BANK OF MAURITIUS

Guideline on Operational Risk Management and Capital Adequacy Determination

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INTRODUCTION

This Guideline applies to all banks. In the determination of capital adequacy, the requirements of this Guideline are supplementary to those of the Guidance Notes on Risk Weighted Capital Adequacy Ratio (hereinafter called Guidance Notes).

Definition of operational risk

In the new capital adequacy framework entitled *'International Convergence of Capital Measurement and Capital Standards'*[1], the Basel Committee on Banking Supervision (hereinafter referred to as the BCBS) has defined operational risk as:

"The risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. The definition includes legal risk, but excludes strategic and reputational risks."

Purpose

The Bank of Mauritius (hereinafter referred to as the 'Bank') through this Guideline, enunciates the basic framework of operational risk management to be put in place by banks and outlines the methodology for the computation of capital charge for operational risk.

Authority

This Guideline is issued under the authority of Section 50 of the Bank of Mauritius Act 2004 and Section 100 of the Banking Act 2004.

Scope of application

This Guideline applies to all banks licensed under the Banking Act 2004 and supersedes the previous *Guideline on Operational Risk Management and Capital Adequacy Determination* issued in February 2005.

Effective date

The Guideline is effective as from 1st April 2008.

Structure of the guideline

This Guideline is divided into two parts,

Part I – Operational Risk Management Framework and

Part II – Computation of Capital charge.

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[1] Available on: http://www.bis.org.

PART I - Operational Risk Management Framework

Risk Management

1. Every bank shall establish an appropriate, comprehensive approach to identify, assess/measure, monitor and control operational risk and shall be required to make an adequate provision of capital to protect against such risk.

Operational Risk Management Framework

2. Every bank shall have in place an operational risk management framework that serves to orientate the employees to the essential objectives and components of operational risk management.

   The framework should be properly documented and made available for scrutiny by the Bank as and when required.

   The operational risk framework should be in line with the Principles 1 to 7 and 10 laid down in Annexure 1.

Operational Risk Management

3. The management of operational risk comprises risk identification and assessment, risk treatment, risk monitoring and continuous monitoring as explained below.

Risk Identification and Assessment

4. A bank may use the tools listed below for identifying and assessing operational risk, or any other tool approved by the Bank.

   Business process analysis

   This technique may be used to link processes, risks and controls and ensure risk-sensitive process optimization.

   A bank shall allocate significant risks and controls identified to the business processes.

   A rough business process analysis should, at least, already be carried out before self-assessment.

   Self assessment

   A bank shall conduct a systematic inventory of its procedures and processes as a starting point and keep a record of all the inventories and documentation relating to self assessment.

   This shall be made available for scrutiny by the Bank as and when required.

Risk Treatment

5. Every bank shall have the basic management elements for coping with identified and assessed operational risks and shall adopt a risk treatment strategy such as (i) risk avoidance, (ii) risk mitigation, (iii) risk sharing and transfer, and (iv) risk acceptance which is appropriate to its business environment and consistent with its basic goal.

   This shall be documented and made available for scrutiny by the Bank as and when required.

Risk Monitoring

6. Every bank shall monitor the entire risk cycle and implement control measures in its business processes. There shall be ongoing controls embedded as far as possible in business processes that shall be performed by all employees within the framework of their tasks. The control measures must be at least annually assessed by internal or external entities. Such assessments shall be documented and made available for scrutiny by the Bank as and when required.

   A bank using the standardized approach shall also require its internal and / or external auditors to examine the allocation of income to individual business lines.

   Apart from the above, every bank using Advanced Measurement Approaches shall require the internal and / or external auditors to review the operational risk management processes and measurement systems. This review must include the activities of the business units and of the independent operational risk management function. Further when validating the operational risk measurement system it must be ensured that the data flows and processes associated with the risk measurement system are transparent and accessible.

Continuous Monitoring

7. Every bank shall set up a system which ensures that all the processes and procedures are continuously monitored with a view to capturing any risk that may arise.

