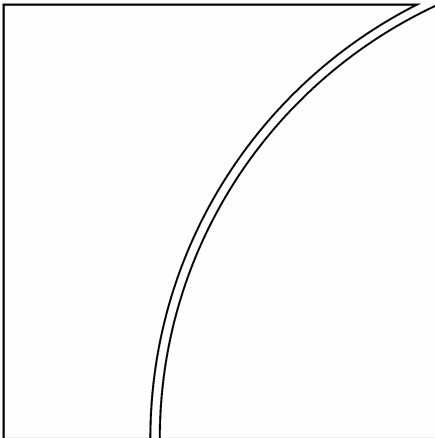


Basel Committee
on Banking Supervision



**Instructions for workbooks
for further impact studies/
field testing**

3 December 2004



BANK FOR INTERNATIONAL SETTLEMENTS

Table of Contents

1.	Main changes to the workbook since QIS 3	5
2.	General.....	6
2.1	Estimates	6
2.2	Units	6
2.3	Consolidated basis.....	6
2.4	Consistent portfolio	6
2.5	Reference date.....	6
2.6	Structure of worksheets	7
2.7	Approaches	7
	General	7
	Partial use of the Standardised approach	8
2.8	Assignment of exposures to portfolios	8
	General	8
	Guarantees and credit derivatives	9
	Securitisation exposures	10
3.	Input worksheet	11
3.1	Purpose.....	11
3.2	General information (panel A)	11
3.3	Capital held and provisioning data (panel B)	11
	Capital held (panel B1).....	11
	Other supervisory deductions (panel B2).....	12
	Provisioning data (panel B3)	12
3.4	Current accord, trading book and partial use risk-weighted assets (panel C).....	13
	Trading book requirements (panel C1)	13
	Partial use of Standardised approach (panel C2)	13
	Total risk-weighted assets (panel C3).....	13
3.5	Exposure data	14
	General remarks	14
	On-balance sheet exposures (panel D)	14
	Off-balance sheet exposures (panel E).....	14
	Counterparty Exposures under repo and OTC derivatives (panel F).....	15
4.	Checks and Results worksheets	15
5.	Parameters and Summary worksheets	16
6.	Related Entities worksheet.....	16
6.1	Introduction	16

6.2	Information required	16
6.3	Inputs.....	17
7.	Current Accord worksheet	17
7.1	Basis for calculations.....	17
7.2	Structure of worksheet	17
7.3	Inputs for drawn exposures, other off-balance sheet exposures and undrawn lines	18
7.4	Counterparty exposures (repo-style transactions and OTC derivatives).....	18
7.5	Trading book	18
7.6	Netting arrangements.....	18
7.7	Credit risk mitigation.....	18
8.	Current Accord Securitisation worksheet.....	19
9.	Standardised approach worksheet	19
9.1	General.....	19
9.2	Credit risk mitigation – collateral.....	19
9.3	Eligible on-balance sheet netting agreements.....	20
10.	Standardised approach securitisation worksheet	20
10.1	Securitisation exposures requiring deduction (panel A)	20
10.2	Rated exposures (panel B).....	21
	Exposure types.....	21
	Exposure amounts	21
	Risk-weighted assets	21
	Credit risk mitigation.....	21
10.3	Unrated exposures (panel C)	21
	Exposure types.....	21
	Exposure amount	22
	Risk-weighted assets	22
	Credit risk mitigation.....	22
10.4	Investors' interest (panel D).....	22
	Exposure types.....	22
	Early amortisation / Early amortisation triggers.....	22
	Risk-weighted assets	23
11.	Foundation IRB approach worksheets.....	23
11.1	General.....	23
11.2	Structure of the worksheets.....	23
11.3	PD bands.....	24
11.4	LGD bands – Drawn, off-balance sheet items and commitments	24
11.5	Treatment of Repos.....	26

11.6	Treatment of OTC derivative exposures	26
11.7	Netting agreements.....	26
11.8	Maturity	26
11.9	SME portfolio – size function.....	27
12.	Advanced IRB approach worksheets	27
12.1	EAD.....	27
12.2	LGD.....	27
12.3	Retail	28
12.4	Maturity	28
13.	IRB Equity worksheet.....	29
13.1	Materiality.....	29
13.2	Specific exclusions.....	29
13.3	Grandfathering	29
13.4	Treatment of excluded and non-excluded items	29
13.5	Scaling factor	29
14.	IRB Specialised Lending worksheets	29
15.	IRB Securitisation worksheets.....	30
15.1	Securitisation requiring deductions (panel A).....	30
15.2	Securitisation exposures subject to ratings-based or internal assessment approach (panel B).....	30
	Exposure types	30
	Exposure amounts	30
	Risk-weighted assets	31
	Credit risk mitigation.....	31
15.3	Unrated exposures – non IAA (panel C)	31
	Exposure types	31
	Exposure amount.....	31
	Risk weights and risk-weighted assets	32
	Credit risk mitigation.....	32
15.4	Investors’ interest (panel D)	32
	Exposure types	32
	Exposure amounts and risk-weighted assets.....	32
16.	Operational Risk worksheet	33
16.1	Introduction	33
16.2	Missing data	33
16.3	Annual gross income.....	33
16.4	Current Accord.....	33
16.5	Basic Indicator Approach	33

16.6 Standardised Approach	33
16.7 Alternative Standardised Approach	34
16.8 Advanced Measurement Approaches	34
Significant changes versus QIS 3	35
1. Input worksheet	35
2. Parameter worksheet	35
3. Results worksheet	35
4. Related entities worksheet	35
5. 1988 Accord worksheet	35
6. Standardised approach worksheet	36
7. IRB worksheets (general)	36
8. Equity	36
9. Operational Risk	36
10. Other issues	37

Instructions¹

These instructions refer to version 4.0.x of the workbook. If the workbook version shown in panel A of the Parameters worksheet is different, please obtain the appropriate instructions from your supervisor.

1. Main changes to the workbook since QIS 3

The structure of the workbook as well as the data requirements are similar to those used for the Quantitative Impact Study 3 (QIS 3). However, the workbook was improved in a number of ways: (i) to incorporate changes in the rules from the third consultative document (CP3) issued in April 2003 to the revised Framework issued in June 2004, especially the move to a UL-only framework and to the different treatment of provisions; and (ii) to avoid the problems that emerged during the QIS 3 data collection exercise and the subsequent analysis. The main changes are as follows:

- The Input and Results worksheets (the latter mainly containing the calculations of the former Capital worksheet) have been slightly modified in order to present the relevant information in a consistent matter. Furthermore, a new Parameters worksheet has been added, in which the values of the necessary parameters for the calculations are clearly illustrated, even though they cannot be modified by banks.
- In the worksheets for the advanced IRB approach, separate LGD values for non-defaulted and defaulted assets shall be entered, in order to reflect the requirements of the revised Framework.
- The PD/maturity matrix used in the IRB portfolios in QIS 3 has been replaced by a matrix requesting the average maturity for a given PD/LGD combination. This change will increase the accuracy of the risk-weighted asset calculations.
- In QIS 3, specialised lending exposures subject to the foundation or advanced IRB treatment were reported in the Corporate worksheet. There are now separate worksheets for HVCRE and other specialised lending exposures under both foundation and advanced IRB approaches.
- There is also a new worksheet for home equity lines of credit (HELOCs) to enable a separate analysis of the impact of the revised Framework on these exposures. The parameters of the risk-weight function are the same as for residential mortgages.
- To the greatest extent possible, all IRB worksheets – for both foundation and advanced IRB approaches – now have the same basic structure, and in general all matrices appear in the same cell positions. This makes it easier for banks to fill in data automatically, and it also allows a more efficient analysis of the data. Therefore, various tables (e.g. the maturity adjustment) appear in some IRB worksheets for portfolios for which they are not really necessary. However, these

¹ Unless stated otherwise, paragraph numbers given in the remainder of these Instructions refer to the document "International Convergence of Capital Measurement and Capital Standards: A Revised Framework", published by the Basel Committee on Banking Supervision in June 2004.

parts are hidden and disabled insofar as they are not necessary and will not have any impact on the calculation of risk-weighted assets.

- An additional subtype of exposures called “e) Other off-balance sheet exposures” was created in order to separate the effects on off-balance sheet exposures which do not belong to one of the subcategories “b) Undrawn lines – committed and uncommitted”, “c) Repo-style transactions” or “d) OTC derivative exposures” from the effects on drawn exposures.

A more detailed list of changes versus QIS 3 is contained in the Annex.

2. General

2.1 Estimates

It is recognised that banks may not have exact data on all the requested elements due to, for example, the roll-out of the IRB approach and, therefore, estimates are acceptable for the purpose of this exercise as long as they are representative of a bank’s portfolio and can be justified. Estimates should be discussed with the national supervisor and set out in a separate note.

2.2 Units

Banks should report data in the most convenient currency. Banks should record which currency has been used in the Input worksheet. Supervisors will provide the relevant exchange rate for converting the reporting currency to Euros. If banks use 1,000 or 1,000,000 currency units for reporting, this must also be indicated in the Input worksheet.

Percentages should be reported as decimals and will be converted to percentages automatically. For example, 1% should be entered as 0.01.

