

Basel Committee on Banking Supervision

OPE

Calculation of RWA for operational risk

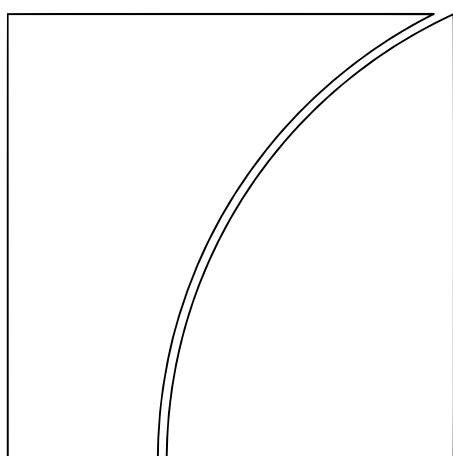
OPE25

Standardised approach

This chapter sets out the standardised approach for calculating operational risk capital requirements.

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Updated to include the FAQs published on 5 June 2020 and the FAQ on climate-related financial risks published on 8 December 2022.



BANK FOR INTERNATIONAL SETTLEMENTS

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Introduction

25.1

The standardised approach methodology is based on the following components:

1. the Business Indicator (BI) which is a financial-statement-based proxy for operational risk;
2. the Business Indicator Component (BIC), which is calculated by multiplying the BI by a set of regulatory determined marginal coefficients (α_i); and
3. the Internal Loss Multiplier (ILM), which is a scaling factor that is based on a bank's average historical losses and the BIC.

25.2

Operational risk capital requirements (ORC) are calculated by multiplying the BIC and the ILM, as shown in the formula below. Risk-weighted assets (RWA) for operational risk are equal to 12.5 times ORC.

$$ORC = BIC \times ILM$$

Components of the standardised approach

25.3

The BI comprises three components: the interest, leases and dividend component (ILDC); the services component (SC), and the financial component (FC).

25.4

The BI is defined as:

$$BI = ILDC + SC + FC$$

25.5

ILDC, SC and FC are defined in the formulae below, where a bar above a term indicates that it is calculated as the average over three years: t, t-1 and t-2:¹

$$ILDC = \min\left(\overline{Abs(\text{interest income} - \text{interest expense})}, 2.25\% \times \overline{\text{interest earning assets}}\right) + \overline{\text{dividend income}}$$

$$SC = \max\left(\overline{\text{other operating income}}, \overline{\text{other operating expense}}\right) + \max\left(\overline{\text{fee income}}, \overline{\text{fee expense}}\right)$$

$$FC = \overline{Abs(\text{Net P \& L trading book})} + \overline{Abs(\text{Net P \& L banking book})}$$

1 Footnote

¹ The absolute value of net items (eg interest income - interest expense) should be calculated first year by year. Only after this year by year calculation should the average of the three years be calculated.

25.6

The definitions for each of the components of the BI are provided in [OPE10](#).

25.7

To calculate the BIC, the BI is multiplied by the marginal coefficients (α_i). The marginal coefficients increase with the size of the BI as shown in Table 1. For banks in the first bucket (ie with a BI less than or equal to €1bn) the BIC is equal to BI x 12%. The marginal increase in the BIC resulting from a one unit increase in the BI is 12% in bucket 1, 15% in bucket 2 and 18% in bucket 3.²

BI ranges and marginal coefficients		Table 1
Bucket	BI range (in €bn)	BI marginal coefficients (α_i)
1	≤ 1	12%
2	$1 < BI \leq 30$	15%
3	> 30	18%

1 Footnote

² For example, given a BI = €35bn, the BIC = $(1 \times 12\%) + (30-1) \times 15\% + (35-30) \times 18\% = €5.37bn$.

25.8

A bank's internal operational risk loss experience affects the calculation of operational risk capital through the ILM. The ILM is defined as below, where the Loss Component (LC) is equal to 15 times average annual operational risk losses incurred over the previous 10 years:

$$ILM = \ln \left(\exp(1) - 1 + \left(\frac{LC}{BIC} \right)^{0.8} \right)$$

25.9

The ILM is equal to one where the loss and business indicator components are equal. Where the LC is greater than the BIC, the ILM is greater than one. That is, a bank with losses that are high relative to its BIC is required to hold higher capital due to the incorporation of internal losses into the calculation methodology. Conversely, where the LC is lower than the BIC, the ILM is less than one. That is, a bank with losses that are low relative to its BIC is required to hold lower capital due to the incorporation of internal losses into the calculation methodology.