   The employees of the bank should be a key element in that system and should be responsible for ensuring continuous monitoring of the various processes and procedures as part of their duties. It must be ensured that their responsibilities in that regard are not shifted vertically or laterally.

Loss Database

8 Banks must track internal loss data according to the criteria set out by the BCBS, record and classify all the operational risk losses within the scope of the definition of operational risk (as set out in Annexure 7).

   Banks have the option to choose the structure of their internal loss database subject to it being capable of providing information in line with the requirements of Annexure 7 and which facilitates its validation. As such, in

the minimum, the loss database shall capture information on gross loss amounts, as well as some descriptive information about the drivers or the causes of the loss event. However banks may decide to have other information with regards to the gross loss amount and provide maximum granularity for ease of validation.

A bank should capture all the operational losses in its internal loss database and shall report immediately all single event operational losses of at least 1% of their capital base or Rs 5 million, which ever is lower.

The internal loss data shall be reported on a quarterly basis and the return shall be submitted to the Bank not later than the 20th of the month following the quarter.

The bank should submit to its board of directors its yearly historical loss experience which could be reviewed by the Bank during on-site examination.

Contingency and Business Continuity Planning

9 A bank must put in place a well designed, realistic contingency and continuity plan, approved by the board. The plan must include at least the following elements:

a) identification of critical business processes, including those where there is dependence on external vendors or other third parties;

b) identification of alternative mechanisms for rapid resumption of services, with special focus on critical business processes;

c) location of off-site back-up facilities at a reasonable distance from the impacted operations to reduce risk of having both primary and back-up records and facilities unavailable simultaneously; and regular reviews and testing of the contingency plans.

Part II - Computation of Capital Charge

10 The three main methods for calculating operational risk capital charges in a continuum of increasing sophistication and risk sensitivity are presented below.

11 Every bank in Mauritius will have the flexibility of choosing one of the above three approaches and will be encouraged to move along the spectrum of available approaches as it develops more sophisticated operational risk measurement systems and practices.

However, prior approval of the Bank should be obtained prior to adopting any one of the advanced approaches namely The Standardised Approach, Alternative Standardised Approach or Advanced Measurement Approach.

Further, if a bank has adopted any one of these approaches and wants to revert to the use of a simpler approach, it must seek prior approval of the Bank. As from the effective date of the Guideline, banks shall, as a minimum, implement the Basic Indicator Approach.

The Basic Indicator Approach (BIA)

12 Under the BIA, the capital requirement for operational risk is equal to **15%** of the average annual positive gross income over the previous three years.

Gross income is defined as the sum of net interest income and net non-interest income[2] and shall be arrived at before accounting for:

a) Provisions, including those for credit impairment;

b) operating expenses (including fees paid for outsourced services);

c) realised profits/ losses from the sale of securities held to maturity and available for sale;

d) extraordinary items, classified as such by accounting standards and conventions; and income derived from insurance.

The computation of the charge under the basic indicator approach is detailed in Annexure 2. The following must be considered when computing the three year average:

a) when audited figures are not available, estimates may be used;

b) the relevant indicator is calculated as the sum of positive figures divided by the number of positive figures;

c) if for any of the three observations, the sum of net interest income and net non-interest income is negative or equal to zero, this figure must not be taken into account in the calculation of the three year average;

d) a newly set up bank which does not have sufficient income data to meet the three year requirement may use its forecasted gross income

[2] Net non interest income are income arising from assets not generating interest and other fee and commission net of any expense directly associated with the generation of these income.

projections for all or part of the three year time period when calculating the three year average.

The Standardised Approach (TSA)

13 This approach is subdivided into two parts namely The Standardised Approach and The Alternative Standardised Approach.

The Standardised Approach

14 Under this approach, banks' activities are divided into eight business lines listed below. A description of these business lines is given in Annexure 3.