2.3 Consolidated basis

Unless otherwise specified by their supervisor, banks are asked to complete the worksheets for consolidated group exposures on a worldwide basis. All operating entities with material exposures should be included. As far as possible, all exposures within given portfolios (e.g. corporate, retail) should be included.

2.4 Consistent portfolio

It is extremely important that banks use a consistent portfolio throughout the calculations of capital requirements under the current Accord and the new Standardised and/or IRB approaches. This ensures the comparability of results across approaches and relative to the current capital requirements.

2.5 Reference date

Banks should note the reporting date in the Input worksheet and use the same data for credit, market and operational risk. (Different rules apply for the Standardised and Basic

Indicator approaches to operational risk, where the information about the relevant years is contained in the respective worksheets.)

2.6 Structure of worksheets

Banks need only enter data in the yellow shaded cells. All other cells are either automatically calculated or are linked to cells in other parts of the worksheet. These unshaded cells cannot be changed.

There are separate worksheets (generally more than one) for each approach. The worksheets calculate risk-weighted assets using information linked to the Input worksheet and banks' own inputs that are entered in yellow cells.

In addition, some worksheets contain **green** shaded cells. These are for information only; they are designed to provide further information for analysing the results. Banks should provide this information, although such information does not feed directly into the calculation of capital.

There are also pink cells which should be completed by supervisors. In general, these refer to areas where there is national discretion in the current Accord or in the revised Framework. If there are pink cells that have not been completed, banks should contact their national supervisors.

All other cells – including those that have been “greyed out” or shaded orange to highlight some of the results – must not be changed by banks and are therefore locked. The structure of the whole workbook is locked as well. **It is important to note that any modification to the worksheets might render the workbook unusable both for the validation of the final results and the subsequent aggregation process.**

The worksheets have in-built checks (in red). Underneath each check, cells indicate whether the inputs tally with the relevant data (“Yes” or “No”). Banks are asked to look at these checks to ensure the data input is consistent – if they are not, they should understand why and make the necessary adjustments.

For many portfolios in the IRB approaches, banks can specify the number of PD, LGD and exposure at default (“EAD”) bands they wish to use. Additional columns or rows can be left empty. Banks can, however, not add or remove columns or rows since the worksheets are protected. If this should become necessary, the national supervisor should be contacted.

Where banks have not been able to comply with any of the instructions, they must clearly set out these areas in a separate note to their supervisor.

2.7 Approaches

General

Banks are requested to provide data for at least one of the approaches of the revised Framework as well as for the current Accord. The worksheets for the other approaches can be used for comparative analysis only and not for reporting data on exposures subject to partial use of that approach. The national supervisor will provide guidance on whether such a comparative analysis is intended and therefore data for more than one of the new approaches is required.

Partial use of the Standardised approach

In general, the current workbook does not allow banks to use different approaches for different parts of their portfolios. However, partial use of the Standardised approach can be included in the calculations only in the case where the bank can separate out all exposures and general provisions subject to the partial use of the Standardised approach, e.g. because the Standardised part of the banking group is a separate legal entity and these figures are readily available from that entity's balance sheet.

2.8 Assignment of exposures to portfolios

General

For the purposes of this exercise, eleven broad categories of exposures are identified. However, not all of them will be relevant for all banks. The eleven categories are:

- Corporate (not including SMEs and Specialised Lending);
- Specialised lending (SL). Within the SL portfolio the categories “HVCRE” and “Other” are distinguished where the latter category comprises Project Finance, Income Producing Real Estate, Object Finance and Commodity Finance;
- Sovereign;
- Banks;
- Retail (not including SMEs), including
 - Other Retail,
 - Qualifying revolving retail,
 - Mortgage retail and
 - Home equity lines of credit (HELOCs);
- SMEs
 - treated as corporate,
 - treated as retail;
- Equity;
- Purchased receivables;
- Securitised assets;
- Trading book; and
- Investments in related entities.

Definitions for all exposure classes are given in the revised Framework (June 2004). Additional instructions will be provided on whether and how HELOCs should be reported separately if necessary.

It is important that banks use consistent categories across the various approaches (i.e. exposures designated as sovereign under the Standardised approach must also be designated as sovereign under the current Accord and IRB approaches). A particular case is for the Retail portfolio, where the definition of retail is different for the Standardised and IRB approaches. Banks completing one or both of the IRB approaches must use the IRB

definition for **both** Standardised and IRB approaches if they also provide data for the Standardised approach. This is to ensure that the Standardised and IRB results are comparable. Banks **only** completing the Standardised or one of the IRB approaches should follow the definition of that specific approach.

Guarantees and credit derivatives

As a general rule, in completing the worksheets banks should assign exposures that are guaranteed by (or where credit protection is provided by) another counterparty, **according to the characteristics of the guarantor or provider of protection**. Thus, if a bank has an exposure to a corporate guaranteed by another bank, this exposure must be treated as a bank exposure and included in the claims on banks portfolio. This should apply throughout the approaches.² Exposures should not be moved between portfolios – thus if a corporate exposure has been guaranteed by a bank, it should always be shown in the bank portfolio (in the Input worksheet and throughout the approaches). An exception must be made in the case of credit default swaps on guaranteeing a pool of assets. If the CDS provides full protection for the entire portfolio and the protection seller is an eligible guarantor then the treatment is as described above. If the eligible guarantor provides only partial coverage, the covered portion of the pool must be treated according to the substitution approach as described above. The remaining uncovered part must be treated as a retained first loss piece which is to be entered accordingly in the Securitisation worksheets.

Supervisors may choose not to ask for data on credit risk mitigation. If this is the case only exposures “post protection” should be recorded. Conversely, banks might be requested to enter their exposures before and after the effects of credit protection. Thus, in the current Accord and Standardised approach worksheets, banks should first slot exposures with a guarantee or credit protection according to the risk weighting of the initial obligor in the column headed “pre-protection” and then slot exposures according to the risk weighting of the guarantor or credit protection provider in the column “post-protection”.

Banks should adopt a similar approach in the IRB worksheets: banks should assign exposures with a guarantee or credit protection according to the PD band of the initial obligor in the column headed “exposures before credit protection” and then assign these exposures according to the PD of the guarantor in the column headed “exposures after credit protection”.

A further option is available in the advanced IRB approach, where banks can make their own internal assessment of the degree of risk transfer and can accordingly adjust either the PD or LGD.

- If a bank chooses to adjust the PD, it should follow the same approach as described above and assign exposures to PD bands before and after the effects of credit protection.
- If the bank chooses to adjust its LGD estimates, it should enter the same quality distributions in both the “before” and “after” credit protection columns. If a bank chooses this option, exposures must also be shown in the portfolio of the underlying

² Credit protection other than collateral (e.g. a guarantee) provided by a securitisation special purpose vehicle to a securitisation exposure is not eligible for CRM treatment and should not be recorded in the portfolio of the protection provider – it should be recorded in the Securitisation worksheet. However, if the guarantee is collateralised, the effects of such collateralisation must be recorded in the appropriate table of the Securitisation worksheet.

obligor in the foundation IRB, the Standardised approach and the current Accord worksheets.

Where partial coverage exists, or where there is a currency mismatch between the underlying obligation and the credit protection, it is necessary to split the exposure into a covered and uncovered amount. The treatment in the Standardised and foundation IRB approaches is very similar. In showing exposures "after" the effects of credit protection, banks should slot the portion of the exposures guaranteed/protected into the PD band/risk weighting of the guarantor/protection provider. The remaining uncovered portion of the exposure is assigned the PD band/risk weighting of the underlying counterparty.

Securitisation exposures

Banks must apply the securitisation framework for determining regulatory capital requirements for exposures arising from traditional and synthetic securitisations or similar structures that contain features common to both (paragraphs 538–540).

Securitisation exposures can include but are not restricted to the following:

- Asset-backed securities;
- Mortgage-backed securities;
- Credit enhancements;
- Liquidity facilities;
- Interest rate or currency swaps;
- Credit derivatives;
- Refundable price discounts as described in paragraph 371; and
- Tranched cover as described in paragraph 199.

Reserve accounts, such as cash collateral accounts, recorded as an asset by the originating bank, must also be treated as securitisation exposures.

Originators' positions are retained and repurchased positions on originators' side. Sponsors of conduits are also considered to be originators. For example, in the context of such programmes, a bank would be considered an originator if it provides liquidity and/or credit enhancements. All other securitisation exposures held of which the bank is not the originator are considered as **investors' positions**. Guarantors of securitisation exposures must treat the guarantee as if they were an investor in that exposure.

With the exception of securitisation of exposures for which no IRB treatment of the pool assets has been specified (see paragraph 608) and under the standardised approach for exposures with a rating of BB+, BB or BB- (paragraphs 569 and 570), no distinction is made between securitisation exposures held by originators and those held by investors.

In the case of securitised revolving credit subject to early amortisation, originators must hold regulatory capital for investors' interest in the exposure. The investors' interest includes both drawn and undrawn portions of the securitised line.

Originators of securitisation exposures need not enter the securitised pool assets in the portfolio corresponding to the underlying exposures even in the case of a synthetic securitisation transaction in which the underlying instruments remain on the originators' balance sheets. An exception to this rule applies if the conditions in paragraph 554 are not fulfilled. In the case of a synthetic resecuritisation involving securitisation exposures as

underlying instruments, the underlying instruments have to be entered into the Securitisation worksheets (if rated in section B, otherwise in section C).