25.10

The calculation of average losses in the LC must be based on 10 years of high-quality annual loss data. The qualitative requirements for loss data collection are outlined in [OPE25.14](#) to [OPE25.34](#). As part of the transition to the standardised approach, banks that do not have 10 years of high-quality loss data may use a minimum of five years of data to calculate the LC.³

Banks that do not have five years of high-quality loss data must calculate the capital requirement based solely on the BIC. Supervisors may however require a bank to calculate capital requirements using fewer than five years of losses if the ILM is greater than 1 and supervisors believe the losses are representative of the bank's operational risk exposure.

1 Footnote

- [3](#) *This treatment is not expected to apply to banks that previously used the Advanced Measurement Approaches for determining operational risk capital requirements under the Basel II framework.*

25.11

For banks in bucket 1 (ie with BI $\leq$ €1 billion), internal loss data does not affect the capital calculation. That is, the ILM is equal to 1, so that operational risk capital is equal to the BIC ($=12\% \times$ BI). At national discretion, supervisors may allow the inclusion of internal loss data into the framework for banks in bucket 1, subject to meeting the loss data collection requirements specified in [OPE25.14](#) to [OPE25.34](#). In addition, at national discretion, supervisors may set the value of ILM equal to 1 for all banks in their jurisdiction. In case this discretion is exercised, banks would still be subject to the full set of disclosure requirements summarised in [OPE25.35](#).

Minimum standards for the use of loss data under the standardised approach

25.12

Banks with a BI greater than €1bn are required to use loss data as a direct input into the operational risk capital calculations. The soundness of data collection and the quality and integrity of the data are crucial to generating capital outcomes aligned with the bank's operational loss exposure. The minimum loss data standards are outlined in [OPE25.14](#) to [OPE25.34](#). National supervisors should review the quality of banks' loss data periodically.

25.13

Banks which do not meet the loss data standards are required to hold capital that is at a minimum equal to 100% of the BIC. In such cases supervisors may require the bank to apply an ILM which is greater than 1. The exclusion of internal loss data due to non-compliance with the loss data standards, and the application of any resulting multipliers, must be publicly disclosed in accordance with the Pillar 3 requirements.

General criteria on loss data identification, collection and treatment

25.14

The proper identification, collection and treatment of internal loss data are essential prerequisites to capital calculation under the standardised approach. The general criteria for the use of the LC are as follows.

25.15

Internally generated loss data calculations used for regulatory capital purposes must be based on a 10-year observation period. If ten years of good quality loss data are not available when the bank first moves to the standardised approach, a shorter observation period is acceptable

on an exceptional basis (with a minimum observation period of five years). Note that all years of good-quality data available beyond five years must be included.

25.16

Internal loss data are most relevant when clearly linked to a bank's current business activities, technological processes and risk management procedures. Therefore, a bank must have documented procedures and processes for the identification, collection and treatment of internal loss data. Such procedures and processes must be subject to validation before the use of the loss data within the operational risk capital requirement measurement methodology, and to regular independent reviews by internal and/or external audit functions.

25.17

For risk management purposes, and to assist in supervisory validation and/or review, a supervisor may request a bank to map its historical internal loss data into the relevant Level 1 supervisory categories as defined in Table 2 and to provide this data to supervisors. The bank must document criteria for allocating losses to the specified event types.

Detailed loss event type classification			Table 2
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 Check kiting Smuggling Account takeover / 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 (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 (slip and fall etc) Employee health and safety rules events Workers compensation
		Diversity and discrimination	All discrimination types
Clients, products and 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 and fiduciary	Fiduciary breaches / guideline violations Suitability / disclosure issues (know-your-customer 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 and 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 and process management	Losses from failed transaction processing or process management, from relations with trade counterparties and vendors	Transaction capture, execution and maintenance	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
		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 Miscellaneous non-client counterparty disputes
		Vendors and suppliers	Outsourcing Vendor disputes

1 FAQ

FAQ1 *How could banks ensure that losses stemming from climate-related financial risks are identifiable?*
Losses due to natural disasters map to the event type category “Damage to physical assets” from Table 2. However, climate-related financial risks may also cause operational risk losses in other event type categories. For example, if a bank is perceived to misrepresent sustainability-related practices or the sustainability-related features of its investment products, it could lead to litigation cases (event type category “Clients, products and business practices”). A power cut as a consequence of climate-related financial risks could cause an interruption to a bank's services and communications (event type category “Business disruption and system failures”). Where feasible, losses whose root cause could stem from climate-related risk drivers could be identifiable from the loss database, for example, by using a flag.