The capital charge for each business line is calculated by multiplying gross income[3] by a beta factor assigned to that business line. Beta serves as a proxy for industry-wide relationship between the operational risk loss experience for a given business line and the aggregate level of gross income generated by the business line. Beta factor varies from 12% to 18%, as follows:

- Corporate finance 18%
- Trading and sales 18%
- Retail banking 12%
- Commercial banking 15%
- Payment and settlement 18%
- Agency services 15%
- Asset management 12%
- Retail brokerage 12%

Annexure 4 details the computation of the capital charge under the Standardised Approach.

a) 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.

b) In any given year, negative capital charge (resulting from negative gross income) in any business line may offset positive capital charges in other business lines without limit.

c) 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 but in calculating the average, the denominator will remain unchanged, i.e. will consist of three representing the number of years.

[3] Refer to paragraph 12 for the definition of gross income.

The Alternative Standardised Approach (ASA)

15 The computational framework under the ASA is the same as under the Standardised Approach except for retail banking and commercial banking. The beta factors for these two business lines remain unchanged but the gross income is replaced by the outstanding balance of loans and advances multiplied by a factor which has been fixed at 0.035.

a) Banks can choose to compute an aggregate capital charge for retail and commercial banking using the total outstanding balance as the exposure indicator and a single beta of 15%.

b) 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%.

c) Negative gross income may be used to offset positive income in any one year.

d) Once a bank has been allowed to use the ASA, it will not be allowed to revert to use of The Standardised Approach without the permission of the Bank.

Annexure 5 details the computation of the capital charge under the Alternative Standardised Approach.

Advanced Measurement Approach (AMA)

16 The regulatory capital requirement under this approach shall equal the risk measure resulting from the bank's internal operational risk measurement system, using the specified qualitative and quantitative criteria. Use of this approach is subject to the prior written approval of the Bank. The approach is designed to produce a reasonable estimate of unexpected losses based on the combined use of internal and relevant external contingencies and loss data. The approach also factors in the bank specific business environment information systems, practices and controls in place. Annexure 6 details the computation of the capital charge under AMA.

Determination of Capital Adequacy Ratio

17 Banks shall compute a composite capital adequacy ratio, encompassing both credit risk and operational risk. The principles and methodology for calculating capital adequacy ratio for <u>credit risk</u> (i.e. capital base and risk-weighted assets), contained in the existing Guidance Notes, will remain unchanged. Information requirements for the calculations are specified in Part A of the existing capital adequacy return. The components of the capital base (Tier 1 capital and Tier 2 capital) and the approach for their calculation, contained in the Guidance Notes, will remain unchanged. This Guideline deals with the methodology for assessing operational risk and calculating the composite capital adequacy ratio.

In order to ensure consistency in the calculation of capital charge between credit risk and operational risk, a numerical link between the two will be established. This will be done by multiplying the capital charge for operational risk (calculated under this Guideline) by a factor of 10 (the

reciprocal of the minimum capital ratio of 10 per cent) and adding the resulting figure to the risk based assets calculated under the Guidance Notes. The ratio is then calculated by dividing the capital base by the sum of total risk weighted assets (credit risk assets plus operational risk assets). Banks are required to maintain a minimum composite capital adequacy ratio, so determined, of 10 per cent.

Minimum Eligibility Criteria for Advanced Approaches

General Minimum Eligibility Criteria

18 A bank opting to use the Standardised Approach (TSA) or the Advanced Measurement Approach (AMA) for assessment of operational risk shall meet the following general criteria:

a) The bank's board of directors and senior management are actively involved in the oversight of the operational risk management framework;

b) The bank has an operational risk management system that is conceptually sound and is implemented with integrity;

c) The bank has deployed sufficient resources in the implementation of the approach in its major business lines as well as in the control and audit functions.

