlation trading portfolio, and capital charges for correlation trading exposures subject to the standardised measurement method as well as the level of the 8% floor, might be overstated.

Table 10 shows the impact of the revised trading book capital charges on overall risk-weighted assets. It is important to note that the sample of banks that provided trading book data in the QIS is larger than the sample of banks included in the Trading Book Group's impact studies. As these additional banks are not expected to be as active in securitisation trading and especially correlation trading, the average impact is expected to be lower.

Stressed value-at-risk (column "sVaR") results in an average increase in overall capital requirements of 2.6%. However, there is significant dispersion of the increases across Group 1 banks with a maximum of 51.8% for one bank in the sample. The elimination of the preferential 4% risk weight for certain equity exposures subject to the standardised measurement method (column "Equity") has almost no impact on Group 1 banks. The incremental and comprehensive risk capital charges and the capital charges for securitisation exposures in the trading book contribute on average 6.9% to the increase of overall capital requirements with a maximum of 112.3% for one bank. The overall average increase is broken down further as follows: the incremental risk capital charge (column "IRC")

[24] "Adjustments to the Basel II market risk framework announced by the Basel Committee" (www.bis.org/press/p100618.htm).

contributes 1.5%; the capital charge for non-correlation trading securitisation exposures according to the standardised measurement method (column “SMM non-CTP”) contributes 4.4%; the comprehensive risk model for correlation trading exposures (including the floor, column “Correlation trading CRM”) contributes 1.7%; the standardised measurement method for correlation trading exposures not included in the model (column “Correlation trading SMM”) contributes 0.2%; and the previous capital charges (resulting from the event risk surcharge and previous standardised or VaR-based charges for the specific risk capital requirements of securitisations) reduce the impact of the charges by 0.9%.

Table 10

Increase in trading book-related capital charges relative to overall capital requirements, Group 1 banks, in percent

			IRC and securitisation					
						Correlation trading		
	SVaR	Equity	Overall	IRC	SMM non-CTP	CRM	SMM	Prev. charge
Average	2.6	0.0	6.9	1.5	4.4	1.7	0.2	-0.9

This table includes all banks providing data on the trading book changes, irrespective of whether or not they also provided data on all other policy issues with risk-weighted asset impact. Therefore, the results are not comparable to the last three columns of Table 6.

Across the sample of 61 Group 1 banks providing data, the stressed value-at-risk was on average 248.7% of the value-at-risk provided by firms for a non-stressed period, typically the period ending 31 December 2006. This ratio ranged from as low as 86.7% to a high of 814.9%, with a median of 207.2% and a standard deviation of 141.7%. Some additional summary statistics regarding the new trading book capital requirements compared to current market risk capital requirements are included in Table 11.

Table 11

Increase in trading book-related capital charges relative to current market risk requirements, Group 1 banks, in percent

				Correlation trading	
	sVaR	IRC	SMM non-CTP	CRM	SMM
Number of banks	61	35	45	18	16
Median	51.7	28.8	17.0	25.5	8.2
Minimum	8.5	1.2	0.2	5.6	2.3
Maximum	165.4	171.9	484.8	91.2	61.5
StDev	43.8	49.1	119.4	21.9	17.6