25.18

A bank's internal loss data must be comprehensive and capture all material activities and exposures from all appropriate subsystems and geographic locations. The minimum threshold for including a loss event in the data collection and calculation of average annual losses is set at €20,000. At national discretion, for the purpose of the calculation of average annual losses, supervisors may increase the threshold to €100,000 for banks in buckets 2 and 3 (ie where the BI is greater than €1 billion).

3 FAQs

- FAQ1** *Should operational loss events from outsourced activities be included in the operational loss dataset?*
For operational losses from outsourced activities, the financial impacts of events that the bank is responsible for should be included in the dataset as operational losses. The financial impacts of events that are paid by the outsourcer (rather than by the bank) are not operational losses to the bank.
- FAQ2** *When building the loss data set, which exchange rate should be used to convert losses from foreign subsidiaries of a banking organisation into domestic currency? Loss impacts denominated in a foreign currency should be converted using the same exchange rate that is used to convert them in the banking organisation's financial statements of the period the loss impacts were accounted for.*
- FAQ3** *How should the minimum threshold for including a loss event in the Loss Component dataset be applied for events which result in multiple accounting impacts?*
Some operational loss events result in multiple accounting impacts, which can be loss impacts or recoveries. To determine whether an operational loss event must be included in the Loss Component calculation dataset, the net loss amount of the event should be calculated by summing all of the event's loss impacts inside the ten-year calculation window and subtracting all recoveries inside the ten-year calculation window. The accounting date of the impacts is used to determine whether they are inside the ten year calculation window. If the event's net total loss amount is equal to or above EUR 20,000 (or equal to or above EUR 100,000 if that national discretion is used), the loss event must be included in the calculation dataset. Note that a loss event may not result in a net loss amount above EUR 20,000 (EUR 100,000) in any individual year and still have to be included in the Loss Component calculation dataset as long as the cumulative impact of the loss event in the ten year window is equal to or above EUR 20,000 (EUR 100,000). As an example, consider a bank determining its capital requirements using a Loss Component calculation window of 2012 to 2021, and assume this bank is subject to a EUR 20,000 loss threshold. Suppose one loss event results in a loss impact of EUR 16,000 in 2012 and EUR 7,000 in 2013. This loss event must be included in the calculation dataset because its total impact inside the calculation window is EUR 23,000. On the other hand, a loss event that resulted in a loss impact of EUR 1,000,000 in 2010 (outside of the calculation window), a loss impact of EUR 300,000 in 2013 (inside the calculation window), and a recovery of EUR 500,000 in 2015 (inside the calculation window) should not be included in the calculation dataset because its net impact inside the calculation window is negative, and thus less than EUR 20,000.

25.19

Aside from information on gross loss amounts, the bank must collect information about the reference dates of operational risk events, including the date when the event happened or first began ("date of occurrence"), where available; the date on which the bank became aware of

the event (“date of discovery”); and the date (or dates) when a loss event results in a loss, reserve or provision against a loss being recognised in the bank’s profit and loss (P&L) accounts (“date of accounting”). In addition, the bank must collect information on recoveries of gross loss amounts as well as descriptive information about the drivers or causes of the loss event.⁴ The level of detail of any descriptive information should be commensurate with the size of the gross loss amount.

1 Footnote

⁴ *Tax effects (eg reductions in corporate income tax liability due to operational losses) are not recoveries for purposes of the standardised approach for operational risk.*

25.20

Operational loss events related to credit risk and that are accounted for in credit RWA should not be included in the loss data set. Operational loss events that relate to credit risk but are not accounted for in credit RWA should be included in the loss data set.

25.21

Operational risk losses related to market risk are treated as operational risk for the purposes of calculating minimum regulatory capital under this framework and will therefore be subject to the standardised approach for operational risk.

25.22

Banks must have processes to independently review the comprehensiveness and accuracy of loss data.

Specific criteria on loss data identification, collection and treatment

25.23

Building an acceptable loss data set from the available internal data requires that the bank develop policies and procedures to address several features, including gross loss definition, reference date and grouped losses.

25.24

Gross loss is a loss before recoveries of any type. Net loss is defined as the loss after taking into account the impact of recoveries. The recovery is an independent occurrence, related to the original loss event, separate in time, in which funds or inflows of economic benefits are received from a third party.⁵

1 Footnote

⁵ *Examples of recoveries are payments received from insurers, repayments received from perpetrators of fraud, and recoveries of misdirected transfers.*

25.25

Banks must be able to identify the gross loss amounts, non-insurance recoveries, and insurance recoveries for all operational loss events. Banks should use losses net of recoveries

(including insurance recoveries) in the loss dataset. However, recoveries can be used to reduce losses only after the bank receives payment. Receivables do not count as recoveries. Verification of payments received to net losses must be provided to supervisors upon request.