Specific Minimum Eligibility Criteria

19 BCBS has outlined at length the specific minimum eligibility criteria for the use of the Standardized Approach and the Advanced Measurement Approach. The criteria are not reproduced in the Guideline but banks are invited to refer to its new capital adequacy framework for the purpose. These criteria, shall apply to banks in Mauritius which plan to use one of the advanced approaches. Banks will also be permitted to make partial use of any of the three approaches for different parts of their operations provided certain minimum criteria are met and prior written approval of the Bank is obtained. In considering such request, the Bank would assess whether the systems and processes of the applicant bank are compliant with those requirements.

Information Returns

20 Every bank shall complete and submit information on:

a) Capital adequacy computation for operational risk, as specified in the returns in Annexures 2, 4, 5, or 6 depending on the approach used. The returns shall be completed on a quarterly basis and as an addendum (Part F) to the existing return required under the Guidance Notes on risk weighted capital adequacy ratio.

b) The internal loss data shall be reported on a quarterly basis in line with Annexure 7. The first return shall be submitted to the Bank for the quarter ending 31 March 2008. The quarterly return on internal loss data should reach the Bank not later than the 20th of the month following the quarter.

Annexure 1

Principles for Sound Management and Supervision of Operational Risk

Developing an Appropriate Risk Management Environment

Principle 1: The board of directors[4] should be aware of the major aspects of the bank's operational risks as a distinct risk category that should be managed, and it should approve and periodically review the bank's operational risk management framework. The framework should provide a firm-wide definition of operational risk and lay down the principles of how operational risk is to be identified, assessed, monitored, and controlled/mitigated.

Principle 2: The board of directors should ensure that the bank's operational risk management framework is subject to effective and comprehensive internal audit by operationally independent, appropriately trained and competent staff. The internal audit function should not be directly responsible for operational risk management.

Principle 3: Senior management should have responsibility for implementing the operational risk management framework approved by the board of directors. The framework should be consistently implemented throughout the whole banking organisation, and all levels of staff should understand their responsibilities with respect to operational risk management. Senior management should also have responsibility for developing policies, processes and procedures for managing operational risk in all of the bank's material products, activities, processes and systems.

Risk Management: Identification, Assessment, Monitoring, and Mitigation/Control

Principle 4: Banks should identify and assess the operational risk inherent in all material products, activities, processes and systems. Banks should also ensure that before new products, activities, processes and systems are introduced or undertaken, the operational risk inherent in them is subject to adequate assessment procedures.

Principle 5: Banks should implement a process to regularly monitor operational risk profiles and material exposures to losses. There should be regular reporting of pertinent information to senior management and the board of directors that supports the proactive management of operational risk.

[4] The BCBS refers to a management structure composed of a board of directors and senior management. The Committee is aware that there are significant differences in legislative and regulatory frameworks across countries as regards the functions of the board of directors and senior management. In some countries, the board has the main, if not exclusive, function of supervising the executive body (senior management, general management) so as to ensure that the latter fulfils its tasks. For this reason, in some cases, it is known as a supervisory board. This means that the board has no executive functions. In other countries, the board has a broader competence in that it lays down the general framework for the management of the bank. Owing to these differences, the terms 'board of directors' and 'senior management' are used in this paper not to identify legal constructs but rather to label two decision-making functions within a bank.

Principle 6: Banks should have policies, processes and procedures to control and/or mitigate material operational risks. Banks should periodically review their risk limitation and control strategies and should adjust their operational risk profile accordingly using appropriate strategies, in light of their overall risk appetite and profile.

Principle 7: Banks should have in place contingency and business continuity plans to ensure their ability to operate on an ongoing basis and limit losses in the event of severe business disruption.

Role of Disclosure

Principle 10: Banks should make sufficient public disclosure to allow market participants to assess their approach to operational risk management.

(Source : The BCBS Sound Practices for the Management and Supervision of Operational Risk issued in February 2003).

