BASEL COMMITTEE ON BANKING SUPERVISION

BANK FOR INTERNATIONAL SETTLEMENTS

5 May 2003

Quantitative Impact Study 3 – Overview of Global Results

Introduction

In October 2002, the Basel Committee on Banking Supervision initiated the third Quantitative Impact Study (QIS3) involving a range of banks across 43 countries. The objective of the study was to allow the Committee to gauge the impact of the Basel II proposals on minimum capital requirements (i.e. Pillar 1) before finalisation of the third consultative paper (CP3). The detailed proposals to be tested were set out in the Technical Guidance for the study (released on 1 October 2002[1]).

Overall, the results from QIS3 were consistent with the Committee's objectives. Changes made to the second consultative paper (CP2) proposals had generally delivered the desired result. For example, capital requirements for loans to SMEs will generally be no higher than currently – indeed in many cases they will be lower. However, some issues were highlighted by the QIS3 results which needed to be addressed. The Committee decided to make a few targeted reductions to the Standardised approach proposals – in particular a lower risk weight of 35% for residential mortgages and recognition that "past due" loans with significant levels of provisioning warrant a lower risk weight than 150% on the net amount remaining. An alternative Standardised treatment for operational risk will be offered at supervisory discretion, available for use with any of the three credit risk approaches. Finally, elements of the IRB approach proposals have been fine-tuned. For example, floors have been set for retail mortgage LGDs (10%) and for all retail PDs (3 basis points), the risk weight curve for qualifying revolving retail exposures has been modified and the implicit maturity for repos has been reduced to 6 months. These changes have been included in CP3 and are more fully set out in the Overview paper discussing CP3.

In order to show the effect of the CP3 proposals on minimum capital requirements, the QIS3 results have been adjusted by national supervisors to take into account the latest changes, and the results presented in this paper are on this basis. Because two Standardised treatments are now available for operational risk, the lower result has been taken for each bank. The results for G10 banks calculated using the original QIS3 Technical Guidance are set out in an Annex as a basis for comparison.

The Committee appreciates the substantial efforts that banks and national supervisors have put into this exercise and believes that the data are overall to a good standard.[2] This report has benefited from information derived from discussions between supervisors and banks as

[1] See http://www.bis.org/bcbs/qis/qis3.htm

[2] A number of different authorities have been involved in the co-ordination of the project. The European Commission, which is an observer to the Basel Committee, co-ordinated the EU and Accession country results.

well as from the actual data. However, as in previous exercises, banks' systems have not necessarily been able to provide all the information required to calculate the effects of Basel II. This is particularly the case in the area of credit risk mitigation, where it has proved difficult for banks in many countries to recognise all the types of collateral which are allowed to reduce the capital requirements. The Committee believes the results, particularly from non-retail activities, shown in this paper tend to overstate the minimum capital requirements on implementation. This is partly because of lack of recognition of CRM but also because banks will have different options that have not been fully utilised in these results e.g. recognition of some SME exposures as retail and VaR modelling for repos. Also all operational risk figures included are those calculated using the Standardised approach (or, in only a few cases, other approaches) and the Advanced Measurement approach may reduce the figures for some banks.

A total of 188 banks in the 13 G10 countries[3] participated in the study, with a further 177 banks from 30 other countries. All 15 EU member countries and a further 5 EU Accession countries participated. Results are shown for the G10, the EU countries (including those in the G10) and the other participating countries (labelled 'Other').

As with previous exercises, banks calculated the capital requirements for consolidated group exposures on a world-wide basis. Not all banks were able to provide data for all three new credit risk approaches and the sample of banks completing the Advanced IRB approach, in particular, was significantly smaller. Outside the G10 and EU, only a small number of countries had any banks completing this approach, making it difficult to maintain confidentiality, so these results are not included here; nor are Group 2 results for the G10 or EU for the same reason. Banks were split into two groups – Group 1 banks are large, diversified and internationally active with Tier 1 capital in excess of €3bn, and Group 2 banks are smaller and, in many cases, more specialised. The Committee believes that the G10 Group 1 banks are broadly representative of the large, internationally active banks in these countries. The Group 1 results for a country are an average of the individual bank results weighted by the sum of their Tier 1 and Tier 2 capital less supervisory deductions. The Group 2 results for a country are generally simple averages, although some countries outside the G10 used a weighted average for Group 2 also. Simple averages were used across countries. For 'Other' countries Group 1 and Group 2 results are shown together because the Group 2 banks account for by far the largest proportion and are the main banks in most of these countries.

As in previous exercises, results are presented in terms of the changes to minimum capital requirements, relative to the current Accord, under each approach. The 'contributions' to the change are also shown, where the contribution for each portfolio shows the percentage change to the total capital requirement resulting from that specific portfolio. This is derived by multiplying the percentage change in capital requirements for the portfolio by the proportion of capital under the current Accord accounted for by that portfolio.

[3] This includes all the members of the Basel Committee and is therefore wider than just the G10. Members of the Committee are: Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, UK and US.

Summary of Results

The QIS3 results for the Standardised approach show some increases in capital requirements relative to current for all the country groupings. In the Foundation IRB approach, Group 1 banks on average report only small changes to current requirements, but the results show substantial reductions for G10 and EU Group 2 banks (which are more retail orientated on average). In the Advanced IRB approach, all the groups of banks report reductions in capital requirements compared with those under the current Accord.

The results are generally in line with the Committee's objectives: minimum capital requirements would be broadly unchanged for large internationally active banks taking into account the fact that they are likely to use the IRB approaches. The proposals would offer an incentive for internationally active banks to adopt the more sophisticated IRB approaches. For smaller, more domestically orientated, G10 and EU banks capital requirements could be substantially lower than currently under the IRB approaches, largely reflecting the importance of retail for these banks. In 'Other' countries there will be significant variation depending on the conditions in different markets and the focus of activity of the banks All the results are thought to be somewhat overstated, for example because of difficulties in identifying new forms of collateral.

Table 1

World-wide Results - overall percentage change in capital requirements[4]

	Standardised			**IRB Foundation**			**IRB Advanced**		
	Average	Max	Min	Average	Max	Min	Average	Max	Min
G10 Group 1	**11%**	84%	-15%	**3%**	55%	-32%	**-2%**	46%	-36%
Group 2	**3%**	81%	-23%	**-19%**	41%	-58%			
EU Group 1	**6%**	31%	-7%	**-4%**	55%	-32%	**-6%**	26%	-31%
Group 2	**1%**	81%	-67%	**-20%**	41%	-58%			
Other[5] Groups 1&2	**12%**	103%	-17%	**4%**	75%	-33%			

Variation Across Portfolios

There is considerable variation in the extent to which capital requirements will rise or fall under Basel II for the different portfolios. This reflects the relative risk insensitivity of the current Accord, which leads to requirements which are currently high or low relative to risk for different portfolios. In particular, retail exposures carry relatively high weights relative to risk under the current Accord, whereas much of the sovereign portfolio for many banks is currently zero weighted even though there is some risk.

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[4] Max and min figures relate to individual bank results. Operational risk figures were generally determined on the basis of the Standardised approach and for a few banks the Basic Indicator approach. One bank used the Advanced Measurement approach.

[5] The countries include in this grouping are: Australia, Brazil, Bulgaria, Czech Republic, Chile, China, Hong Kong, Hungary, India, Indonesia, Korea, Malaysia, Malta, Norway, Philippines, Poland, Russia, Saudi Arabia, Singapore, Slovakia, South Africa, Tanzania, Thailand and Turkey.

Variation Across Banks

As expected by the Committee, the new risk-based capital requirements would lead to significant variation in outcomes across banks. The greatest variation for G10 banks is in the Foundation IRB approach. The charts attached show the results for individual banks within the broad geographic groupings. While one of the main factors behind the variation in results is the relative quality of the exposures, reflected in PDs in both IRB approaches and LGDs in the Advanced approach, another important element is the importance of retail activity. Banks with a large proportion of retail exposures generally have significantly lower capital requirements in the new approaches relative to current levels, reflecting the generally lower risk in this portfolio. It should also be noted that this is one of the factors behind the difference in average results for Group 1 banks and Group 2 banks: on average, Group 2 banks tend to have a higher proportion of retail activity. Variation in results for the Standardised approach is also largely due to the relative importance of retail portfolios for different banks.

Another source of variation across all approaches is the sizable change in capital requirements for some specialised banks because of the new operational risk capital requirement. However, the magnitude of the change is greatly influenced by the small capital requirements that these banks have under the current Accord (reflecting the fact that it is based on only credit and market risk).

Data Quality

Banks were given more time to collect and compile data than in previous QIS exercises, with forewarning about the data requirements more than two months before the exercise was launched. There were still some data quality issues, however. Banks found it difficult to gather data on all the new forms of eligible collateral. Not all banks met the standards laid down by the Committee for setting PDs, LGDs and EADs, which led to some variation in the results across banks. Some of these estimates are likely to change as the standards are fully implemented which is likely to reduce the overall dispersion.