25.26

The following items must be included in the gross loss computation of the loss data set:

1. Direct charges, including impairments and settlements, to the bank's P&L accounts and write-downs due to the operational risk event;
2. Costs incurred as a consequence of the event including external expenses with a direct link to the operational risk event (eg legal expenses directly related to the event and fees paid to advisors, attorneys or suppliers) and costs of repair or replacement, incurred to restore the position that was prevailing before the operational risk event;
3. Provisions or reserves accounted for in the P&L against the potential operational loss impact;
4. Losses stemming from operational risk events with a definitive financial impact, which are temporarily booked in transitory and/or suspense accounts and are not yet reflected in the P&L ("pending losses").⁶ Material pending losses should be included in the loss data set within a time period commensurate with the size and age of the pending item; and
5. Negative economic impacts booked in a financial accounting period, due to operational risk events impacting the cash flows or financial statements of previous financial accounting periods ("timing losses").⁷ Material "timing losses" should be included in the loss data set when they are due to operational risk events that span more than one financial accounting period and give rise to legal risk.

2 Footnotes, 2 FAQs

⁶ *For instance, in some countries, the impact of some events (eg legal events, damage to physical assets) may be known and clearly identifiable before these events are recognised through the establishment of a reserve. Moreover, the way this reserve is established (eg the date of discovery) can vary across banks or countries.*

⁷ *Timing impacts typically relate to the occurrence of operational risk events that result in the temporary distortion of an institution's financial accounts (eg revenue overstatement, accounting errors and mark-to-market errors). While these events do not represent a true financial impact on the institution (net impact over time is zero), if the error continues across more than one financial accounting period, it may represent a material misrepresentation of the institution's financial statements.*

- FAQ1** *When an operational loss event results in a provision and, later, that provision turns into a charge-off, should both be summed in calculating the operational loss resulting from an operational loss event? For example, if a bank takes a €1 million provision for a legal event in 2018 and then settles the legal event for €1.2 million in 2019, should both be summed to calculate the operational loss resulting from the operational loss event?*
No. The €1 million provision is an operational loss included in 2018 and the additional €200 thousand is an operational loss in 2019 (equal to the €1.2 million settlement in 2019 minus the €1 million provision in 2018). There should be no double counting of the same financial impacts in the calculation of operational losses. When a bank makes a provision due to an operational loss event, such provision must be considered an operational loss immediately for the calculation of the Loss Component. When a charge-off (such as a settlement) eventually takes place later, only the difference between the initial provision and the charge-off (if any) should be added to the operational loss calculation.
- FAQ2** *When a bank refunds a client that was overbilled due to an operational failure, can the initial overbilling be used to net out the refund?*
When a bank refunds a client that was overbilled due to an operational failure, if the refund is provided in the same financial accounting period as the overbilling took place and thus no misrepresentation of the institution's financial statements occurs, there is no operational loss. If the refund occurs in a subsequent financial accounting period to the overbilling, it is a timing loss; any operational loss event that exceeds the threshold of EUR 20,000 (or EUR 100,000 if the national supervisor has used the national discretion to set this higher threshold) should be included in the loss dataset. In this case, the prior overbilling is not a recovery.

25.27

The following items should be excluded from the gross loss computation of the loss data set:

1. Costs of general maintenance contracts on property, plant or equipment;
2. Internal or external expenditures to enhance the business after the operational risk losses: upgrades, improvements, risk assessment initiatives and enhancements; and
3. Insurance premiums.

25.28

Banks must use the date of accounting for building the loss data set. The bank must use a date no later than the date of accounting for including losses related to legal events in the loss data set. For legal loss events, the date of accounting is the date when a legal reserve is established for the probable estimated loss in the P&L.

25.29

Losses caused by a common operational risk event or by related operational risk events over time, but posted to the accounts over several years, should be allocated to the corresponding years of the loss database, in line with their accounting treatment.

1 FAQ

- FAQ1** *What are the conditions for losses (and recoveries) to be grouped into a single operational loss event?*
All operational losses caused by a common underlying trigger or root cause should be grouped into one operational loss event in a bank's operational loss event dataset. Two examples of losses with a common underlying trigger or root cause, which should be grouped into a single loss event:
A natural disaster causes losses in multiple locations and/or across an extended time period. A breach of a bank's information security results in the disclosure of confidential customer information. As a result, multiple customers incur fraud-related losses that the bank must reimburse. This is sometimes accompanied by remediation expenses such as credit card re-issue or credit history monitoring services.
Banks should have a clear, well-documented policy for determining the criteria for multiple losses to be grouped into an operational loss event. In addition, processes should be in place to ensure that there is a firm-wide understanding of the loss event grouping policy, that there is appropriate sharing of loss event data across businesses to implement the policy effectively and that there are adequate controls (including independent review) to assess ongoing compliance with the policy.