If an originating bank buys protection for pool assets from an SPE (non-eligible guarantor) in the form of a CDS and full coverage is provided, the underlying assets are to be entered into the workbooks corresponding to their portfolio. Assets held by the SPE for the purpose of protecting the originator against credit losses are to be treated as financial collateral for the underlying assets. If partial coverage is provided, both the covered and uncovered parts are to be treated as securitisation exposures and entered into the Securitisation worksheets.

3. Input worksheet

3.1 Purpose

The Input worksheet is intended to capture broad information about the portfolios used in the exercise as well as some key data regarding the bank (e.g. capital and provisions). It is the worksheet in which banks are requested to insert most of the information required for the calculations of risk-weighted assets and capital ratios; for this reason, it is linked to the other worksheets. Therefore **it is vital that this information is as accurate as possible**.

3.2 General information (panel A)

Banks should enter the reporting date, the ISO code of the reporting currency and the unit they are reporting in (e.g. 1, 1,000 or 1,000,000 currency units) here. Panel A also provides drop-down menus where banks should indicate which approaches they are providing data for.

3.3 Capital held and provisioning data (panel B)

Capital held (panel B1)

Section 1 of this panel asks banks for the regulatory capital they hold. In general, all portfolio-specific supervisory restrictions on the eligibility of capital (e.g. that eligible Tier 2 capital must be less than Tier 1 capital) are dealt with by the worksheet. Conversely, consideration of the restrictions to eligibility depending on the type of capital instrument (e.g. the restrictions to eligibility of subordinated debt as set out in the current Accord) must be taken by the bank.

Since portfolio-specific restrictions might well be different under the different approaches (e.g. because of a different amount of supervisory deductions or risk-weighted assets), it is important that **capital figures are entered regardless of any portfolio-dependent restrictions to eligibility**. Where applicable, Tier 2 capital must include general provisions to the extent eligible under the current Accord in the respective jurisdiction.

The capital numbers must relate to the **total banking group**, even if some exposures are not included in the exercise or subject to partial use of the Standardised approach. If the exercise is carried out for an entity other than the consolidated group at the request of the national supervisor, capital figures must be reported for that entity. Still, capital held for portfolios subject to partial use of the Standardised approach has to be included.

Other supervisory deductions (panel B2)

In section 2 of panel B other supervisory deductions that are not dealt with elsewhere in the workbook should be entered for all approaches banks are providing data for.

Supervisory deductions should include goodwill, total capital from investments in unconsolidated banking and financial subsidiary companies and total capital for investments in the capital of other banks and financial institutions. The deductions for investments in unconsolidated banking and other financial subsidiary companies are calculated in the related entities worksheet and will feed-through to the Results worksheet automatically. The same holds true for deductions for Securitisation exposures. Banks should record other supervisory deductions not captured by the related entities or Securitisation worksheet in the cells provided.

Provisioning data (panel B3)

Section 3 asks for data on provisioning. Since the treatment of provisions strongly affects the calculations of the UL-only IRB capital requirements which have been introduced after CP3, correct data on provisioning is crucial.

The figure “**coverage general provisions**” indicates which percentage of the general provisions entered in the remainder of section 3 were set up for those assets included in the workbook. If this cell is left empty, the workbook assumes that this percentage equals the percentage coverage in terms of current Accord risk-weighted assets. For example, if the current risk-weighted assets calculated in the workbook amount to 90% of the current risk-weighted assets according to a banks’ supervisory returns, the workbook assumes that 90% of the general provisions can be attributed to those exposures. If the bank thinks that 85% or 95% would be more appropriate, banks must enter the respective percentage here.

General provisions have to be entered in four separate cells.

- First, banks have to enter the amount, if any, of general provisions currently included in their Tier 2 capital figure. If general provisions are currently not eligible as Tier 2 capital in their jurisdiction, banks shall leave this cell empty.
- Second, general provisions that might be eligible for Tier 2 capital under the Standardised approach have to be entered. Since risk-weighted assets under the Standardised approach are not known in advance, this amount must be entered regardless of the risk-weighted asset based cap.
- Third, if applicable, the bank must calculate the amount of general provisions eligible for inclusion in Tier 2 capital under the Standardised approach for the fraction of exposures subject to partial use (paragraphs 381–383). The cap depending on risk-weighted assets is calculated automatically and must therefore not be applied by the bank. **The spreadsheet automatically subtracts this amount from the amounts of eligible provisions given in that panel for the Standardised and the IRB approaches. Therefore, those figures must always be entered regardless of any partial use.**
- Fourth, general provisions eligible for the EL-provisions calculation under the IRB approaches have to be entered. Once more, this amount should be entered regardless of the risk-weighted asset based cap (paragraph 43) since IRB risk-weighted assets are not known in advance and the workbook calculates the cap automatically.

3.4 Current accord, trading book and partial use risk-weighted assets (panel C)

Trading book requirements (panel C1)

Trading activities carry several types of risks: counterparty credit risk, market risk (consisting of both “general market” and “specific” risk), and concentration risk. The revised Framework imposes charges for the first two, while EU institutions may incur a further charge for large exposures.

Capital requirements are calculated separately for the trading book for each approach. Risk-weighted assets are calculated for three elements.

- The first component is risk-weighted assets required for **counterparty trading book exposures**; these are calculated separately for the current, Standardised and IRB approaches in the respective worksheets.
- The second element is the capital charge for **specific risk**. This capital charge should be calculated using either the standardised or the internal models method. In the former case, nothing has to be inserted in this worksheet, given that the calculations are run through the specific worksheets and then fed into the Results worksheet; in the latter case the specific risk charge (unchanged from the 1996 Market Risk Amendment) must be reported in the Input worksheet (panel C1). Please note that banks should not enter specific risk exposures subject to the internal models method elsewhere in the worksheets.
- The third element is the capital charge for **general market risk** calculated using the standardised and/or internal models method. This figure should be entered in the Input worksheet (panel C1) separately for the two methods. For exposures subject to the standardised method, supervisors might ask for an alternative calculation using the internal models method. A green cell is provided for that purpose.

In addition, if banks in the EU have capital requirements for large exposures, they should record this capital requirement in this panel (the worksheet will convert this to a risk-weighted asset equivalent).

Partial use of Standardised approach (panel C2)

Risk-weighted assets for exposures subject to partial use of the Standardised approach must be calculated by the bank under both the current Accord and the Standardised approach outside the actual workbook. This calculation might be carried out either using internal IT systems or a separate workbook.

Total risk-weighted assets (panel C3)

Banks should enter the amount of risk-weighted assets according to current supervisory returns here.

3.5 Exposure data

General remarks

Exposures must be reported both gross and net of specific provisions and partial write-offs and included in the appropriate yellow cell.³ This includes defaulted assets that have not yet been fully written-off. For the current Accord and the Standardised approach the exposures net of specific provisions and partial write-offs and for the IRB approach the exposures gross of specific provisions and partial write-offs are taken into further consideration. In addition, under the IRB approaches, the difference between gross and net exposures feeds into the EL-provisions calculation.

Securitisation exposures are to be entered prior to credit risk mitigation on existing securitisation exposures. Investors' interest for securitised credit lines with early amortisation features are not captured in the Input worksheet.

On-balance sheet exposures (panel D)

Exposures must be included **before** application of a haircut on exposures (H_e) where relevant. H_e applies only in the comprehensive approach for collateral (i.e. it is not relevant for collateralised transactions in the current Accord and in the Standardised approach where the simple approach for CRM is used).

Assets subject to the partial use of the Standardised approach should not be allocated to the different portfolios, but reported on an aggregated basis in panel D4. In panel D4 banks should also report assets that have not been included in the exercise but are included for current regulatory capital purposes (for example, where a foreign subsidiary has been excluded).

Banks should also note any other assets not included elsewhere in the Input worksheet in panel D5 (for example fixed assets which do not attract a regulatory capital charge or will remain subject to a 100% capital charge also under the revised Framework). Fixed assets acquired through credit defaults should be identified separately from other fixed assets for the bank's own use. As far as possible, banks should aim to reconcile the total on-balance sheet assets in panel D6 to their balance sheet at the reference date.

Off-balance sheet exposures (panel E)

Off-balance sheet exposures must be recorded **before** credit conversion for each portfolio. Undrawn lines and other off-balance sheet items must be recorded separately. Exposures after credit conversion have to be entered in the relevant worksheets for each approach using the applicable credit conversion factors. Concerning securitisation exposures, banks have to fill in **all off-balance sheet securitisation exposures under undrawn lines** even if the title refers to undrawn lines only.

In the data provided for the current Accord, Standardised and IRB approaches, banks should include any commitments that are either unconditionally cancellable or that effectively allow automatic cancellation by the bank, at any time and without prior notice, resulting from a

³ If a supervisor decides not to require data on the Standardised approach and banks have not set up specific provisions against any of their exposures, it is sufficient to provide the exposure figures in the column "net of provisions".

deterioration in the obligor's creditworthiness. However, a 0% conversion factor must be applied to these commitments in the Standardised and foundation IRB approaches. In the advanced IRB approach banks may estimate their own credit conversion factor for these exposures as long as the LGD is adjusted to give a correct overall figure for expected loss. This applies to unconditionally cancellable commitments in the IRB retail portfolios since retail only has an advanced approach.