It should be noted that QIS3 results are not necessarily directly comparable with those from QIS2 or 2.5, given the wider sample of banks for the latest exercise and the adoption by some banks of more intensive methods to refine data.

Standardised Approach

In the Standardised approach, capital requirements for **credit risk** are little changed from current for Group 1 banks on average, but would be significantly lower than current for G10 and EU Group 2 banks and slightly increased for banks in 'Other' countries. In all cases, the new operational risk capital requirement more than outweighs any reduction in credit risk capital requirements, so the overall change is an increase. The largest increases are for the G10 Group 1 banks, which are unlikely to use this approach except as a transitional arrangement, and for the banks in 'Other' countries. The G10 Group 1 figures reflect the higher level of commitments and smaller proportion of retail activity than for Group 2 banks

on average. The result for the 'Other' countries also reflects less retail activity, but some countries have also been more conservative[6] in their application of Basel II to reflect local credit conditions and there are some outlier factors[7] in some portfolios. There have also been some data issues.[8]

Table 2

Contributions to Change in Capital – Standardised approach core portfolios[9]

Portfolio	G10		EU		Other
	Group 1	Group 2	Group 1	Group 2	Groups 1 & 2
Corporate	1%	-1%	-1%	-1%	0%
Sovereign	0%	0%	0%	0%	1%
Bank	2%	0%	2%	1%	2%
Retail	-5%	-10%	-5%	-7%	-4%
SME	-1%	-2%	-2%	-2%	-1%
Securitised assets	1%	0%	1%	0%	0%
Other portfolios	2%	1%	2%	-1%	3%
Overall credit risk	0%	-11%	-3%	-11%	2%
Operational risk	10%	15%	8%	12%	11%
Overall change	11%	3%	6%	1%	12%

The main area of activity where the minimum capital requirement will change substantially is the retail portfolio, where the risk weights have been lowered significantly for all sub-portfolios (excluding past due assets) relative to the current Accord. The large contribution across all groups reflects the combination of these changes with the importance of retail activity for many participating banks.

For the corporate portfolio, the capital requirements are little changed as most exposures are reported as unrated and the risk weight therefore does not change unless they benefit from the greater recognition of financial collateral. For some countries, a relatively small amount of financial collateral was reported. By implementation, the banks' systems should allow more collateral to be identified and more borrowers may be rated. For past due loans (with less than 20% of specific provisions) and exposures to low-rated borrowers the risk weight rises by 50% compared to the current Accord and this is a significant factor for some 'Other' countries.

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6 In one case applying a risk weight of more than 100% to unrated exposures and in others not applying the new 35% risk weight to residential mortgages because of loan to value ratios.

7 Some countries have local factors which lead to high figures for some particular portfolios such as the trading book. For some banks with large sovereign portfolios, the operational risk charge leads to a large change because the total capital requirements under the current Accord are low.

8 For example, with many banks not identifying SME exposures which can be included in retail.

9 Not all portfolios are detailed in the table. Portfolios that have not been separately listed are included in "Other portfolios". Some of the portfolios included in "Other" had a material impact on overall results in some participating countries. Columns do not always appear to sum to the given totals due to rounding errors.

For interbank and sovereign exposures, where more borrowers are externally rated, the pattern varies bank by bank, although overall there are increases in capital requirements reflecting some lower-rated exposures. But these portfolios do not make a large contribution to the overall results because of their relatively small size and the current low risk-weighting.

The average operational risk capital requirement under the Standardised treatment (taking the lower of the two options for each bank) is between 8% and 10% for the Group 1 banks in the G10 and EU. The requirement (at 12% to 15%) is higher for G10 and EU Group 2 banks which include many specialised institutions which have activities not captured under the current Accord (asset management, custody and other financial services). For the 'Other' countries the average increase in capital from operational risk would be 11%. Some countries would have higher figures reflecting particular local factors such as substantial sovereign exposures with low or zero requirements under the current Accord which reduce the base against which the operational risk charge is measured. This is a similar issue to that for the specialised Group 2 banks. The alternative Standardised approach for traditional banking based on the volume of assets reduces the operational risk charges for a number of banks. The gross income measure produced substantial increases for some banks which have high margins.

The same treatment is used for operational risk throughout, so differences in the contribution shown under the IRB approaches reflect only sample differences.

Internal Ratings Based Approaches

Credit risk capital requirements fall for all groups under the IRB approaches.

Table 3

Contributions to Change in Capital – IRB Foundation approach core portfolios[10]

Portfolio	G10		EU		Other[11]
	Group 1	Group 2	Group 1	Group 2	Groups 1 & 2
Corporate	-2%	-4%	-5%	-5%	-1%
Sovereign	2%	0%	2%	1%	1%
Bank	2%	-1%	2%	-1%	1%
Retail	-9%	-17%	-9%	-18%	-8%
SME	-2%	-4%	-3%	-5%	1%
Securitised assets	0%	-1%	0%	-1%	1%
General provisions	-1%	-3%	-2%	-2%	-2%
Other portfolios	4%	3%	3%	5%	5%
Overall credit risk	-7%	-27%	-13%	-27%	-3%
Operational risk	10%	7%	9%	6%	7%
Overall change	3%	-19%	-4%	-20%	4%

Again, a major feature of these results is a large reduction in the capital requirement for retail portfolios, with the scale of impact of this on overall results for each bank driven largely by the relative size of the mortgage portfolio within the total. There is only one IRB approach for the retail portfolios, with banks required to estimate their own Loss Given Default (LGD) and Exposure at Default (EAD) parameters.

Capital requirements for corporate exposures under the Foundation approach (where the Committee sets the LGD and EAD) are generally lower than under the current Accord, reflecting the importance of exposures to high quality borrowers within these portfolios.

Capital requirements on loans to SMEs will generally be lower than currently. The changes to the corporate risk weight curve following CP2 and the introduction of a size function (with lower requirements for exposures to small companies) have significantly lowered the requirements on good or medium quality exposures to those SMEs treated as corporate. Exposures to SMEs treated as retail will have yet lower requirements due to the use of the retail risk weight curve.

[10] Not all portfolios are detailed in the table. Portfolios that have not been separately listed are included in "Other portfolios". Some of the portfolios included in "Other" had a material impact on overall results in some participating countries. Columns do not always appear to sum to the given totals due to rounding errors.

[11] Note that the sample of Other banks completing the Foundation IRB approach was less than one quarter of the size of the sample completing the Standardised approach and average results are therefore less robust.

Changes to the treatment of counterparty risk in the Trading Book had only a small impact on overall average results for all groups and all approaches, although a number of individual banks recorded significant changes in capital requirements for this area.

One other portfolio with a noticeable impact in a number of countries was the equity portfolio, where significant increases in capital were reported by the small number of banks which completed the IRB approach for this portfolio (in many cases the portfolio was excluded as it was immaterial or grandfathering from the current Accord was permitted).

The table below sets out the results for the IRB Advanced approach for G10 and EU Group 1 banks.

Table 4

Contributions to Change in Capital – IRB Advanced approach core portfolios[12]

Portfolio	G10	EU
	Group 1	Group 1
Corporate	-4%	-4%
Sovereign	1%	1%
Bank	0%	-1%
Retail	-9%	-9%
SME	-3%	-4%
Securitised assets	0%	0%
General provisions	-2%	-3%
Other portfolios	2%	4%
Overall credit risk	-13%	-15%
Operational risk	11%	10%
Overall change	-2%	-6%

The differences between the results under the Foundation and Advanced IRB reflect several elements.[13] Under the Advanced approach the banks set their own LGDs and EADs for all portfolios. Another factor is that under the Foundation approach countries can opt to use an implicit[14] rather than an explicit maturity for non-retail loans. The largest differences between the Foundation and Advanced approaches for those banks which completed both were in the corporate and interbank portfolios. In the interbank portfolio, average LGDs set by the banks in the Advanced approach were rather lower than the fixed LGDs set by the Committee for use in the Foundation approach, but there was considerable variation across banks, with

[12] Not all portfolios are detailed in the table. Portfolios that have not been separately listed are included in "Other portfolios". Some of the portfolios included in "Other" had a material impact on overall results in some participating countries. Columns do not always appear to sum to the given totals due to rounding errors.

[13] Some of the variation between the Foundation and Advanced results presented here are due to sample differences: the sample of banks completing the Advanced approach is only a sub-set of those completing the Foundation approach.

