Annex

Guidelines on The Standardised Approach for Calculating Operational Risk Capital Charge

In comparison with the Basic Indicator Approach, **The Standardized Approach (TSA**) is a more advanced method to determine the capital required for covering operational risk losses. Under this approach, the business activities of a bank are subdivided into standardized business lines and assigned a relevant indicator. The capital requirement for operational risks corresponds to the sum of capital requirements in the individual business lines. The bank choosing the TSA should apply it both at solo bank level as well as across the entire banking group except insurance business. However, if a bank is not able to apply TSA across the entire banking group, it may initially apply TSA on solo level and Basic Indicator Approach for other entities in the group. The bank should gradually move to its implementation for the entire group. The efforts made by the bank in this regard will be taken into account while carrying out the supervisory review and evaluation process under Pillar II.

Banks will also have an option to follow the **Alternative Standardised Approach (ASA)** as detailed in para 2 below.

1. THE STANDARDISED APPROACH

1.1 In TSA, banks' activities are divided into eight business lines: corporate finance, trading & sales, retail banking, commercial banking, payment & settlement, agency services, asset management, and retail brokerage. The business lines are defined in detail in **Appendix 1**. It is possible that some of these business lines are not being pursued by banks in India departmentally, but are being undertaken through subsidiaries. In such cases, these would be completely omitted from the bank's operational risk capital charge calculations on solo basis, but included in the assessment of group-wide operational risk capital charge.

1.2 Within each business line, gross income is a broad indicator that serves as a proxy for the scale of business operations and thus the likely scale of operational risk exposure within each of these business lines. The capital charge for each business line is calculated by multiplying gross income by a factor (denoted beta-β) assigned to that business line. Beta serves as a proxy for the industry-wide relationship between the operational risk loss experience for a given business line and the aggregate level of gross income for that business line. It should be noted that in TSA gross income is measured for each business line, not the whole institution, i.e. in corporate finance, the indicator is the gross income generated in the corporate finance business line. However, the sum of the gross income of eight business lines should be equal to the gross income of the institution.

1.3 The total capital charge is calculated as the three-year average of the simple summation of the regulatory capital charges across each of the business lines in each year. For this purpose, the year will be determined as explained in the example at the end of this para. In any given year, negative capital charges (resulting from negative gross income) in any business line may offset positive capital charges in other business lines without limit. However, where the aggregate capital charge across all business lines within a given year is negative, then the input to the numerator for that year will be zero. The total capital charge will be expressed as:

$K_{TSA} = \{\sum_{years\ 1\text{-}3} \max[\sum(GI_{1\text{-}8} \times \beta_{1\text{-}8}),0]\}/3$

Where,

K_{TSA} = the capital charge under TSA

$GI_{1\text{-}8}$ = annual gross income in a given year, as defined in the Basic Indicator Approach, for each of the eight business lines (Please see **Appendix 2**)

$\beta_{1\text{-}8}$ = a fixed percentage, set by the Basel Committee, relating the level of required capital to the level of the gross income for each of the eight business lines. The values of beta are detailed below:

<u>The value of the betas for TSA</u>

S.No	Business Line	β Factors
1	Corporate finance (β_1)	18%
2	Trading and sales(β_2)	18%
3	Payment and settlement(β_3)	18%
4	Agency services(β_4)	15%
5	Asset management(β_5)	12%
6	Retail brokerage(β_6)	12%
7	Retail banking(β_7)	12%
8	Commercial banking(β_8)	15%

A bank should calculate its annual gross income for the most recent year by aggregating the gross income for the particular business line for the last four financial quarters. A bank should calculate its annual gross income for the two years preceding the most recent year in the same manner.