Annexure 2

Basic Indicator Approach

Capital Adequacy Return
For the quarter ended ......
PART F
('000)

	Financial Year Ended 01	Financial Year Ended 02	Financial Year Ended 03
Annual Gross Income (X)	X_1	X_2	X_3

(1)	Number of Years with **positive** income	:	N
(2)	Average Gross Income	:	(sum of **positive** values of X) ÷ N
(3)	Capital charge for Operational Risk	:	15 % x (2)
(4)	Risk Weighted Assets for operational risk	:	10 x (3)
(5)	Risk Weighted Assets for credit risk	:	Calculated as per Guidance Notes on Risk Weighted Capital Adequacy Ratio (Part A-subsection II, of the capital adequacy returns)
(6)	Total Risk Weighted Assets	:	(4) + (5)
(7)	Total Capital Base	:	Calculated as per Guidance Notes on Risk Weighted Capital Adequacy Ratio (Part A-subsection I(C), of the capital adequacy returns)
(8)	Capital Adequacy Ratio (%)	:	[(7) ÷ (6)] x 100

Annexure 3

Business lines

Business Lines	**Sub-Categories**	**Activities Groups**
Corporate Finance	Corporate Finance	Mergers and acquisitions, underwriting, privatizations, securitisation, research, debt, equity, syndications, IPO, secondary private placements.
	Municipal/Government Finance	
	Merchant Banking	
	Advisory Services	
Trading & Sales	Sales	Fixed income, equity, foreign exchanges, commodities, credit, funding, own position securities, lending and repos, brokerage, debt, prime brokerage
	Market Making	
	Proprietary Positions	
	Treasury	
Retail banking	Retail Banking	Retail lending and deposits, banking services, trust and estates
	Private Banking	Private lending and deposits, banking services, trust and estates, investment advice
	Card Services	Merchant/commercial/corporate cards, private labels and retail
Commercial banking		Project finance, real estate, export finance, trade finance, factoring, leasing, lending, guarantees, bills of exchange
Payment and Settlement	External Clients	Payment and collections, funds transfer, clearing and settlement.
Agency services	Custody	Escrow, depository receipts, securities lending (customers), corporate actions
	Corporate Agency	Issuer and paying agents
	Corporate Trust	
Asset Management	Discretionary Fund Management	Pooled, segregated, retail, institutional, closed, open, private equity
	Non-Discretionary Fund Management	
Retail brokerage		Execution and full service

Source: Basel Committee on Banking Supervision (2004), *International Convergence of Capital Measurement and Capital Standards*

Annexure 4

PART A

Standardised Approach

Capital Adequacy Return For the quarter ended ......

PART F

('000)

	Line of Business	Beta Factor	Gross Income for previous 3 years			Weighted Gross Income		
			FY 01	FY 02	FY 03	FY 01	FY 02	FY 03
		β	A1	A2	A3	A1 x β	A2 x β	A3 x β
(1)	Corporate Finance	18%						
(2)	Trading and Sales	18%						
(3)	Commercial Banking	15%						
(4)	Retail Banking	12%						
(5)	Payment and Settlement	18%						
(6)	Agency Services	15%						
(7)	Asset Management	12%						
(8)	Retail Brokerage	12%						
	Total Yearly Weighted Gross Income (A4)					$A4_1$	$A4_2$	$A4_3$

(Contd)

PART B

Standardised Approach

Capital Adequacy Return
For the quarter ended ......
PART F (Cont'd)
('000)

(9)	Aggregate of positive value of Total Yearly Weighted Gross Income over the three years	**:**	Sum of **positive** values of A4
(10)	Capital charge for Operational Risk	**:**	(9) ÷ 3
(11)	Risk Weighted Assets for Operational Risk	**:**	10 x (10)
(12)	Risk weighted assets for Credit Risk	**:**	Calculated as per Guidance Notes on Risk Weighted Capital Adequacy Ratio (Part A-subsection II, of the capital adequacy returns)
(13)	Total Risk Weighted Assets	**:**	(11) + (12)
(14)	Total Capital Base	**:**	Calculated as per Guidance Notes on Risk Weighted Capital Adequacy Ratio (Part A-subsection I(C), of the capital adequacy returns)
(15)	Capital Adequacy Ratio (%)	**:**	[(14) ÷ (13)] x 100