Exposures subject to partial use of the Standardised approach must be reported separately in panel E2 and must not be included in any other figure in panel E. Off-balance sheet exposures not included elsewhere in the Input worksheet should be reported in panel E3.

Counterparty Exposures under repo and OTC derivatives (panel F)

Banks must enter banking book and trading book repo-style and OTC derivative exposures in panels F1 and F2 respectively. For OTC derivatives, the credit equivalent amounts (calculated using the current or original exposure method) should be recorded; this should be consistent with the bank's supervisory return and the 1988 Accord.

Repo-style transaction exposures include off-balance sheet lending of securities that continue to be recorded on-balance sheet (including the posting of securities as collateral), as well as guarantees of securities lending transactions (e.g. guarantees issued by an agent lender). Cash posted as collateral in a repo-style transaction should be treated as a repo-style transaction exposure, rather than as a loan. In the Input worksheet, banks should record the **gross** exposure (i.e. the exposure amount (E) without any netting for collateral (C)).

Once more, there is a separate cell for Repo and OTC derivative exposures subject to the partial use of the Standardised approach in panel F3. Banks should use panel F4 to record banking book and trading book repo-style and OTC derivative exposures not included elsewhere in the Input worksheet.

In panel F, supervisors might also ask for the internal methods used for the calculation of counterparty exposures. Several drop-down menus are provided for that purpose.

4. Checks and Results worksheets

The **Checks** worksheet summarises the in-built checks contained throughout the workbook. The cells indicate whether inputs in each worksheet tally with the relevant section in the Input worksheet. Banks should use this worksheet to ensure that data input is consistent.

The **Results** worksheet (which incorporates most of the information captured by the Capital worksheet in QIS 3) summarises the main information on capital and deductions, provides a summary of risk-weighted assets and the expected losses (EL) across all the approaches, split by banking and trading book, and calculates the regulatory calculation difference. Supervisors might activate a scaling-up mechanism if banks are not able to provide data for their entire books. Finally, minimum capital requirements, capital ratios and the changes of these figures relative to the current Accord are calculated. All cells in this worksheet are unshaded and they link to other areas of the workbook. No inputs are necessary in this worksheet.

5. Parameters and Summary worksheets

The **Parameters** worksheet allows supervisors to configure most of the parameters used in the calculation of the capital requirements as well as certain parameters that are subject to national discretion. Most other parameters can also be configured here to allow supervisors to stress test the results. In addition, additional information on the version and structure of the workbook is compiled in this worksheet to allow supervisors to extract the required data easily. No inputs are necessary in this worksheet.

The **Summary** worksheet provides some basic results for easy aggregation by supervisors. No inputs are necessary in this worksheet.

6. Related Entities worksheet

6.1 Introduction

The scope of application of the revised Framework includes, on a fully consolidated basis, any holding company that is the parent entity within a banking group to ensure that it captures the risk of the whole banking group. Investments relating to the scope of application of the revised Framework will receive either a risk-weight or a deduction treatment (at the discretion of the national supervisor). The related entities worksheet is structured to collect data for capital deduction and/or risk-weighted assets treatment under the current national regime and the revised Framework.

6.2 Information required

Banks must ensure that (i) only investments relating to the scope of application are reported in this worksheet, and (ii) none of the investments reported in this worksheet are included in other portfolios – especially in the “equity” portfolio, to avoid double-counting.

Banks should report the data by categories of investments relating to the scope of application as listed below in accordance with the revised Framework.

- (a) Investments in unconsolidated majority-owned or controlled securities and other financial entities.
- (b) Significant minority investments in banking, securities and other financial entities.
- (c) Investments in insurance subsidiaries and significant minority investments in insurance entities,
- (d) Significant minority and majority investments in commercial entities that exceed certain materiality levels.
- (e) Other investments relating to Scope of Application (i.e. significant minority- and majority-owned commercial entities below materiality levels, and others if any).

6.3 Inputs

Banks should fill in the amounts of investment for categories “a” through “e” in the column titled “Amount outstanding”.

Banks should report the data for the current national regime and the revised Framework. In reporting these data, banks should first refer to the treatment applicable under their jurisdiction (i.e. deducting from capital or risk weighting) under the current regime and the revised Framework. It is essential that banks use consistent portfolios under the current regime and the revised Framework.

If national supervisors instruct banks to:

- deduct investments from capital, then banks should report the amount deducted from capital in the column labelled “Deductions”;
- risk weight investments, then banks should report the risk-weighted amounts under the column labelled “Risk weighting treatment”. Under the risk weighting treatment, banks should report data for all the relevant approaches to them (Standardised/ foundation IRB/ advanced IRB).

7. Current Accord worksheet

7.1 Basis for calculations

Exposures should be assigned to the appropriate category in the worksheet based on the local implementation of the 1988 Basel Capital Accord by the national supervisor. In some countries supervisors may have additional rules beyond the 1988 Accord or may have made modifications to the Accord in their national implementation. Since these areas may also be impacted by the proposals for the revised Framework, banks should carefully discuss with their supervisors as to how the current Accord worksheet should be completed.

7.2 Structure of worksheet

Risk-weighted assets are calculated separately for each portfolio (numbered one to eleven). Within each portfolio, risk-weighted assets are calculated for drawn exposures (panel a), undrawn lines (panel b), repo-style transactions (panel c), OTC derivatives (panel d) and other off-balance sheet exposures (panel e).

The full range of risk weights allowed in the current Accord is included in the worksheet for each portfolio, so as to allow institutions to reflect where national supervisors have exercised discretion over the risk weight to be applied to a given category of asset/counterparty. (This discretion may either have been made explicit in the current Accord, i.e. claims on public sector entities – PSEs, or applied locally by national supervisors.)

For the retail portfolio, where national discretion has been exercised (e.g. use of a risk weight other than 50% for residential mortgages) banks should enter the appropriate values in the row provided.

7.3 Inputs for drawn exposures, other off-balance sheet exposures and undrawn lines

Banks should assign the exposures to the appropriate risk-weight bucket in the column headed “all exposures”. These exposures should then be subdivided between three categories: (1) unsecured exposures; (2) collateralised exposures; and (3) exposures with credit protection. The treatment of credit risk mitigation and the inputs for categories (2) and (3) are explained below.

Drawn exposures and other off-balance sheet items must be reported in two separate panels, after applying the appropriate credit conversion factor, for all portfolios in the relevant yellow box.

For **undrawn lines**, the exposure to be reported is that which has been disclosed to the obligor to which the appropriate credit conversion factor must be applied. Post-conversion figures should be entered in the appropriate yellow box.

7.4 Counterparty exposures (repo-style transactions and OTC derivatives)

Banks should assign repo-style and OTC derivative exposures to the appropriate risk-weight bucket in the columns headed “repo” and “OTC derivatives”. In the “pre-CRM” columns, OTC derivative counterparty exposures must be recorded as the credit equivalent amount (calculated using the current or original exposure method). In the “post-CRM” columns banks should assign exposures to the risk-weight buckets appropriate to the credit risk mitigant – either the collateral or credit protection taken against the exposure.

7.5 Trading book

Inputs for the counterparty exposures in the trading book should follow those for the banking book. Trading book on-balance sheet exposures and OTC derivative exposures giving rise to specific risk should be entered in the correct yellow box in the specific risk section (panel 11c).

7.6 Netting arrangements

Banks should take account of netting agreements which are eligible under the current Accord in assigning “post CRM” exposures to risk-weight buckets. Banks should show the portion of gross exposures covered by the netting agreement in the 0% risk-weight bucket. The remaining unsecured portion after netting should be assigned to the risk weight bucket of the counterparty.

7.7 Credit risk mitigation

The treatment of credit protection (guarantees and credit derivatives) is described in section 2.8. The treatment of collateralised exposures is described below.

“Pre-collateral” exposures should reflect the risk weight of the obligor. “Post-collateral” exposures must reflect the risk weight of the collateral taken against an exposure. Where a loan is fully or partially collateralised by cash and securities issued by certain bodies or others specified by the national supervisor, the part of the loan that is collateralised should be assigned the appropriate risk weight given to the cash or securities used as collateral or according to national regulations, where national regulations prevail. The remaining portion

of the loan should be assigned to the risk weight appropriate to the underlying asset/counterparty.

8. Current Accord Securitisation worksheet

Three main panels are provided. In panel A banks must insert information on rated exposures and split them by risk-weight bucket. In panel B unrated exposures are requested. In panel C information on early amortisation features must be inserted, by distinguishing between retail and non-retail lines.

If securitisation exposures are guaranteed, they are to be treated using the substitution method on the portion of the securitisation exposure covered by the guarantee. However, the whole exposure must be entered in the “Exposures” column according to the appropriate risk weight pre-CRM. The risk-weighted assets should then be calculated by the bank taking into account the lower risk weight for the guaranteed portion of the exposure and entered in the “RWA post CRM” column in the same row as the respective exposure amount.

9. Standardised approach worksheet

9.1 General

Risk-weighted assets are calculated separately for each portfolio (numbered one to eleven). Within each portfolio, risk-weighted assets are calculated for drawn exposures (panel a), undrawn lines (panel b), repo-style transactions (panel c), OTC derivatives (panel d) and other off-balance sheet exposures (panel e).

There are two methodologies for treatment of collateral in the Standardised approach – comprehensive and simple. Banks **only** need to calculate capital requirements using one approach.