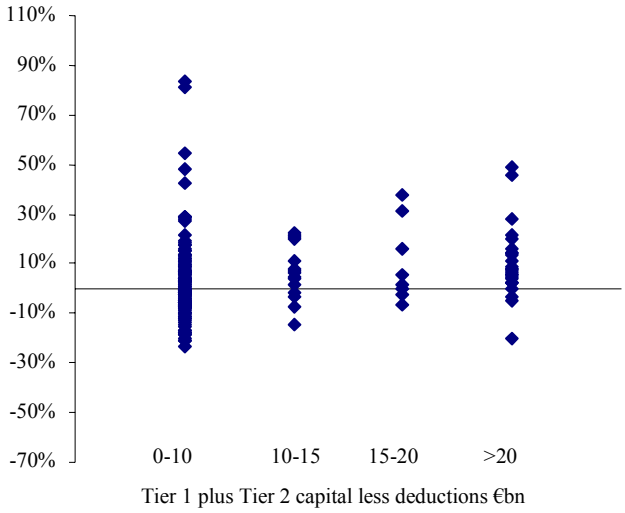
[14] 2.5 years for all exposures except repos which is now 6 months.

many using higher LGDs in the Advanced approach. For the corporate portfolio, there was little difference in average LGDs between the two IRB approaches and the lower capital requirements under the Advanced approach reflect lower credit conversion factors set by the banks for commitments.

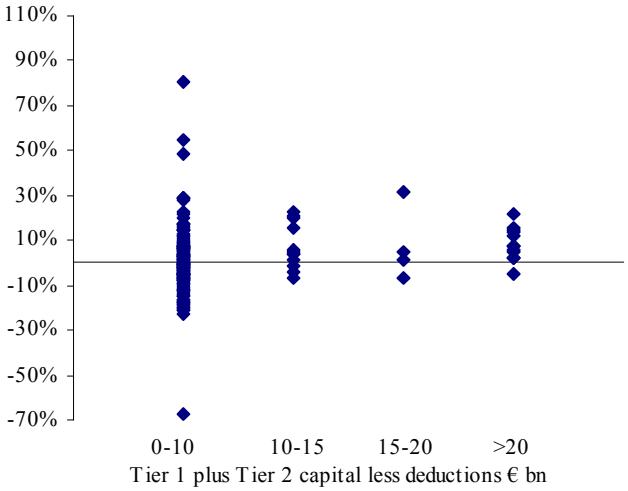
Appendix - Results by individual bank (CP3 basis)[15]

Standardised approach: change in minimum capital requirements versus current Accord

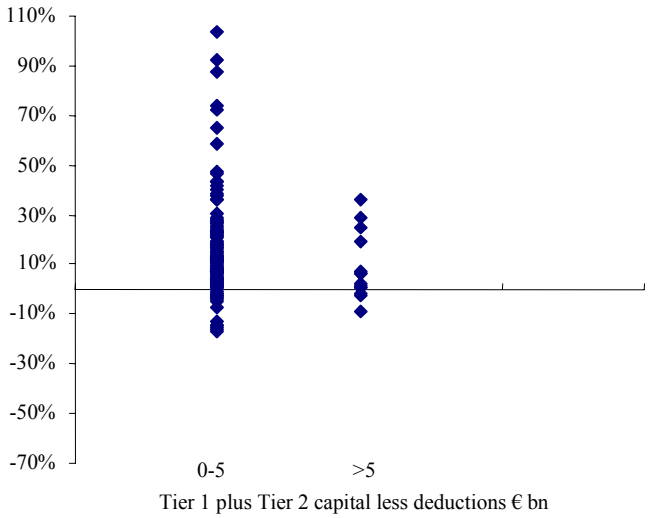
G10 banks



EU banks



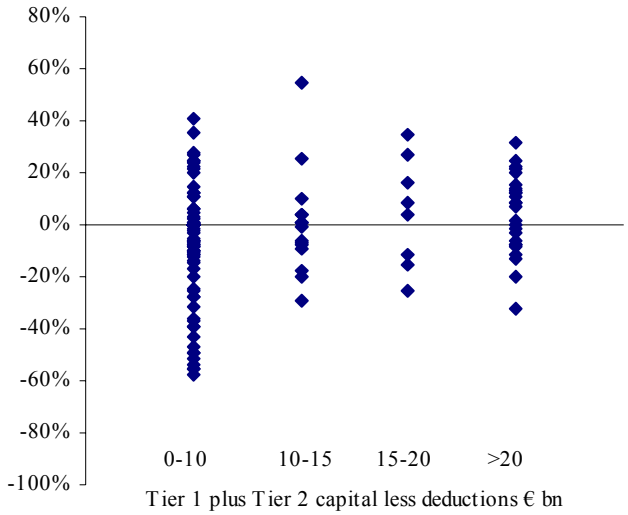
Other banks



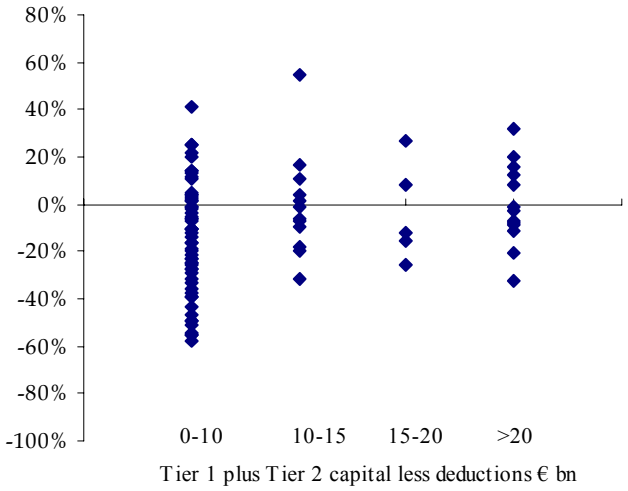
[15] On the charts the markers represent the results for one individual bank. Each chart covers both Group 1 and Group 2 banks for that geographical grouping.

Foundation IRB approach: change in minimum capital requirements versus current Accord

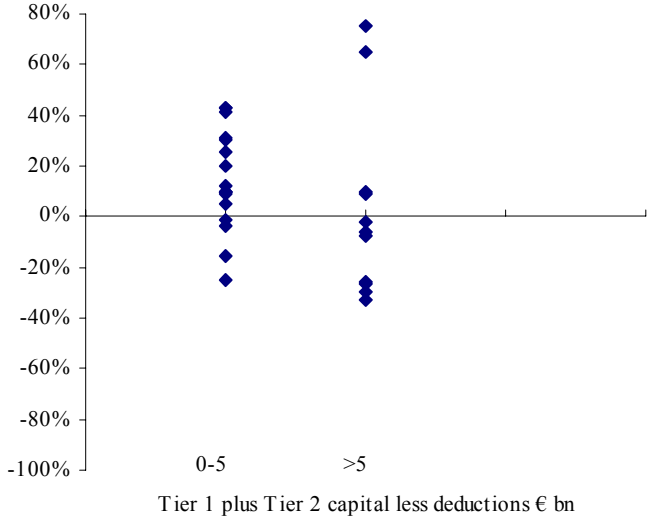
G10 banks



EU banks

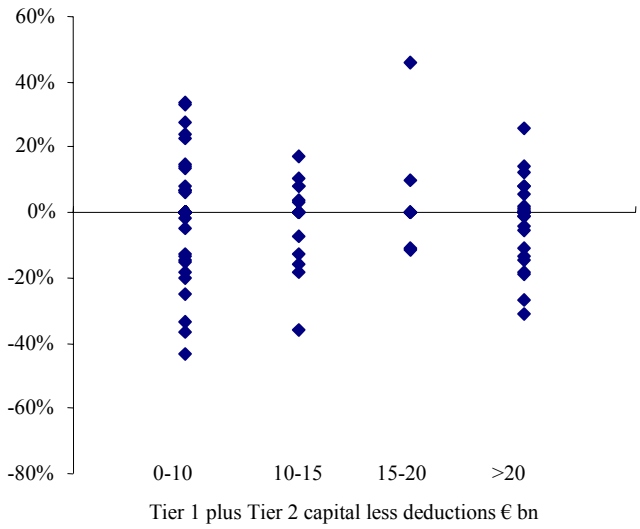


Other banks

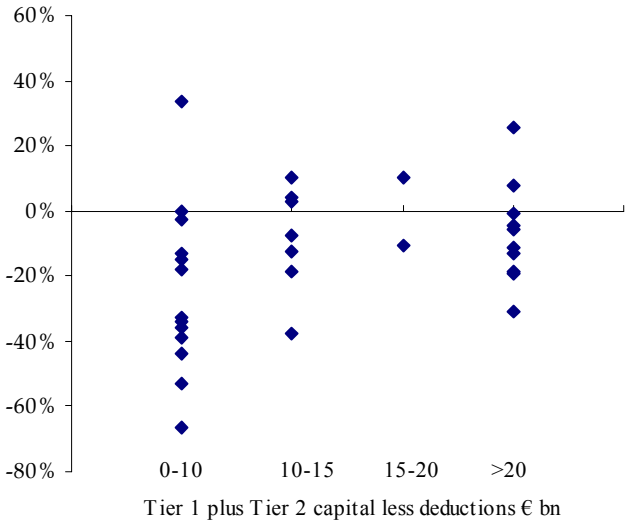


Advanced IRB approach: change in minimum capital requirements versus current Accord

G10 banks



EU banks



Annex

Detailed G10 Results

This annex provides more detail on the results of the QIS3 exercise for the G10 banks. It sets out the results on the adjusted CP3 basis and on the original QIS3 basis.