Annexure 5
PART A

Alternative Standardised Approach

Capital Adequacy Return For the quarter ended ......
PART F
('000)

I Capital Charge for the six business lines (excl. retail and commercial banking)[5]

	Line of Business	Beta Factor	Gross Income for previous 3 years			Weighted Gross Income		
			FY 01	FY 02	FY 03	FY 01	FY 02	FY 03
		β	A1	A2	A3	A1 x β	A2 x β	A3 x β
(1)	Corporate Finance	18%						
(2)	Trading and Sales	18%						
(3)	Payment and Settlement	18%						
(4)	Agency Services	15%						
(5)	Asset Management	12%						
(6)	Retail Brokerage	12%						
(7)	Total Gross income1	*18%*						
(8)	Capital charge for each year (A4)					$A4_1$	$A4_2$	$A4_3$
(9)	Aggregate capital charge					C1 = (Sum of positive values of A4) ÷ 3		

[5] Depending on the approach adopted, gross income from the six lines of business should **either** be disaggregated into items 1 to 6 **or** aggregated into line 7. In case aggregate figure is used a beta of 18% should be applied.

PART B

Alternative Standardised Approach

Capital Adequacy Return
For the quarter ended ....
PART F (Cont'd)
('000)

II Capital Charge for retail and commercial banking[6]

	Line of Business	Beta Factor	Fixed Factor	Outstanding balance of loans and advances as at end of past 3 years			Average	Capital Charge
				FY 01	FY 02	FY 03		
		β	M	A7	A8	A9	A10 [7]	A11 [8]
(9)	Retail Banking	12%	0.035					
(10)	Commercial Banking	15%	0.035					
(11)	Aggregated Retail & Commercial Banking	15%	0.035					
	Total							C2

(Contd)

[6] Depending on the approach being used, outstanding balances for retail and commercial banking should **either** be disaggregated into items 9 and 10 **or** aggregated into line 11. In case aggregate figures are used a beta of 15% should be applied.

[7] $A10 = (A7 + A8 + A9) \div 3$

$A11 = A10 \times \beta \times M$

PART C

Alternative Standardised Approach

Capital Adequacy Return
For the quarter ended ....
PART F (Cont'd)
('000)

(12)	Total Capital Charge for Operational Risk	:	Sum of C1 and C2
(13)	Risk Weighted Assets for Operational Risk	:	10 x (12)
(14)	Risk weighted assets for Credit Risk	:	Calculated as per Guidance Notes on Risk Weighted Capital Adequacy Ratio (Part A- subsection II, of the capital adequacy returns)
(15)	Total Risk Weighted Assets	:	(13) + (14)
(16)	Total Capital Base	:	Calculated as per Guidance Notes on Risk Weighted Capital Adequacy Ratio (Part A- subsection I(C), of the capital adequacy returns)
(17)	Capital Adequacy Ratio (%)	:	[(16) ÷ (15)] x 100

Annexure 6

Advanced Measurement Approach

Capital Adequacy Return
For the quarter ended ....
PART F
('000)

(1)	Total Capital Charge for Operational Risk	**:**	To be determined using internal operational risk measurement system approved by the Bank
(2)	Risk Weighted Assets for Operational Risk	**:**	10 x (1)
(3)	Risk weighted assets for Credit Risk	**:**	Calculated as per Guidance Notes on Risk Weighted Capital Adequacy Ratio (Part A-subsection II, of the capital adequacy returns)
(4)	Total Risk Weighted Assets	**:**	(2) + (3)
(5)	Total Capital Base	**:**	Calculated as per Guidance Notes on Risk Weighted Capital Adequacy Ratio (Part A-subsection I(C), of the capital adequacy returns)
(6)	Capital Adequacy Ratio (%)	**:**	[(5) ÷ (4)] x 100

Annexure 7

Internal loss data
For the Quarter ended ....