Example

For a bank calculating its Operational Risk Weighted Assets as at end November 2010, the annual gross income of a particular business line for the previous three years should be calculated as follows:

	Year 3	**Year 2**	**Year 1**
Gross Income for Financial quarter ending	September 2010(GI_{3a})	September 2009(GI_{2a})	September 2008(GI_{1a})
	June 2010(GI_{3b})	June 2009(GI_{2b})	June 2008(GI_{1b})
	March 2010(GI_{3c})	March 2009(GI_{2c})	March 2008(GI_{1c})
	December 2009(GI_{3d})	December 2008(GI_{2d})	December 2007(GI_{1d})
Total	$GI_3 = GI_{3a} + GI_{3b} + GI_{3c} + GI_{3d}$	$GI_2 = GI_{2a} + GI_{2b} + GI_{2c} + GI_{2d}$	$GI_1 = GI_{1a} + GI_{1b} + GI_{1c} + GI_{1d}$

Where,

GI = Gross income

If for any reason, the GI figure for the preceding quarter is not available, the bank can calculate its annual gross income for the most recent year by aggregating the gross income of the last to last four financial quarters. A bank should calculate its annual gross income for the two years preceding the most recent year in the same manner. For instance, while calculating Operational Risk Weighted Assets at the end of April 2011, if March 2011 figures are not available, the GI for the 4 quarters – Quarter ended March 2010 to quarter ended December 2010 - could be used to compute GI for year 3.

1.4 QUALIFYING CRITERIA FOR ADOPTING TSA

In order to qualify for use of TSA, a bank must satisfy RBI that at a minimum, it meets the requirements given in paras 1.4.1 to 1.4.3.

1.4.1 <u>Board of Directors and Senior Management Oversight</u>

The board of directors and senior management of bank should be actively involved in the oversight of the operational risk management framework. There must be regular reporting of operational risk exposures, including material operational losses, to business unit management, senior management, and to the board of directors. For this purpose operational risk exposures would mean the trends in operational losses observed during last few years in each business line and the bank's perception of likely operational losses in the near future given its internal controls. The bank must have procedures for taking appropriate action according to the information contained in the management reports.

1.4.2 <u>Quality of Operational Risk Management System</u>

1.4.2.1 The bank should have an operational risk management system that is conceptually sound and is implemented with integrity. The operational risk management function is responsible for developing strategies to identify, assess, monitor and control/mitigate operational risk; for codifying firm-level policies and procedures concerning operational risk management and controls; for the design and implementation of the firm's operational risk assessment methodology; and for the design and implementation of a risk-reporting system for operational risk.

1.4.2.2 As part of the bank's internal operational risk assessment system, the bank must systematically track relevant operational risk data including material losses by business line. In order to qualify for TSA, a bank should meet the following requirements regarding collection of operational loss data:

(i) The bank should have collected operational loss data for different business lines at least for one year and reviewed it at the level of Board at least during last six months.

(ii) The bank's internal loss data must be comprehensive in that it captures all material activities and exposures from all appropriate sub-systems and geographic locations. A bank must be able to justify that any activity and exposure excluded would not have a significant impact on the overall risk estimates.

(iii) Bank may have an appropriate *de minimis* gross loss threshold for internal loss data collection, say Rs.10, 000. The appropriate threshold may vary somewhat among banks and within a bank across business lines and / or event types. Measuring operational risk requires both estimating the probability of an operational loss event and the severity of the loss and the choice of the threshold could affect the shape of the loss distribution and estimates of both expected and unexpected operational losses. Therefore, the threshold fixed by the bank may be broadly consistent with those used by the peer banks and it should be fixed in such a way that the bank collects detailed information relating to at least top 95% of the operational losses of the bank. Besides, banks are encouraged to have break-up of operational loss data into seven loss events within each business line, as given in **Appendix 3**. This would facilitate transition to the Advanced Measurement Approach by the bank in due course.

1.4.2.3 The bank's operational risk assessment system must be closely integrated into the risk management processes of the bank. Its output must be an integral part of the process of monitoring and controlling the bank's operational risk profile. For instance, this information must play a prominent role in risk reporting, management reporting, and risk analysis. The bank must have techniques for creating incentives to improve the management of operational risk throughout the firm. The bank's operational risk management system must be well documented. The bank must have a routine in place for ensuring compliance with a documented set of internal policies, controls and procedures concerning the operational risk management system, which must include policies for the treatment of non compliance issues.