Results were received from 65 Group 1 banks and 123 Group 2 banks in the Basel Committee member countries. In most countries, the participating Group 1 banks were considered to either cover the whole population of large internationally active banks or to provide a representative sample, whereas for Group 2, given the specialised nature of some banks in this category, the samples were not necessarily considered representative of the full population. Not all participating banks managed to calculate the capital requirements under each of the three methods set out in the proposals – Standardised, IRB Foundation and IRB Advanced. 185 banks completed the Standardised approach, 109 IRB Foundation and 57 IRB Advanced. Given the very small sample of Group 2 banks completing the Advanced approach, these results are not shown here.

There has been extensive contact between the national supervisors and banks over the course of the exercise which has included discussion of the extent to which banks have been able to identify all of the necessary data and meet the standards set down by the Committee for the new approaches. The conclusions drawn in this report reflect these discussions, as well as the results.

Summary of results across approaches

Under the CP3 proposals, the Group 2 banks (which are more likely to use the simpler approaches under Basel II) would have only a modest increase in their capital requirements relative to current under the Standardised approach. The original QIS3 basis would have delivered a larger increase. The increase would be higher for the Group 1 banks, but they are generally less likely to use this approach, except as a transitional arrangement. Capital requirements would be lower for both groups of banks under IRB Foundation compared with under the Standardised approach, and lower still for Group 1 banks under IRB Advanced, giving the appropriate incentives to encourage large, internationally active banks to adopt the more sophisticated approaches.

Overall results:
Average % change in minimum capital requirements relative to current Accord[16]

CP3 Basis

	Standardised	FIRB	AIRB
Group 1	10.5%	2.6%	-1.6%
Group 2	3.4%	-19.4%	

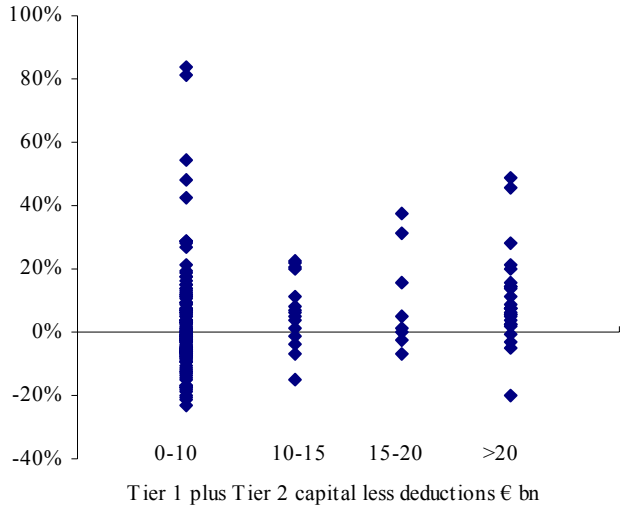
Original QIS3 basis

	Standardised	FIRB	AIRB
Group 1	12.4%	2.5%	-1.9%
Group 2	5.8%	-22.2%	

Standardised approach

There is significant variation in the results for the Standardised approach across individual banks, with the greatest variation among the Group 2 banks.

% change in Standardised capital requirements – all G10 banks (CP3 basis)

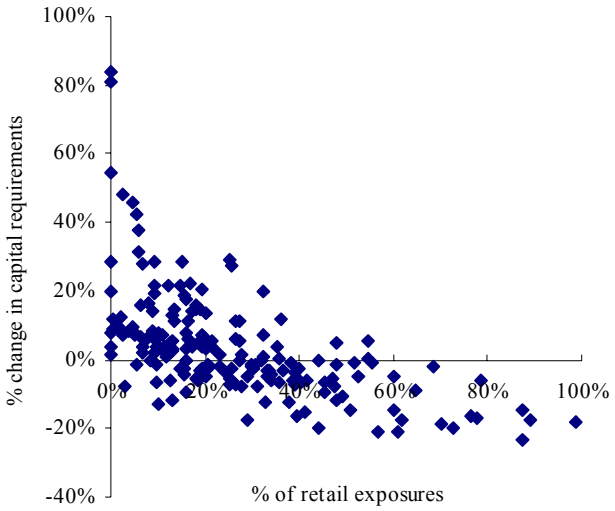


[16] Throughout this paper, results represent a simple average of individual country results. For Group 1, the country results are weighted averages between the banks (weighted according to capital base) whilst Group 2 results are simple averages between the banks.

The chart shown above is on the CP3 basis and is little different from that on the original QIS3 basis.

The banks with the greatest reduction in capital requirements under this approach are those banks with a large proportion of retail activity and the Group 2 banks have the largest preponderance of retail activity – on average it outweighs other lines of business. The chart below shows the clear relationship between the proportion of activity accounted for by retail and the change in the capital requirements under the Standardised approach.

% change in Standardised capital requirements against % of book in retail (CP3 basis)



Those banks with the largest increases relative to the current Accord tend to be the most specialised institutions including, for example, a few banks with large amounts of securitisation or activities (such as fund management) which are not captured under the current Accord, leading to a greater proportionate effect from the introduction of the operational risk requirement. For a bank currently carrying out little credit risk activity the new operational risk charge, which covers the whole business, can lead to a large percentage change in required capital relative to the current Accord, which is based only on credit and market risk, because the denominator (current capital requirements) is small.

The following table shows the total change in the capital requirement, on average, for each group of banks and the composition of this change in terms of 'contributions'. For each portfolio, the 'contribution' is the percentage change in the capital requirement for that portfolio (Basel II against current) weighted by the significance of the portfolio (using the proportion of capital under the current Accord accounted for by that portfolio). This gives a measure of the impact of the change in the capital requirements for any area of activity on the overall change in the capital requirements for the bank. For Operational Risk, the 'contribution' figure represents the operational risk capital requirement as a percentage of current capital requirements.

Average contribution to change in the Standardised approach[17]

CP3 basis

Portfolio	Group 1 Contribution	Group 2 Contribution
Corporate	1%	-1%
Sovereign	0%	0%
Bank	2%	0%
Retail: (total)	-5%	-10%
– Mortgage	-3%	-4%
– Non-mortgage	-2%	-4%
– Revolving	0%	-2%
SME (total)	-1%	-2%
Specialised lending	0%	0%
Equity	0%	0%
Trading book	1%	0%
Securitised assets	1%	0%
Other portfolios	1%	2%
Overall credit risk	0%	-11%
Operational risk	10%	15%
Overall change	11%	3%

[17] Not all portfolios are detailed in the table. Portfolios that have not been separately listed are included in "Other portfolios". Some of the portfolios included in "Other" had a significant impact for some countries. Columns do not always appear to sum to the given totals due to rounding errors.

QIS3 basis

	Group 1			Group 2		
Portfolio	% of current capital	% change in capital	Contribution	% of current capital	% change in capital	Contribution
Corporate	32%	1%	1%	16%	-10%	-1%
Sovereign[18]	1%	19%	0%	0%	1%	0%
Bank	5%	43%	2%	14%	15%	0%
Retail: (total)	20%	-21%	-5%	38%	-19%	-8%
– Mortgage	11%	-20%	-2%	16%	-14%	-3%
– Non-mortgage	7%	-22%	-2%	13%	-19%	-4%
– Revolving	2%	-14%	0%	8%	-8%	-2%
SME (total)	18%	-3%	-1%	19%	-5%	-1%
Specialised lending	2%	2%	0%	1%	2%	0%
Equity	2%	6%	0%	2%	8%	0%
Trading book	8%	12%	1%	3%	4%	0%
Securitised assets	2%	86%	1%	2%	61%	0%
Other portfolios			2%			0%
Overall credit risk		1%	1%		-9%	-10%
Operational risk			11%			15%
Overall change		12%	12%		6%	6%

Changes in credit risk capital requirements

The largest changes are in the **retail portfolio**, reflecting the significant reduction in capital risk weights (relative to current) in CP3 (100% to 75% for non-mortgage retail and 50% to 35% for retail mortgages). In the QIS3 Technical Guidance the retail mortgage weight was higher (40%). The lower capital requirements for exposures to small and medium sized enterprises (SMEs), which includes both SMEs treated as retail and SMEs treated as corporate, reflect the lower weights on SME retail[19] and on all exposures that are collateralised with residential real estate.