This return shall be submitted for each of the eight lines of business set out in Annexure 3. Examples of the types of loss for each category are provided in Annexure 8.

Event Type	Categories	**Amount of loss (before accounting for income derived from insurance)[9] Rs'000**	**Income derived from insurance Rs'000**
Internal Fraud	Unauthorised Activity		
	Theft and Fraud		
External fraud	Theft and Fraud		
	Systems Security		
Employment practices and Workplace safety	Employee Relations		
	Safe environment		
	Diversity & discrimination		
Clients, Products and Business practices	Suitability, disclosure and fiduciary		
	Improper Business or Market Practices		
	Product Flaws		
	Selection, Sponsorship & Exposure		
	Advisory Activities		

(contd)

[9] Breakdown of losses, briefly explaining nature of each loss, have to be provided separately

Event Type	Categories	**Amount of loss (before accounting for income derived from insurance) Rs'000**	**Income derived from insurance**
Damage to Physical Assets	Disasters and other events		
Business disruption and system failures	Systems		
Execution, Delivery & Process Management	Transaction Capture, Execution & Maintenance		
	Monitoring & Reporting		
	Customer Intake and Documentation		
	Customer/ Client Account management		
	Trade counterparties		
	Vendors & Suppliers		

Annexure 8

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, which involves at least on internal party	Unauthorised Activity	▪ Transactions not reported(intentional) ▪ Transaction type unauthorized ▪ Intentional mismarking of positions
		Theft and Fraud	▪ Fraud/ credit card/ worthless deposits ▪ Theft / extortion / embezzlement / robbery ▪ Misappropriation of assets ▪ Malicious destruction of assets ▪ Forgery ▪ Check kiting ▪ 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 ▪ Check kiting
		Systems security	▪ Hacking damage ▪ Theft of information

Event-Type Category (Level 1)	**Definition**	**Categories (Level 2)**	**Activity Examples (Level 3)**
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 (slip and fall, etc) ▪ Employee health & safety rules events ▪ Workers compensation
		Diversity & Discrimination	▪ All discrimination types
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 ▪ Accounting 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(unauthorized, etc) ▪ Model errors
		Selection, Sponsorship & Exposure	▪ Failure to investigate client per guidelines ▪ Exceeding client exposure limits

(Contd)

Event-Type Category (Level 1)	Definition	Categories (Level 2)	Activity Examples (Level 3)
		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	Disaster or other events	▪ Natural disaster losses ▪ Human losses from external sources (terrorism, vandalism) ▪
Business disruption and system failures	Losses arising disruption of business or system failures	Systems	▪ Hardware ▪ Software ▪ Telecommunications ▪ Utility Outage/disruption ▪
Execution, Delivery & Process Management	Losses from failed transaction processing or process management, from relations with trade counterparties and vendors	Transaction Capture, Execution & Maintenance Monitoring and Reporting Customer Intake and Documentation Customer/ Client Account Management	▪ Miscommunication ▪ Data entry, maintenance or loading error ▪ Missed deadline or responsibility ▪ Model / system misoperation ▪ Accounting error / entity attribution error ▪ Other task misperformance ▪ Delivery failure ▪ Collateral management failure ▪ Reference Data Maintenance ▪ Failed mandatory reporting obligation ▪ Inaccurate external report ▪ Client permissions/disclaimers missing ▪ Legal documents missing/incomplete ▪ Unapproved access given to accounts ▪ Incorrect client records ▪ Negligent loss or damage of client assets ▪ Non-client counterparty misperformance/

(Contd)

Event-Type Category (Level 1)	**Definition**	**Categories (Level 2)**	**Activity Examples (Level 3)**
		Trade Counterparties Vendors & Suppliers	disputes ▪ Outsourcing ▪ Vendor disputes

Source: Basel Committee on Banking Supervision (2004), *International Convergence of Capital Measurement and Capital Standards*