1.4.2.4 The bank's operational risk management processes and assessment system must be subject to validation and regular independent review which can be carried out by its internal audit department at least annually. These reviews must include both the activities of the business units and of the operational risk management function.

1.4.2.5 The bank's operational risk assessment system (including the internal validation processes) must be subject to regular review by external auditors (including statutory auditors) and/or supervisors. While engaging external auditing firms for this purpose, banks should look at their experience in the area, the present capabilities to carry out validations/review and the market reputation.

1.4.2.6 The bank must develop specific policies and have documented criteria for mapping gross income for current business lines and activities into the standardized framework. The criteria must be reviewed and adjusted for new or changing business activities as appropriate. The bank may get guided by the principles of business line mapping set out in **Appendix 4**.

1.4.2.7 Banks using TSA should also comply with the guidance on management of operational risk contained in RBI circular No. RBI/2005-06/180 DBOD.No.BP.BC.39/ 21.04.118/2004-05 dated October 14, 2005.

1.4.3 Allocation of Sufficient Resources

The bank should have sufficient resources (technical/physical and human) in the use of the approach in the major business lines as well as the control and audit areas.

1.5 VERIFICATION BY RBI

A bank may adopt the TSA/ASA (detailed below) once it satisfies RBI that the aforesaid qualifying criteria are met by the bank. On receipt of application from the bank, along with supporting documents, for migrating to TSA/ASA, RBI will inter alia examine the compliance to various requirements contained in these guidelines. Such an evaluation would *inter alia* comprise the following elements:

- Documentation of the mapping process,
- Description of the mapping criteria,
- Explanation of the mapping of new types of activities,
- Structure of responsibilities and reporting,
- Description of the risk management process for operational risk, and
- Integrity of the operational risk loss data for each business line.

2. THE ALTERNATIVE STANDARDISED APPROACH

2.1 The ASA is a special variant of TSA. A bank can use the ASA provided the bank is able to satisfy RBI that this alternative approach provides an improved basis for risk management. Once a bank has been allowed to use the ASA, it will not be allowed to revert to use of TSA without the permission of RBI.

2.2 Under the ASA, the operational risk capital charge/methodology is the same as for TSA except for two business lines — retail banking and commercial banking. For these business lines, loans and advances — multiplied by a fixed factor 'm' — replaces gross income as the exposure indicator. The betas for retail and commercial banking are unchanged from TSA.

For instance, the ASA operational risk capital charge for retail banking can be expressed as:

$K_{RB} = B_7 \times m \times LA_{RB}$

where

K_{RB} = the capital charge for the retail banking business line

B_7 = the beta for the retail banking business line

LA_{RB} = total outstanding retail loans and advances (non-risk weighted and gross of provisions), averaged over the past 12 quarters identified in the manner explained in the example given in para 1.3 above; and

m = the fixed factor 0.035.

Overall capital charge under ASA will be calculated as under:

$K_{ASA} = \{\Sigma\text{years 1-3} \max[\Sigma(GI_{1-6} \times \beta_{1-6}),0]\} /3 + (\beta_7 \times m \times LA_{RB}) + (\beta_8 \times m \times LA_{cB})$

Where

LA_{RB} = total outstanding retail loans and advances (non-risk weighted and gross of provisions), averaged over the past 12 quarters identified in the manner explained in the example given in para 1.3 above; and

LA_{CB} = total outstanding commercial banking loans and advances (non-risk weighted and gross of provisions), averaged over the past 12 quarters identified in the manner explained in the example given in para 1.3 above; and

m = 0.035 (for both retail and commercial banking)

2.3 For the purposes of the ASA, total loans and advances in the retail banking business line consists of the total drawn amounts in the following credit portfolios: retail, SMEs treated as retail, and purchased retail receivables. For commercial banking, total loans and advances consists of the drawn amounts in the following credit portfolios: corporate, sovereign, bank, specialised lending, SMEs treated as corporate and purchased corporate receivables. The book value of securities held for the purpose of interest income such as in HTM and AFS should also be included.