For the **non-retail portfolios**, the main determining factors are, on the one side, the amount of high quality rated exposures and the amount of eligible collateral (in the Standardised

[18] Average changes in capital for the sovereign portfolio have been calculated excluding those banks with a zero or very low capital requirement under the current Accord due to all – or the vast majority – of sovereign exposures being to counterparties with a zero risk weight. For these banks, the percentage change in capital is infinite or very large, which does not accurately reflect a requirement which remains relatively modest, hence their exclusion.

[19] SME exposures of less than Euro 1 mn can be treated as retail providing the exposures meet the qualitative criteria set by the Committee.

approach this is financial collateral) or other credit risk mitigation and, on the other, the amount of exposures included in the 150% weighting band (past due and low rated exposures) and the level of commitments.

Quality distribution for corporate exposures

Rating	AAA to AA-	A+ to A-	BBB+ to BB-	Below BB-	Unrated	Past due
Risk Weight	**20%**	**50%**	**100%**	**150%**	**100%**	**150%**
Group 1	11%	9%	15%	2%	62%	2%
Group 2	14%	15%	15%	1%	46%	1%

For Group 1 banks most (77%) **corporate exposures** were included in either the unrated band or the BBB+ to BB- rated band, for which there was no change in the risk-weighting. The proportion was somewhat lower (61%) for Group 2 banks. For both groups, only a small proportion of exposures fell into categories (either low rated or past due) where the risk weight increased. For Group 1 banks, the overall increase in average capital required for the corporate portfolio is driven by increased requirements for commitments, as commitments with a maturity of less than one year will have a capital requirement for the first time.

With the change in the treatment of past due assets in CP3 – allowing the net exposures on loans with significant amounts of provisioning to be placed in low risk-weight bands – there is a reduction in capital requirements for a number of the banks (particularly in the SME portfolio), but overall no significant change.

Many banks commented on difficulties they encountered in extracting data on **collateral** from their current systems and a number of countries believe that collateralisation has been widely under-reported, even in the Standardised approach where recognition is limited to specified financial instruments (including gold). Improved reporting in this area would probably reduce total capital requirements in the Standardised approach – probably most notably in the corporate and SME treated as corporate portfolios, where many countries consider that the under-reporting is greatest.

Percentage of exposures secured by collateral

	Corporate	SME corporate	Sovereign	Bank
Group 1	7%	8%	1%	1%
Group 2	8%	4%	2%	3%

Most **sovereign exposures** are rated and the quality is generally high with an average of 87% (Group 1) and 99% (Group 2) of exposures rated as A- or higher. Exposures in the unrated and past due buckets are significantly smaller than for the corporate portfolio. Nevertheless, capital requirements increase for this portfolio, reflecting the narrower group of sovereign exposures with a zero weighting than under the current Accord. The overall contribution of this portfolio is small, due to the relatively small size of the portfolio (and also the zero weighting of many exposures under the current Accord).

Quality distribution for sovereign exposures

	AAA to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated	Past due
Risk weight	**0, 10, 20%**	**50%**	**100%**	**150%**	**100%**	**150%**
Group 1	87%	2%	5%	0%	6%	0%
Group 2	99%	1%	0%	0%	1%	0%

There are two options for the treatment of **interbank exposures**[20]: Option 1 assigns risk weights based on the sovereign rating for that country and Option 2 assigns risk weights according to the bank's external rating. For banks applying Option 2, a much larger proportion of exposures were to unrated borrowers, but this is likely to be addressed by the time of implementation through increased incidence of rating of subsidiaries, as many of the banks reported as unrated seem to be part of bank groups with high credit standing. This would tend to reduce the interbank capital requirements on implementation in countries adopting Option 2.

Quality distribution for interbank exposures

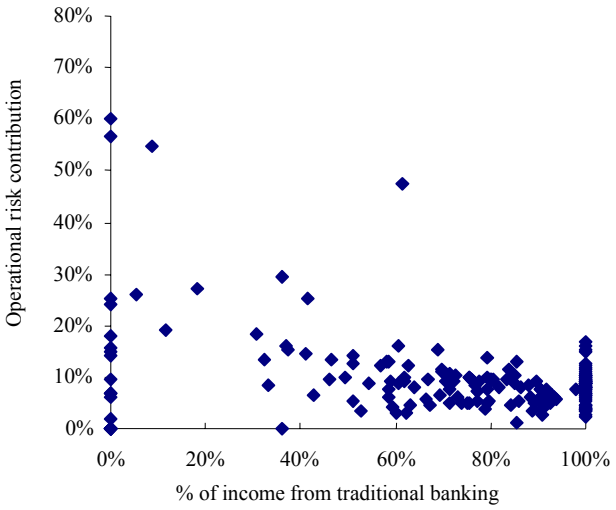
Option 1	**AAA to AA-**	**A+ to A-**	**BBB+ to B-**	**Below B-**	**Unrated**	**Past due**
Group 1	86%	6%	4%	0%	4%	0%
Group 2	96%	2%	1%	0%	1%	0%
Option 2	**AAA to AA-**	**A+ to BBB-**	**BB+ to B-**	**Below B-**	**Unrated**	**Past due**
Group 1	46%	21%	3%	0%	29%	0%
Group 2	78%	18%	0%	0%	3%	0%

Operational risk capital requirements

The average contribution from **operational risk** (under the CP3 proposals) is 10% for Group 1 banks and 15% for Group 2 banks. This is slightly lower for Group 1 banks than the average on the QIS3 basis (11%) due to the introduction of the new alternative Standardised approach for traditional banking lines (commercial and retail banking) based on the volume of assets – the other business lines are unchanged. Because this is an optional approach (at the discretion of the supervisor), the modified results include the lower of the original Standardised or the alternative Standardised requirement for each bank. The chart below shows the change in capital due to the requirements for operational risk, on this basis, for individual banks plotted against the importance of traditional banking for that bank. The alternative approach was introduced because some banks with traditional activity could have a high operational risk requirement (on the gross income basis) if they were charging wide margins, for example, to cover the credit risk. The alternative volume-based requirement was designed to avoid this. The chart shows that the larger percentage contributions for operational risk tend to be for banks with sizeable amounts of non-traditional banking which is not captured under the current Accord and for whom the denominator (current capital requirements) is therefore small.

[20] The option used is at the discretion of national supervisors – 7 countries chose Option 1 and 6 chose Option 2.

Operational risk contribution by proportion of gross income generated from traditional banking (CP3 basis)



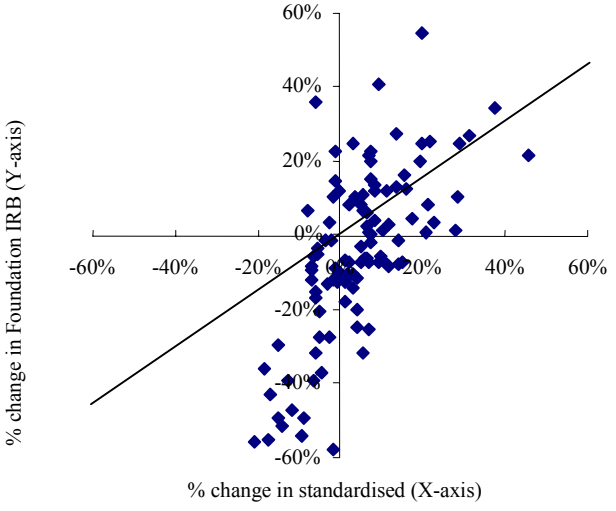
The differences between the operational risk contribution shown under Standardised and IRB approaches are solely due to the different sample of banks completing these approaches.

Variation in the operational risk capital requirement (reflecting some specialised activities) and the proportion of retail activity account for much of the variability across banks in the Standardised approach.

IRB Foundation

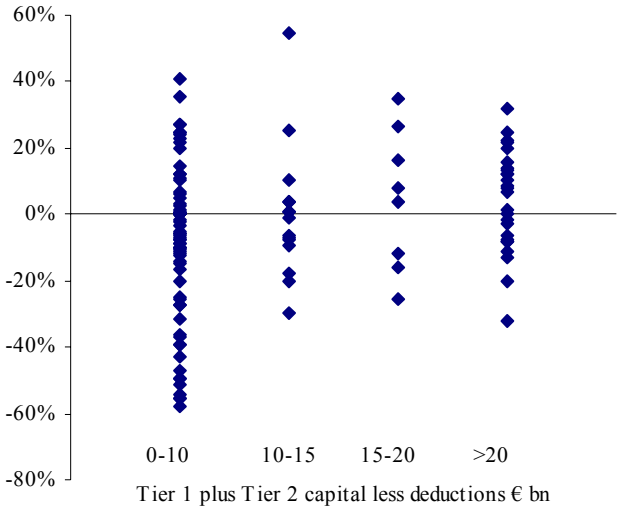
Capital requirements under the IRB Foundation approach are on average lower than for the Standardised approach. IRB Foundation is considerably more risk sensitive than the Standardised approach, but even so the outcomes are broadly correlated.