Off-balance sheet items must be reported, after applying the appropriate credit conversion factor, for all portfolios in the relevant yellow box. Trading book on-balance sheet exposures and OTC derivative exposures giving rise to specific risk should be entered in the correct yellow box in the specific risk section (panel 11c).

Banks should assign the exposures to the appropriate risk-weight bucket and category in the column headed “all exposures”.

9.2 Credit risk mitigation – collateral

If the national supervisor chooses to ask for data on credit risk mitigation, these exposures should then be subdivided between three categories: (1) exposures without CRM; (2) collateralised exposures; and (3) exposures with credit protection. Treatment of credit risk mitigation and the inputs for categories (2) and (3) is explained below.

Adjustments for guarantees and credit derivatives should be made in the columns “credit protection” as described in section 2.8 above. Treatment of collateral is described below.

Simple approach – Under this approach a bank may alter the risk weight applied to an exposure according to collateral held. Where collateral is eligible the collateralised portion of the exposure is assigned the risk weight of the collateral. Banks should record collateralised exposures before taking account of the collateral held in the “pre collateral” column. In the “post collateral” column, banks should slot the portion of exposures covered by collateral according to the risk weighting of the collateral. Further details of how to determine the portions of exposures that are covered are provided in the revised Framework. The remaining portion of the exposure which is not covered by collateral should be assigned the risk weight of the obligor.

Comprehensive approach – In the “pre collateral” column, banks should record the gross exposure (E). In the “post collateral” column, banks should record the net exposures (E*) after deduction of collateral amounts. In calculating E*, banks should adjust the value for the collateral held against each loan for haircuts (H_c). Where collateral is denominated in a currency that differs from that of the underlying exposure (i.e. there is a currency mismatch), an additional haircut reflecting the currency volatility (H_{fx}) is taken on the collateral (see the discussion on haircuts in the revised Framework). Net exposures should also reflect haircuts appropriate to the exposure (H_e).

Collateral must be calculated on a loan-by-loan basis (except in the case of repo-style transactions covered by master netting agreements). If collateral held against a particular loan exceeds the exposure amount banks are **not** permitted to use this collateral against loans for other counterparties.

9.3 Eligible on-balance sheet netting agreements

Banks should take account of eligible on-balance sheet netting agreements in assigning “post CRM” exposures to risk-weight buckets. Banks using the simple approach should show the portion of gross exposures covered by the netting agreement in the 0% risk-weight bucket. The remaining unsecured portion (after netting) should be assigned to the risk-weight bucket of the counterparty. Banks using the comprehensive approach should make allowances for any eligible netting agreements in calculating E*.

10. Standardised approach securitisation worksheet

Four main panels are provided. In panel A banks must select securitisation exposures requiring deduction. In panel B banks must enter rated exposures following the rating categories required by the revised Framework (paragraph 567). In panel C information on unrated securitisation exposures must be inserted, with the main distinction between the most senior exposures (paragraphs 572–573) and other unrated exposures (paragraph 571). Finally, in panel D information on investors’ interest is requested separately for retail and non-retail lines.

10.1 Securitisation exposures requiring deduction (panel A)

Panel A refers to paragraphs 561–563 regarding the treatment of securitisation exposures to be deducted from regulatory capital. All gains on sale must be deducted from Tier 1 capital, and their total amount should be entered in the matrix in this section. Exposure amounts in credit-enhancing interest-only strips, net of gain on sale, must be deducted in equal amounts from Tier 1 and Tier 2 capital and entered in the same matrix.

10.2 Rated exposures (panel B)

Exposure types

Securitisation exposures treated in this section are securitisation exposures rated by an external credit assessment institution (ECAI).

Exposure amounts

For the purposes of the Standardised approach, the exposure amounts for on-balance sheet securitisation exposures should be entered net of provisions. Rated off-balance sheet securitisation exposures (credit default swaps, guarantees, letters of credit, liquidity facilities) receive a CCF of 100%.

Risk-weighted assets

Rated securitisation exposures are assigned risk weights according to the table in paragraph 567. For ratings from BB+ to BB-, for exposures which are retained and for those invested in (i.e. which are originated by a third party) two separate rows have to be used.

Credit risk mitigation

Credit risk mitigation has to be treated separately according whether the substitution approach (i.e. the simple approach or risk mitigation in the form of guarantees) or the comprehensive approach is used in computing the risk mitigation.

Securitisation exposures benefiting from financial collateral under the comprehensive approach are to be treated according to the formulae and definitions outlined in paragraphs 147–150. Pre- and post-CRM exposures, broken down according to risk weight, are to be entered under the respective columns in the table “Collateralised exposures subject to the comprehensive approach”.

If the simple approach to credit risk mitigation is applied or if the credit risk mitigation is in the form of guarantees (or CDSs, letters of credit), exposures are to be treated using the substitution method. The entire exposure must be entered in the “Exposure Amounts” column broken down according to pre-CRM risk weights. The post-CRM risk-weighted assets should then be calculated as the sum of the risk-weighted assets of the secured and unsecured parts of the exposure. The risk-weighted assets for the secured part are obtained by applying the risk weight of the guarantor respective collateral to the guaranteed respective collateralised portion of the exposure. The post-CRM risk-weighted assets are to be entered in the “RWA post-CRM” column in the same row as the exposure amount pre credit-risk mitigation.

Maturity mismatches for all forms of credit risk mitigation must be treated as described in paragraphs 202–205.

10.3 Unrated exposures (panel C)

Exposure types

Unrated most senior securitisation exposures do not have to be deducted but can be treated as described in paragraphs 572 and 573. They have to be entered in panel C1.

All other types of unrated exposures (liquidity facilities, credit enhancements, tranches) are entered into panel C2 which contains five different types of unrated exposures:

- Eligible liquidity facilities as described in paragraph 578;
- Market disruption facilities as described in paragraph 580;
- Servicer cash advance facilities as described in paragraph 582;
- Second loss positions in ABCPs as described in paragraph 574; and
- Other unrated exposures.

Depending on the type of the exposure different CCFs and risk weights are used, other unrated exposures are to be deducted.

Exposure amount

As for the securitisations exposures to be entered in panel B, those in panel C are distinguished between non-collateralised and collateralised exposures.

Risk-weighted assets

Regarding the determination of risk-weighted assets pre-CRM the same rules apply as described above for panel B.

Credit risk mitigation

Credit risk mitigation has to be treated as discussed in section 10.2.

10.4 Investors' interest (panel D)

Exposure types

In this section, exposures originated by the bank and held by investors for which the originator might hold regulatory capital have to be entered. An originating bank might hold capital against investors' interest only if the exposures sold are of a **revolving nature and are subject to an early amortisation clause**. The most typical examples are the securitisation of credit card receivables and corporate loan commitments.

Early amortisation / Early amortisation triggers

Early amortisation provisions are mechanisms that, once triggered, allow investors to be "paid out" prior to maturity. Early amortisation triggers can be either economic or non-economic in nature. In the economic case, early amortisation is in general triggered by a downturn in the creditworthiness of the pool assets or selling bank. Non-economic (sometimes called regulatory) early amortisation clauses are triggered by events not related to the performance of the pool assets of the selling bank, rather by tax laws or regulations, for example. Capital requirements need not be held against securitisations with non-economic early amortisation clauses (paragraph 593 (d)). Note that regulatory capital is also not required to be held if the underlying exposures do not revolve (for example, in cases where replenishment structures are in place (paragraph 593 (a)) or the revolving structure is such that investors remain exposed to future draws (paragraph 593 (c)).

Risk-weighted assets

The originator's capital charge for the investors' interest is determined as the product of

- The investors' interest;
- The appropriate CCF; and
- The risk weight appropriate to the underlying exposure type, as if the exposures had not been securitised.

The applicable CCFs depend upon

- Whether the early amortisation repays investors through a controlled or non-controlled mechanism; and
- Whether the securitised exposures are uncommitted retail credit lines or other credit lines (paragraphs 594–605).

11. Foundation IRB approach worksheets

11.1 General

For most portfolios, there are three different inputs required from banks to calculate risk-weighted assets under the foundation IRB approach. These include information on the distribution of exposures between PD bands, the type of collateralisation for each portfolio, and the average maturity for these exposures (if applicable – see below). Five separate panels are provided for banks to calculate risk-weighted assets for drawn exposures, undrawn lines (committed and uncommitted), repo-style transactions, OTC derivatives and other off-balance sheet items. (Off-balance sheet exposures (including undrawn lines and other off-balance sheet exposures) should be converted using the appropriate conversion factors.) National supervisors may ask for a more detailed breakdown in additional panels.

Within the SME portfolio, exposures treated as corporate (i.e. using the corporate risk-weight curve for capital purposes) require an additional input – turnover of the firm – see section 11.9.

Inputs for the retail portfolios are also different from the general approach described immediately below. Section 12.3 details the additional inputs banks will need to make for retail exposures.

11.2 Structure of the worksheets

The IRB worksheets are divided into four separate pages to capture these inputs. The first page (on the left-hand side of the worksheet) shows PD bands as well as risk-weighted assets and some additional summary statistics calculated using information provided in grids to the right. Banks only have to define their PD bands in this grid.