2.4 Under the ASA, banks may aggregate retail and commercial banking (if they wish to) using a beta of 15%. Similarly, those banks that are unable to disaggregate their gross income into the other six business lines can aggregate the total gross income for these six business lines using a beta of 18%. As under TSA, the total capital charge for the ASA is calculated as the simple summation of the regulatory capital charges across each of the eight business lines.

2.5 QUALIFYING CRITERIA

In addition to the general requirements for applying the standardized approach, a bank opting for ASA should also satisfy the following additional criteria:

- The bank must be overwhelmingly active in retail and/or commercial banking activities, which must account for at least 90% of its income indicator; and
- The bank must be able to demonstrate that a significant proportion of its retail and/or commercial banking activities comprise loans associated with a high probability of default, and that the alternative standardised approach provides an improved basis for assessing the operational risk.

3. CALCULATION OF CAPITAL CHARGE FOR OPERATIONAL RISK

3.1 Once the bank has calculated the capital charge for operational risk under TSA/ASA, it has to multiply this with (100÷9) and arrive at the notional risk weighted asset (RWA) for operational risk.

3.2 The RWA for operational risk will be aggregated with the RWA for the credit risk and the minimum capital requirement (Tier 1 and Tier 2) for credit and operational risk will be calculated. The available surplus eligible capital (as described in our Master Circular on New Capital Adequacy Framework - NCAF) should be sufficient to meet the capital requirement for market risk.

3.3 The total of eligible capital (Tier 1 and Tier 2) will be divided by the total RWA (credit risk + operational risk + market risk) to compute CRAR for the bank as a whole.

Appendix 1

Mapping of Business Lines

Level 1	Level 2	Activity Groups
Corporate Finance	Corporate Finance	Mergers and acquisitions, underwriting, privatisations, securitisation, research, debt (government, high yield), equity, syndications, IPO, secondary private placements *Note: The Gross Income arising from advisory, on-balance sheet and off-balance sheet activities of banks connected with the above areas would be reckoned under this business line. GI related to financial assistance extended for mergers and acquisitions, wherever permitted as per existing RBI guidelines, will be reported here.*
	Government Finance	
	Merchant Banking	
	Advisory Services	
Trading & Sales	Sales	Fixed income, equity, foreign exchanges, credit products, funding, own position securities, lending and repos, brokerage, debt, prime brokerage and sale of Government bonds to retail investors. *Note: GI from cross-selling of various products of the subsidiaries of the bank or other financial institutions, income from derivatives transactions, call money lending transactions, short sale of securities, purchase and sale of foreign currency, should also be reported here.*
	Market Making	
	Proprietary Positions	
	Treasury	
Payment and Settlement*	External Clients	Payments and collections, inter-bank funds transfer (RTGS,NEFT,EFT,ECS etc.), clearing and settlement
Agency Services	Custody	Escrow, securities lending (customers) corporate actions, depository services
	Corporate Agency	Issuer and paying agents
	Corporate Trust	Debenture trustee
Asset Management	Discretionary Fund Management	Pooled, segregated, retail, institutional, closed, open, private equity
	Non-Discretionary Fund Management	Pooled, segregated, retail, institutional, closed, open
Retail Brokerage	Retail Brokerage#	Execution and full service
Retail Banking	Retail Banking	Retail lending including trade finance, cash credit etc. as defined in the guidelines on New Capital Adequacy Framework issued by RBI and also covering non fund based, bill of exchange and export and import finance facilities to retail customers, housing loans, loans against shares, banking services, trust and estates, retail deposits@, intra bank fund transfer on behalf
	Private Banking	Private lending (personal loans) and private(institutional) deposits @, banking services, trust and estates, investment advice
	Card Services	Merchant/commercial/corporate cards, private labels and retail
Commercial Banking	Commercial Banking	Project finance, corporate loans, cash credit loans, real estate, export and import finance, trade finance, factoring, leasing, lending, guarantees including deferred payment and performance guarantees, LCs, bills of exchange, take-out finance, interbank lending other than in call money and notice money market.

* Payment and settlement losses related to a bank's own activities would be incorporated in the loss experience of the affected business line.