% change in capital requirements under Standardised and IRB Foundation approaches – all G10 banks (CP3 basis)



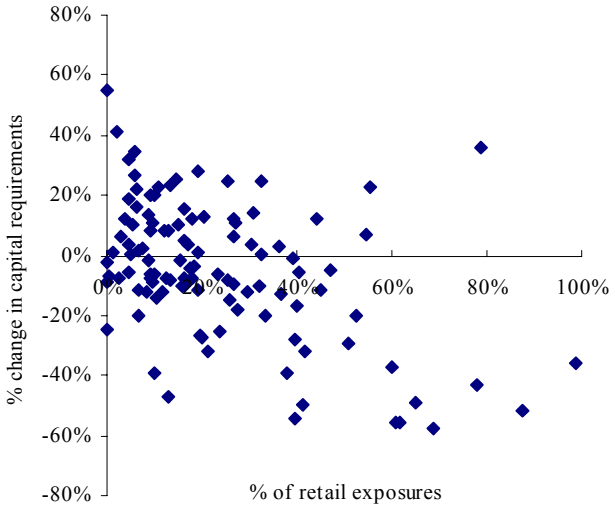
There is again a wide dispersion of results, reflecting a number of factors.

% change in Foundation IRB capital requirements – all G10 banks (CP3 basis)



The importance of retail activity is again a significant factor and is the main reason why Group 2 banks show a decrease in capital requirements. But in the risk sensitive IRB framework the quality of different portfolios is also crucial, giving a less close fit between reduction in capital requirements and retail activity than in the Standardised approach.

% change in Foundation IRB capital requirements against % of book in retail (CP3 basis)



Within the Group 2 banks, some have sizeable increases in capital requirements because of the larger changes caused by the introduction of the operational risk charge given their specialist activities, as discussed earlier. Group 1 banks are evenly divided between those with an increase and those with a decrease in their capital requirements.

In IRB Foundation, the banks' assessments of the quality of their portfolios (reflected in the PDs) is an important factor for all portfolios but differences also reflect, to some extent, different estimation methods and differences in the extent to which banks met the standards laid down by the Committee. The process of adoption of the Committee's standards is expected to reduce the amount of dispersion that will be seen between individual bank results on implementation. Some banks had higher requirements because their default definition did not match that of the Committee and therefore specific provisions did not cover all expected loss on defaulted assets.

Average contributions to change under the Foundation IRB approach[21]

CP3 basis

Portfolio	Group 1 Contribution	Group 2 Contribution
Corporate	-2%	-4%
Sovereign	2%	0%
Bank	2%	-1%
Retail: (total)	-9%	-17%
– Mortgage	-6%	-13%
– Non-mortgage	-3%	-4%
– Revolving	0%	0%
SME (total)	-2%	-4%
Equity	2%	2%
Trading book	0%	0%
Securitised assets	0%	-1%
Other portfolios	1%	1%
General provisions	-1%	-3%
Overall credit risk	-7%	-27%
Operational risk	10%	7%
Overall change	3%	-19%

[21] Not all portfolios are detailed in the table. Portfolios that have not been separately listed are included in "Other portfolios". Some of the portfolios included in "Other" had a significant impact for some countries. Columns do not always appear to sum to the given totals due to rounding errors.

QIS3 basis[22]

	Group 1			Group 2		
Portfolio	% of current capital	% change in capital requirement	Contribution	% of current capital	% change in capital requirement	Contribution
Corporate	32%	-9%	-2%	20%	-27%	-4%
Sovereign[23]	1%	47%	2%	1%	51%	0%
Bank	5%	45%	2%	8%	-5%	-1%
Retail: (total)	20%	-47%	-9%	36%	-54%	-21%
– Mortgage	11%	-56%	-6%	19%	-55%	-16%
– Non-mortgage	7%	-34%	-3%	11%	-27%	-5%
– Revolving	2%	-3%	0%	6%	-33%	0%
SME (total)	18%	-14%	-2%	21%	-17%	-4%
Equity	2%	115%	2%	2%	81%	2%
Trading book	8%	5%	0%	3%	4%	0%
Securitised assets	2%	103%	0%	3%	62%	-1%
Other portfolios			1%			3%
General provisions			-2%			-3%
Overall credit risk		-8%	-8%		-29%	-29%
Operational risk			10%			7%
Overall change		3%	3%		-22%	-22%

Retail

As in the case of the Standardised approach, the largest contribution to the change in capital requirements for credit risk in Foundation IRB comes from the retail portfolios, for both groups of banks. For some individual banks (particularly in Group 2, where some of the banks are heavily dominated by retail portfolios), the contribution from the retail portfolio is particularly significant.

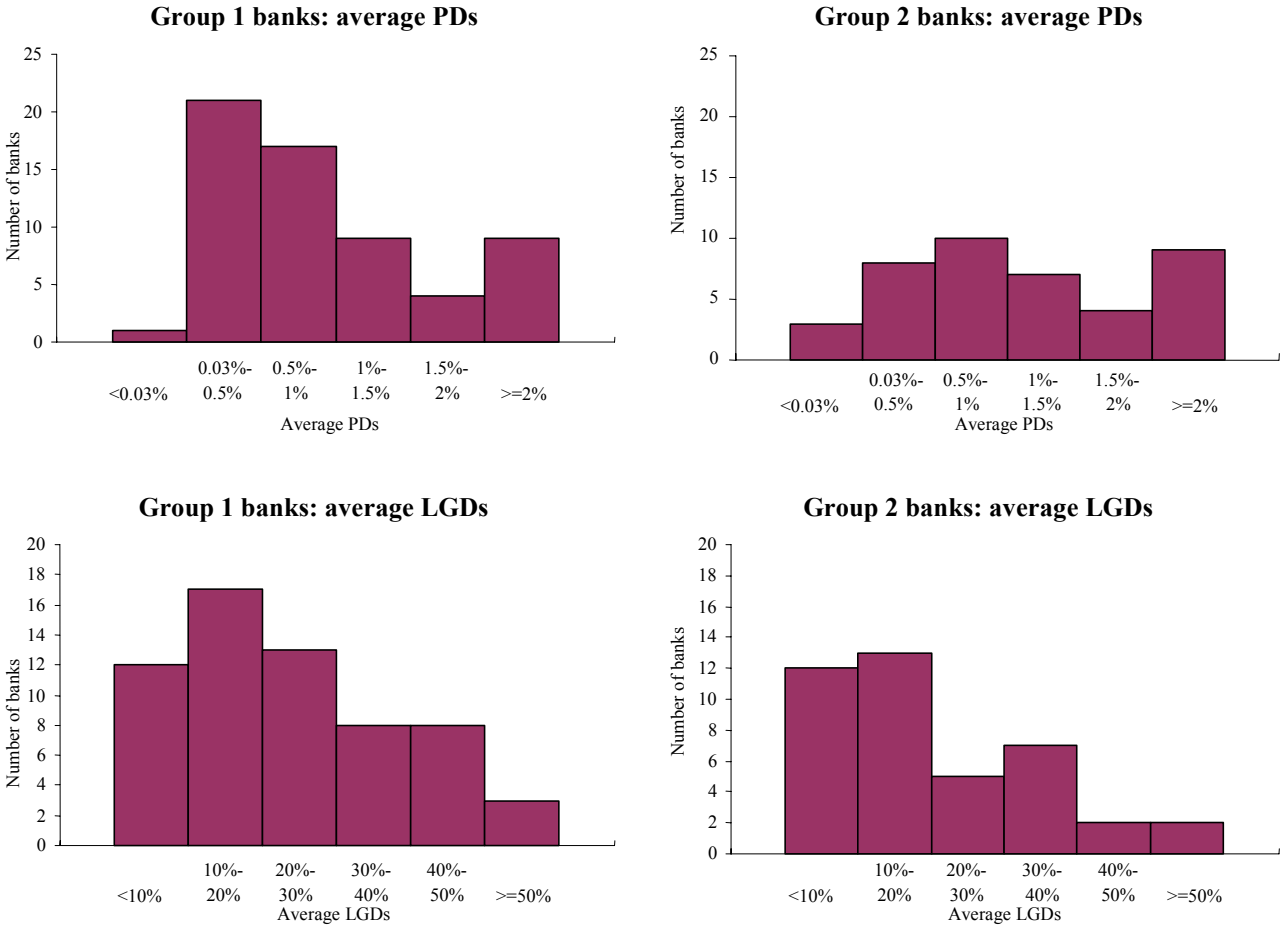
As the largest of the three asset classes within retail, the retail mortgage book has the greatest impact on overall results. It also has, on average, larger reductions in capital requirements than the other classes. For retail exposures there is only one IRB approach, under which banks set the Loss Given Default (LGD) and Exposure at Default (EAD) as well

[22] There is one sign difference between change in capital requirements and contribution because of the weighting scheme.