Banks should input information in the second and third grids on these worksheets to provide a breakdown of exposures by PD and LGD and average maturity by PD and LGD. On the fourth page, risk-weighted assets are calculated for each PD/LGD bucket separately.

Banks should apply the appropriate credit conversion factor for off-balance sheet exposures. Post-conversion figures should be entered in the appropriate yellow box.

11.3 PD bands

For **non-defaulted assets**, banks should use as detailed a distribution of PD bands as is currently used for internal purposes. Under the “PD Quality Bands” heading, banks should define their PD bands.

Banks are required to enter the PD for each band in the “estimated PD” column – this should be the PD which most accurately reflects the bulk of exposures allocated to the band. This estimate will feed into the calculation of risk-weighted assets. In addition to this, national supervisors may require banks to enter the upper and lower boundary for each PD band. The estimated PD must lie between the lower and upper boundary. Where banks use an individual PD grade and do not specify an upper and lower bound, they must enter the single PD estimate as the top and bottom of the range (i.e. in all three cells) if the supervisor asks banks to report the boundaries.

There is one pre-defined row that must be used to enter all **defaulted assets**.⁴ **Banks must not define additional PD bands for defaulted assets.**

Where banks have exposures that are not allocated internally to a PD band, banks should try to redistribute such exposures on a pro rata basis to PD bands according to the distribution of allocated exposures for the purposes of this study. Alternatively, if the bank has relevant information on the credit quality of the unrated portion, a distribution should be estimated. In both cases, national supervisors should be contacted.

Banks should show the effects of credit protection in the columns provided as described above. Where the credit protection or guarantee provided by another counterparty covers only part of the exposure, banks should slot the portion of the exposure guaranteed/protected into the PD band of the guarantor/protection provider and the remainder into the PD band of the obligor.

11.4 LGD bands – Drawn, off-balance sheet items and commitments

Banks should allocate exposures (after the effects of credit protection) according to the type of collateral held against the exposure. Eight categories are shown in the worksheet:

1. Unsecured – subordinated debt;
2. Unsecured – other debt;
3. Other physical collateral;
4. Collateralised by receivables;
5. Collateralised by commercial real estate (CRE);
6. Collateralised by residential real estate (RRE);
7. Collateralised by gold;
8. Collateralised by financial collateral (including cash, equities on a main index, government securities and other securities).

⁴ Even though the revised Framework treats defaulted and non-defaulted assets in the same way under the foundation IRB approach, there is a different treatment under the advanced IRB approach. In order to keep the IRB approach worksheets as consistent as possible, a separate row for defaulted assets must also be used under the foundation IRB approach.

Banks should allocate exposures using the guidance set out below:

- If the exposure is **fully unsecured** allocate the full amount to the unsecured category (category 2).
- If the exposure is collateralised by **financial collateral or gold**, then banks should enter the collateralised portion after adjustments for H (i.e. the greater of zero or E-E*) in the collateralised category (category 7 or 8). The uncollateralised portion (E*) should be slotted in category 2 (senior unsecured claims).
- For exposures collateralised by **commercial or residential real estate**, if any exposures are 140% covered by collateral, 100% of the exposure should be placed in category 5 or 6. For exposures which are less well covered by collateral but meet a minimum coverage of 30%, the following proportion of the exposures should be placed in category 5 or 6:

$$= (\text{percentage of exposure collateralised} / 140\%) \times \text{amount of exposure}$$

The remainder should be placed in the uncollateralised column (category 2).

- For exposures collateralised by **receivables**, if a bank has exposures that are 125% covered by collateral then it should place 100% of the exposures in the appropriate column (category 4). For exposures which are less well covered by collateral, the following proportion of the exposures should be placed in category 4:

$$= (\text{percentage of exposure collateralised} / 125\%) \times \text{amount of exposure}$$

The remainder should be placed in the uncollateralised column (category 2).

- For exposures collateralised by **other physical collateral** the LGD is reduced to 40% when the exposures are covered 140% by collateral. To determine the allocations between categories for partially collateralised exposures, banks should use an identical treatment to commercial or residential real estate as a working assumption. If banks have exposures that are 140% covered by collateral then they should place 100% of the exposures in the appropriate column (category 3). For exposures which are less well covered by collateral but meet a minimum coverage of 30%, the following proportion of the exposures should be placed in category 3:

$$= (\text{percentage of exposure collateralised} / 140\%) \times \text{amount of exposure}$$

The remainder should be placed in the uncollateralised column (2).

For purposes of the exercise, these calculations do not have to be carried out loan by loan. A bank can estimate the split for a whole portfolio. For example, if a bank has corporate loans totalling 100, approximately 35% of which are collateralised by commercial real estate with coverage of 140% or more, then 35 could be slotted into category 5 and 65 into the unsecured category. If 35% was collateralised by commercial real estate but the degree of collateralisation was only 110% then 28 would be slotted into category 3 and the remainder into uncollateralised.

In calculating the extent of collateralisation banks should adjust the value of the collateral to reflect haircuts (where appropriate). Banks should also reflect haircuts on the exposure (H_e) in these calculations by adding H_e to the value of the collateral.

11.5 Treatment of Repos

Banks have two options for entering exposure data for repo-style transactions. The preferred method is the computation of the adjusted EAD (E^*) in accordance with paragraphs 147 and 176, respectively. Alternatively, an adjusted loss given default LGD* as defined in paragraph 291 can be computed.

The net exposure is to be calculated as the sum of the aggregated adjusted exposures and the non-adjusted exposures for those transactions for which the adjusted LGD was computed. This value is then to be entered into the cell “Repo / Securities lending exposures: net exposure”.

In the next step the non-adjusted and adjusted exposure amounts broken down into PD bands are to be entered in the appropriate, respective columns. In the PD/LGD matrix, adjusted and non-adjusted exposures are to be assigned to LGD buckets based on LGD and LGD*, respectively.

11.6 Treatment of OTC derivative exposures

OTC derivatives should be treated in a similar manner as under the Standardised approach, however PD bands should be used instead of risk-weights. The adjusted exposure amount (E^*) should be entered in the column for unsecured exposures. The portion of gross exposures covered by the netting agreement and collateral – i.e. the greater of zero or E minus E^* – should be shown in the 0% LGD band headed “secured exposures”. The other LGD columns have been left blank – banks do not need to input anything in these columns.

11.7 Netting agreements

Banks should take account of eligible netting agreements in assigning exposures to LGD bands. The portion of gross exposures covered by the netting agreement should be shown in the 0% LGD band. The remaining unsecured portion after netting should be assigned to the “unsecured” column (45% LGD band).

11.8 Maturity

At the discretion of national supervisors, banks will be required to use an explicit maturity adjustment in the foundation IRB approach. Where an explicit maturity adjustment is required the exposure-weighted average maturity should be entered in the maturity grid. Maturity should be calculated according to the rules of the revised Framework. The PD bands and collateral types used must be the same as those used for grid showing exposures by PD and collateral type, and banks are expected to enter the exposure-weighted average maturity for all exposures with the respective PD/collateral type combination. The worksheet will automatically calculate the maturity adjustment.

If a bank is not able to calculate the exposure-weighted average maturity for all individual PD/collateral type combinations, it should calculate the exposure-weighted average maturity for all exposures in each PD band and report this single result for all collateral types within this PD band. If a bank chooses such a simplification, this should be reported to the supervisor in a separate note.

Exposures exempted from the explicit maturity option should enter the calculation of the average with a maturity of 2.5 years. For foreign exchange/derivative instruments under a netting agreement the longest residual maturity should be used. If no average maturity is

given for a certain PD/collateral type combination, an average maturity of 2.5 years is assumed.

11.9 SME portfolio – size function

As mentioned, for SME exposures that are treated as corporate exposures (i.e. those which are on the corporate risk-weight curve for capital purposes) banks will also need to provide information on the size of the firm. Consequently these exposures must be reported only on a separate SME worksheet.

In the FIRB SME Corporate worksheet a fifth grid requests information on PD and firm size (using either turnover or, according to paragraph 274, total assets). Six bands are provided (€0–5 million, €5–10 million, €10–20 million, €20–30 million, €30–40 million and €40–50 million). In the cells above the reported exposures banks should give the weighted-average turnover (weighted by exposure size) for the size category. **This information has to be entered in million euros – irrespective of the currency and unit used to enter data in the remainder of the workbook.** This information will feed into the capital calculations for these exposures, providing reductions in capital requirements. Banks may find it difficult to provide this data – they may use a sampling approach if necessary to provide reasonable estimates for the purposes of this exercise. In this case, national supervisors should be contacted.

12. Advanced IRB approach worksheets

The inputs required for the advanced IRB approach are very similar to those for the foundation IRB approach (see section 11), with the following additions.

12.1 EAD

For the advanced IRB approach undrawn lines and other off-balance sheet exposures should be entered into the worksheets **before** credit conversion. Banks are required to fill in an EAD grid using their own EAD bands. If possible, banks should assign relevant product types to these EAD estimates in the yellow cells. The PD distribution is that which is defined in the initial collateral type grid. Banks should then allocate exposures according to EAD and PD.

Banks do not need to provide EAD breakdowns for **drawn exposures and OTC derivatives**. OTC derivative exposures should be stated after credit conversion in the tables for PD and LGD. For repo-style transactions under the advanced approach it is assumed that EAD is incorporated in the calculation of E^* – therefore it is not necessary to fill in an EAD matrix.