The Indian retail brokerage industry consists of companies that primarily act as agents for the buying and selling of securities (e.g. stocks, shares, and similar financial instruments) on a commission or transaction fee basis.

@ To calculate net interest income for retail banking/private banking/commercial banking, a bank may take the interest earned on its loans and advances to retail customers/private banking customers/commercial banking cutomers less the weighted average cost of funding of the loans (from whatever source).

Appendix 2

Definition of Gross Income

1. Gross income is defined as "Net interest income" plus "net non-interest income". It is intended that this measure should:

i) be gross of any provisions (e.g. for unpaid interest) and write-offs made during the year;

ii) be gross of operating expenses, including fees paid to outsourcing service providers, in addition to fees paid for services that are outsourced, fees received by banks that provide outsourcing services shall be included in the definition of gross income;

iii) exclude reversal during the year in respect of provisions and write-offs made during the previous year(s);

iv) exclude income recognised from the disposal of items of movable and immovable property;

v) exclude realised profits / losses from the sale of securities in the "held to maturity" category;

vi) exclude income from legal settlements in favour of the bank;

vii) exclude other extraordinary or irregular items of income and expenditure; and

viii) exclude income derived from insurance activities (i.e. income derived by writing insurance policies) and insurance claims in favour of the bank.

2. The above definition is summarized in the following equation:

Gross Income = Net profit (+) Provisions & contingencies (+) Operating expenses (Schedule 16 of Balance Sheet) (-) items (iii) to (viii) of para 1 above.

Appendix 3

Detailed Loss Event Type Classification

Event-Type Category (Level 1)	Definition	Categories (Level 2)	Activity Examples (Level 3)
Internal fraud	Losses due to acts of a type intended to defraud, misappropriate property or circumvent regulations, the law or company policy, excluding diversity/ discrimination events, which involves at least one internal party	Unauthorised Activity	Transactions not reported (intentional)
			Transaction type unauthorised (with monetary loss)
			Mismarking of position (intentional)
		Theft and Fraud	Fraud / credit fraud / worthless deposits
			Theft / extortion / embezzlement / robbery
			Misappropriation of assets
			Malicious destruction of assets
			Forgery
			Kite flying
			Smuggling
			Account take-over / impersonation / etc.
			Tax non-compliance / evasion (wilful)
			Bribes / kickbacks
			Insider trading (not on firm's account)
External fraud	Losses due to acts of a type intended to defraud, misappropriate property or circumvent the law, by a third party	Theft and Fraud	Theft/Robbery
			Forgery
			Kite flying
		Systems Security	Hacking damage
			Theft of information (with monetary loss)
Employment Practices and Workplace Safety	Losses arising from acts inconsistent with employment, health or safety laws or agreements, from payment of personal injury claims, or from diversity / discrimination events	Employee Relations	Compensation, benefit, termination issues
			Organised labour activity
		Safe Environment	General liability (slips and falls, etc.)
			Employee health & safety rules events
			Workers compensation
		Diversity & Discrimination	All discrimination types

Event-Type Category (Level 1)	Definition	Categories (Level 2)	Activity Examples (Level 3)
Clients, Products & Business Practices	Losses arising from an unintentional or negligent failure to meet a professional obligation to specific clients (including fiduciary and suitability requirements), or from the nature or design of a product.	Suitability, Disclosure & Fiduciary	Fiduciary breaches / guideline violations
			Suitability / disclosure issues (KYC, etc.)
			Retail customer disclosure violations
			Breach of privacy
			Aggressive sales
			Account churning
			Misuse of confidential information
			Lender liability
		Improper Business or Market Practices	Antitrust
			Improper trade / market practices
			Market manipulation
			Insider trading (on firm's account)
			Unlicensed activity
			Money laundering
		Product Flaws	Product defects (unauthorised, etc.)
			Model errors
		Selection, Sponsorship & Exposure	Failure to investigate client per guidelines
			Exceeding client exposure limits
		Advisory Activities	Disputes over performance of advisory activities
Damage to Physical Assets	Losses arising from loss or damage to physical assets from natural disaster or other events.	Disasters and other events	Natural disaster losses
			Human losses from external sources (terrorism, vandalism)
Business disruption and system failures	Losses arising from disruption of business or system failures	Systems	Hardware
			Software
			Telecommunications
			Utility outage / disruptions
Execution, Delivery & Process Management	Losses from failed transaction processing or process management, from relations with trade counterparties and vendors	Transaction Capture, Execution & Maintenance	Miscommunication
			Data entry, maintenance or loading error
			Missed deadline or responsibility
			Model / system misoperation
			Accounting error / entity attribution error
			Other task mis-performance
			Delivery failure
			Collateral management failure
			Reference Data Maintenance