[23] Average changes in capital for the sovereign portfolio have been calculated excluding those banks with a zero or very low capital requirement under the current Accord due to all, or the vast majority, of sovereign exposures being to counterparties with a zero risk weight. For these banks, the percentage change in capital is infinite or very large, which does not accurately reflect a requirement which remains relatively modest; hence their exclusion.

as the Probability of Default (PD). The PDs and LGDs set are relatively low for the mortgage book for many banks. Mortgage activity is highly cyclical with defaults and significant losses in the face of the defaults occurring only when house prices are falling and the economy is weak. Different estimates across banks may reflect the different historical experience in different countries and the extent to which banks were able to take into account stress conditions when setting the PDs and LGDs (as laid down in the IRB standards). Some banks used conservative estimates of LGD because they did not reflect the default definition[24] used by the Committee even though this was reflected in the PDs which they had used: these banks were using a later default definition consistent with higher LGD numbers. This affected the variability of the results across banks. The method of decomposition into LGD and PD where banks are working on an EL basis can also affect the capital requirements. The charts below show a histogram of numbers of banks with average PDs and LGDs falling in particular ranges.

PDs and LGDs set by the banks for retail mortgages – QIS3 basis



The Committee has now decided to set floors[25] of 10% for the LGD for residential mortgages and 3 basis points for the PD for all retail exposures. The floors had an impact on the capital

[24] There is some variation across countries and banks in the use of 90 days or 180 days past due as the trigger, either of which can be used under Basel II.

[25] The need for floors will be reviewed within the first two years after implementation.

requirements for the residential mortgage portfolio for Group 2 banks, increasing the contribution by 3%. The effect is sizeable for some banks. The overall average impact on Group 1 banks was negligible.

The floors reduced the variation between Group 2 banks' results on the CP3 basis compared with the QIS3 basis.

Corporate

As the largest portfolio within the overall books of most Group 1 participants, even relatively small changes in capital requirements for the corporate portfolio have a significant impact on overall results. In the Foundation IRB, both Group 1 and Group 2 banks on average record a decrease in capital requirements for the corporate portfolio. The important factors for this portfolio are again the quality of the counterparty and the amount of eligible collateral, which is much wider than under the Standardised approach. Banks may include, for example, physical collateral as long as it meets set standards such as the value is not correlated with the credit worthiness of the borrower.

On average, for Group 1 banks, 72% of exposures have a PD below 0.8% (equivalent to an 'investment grade' rating), whilst 3% of the exposures are in default. Group 2 banks report a higher average portfolio quality than Group 1. (The current 8% capital charge approximately equates with a 1% PD when the exposure is uncollateralised[26].)

Quality distribution for corporate exposures

	PD < 0.2%	0.2% ≤ PD < 0.8%	PD ≥ 0.8%	In default
G1	42%	30%	25%	3%
G2	58%	21%	17%	3%

As in the Standardised approach, many banks commented that they had under-reported collateralisation due to systems constraints (in the main because data on exposures and collateral are held on different systems, making it difficult to generate data in the format required for QIS3). This was certainly a more significant problem in the Foundation IRB than the Standardised approach because of the allowance for different collateral types. The Foundation IRB capital requirements for the corporate portfolio are therefore probably overstated.

[26] Maturity assumption is 2.5 years. LGD for a senior unsecured exposure is 45%.

Corporate - Percentage of exposures secured by each collateral type

	Unsecured claims (sub. and senior)	Other physical collateral	Receivables	Commercial real estate	Residential real estate	Financial collateral and Gold
G1	83%	4%	2%	5%	2%	4%
G2	75%	3%	4%	4%	3%	9%

Sovereign

The average quality of the Group 2 sovereign portfolio was generally high, with 98% of exposures assigned a PD of less than 0.2%. Group 1 banks report a somewhat lower proportion of exposures with a PD of less than 0.2%. Despite the high quality of this portfolio, there are significant increases in capital requirements – Group 1 banks show a positive average contribution of 2% - due to the current Accord's 0% risk weight for much of the sovereign portfolio.[27]

Quality distribution for sovereign exposures

	PD < 0.2%	0.2% ≤ PD < 0.8%	PD ≥ 0.8%	In default
G1	90%	5%	4%	0%
G2	98%	1%	0%	0%

Interbank

The Group 1 banks have exposures to a wider quality range of counterparties than is the case for the Group 2 banks – their higher proportion of exposures to lower quality banks is reflected in an overall increase in capital requirements for interbank (2% contribution for the Group 1 banks). Group 2 banks record a fall in capital requirements (-1% contribution).

Quality distribution for interbank exposures

	PD < 0.2%	0.2% ≤ PD < 0.8%	PD ≥ 0.8%	In default
G1	78%	15%	7%	0%
G2	92%	7%	1%	0%

SME

Overall, the capital requirements for SME exposures (covering both those treated as corporate and those treated as retail) will be significantly lower under the IRB Foundation than currently. The total reduction in capital for SME is –2% contribution for Group 1 and –4% contribution for Group 2.

[27] All local currency exposures to the local sovereign are zero weighted under the current Accord and all exposures to OECD sovereigns.

A number of banks reported that they had difficulty assigning exposures to the two different SME categories ('treated as corporate' and 'treated as retail') as their systems were not able to provide information to split exposures according to this distinction. Furthermore, for those exposures in the SME corporate portfolio, many banks were not able to provide accurate information on firm size for the adjustment and had to estimate this. But in some countries the firm size adjustment in SME corporate had a significant impact.

IRB Advanced

In the Advanced IRB approach, both groups of banks registered an overall decrease in minimum capital requirements. As with the other two approaches, there is a significant diversity for individual banks in overall capital requirements in the Advanced IRB approach compared to the current Accord.

The figures set out in the tables and charts for Advanced and Foundation cannot be directly compared because there is a smaller sample underlying the Advanced approach (particularly for the Group 2 banks). The table below sets out the results for an identical sample of banks – those Group 1 banks that completed both IRB approaches.

IRB Contributions – Group 1 banks completing both IRB approaches[28]

	CP3 basis		QIS3 basis	
Portfolio	FIRB contribution	AIRB contribution	FIRB contribution	AIRB contribution
Corporate	-3%	-4%	-3%	-4%
Sovereign	1%	1%	1%	1%
Bank	2%	0%	2%	0%
Retail: (total)	-9%	-9%	-10%	-10%
– Mortgage	-6%	-6%	-6%	-6%
– Non-mortgage	-3%	-3%	-3%	-3%
– Revolving	0%	0%	0%	0%
SME (total)	-3%	-3%	-3%	-3%
Equity	2%	2%	2%	2%
Trading book	0%	0%	0%	0%
Securitised assets	0%	0%	0%	0%
Other portfolios	3%	2%	4%	3%
General provisions	-2%	-2%	-3%	-3%
Overall credit risk	-9%	-13%	-10%	-14%
Operational risk	11%	11%	12%	12%
Overall change	2%	-2%	2%	-2%

[28] Not all portfolios are detailed in the table. Portfolios that have not been separately listed are included in "Other portfolios". Some of the portfolios included in "Other" had a significant impact for some countries. Columns do not always appear to sum to the given totals due to rounding errors.

Average contributions to change under the Advanced IRB approach[29]

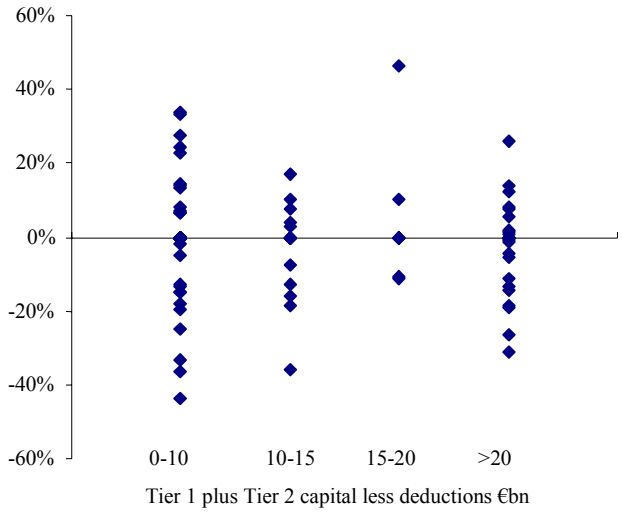
QIS 3 basis

	Group 1		
Portfolio	**% of current capital**	**% change in capital requirement**	**Contribution**
Corporate	30%	-14%	-4%
Sovereign[30]	1%	28%	1%
Bank	5%	16%	0%
Retail: (total)	21%	-50%	-10%
– Mortgage	11%	-60%	-6%
– Non-mortgage	8%	-41%	-3%
– Revolving	2%	14%	0%
SME (total)	18%	-13%	-3%
Equity	2%	114%	2%
Trading book	8%	2%	0%
Securitised assets	2%	129%	0%
Other portfolios			3%
General provisions			-3%
Overall credit risk		-14%	-14%
Operational risk			12%
Overall change		-2%	-2%

[29] Not all portfolios are detailed in the table. Portfolios that have not been separately listed are included in "Other portfolios". Some of the portfolios included in "Other" had a significant impact for some countries. Columns do not always appear to sum to the given totals due to rounding errors.