12.2 LGD

Under the advanced IRB approach, banks are requested to fill in three types of losses based on their own estimates:

- An LGD for non-defaulted exposures which – according to paragraph 468 – should reflect economic downturn conditions;
- An LGD for defaulted assets which should also reflect a possible economic downturn; and

- The best estimate of the expected loss for defaulted assets.

For downturn LGDs (both for non-defaulted and defaulted assets) banks should define their own LGD bands. Note that each of the LGD values can be interpreted as the exposure-weighted average of the respective downturn LGDs assigned to individual exposures within a certain bucket.

For **non-defaulted assets** banks fill in their LGD estimates in the row entitled “LGD” above the PD/LGD-matrix. It would provide useful information to the supervisor if banks were able to specify to which type of collateral the LGD bands relate. If possible, banks should provide this information as well using the predefined collateral types provided in a pull-down menu. The information on the collateral type is voluntary. Since other factors than collateral may also effect the LGD estimates, more than one column with different LGD values can be associated with a certain type of collateral. Conversely, there might be different collateral types for the same LGD.

The LGD buckets for **defaulted assets** should be defined in the row entitled “LGD” above the row including the amounts of defaulted exposures. Once the LGD buckets have been defined, the exposure-weighted average of the best estimate of expected loss for the exposures in the respective LGD bucket should be calculated and filled in the row “best estimate EL”. LGDs for non-defaulted exposures and LGDs for defaulted exposures in the same column do not necessarily refer to exposures with the same characteristics. Therefore, LGD buckets for non-defaulted and defaulted exposures can be defined independently.

In any case, national supervisors might provide further guidance on the estimation of these parameters and how to fill them in the advanced IRB worksheets.

12.3 Retail

There is no foundation IRB approach for retail, i.e. banks need only calculate risk-weighted assets by using what essentially is an advanced IRB approach. There is no maturity adjustment for retail exposures, thus banks need only complete the grids showing exposures by PD and LGD as well as by PD and EAD.

12.4 Maturity

In the advanced IRB approach, all banks will be required to use an explicit maturity adjustment. Therefore banks must fill in the maturity grid. Banks must enter the exposure-weighted average maturity for the exposures within a given PD/LGD bucket.

Certain corporate exposures (and SMEs treated as corporate) will be exempted where the reported sales (i.e. turnover) **and** total assets for the consolidated group of which the firm is a part are less than €500 million if the national supervisor chooses (see paragraph 319). Exposures falling into this category should enter the calculation of the above-mentioned average with a maturity of 2.5 years.

13. IRB Equity worksheet

13.1 Materiality

For this exercise, banks should refer to supervisors to determine whether their equity exposures are material. If a bank's equity exposures are not material then they only need to complete the drop-down box on the IRB equity worksheet and the two appropriate cells in the Summary section.

13.2 Specific exclusions

For this exercise, some equity holdings are considered excluded from the IRB treatment and will be subject to the capital charges required under the Standardised approach – banks should refer to national supervisors for guidance on eligible holdings. Banks should report excluded exposures (in panel 1) of the IRB equity worksheet. National supervisors will provide instructions on those legislated programmes that qualify for this exclusion.

13.3 Grandfathering

For this exercise, equities are to be considered as likely to be grandfathered if the national supervisor has so specified.

13.4 Treatment of excluded and non-excluded items

Risk-weighted assets should be calculated for all equity holdings in the banking book. For **all material non-excluded equities**, the worksheet should be filled in using the PD/LGD approach or the market-based approach (simple or internal models), according to the approach indicated by the national supervisor. **Excluded equity holdings** should be entered separately in panel 1 provided in the worksheet and risk-weighted at 100%.

13.5 Scaling factor

A 1.5 scaling factor will be applied to the risk weights for some equity exposures (paragraph 350). For each PD band, banks should split their exposures between those on which the scaling factor is necessary and those for which a scaling factor will not be applied.

14. IRB Specialised Lending worksheets

A separate worksheet for specialised lending exposures subject to the **risk-weight slotting method** has been provided to calculate risk-weights for certain exposures under the IRB approaches.

Banks that estimate PD to the satisfaction of their supervisors do **not** need to enter these exposures in the risk-weight slotting method worksheet. These banks should include such exposures in the HVCRE or other specialised lending worksheet provided for the foundation IRB approach. Unlike for previous exercises, these exposures should not be recorded in the Corporate worksheet. Banks that can estimate PD, LGD and EAD for these exposures also do **not** need to separately identify these exposures. These banks should include such

exposures in the HVCRE or other specialised lending worksheet provided for the advanced IRB approach.

Banks must record these specialised lending exposures separately for the current Accord and the Standardised approach. In the current Accord and Standardised approach worksheets these exposures will be treated as corporate exposures since there are no specific treatments in the current Accord and the Standardised approach. They should, however, be entered in the separate specialised lending sections for analytical purposes.

15. IRB Securitisation worksheets

15.1 Securitisation requiring deductions (panel A)

Panel A refers to paragraphs 561–563 regarding the treatment of securitisation exposures to be deducted from regulatory capital. All gains on sale must be deducted from Tier 1 capital, and their total amount should be entered in the matrix in this section. Exposure amounts in credit-enhancing interest-only strips, net of gain on sale, must be deducted in equal amounts from Tier 1 and Tier 2 capital and entered in the same matrix.

15.2 Securitisation exposures subject to ratings-based or internal assessment approach (panel B)

Exposure types

The securitisation exposures treated in this section are securitisation exposures rated by an external credit assessment institution (ECAI) or those for which an ECAI rating can be inferred as outlined in paragraphs 617 and 618. In addition, securitisation exposures are to be entered here for which an internal rating can be made in accordance with the Internal Assessment Approach (IAA) as described in paragraphs 619–621.

Exposure amounts

According to paragraph 308 the EAD is based on the exposures gross of specific provisions or partial write-offs. The EAD on drawn amounts should not be less than the sum of (i) the amount by which a bank's regulatory capital would be reduced if the exposure were written-off fully, and (ii) any specific provisions and partial write-offs.

The following applies to off-balance securitisation exposure amounts:

- Liquidity facilities, internally via IAA and externally rated, with the exception of eligible market disruption facilities and eligible servicer cash advance facilities, are treated no differently than any other rated securitisation exposures within panel B and receive a CCF of 100%.
- Market disruption eligible liquidity facilities receive a CCF of 20% if the conditions in paragraph 580 are satisfied. Alternatively, if the facility is externally rated, the bank can use the RBA risk weight for rated exposures and apply a CCF of 100%.
- Eligible servicer cash advance facilities are subject to national discretion and such facilities satisfying the requirements set down in paragraph 582 receive a CCF of 0%.

- If a bank, not the originator, provides credit protection to securitisation exposures in form of a credit default swap, guaranty or letter of credit (other off-balance sheet item), it must calculate the capital requirement on the covered exposure as if it were an investor in that exposure (CCF of 100%).

Risk-weighted assets

Internally via IAA and externally rated securitisation exposures are assigned risk weights as set down in the table in paragraphs 615 and 616.

Credit risk mitigation

Securitisation exposures benefiting from financial collateral are to be treated according to the formulae and definitions outlined in paragraphs 147–150. Post-CRM risk-weighted assets are then defined as the product of the RBA risk weights multiplied with E*. The risk-weighted assets pre- and post-CRM are to be entered into the appropriate cells.

If the credit risk mitigation is in the form of guarantees (or CDSs, letters of credit) which cover the securitisation exposure, they are to be treated using the substitution method on the portion of the securitisation exposure covered by the guarantee. However, the whole exposure must be entered in the “Exposures” column according to the appropriate risk weight pre-CRM. The risk-weighted assets should then be calculated by the bank taking into account the lower risk weight for the guaranteed portion of the exposure and entered in the “RWA post CRM” column in the same row as the respective exposure amount.

Maturity mismatches for all forms of CRM must be treated as described in paragraphs 202–205.

15.3 Unrated exposures – non IAA (panel C)

Exposure types

Unrated securitisation exposures treated under the Supervisory Formula (SF) are to be entered into panel C1 or C2, broken down according to supervisory formula risk weights.

Securitisation exposures whose pool assets have no specific IRB treatment are entered in panel C3. Paragraph 608 specifies a separate treatment of such exposures. Retained securitisation exposures are to be entered into row 101 using the Standardised approach. If a bank is investing in such an exposure the RBA has to be applied and the results have to be entered in the row “Retained exposures” of panel C3. Note that despite the fact that the RBA treatment is used, they are not to be entered into panel B.

Unrated exposures for which neither the RBA, SFA nor IAA apply and which are therefore deducted or where for liquidity facilities the treatment as described in paragraph 639 could be applied are entered in panel C4. A distinction of retained and invested exposures is not necessary.

Exposure amount

As for the panel B securitisations, those in panel C are distinguished between non-collateralised and collateralised exposures. The same rules as apply to panel B securitisations regarding the determination of pre-CRM risk-weighted assets apply to exposures here as well.

Risk weights and risk-weighted assets

For unrated securitisation exposures treated under the Supervisory Formula (SF) the SF capital charge is computed on the basis of five parameters supplied by the bank, namely K_{IRB} , credit enhancement level (L) and thickness (T), the effective number of exposures in the pool (N) and the exposure-weighted average LGD. Definitions and directions to the computation of these parameters as well as the SF capital charge are to be found in paragraphs 623–636.