		Monitoring and Reporting	Failed mandatory reporting obligation
			Inaccurate external report (loss incurred)
		Customer Intake and Documentation	Client permissions / disclaimers missing
			Legal documents missing / incomplete
		Customer / Client Account Management	Unapproved access given to accounts
			Incorrect client records (loss incurred)
			Negligent loss or damage of client assets
		Trade Counterparties	Non-client counterparty misperformance
			Misc. non-client counterparty disputes
		Vendors & Suppliers	Outsourcing
			Vendor disputes

Appendix 4

Principles for Business Line Mapping

(a) All activities must be mapped into the eight level 1 business lines in a mutually exclusive and jointly exhaustive manner.

(b) Any banking or non-banking activity which cannot be readily mapped into the business line framework, but which represents an ancillary function to an activity included in the framework, must be allocated to the business line it supports. If more than one business line is supported through the ancillary activity, an objective mapping criteria must be used.

(c) When mapping gross income, if an activity cannot be mapped into a particular business line then the business line yielding the highest charge must be used. The same business line equally applies to any associated ancillary activity.

(d) Banks may use internal pricing methods to allocate gross income between business lines provided that total gross income for the bank (as would be recorded under the Basic Indicator Approach) still equals the sum of gross income for the eight business lines.

(e) The mapping of activities into business lines for operational risk capital purposes must be consistent with the definitions of business lines used for regulatory capital calculations in other risk categories, i.e. credit and market risk. Any deviations from this principle must be clearly motivated and documented.

(f) The mapping process used must be clearly documented. In particular, written business line definitions must be clear and detailed enough to allow third parties to replicate the business line mapping. Documentation must, among other things, clearly motivate any exceptions or overrides and be kept on record.

(g) Processes must be in place to define the mapping of any new activities or products.

(h) Senior management is responsible for the mapping policy (which is subject to the approval by the board of directors).

(i) The mapping process to business lines must be subject to independent review.

Supplementary Business Line Mapping Guidelines

There are a variety of valid approaches that banks can use to map their activities to the eight business lines, provided the approach used meets the business line mapping principles. The following is an example of one possible approach that could be used by a bank to map its gross income:

1. Gross income for retail banking consists of net interest income on loans and advances to retail customers and SMEs treated as retail, plus fees related to traditional retail activities, net income from swaps and derivatives held to hedge the retail banking book, and income on purchased retail receivables. To calculate net interest income for retail banking, a bank takes the interest earned on its loans and advances to retail customers less the weighted average cost of funding of the loans (from whatever source).

2. Similarly, gross income for commercial banking consists of the net interest income on loans and advances to corporate (plus SMEs treated as corporate), interbank and sovereign customers and income on purchased corporate receivables, plus fees related to traditional commercial banking activities including commitments, guarantees, bills of exchange, net income (e.g. from coupons and dividends) on securities held in the banking book, and profits/losses on swaps and derivatives held to hedge the commercial banking book. Again, the calculation of net interest income is based on interest earned on loans and advances to corporate, interbank and sovereign customers less the weighted average cost of funding for these loans (from whatever source).

3. For trading and sales, gross income consists of profits/losses on instruments held for trading purposes (i.e. in the mark-to-market book), net of funding cost, plus fees from wholesale broking.

4. For the other five business lines, gross income consists primarily of the net fees/commissions earned in each of these businesses. Payment and settlement consists of fees to cover provision of payment/settlement facilities for wholesale counterparties. Asset management is management of assets on behalf of others.