[30] Average changes in capital for the sovereign portfolio have been calculated excluding those banks with a zero or very low capital requirement under the current Accord due to all, or the vast majority, of sovereign exposures being to counterparties with a zero risk weight. For these banks, the percentage change in capital is infinite or very large, which does not accurately reflect a requirement which remains relatively modest; hence their exclusion.

% change in Advanced IRB capital requirements (vs current) – all G10 banks (CP3 basis)



In the retail portfolio there is only one IRB approach, which is used for both the Foundation and Advanced approaches. For non-retail portfolios, the differences between the contributions in the Foundation and Advanced approaches reflect the use of own LGDs and EADs in Advanced IRB and also, for those countries which used implicit maturity for Foundation, the move to explicit maturity in the Advanced approach.

The main factors behind the differences between Foundation and Advanced IRB are considered below.

(a) LGD[31]

The average LGD used by banks for corporate portfolios in the Advanced approach was 40%, compared with an average generated from use of the Supervisory LGDs in Foundation of 42% (which reflects the mix of collateralised and uncollateralised exposures). The average LGDs for the interbank and sovereign portfolios also decrease between Foundation IRB (44% and 42% respectively) and Advanced IRB (36% and 32% respectively).

There is considerable disparity in all of these estimates from individual banks. A significant number of banks increased their average LGD estimate when moving from Foundation to Advanced: of those banks which reported both Foundation and Advanced approach results, the average LGD used for drawn exposures was higher in Advanced for 34% of banks in the corporate portfolio, 31% in sovereign and 36% in interbank. It is possible that some banks are setting LGDs on average for all of their exposures (drawn and undrawn) and therefore some LGDs may reflect EAD assumptions.

The Committee has adopted a default definition which is earlier than that used by some banks but this has not been reflected in lower LGDs by those banks. Consequently, for some

[31] The LGD figures quoted here are for drawn (and other off balance sheet item) exposures for Group 1 banks.

banks there was a shortfall between specific provisions and expected loss on defaulted assets.

(b) Exposure at Default and Commitments

Corporate commitments have a large impact on the overall changes in capital requirements across the new approaches for some banks. The change from the current rule that any commitments under 365 days are zero weighted results in a considerable number of commitments being subject to an explicit capital requirement for the first time. The average contribution to the overall change is greatest in Foundation IRB at +2.5%. The impact of commitments is lower (+1.1% contribution) in the Advanced IRB approach where banks are able to estimate their own credit conversion factors (using the EAD) in place of the supervisory credit conversion factors (CCFs) imposed in the Foundation approach.

(c) Maturity

As can be seen from the table below, average maturities (for Group 1 only) in the corporate and bank portfolios are below the 2.5 years used by those countries which opted for implicit maturity in the Foundation approach (8 countries).

Average maturity in each portfolio (excluding repo exposures) - years

	Corporate	Sovereign	Bank
G1	2.2	2.5	1.6
G2	2.8	2.5	1.8

But there was disparity across different banks and countries, with significant numbers of banks reporting average maturities over 2.5 years, even in these portfolios.

Percentage of banks reporting average maturities longer than 2.5 years (excluding repos)

	Corporate	Sovereign	Bank
Percentage of banks	20%	42%	11%

The average maturity of repo exposures was substantially lower than the implicit 2.5 years (at 0.38 in the trading book and 0.7 in the interbank portfolio) and in CP3 the Committee has set the implicit maturity for these at 6 months for the Foundation approach. The result of the CP3 modification was average reductions in capital requirements for repos held in the trading book and interbank repos in the banking book of 33% and 41% respectively.

Specialised portfolios

In addition to the core portfolios covered above, a number of more specialised portfolios had a significant impact for some banks.

Trading Book

The change in the treatment of counterparty risk in the trading book under the Basel II proposals has a material effect on the minimum capital requirements for banks in a number of countries, although on average its contribution is almost zero under each new approach.

Equity

Although relatively few banks completed the IRB approach for the equity portfolio (in many cases the portfolio was immaterial or grandfathering was permitted), this portfolio still had a material contribution to overall IRB changes in 8 of the 13 G10 countries. Of those banks completing the IRB approach for equity, the majority opted for the Market Based Approach, with most adopting the simple approach for all or some of their exposures.

Specialised Lending

Many banks opted to include their specialised lending (SL) exposures within their corporate portfolios, with only 60 banks recording any exposures using the 'Supervisory Slotting Criteria' approach. HVCRE was not a significant proportion of total SL exposures: for Group 1 banks it accounted for 8% of SL exposures and only two Group 2 banks identified any HVCRE at all. Some banks had difficulty identifying these exposures.

Securitised Assets

On average, securitised assets make a small contribution to each new approach. Many banks had to estimate the data needed and it proved particularly difficult for a number of banks to calculate the requirements for third party liquidity facilities under the rules set out in the QIS3 Technical Guidance. The Committee has revised the treatment in CP3.

Related Entities

Basel II offers national supervisors an opportunity to reconsider their treatment of related entities, for example, by introducing the requirement of a deduction rather than risk weighting for certain insurance subsidiaries.[32] For many countries this is not a change in treatment because under the local rules these entities are deducted currently. But in some countries it would represent a change and, where this national discretionary treatment was used for the QIS3 exercise, it generated a significant increase in capital relative to the current Accord and therefore added to variability across banks.

Overall effect of the changes between QIS3 and CP3

Relative to the QIS3 basis, the particular CP3 changes which had the greatest effect on results were the change in the risk weight for residential mortgages in the Standardised approach and, for a few banks, the change in the treatment of past due assets depending on provisioning levels – although on average the effect of this is negligible. In IRB Foundation,

[32] Refer to page 3 of the QIS3 Technical Guidance for rules relating to Insurance entities.

the greatest effect was the increase in capital requirements for mortgages stemming from the new floors for retail mortgage LGDs and retail PDs. The reduced allowance for general provisions to offset expected loss had a sizeable effect on banks from a few countries, which had particularly high general provisions, but not on average. The new alternative operational risk charge had an effect on some banks.

Changes in contributions between CP3 basis and QIS3 basis[33]

Portfolio	Standardised		Foundation IRB		Advanced IRB
	G1	G2	G1	G2	G1
Corporate	**-0.2%**	**-0.1%**	**-0.1%**	0.0%	**0.0%**
Sovereign	0.0%	0.0%	0.0%	0.0%	0.0%
Bank	0.0%	0.0%	0.0%	0.0%	**0.0%**
Retail: (total)	**-0.9%**	**-1.4%**	**0.3%**	**3.3%**	**0.2%**
- Mortgage	**-0.9%**	**-1.3%**	**0.4%**	**3.2%**	**0.2%**
- Non-mortgage	**-0.1%**	0.0%	0.0%	0.0%	**0.0%**
- Revolving	0.0%	0.0%	0.0%	0.0%	0.0%
SME: (total)	**-0.2%**	**-0.3%**	0.0%	0.0%	**0.0%**
- Treated as Corporate	**-0.1%**	**-0.2%**	0.0%	0.0%	**0.0%**
- Treated as retail	**-0.1%**	**-0.1%**	0.0%	0.0%	**0.0%**
Specialised lending	0.0%	0.0%	**-0.1%**	**-0.3%**	**-0.1%**
Equity	0.0%	0.0%	0.0%	0.0%	**0.0%**
Purchased receivables	0.0%	0.0%	0.0%	0.0%	0.0%
Trading book	0.0%	0.0%	**-0.1%**	0.0%	**0.0%**
Securitised assets - originators	0.0%	0.0%	0.0%	**-0.2%**	0.0%
Securitised assets - investors	0.0%	0.0%	0.0%	0.0%	**0.0%**
Investments in related entities	0.0%	0.0%	0.0%	0.0%	0.0%
General provisions			**1.0%**	**0.3%**	**1.0%**
Credit Risk	**-1.3%**	**-1.8%**	**1.1%**	**3.1%**	**1.1%**
Operational Risk	**-0.6%**	**-0.6%**	**-0.6%**	**-0.1%**	-0.7%
Overall difference	**-1.9%**	**-2.4%**	**0.6%**	**3.1%**	**0.3%**

[33] Due to rounding errors there may appear to be discrepancies between this table and other contributions tables in this annex, but this is not the case when results are considered at a detailed level.