The parameter K_{IRB} is referred to in paragraph 623 as “the IRB capital requirement had the exposures not been securitised”. It is important for the K_{IRB} calculation to note that this values includes the expected loss portion of the underlying pool (paragraph 627).

Credit risk mitigation

For exposures not treated using the SF, credit risk mitigation is to be treated as in panel B. If the SF is applied, risk-weighted assets post-CRM in the SF are to be computed on the basis of the formulae outlined in paragraphs 147–150. The bank may reduce the capital charge proportionally when the credit risk mitigant covers first losses or losses on a proportional basis. For all other cases, the bank must assume that the credit risk mitigant covers the most senior portion of the securitisation exposure (i.e. that the most junior portion of the securitisation exposure is uncovered).

15.4 Investors’ interest (panel D)

Exposure types

This panel is meant for exposures originated by the bank and held by investors for which the originator might hold regulatory capital. An originating bank might hold capital against investors’ interest only if the exposures sold are of a revolving nature **and** are subject to an early amortisation clause. The most typical examples are the securitisation of credit card receivables and corporate loan commitments. Further details are discussed in section 10.4.

Exposure amounts and risk-weighted assets

The risk-weighted assets are to be computed as 8% of the product of the investors’ interest, a CCF and K_{IRB} (paragraph 643). The investors’ interest is the sum of investors’ drawn balance and undrawn interest. The investors’ undrawn interest is defined as the EAD associated with the corresponding undrawn lines and is to be calculated as follows:

$$\text{undrawn investors' interest} = \text{EAD of undrawn line} \times \left(\frac{\text{investors' interest drawn}}{\text{total drawn}} \right)$$

The CCF is determined as outlined in paragraphs 596–605 and the tables included therein. Distinctions are to be made between controlled and uncontrolled early amortisation (for a definition of controlled early amortisation see paragraph 548; all early amortisations which are not controlled are uncontrolled), retail and non-retail revolving credit lines, and committed and uncommitted lines (paragraph 595: “uncommitted lines are those which are unconditionally cancellable without prior notice”).

The determination of K_{IRB} is described in paragraphs 627–629. K_{IRB} is to be calculated as for the SFA.

16. Operational Risk worksheet

16.1 Introduction

There are three methods for calculating operational risk capital charges: (1) the Basic Indicator Approach (BIA); (2) the Standardised Approach (TSA); and (3) the Advanced Measurement Approach (AMA).

16.2 Missing data

If a bank is not active in a given business line then it should enter “NA” (i.e. not applicable) in the corresponding cell. If a bank is active in a given business line but is unable to estimate it, it should enter “NI” (i.e. no information) in the corresponding cell.

16.3 Gross income

The basis for the computation of capital charges related to operational risk is the gross income defined in the revised Framework. Banks should confirm, if necessary, the treatment of gross income in detail with their supervisor.

16.4 Current Accord

In panel B, banks should report their minimum required capital according to the current Accord, including the minimum required credit risk capital and required market risk capital pursuant to the 1996 Market Risk Amendment. Banks should also show their eligible Tier 1, Tier 2 and Tier 3 capital as well as supervisory deductions under the current Accord.

16.5 Basic Indicator Approach

Under the Basic Indicator Approach, banks must hold capital for operational risk equal to a fixed percentage of average annual gross income over the past three years. In panel C a bank should report its total gross income for the three years specified. The worksheet will automatically calculate an average of its total gross income over the years for which gross income is positive. If a bank is unable to provide gross income data for all of the three previous years then, for the purposes of this study, the capital charge will be based on an average of the latest years for which data are available.

16.6 Standardised Approach

Under the Standardised Approach, banks' activities are divided into eight business lines: corporate finance, trading and sales, retail banking, commercial banking, payment and settlement, agency services, asset management, and retail brokerage. A capital charge for each business line is calculated by multiplying the gross income generated by that business (to be entered in panel D2) line by a factor (denoted beta) assigned to that business line. The total capital charge is the summation of the regulatory capital charges across each of the eight business lines, averaged over the previous three years. The sum of gross income for the eight business lines under the Standardised Approach to operational risk should equal total gross income under the Basic Indicator Approach.

The worksheet will automatically calculate a simple three-year average of gross income for each of the eight business lines. If a bank is unable to provide gross income data for all of

the three previous years then, for the purposes of this study, the capital charge will be based on an average of the latest years for which data are available.

16.7 Alternative Standardised Approach

If banks are allowed to use the Alternative Standardised Approach which is at the discretion of the national supervisor, they should choose the Alternative Standardised Approach from the pull-down menu in panel D1 and fill in panel D3 instead. They may enter the sum of loans and advances for the three previous years in the lower part of panel D3 separately for the business lines retail and commercial banking. These figures are multiplied by an “m” factor before feeding into the usual capital calculation. For all other business lines, the necessary inputs under the Alternative Standardised approach must be made in the upper part of this panel and are the same as for the Standardised Approach; the m factor is not needed in these cases.

16.8 Advanced Measurement Approaches

Under the Advanced Measurement Approaches, the regulatory capital requirement for operational risk is based on an estimate of operational risk derived from a bank’s internal risk measurement system. In a case where a bank can calculate AMA capital charge only for some business lines, the AMA capital charge that should be reported in the first table of panel F should be the total of (1) the AMA capital charge for those business units in which the bank uses AMA, and (2) the Standardised Approach capital charge for those business units in which the bank uses the Standardised Approach to operational risk.

In the second table of panel F, supervisors may ask for additional information such as

- The capital charge without a diversification adjustment;
- The capital charge without an insurance offset;
- The capital charge without qualitative adjustments, where feasible;
- The capital charge for credit card fraud;
- The capital charge for retail fraud; and
- The operational risk EL charge calculated according to paragraph 669 (b).

National supervisors might provide further guidance on how these figures should be derived.

Annex

Significant changes versus QIS 3

1. Input worksheet

- The worksheet contains all input cells from the former Data and Capital worksheets.
- A specific Leasing section was added under other assets included (100% risk weight).

2. Parameter worksheet

- Key parameters of the risk-weight functions can be adjusted in the Parameter worksheet.

3. Results worksheet

- This worksheet contains the calculations of the former Capital worksheet as well as additional analyses required because of the UL-only calibration.
- Separate columns for the EL amounts were inserted next to the risk-weighted assets columns.
- Deductions and risk-weighted assets are calculated separately, i.e. deductions are no longer converted into their risk-weighted asset equivalent.
- The calculation of specific provisions (included and not included) as well as the scaling mechanism for exposures not included have been revised.
- The treatment of general provisions has been revised. The amount of provisions included under the Standardised approach is calculated separately since the amount eligible for inclusion in capital (1.25% of risk-weighted assets cap) changes versus the current Accord. The actual cap can be configured in the Parameter worksheet.
- A separate 100% risk-weighting treatment has been included for other assets (e.g. fixed assets) not subject to the revised Framework.

4. Related entities worksheet

- The boxes for language on national discretion items were deleted since their content is not specific to individual banks.
- The memo item “b) Memo item – surplus capital” was removed.

5. 1988 Accord worksheet

- The panels for repos and OTC derivatives are now organised in the same way as drawn and undrawn exposures. Two different panels for repos and OTC derivatives are provided.

- HELOC panels were added as well as the two specialised lending categories.
- An additional subtype of exposures called “e) Other off-balance sheet exposures” was created in order to separate the effects on off-balance-sheet exposures from the effects on drawn exposures.

6. Standardised approach worksheet

- The new rules for provisions (paragraphs 75–78) were incorporated.
- The headings of the rows were in some cases modified or, in other cases, rearranged.
- The risk-weight for residential mortgages is now 35% (not 40% anymore).
- The memo item on retail exposure size has been deleted.
- HELOCs have been inserted as well as the two specialised lending categories.
- All risk weights are available in all portfolios but may be hidden if they are not necessary.
- An additional subtype of exposures called “e) Other off-balance sheet exposures” was created in order to separate the effects on off-balance-sheet exposures from the effects on drawn exposures.

7. IRB worksheets (general)

- Drop-boxes were introduced to deal with different credit risk mitigation types in the PD/LGD matrix.
- The matrix exposure per PD/maturity was replaced by a matrix maturity per PD/LGD combination. In connection with the new matrix for calculation of risk-weighted assets, this improves the accuracy of the calculation. In case that banks are not able to provide maturities for each PD/LGD bucket, they can enter the same value for all LGDs within one PD bucket. In case a cell is empty, the formula assumes a maturity of 2.5 years.
- From the columns on the left, only exposure, EL amount times 12.5 and RWA are kept. All other columns were hidden.
- There is now a separate treatment of defaulted assets in the advanced IRB approach (according to paragraph 471).
- An additional subtype of exposures called “e) Other off-balance sheet exposures” was created in order to separate the effects on off-balance-sheet exposures from the effects on drawn exposures.

8. Equity

- The calculation for immaterial exposures is no longer linked to the Standardised approach worksheet.

9. Operational Risk

- The calculation of Basic Indicator and Standardised approaches was adjusted to the revised Framework.
- The Alternative Standardised approach was added.

10. Other issues

- The Notes worksheet has been deleted.
- “Non-mortgage retail” is now called “Other retail”.