Exclusion of losses from the Loss Component

25.30

Banking organisations may request supervisory approval to exclude certain operational loss events that are no longer relevant to the banking organisation's risk profile. The exclusion of internal loss events should be rare and supported by strong justification. In evaluating the relevance of operational loss events to the bank's risk profile, supervisors will consider whether the cause of the loss event could occur in other areas of the bank's operations. Taking settled legal exposures and divested businesses as examples, supervisors expect the organisation's analysis to demonstrate that there is no similar or residual legal exposure and that the excluded loss experience has no relevance to other continuing activities or products.

2 FAQs

- FAQ1** *Upon supervisory approval to exclude losses, when should this exclusion take effect?*
The calculation of the loss component of the operational risk capital (ORC) should recognise the effect of exclusion immediately after the supervisory approval. If supervisors only require the operational risk standardised approach calculation to be updated annually, but the exclusion is approved prior to an intermediate (eg, quarterly) update of the bank's total risk-weighted assets that precedes the annual update of the operational risk standardised approach, banks should report the revised operational risk risk-weighted assets in the first update of total risk-weighted assets post-exclusion.

FAQ2 *Can operational risk losses resulting from the reform of benchmark reference rates be excluded from the operational risk charge based on [OPE25.30](#)? Banks may suffer operational risk losses related to the reform of benchmark reference rates, particularly if they do not adequately prepare for the transition to the new rates. For example, losses may be incurred over an extended period of time if banks fail to identify and remediate relevant legacy contracts prior to the discontinuation of a benchmark rate. Operational risk losses relating to the reform of benchmark reference rates do not fulfil the criteria for exclusion from the calculation of operational risk capital requirements laid out in [OPE25.30](#) (ie characterised as one-off, no longer relevant, no residual exposure). It should, however, be noted that not all costs related to the implementation of benchmark rate reforms represent operational risk losses (eg legal fees to alter contracts to prepare for the new reference rates in accordance with relevant legal rules; or costs related to adjustments to IT systems). To minimise the risk of operational risk losses, banks should consider the effects of benchmark rate reform on their businesses in a timely manner and make the necessary preparations for the transition to the alternative rates. In doing so, they should maintain a close dialogue with their supervisory authorities regarding their plans and transition progress, including any identified impediments.*

25.31

The total loss amount and number of exclusions must be disclosed in accordance with the Pillar 3 requirements with appropriate narratives, including total loss amount and number of exclusions.

25.32

A request for loss exclusions is subject to a materiality threshold to be set by the supervisor (for example, the excluded loss event should be greater than 5% of the bank's average losses). In addition, losses can only be excluded after being included in a bank's operational risk loss database for a minimum period (for example, three years), to be specified by the supervisor. Losses related to divested activities will not be subject to a minimum operational risk loss database retention period.

Exclusions of divested activities from the Business Indicator

25.33

Banking organisations may request supervisory approval to exclude divested activities from the calculation of the BI. Such exclusions must be disclosed in accordance with the Pillar 3 requirements.

1 FAQ

FAQ1 *Upon supervisory approval to exclude activities from the BI, when should this exclusion take effect? Divested activities should be excluded from the calculation of the BI amount used for the calculation of operational risk capital (ORC) immediately after the supervisory approval. If supervisors only require the operational risk standardised approach calculation to be updated annually, but the exclusion is approved prior to an intermediate (eg, quarterly) update of the bank's total risk-weighted assets that precedes the annual update of the operational risk standardised approach, banks should report the revised operational risk risk-weighted assets in the first update of total risk-weighted assets post-exclusion.*

Inclusion of losses and BI items related to mergers and acquisitions

25.34

The scope of losses and BI items used to calculate the operational risk capital requirements must include acquired businesses and merged entities over the period prior to the acquisition/merger that is relevant to the calculation of the standardised approach (ten years for losses and three years for BI).

1 FAQ

*FAQ1 Upon a merger or an acquisition, when should the inclusion of the losses and BI items of the merged entity or acquired businesses take effect?
Losses and BI items from merged entities or acquired businesses should be included in the calculation of operational risk capital (ORC) immediately after the merger/acquisition, and should be reported in the first update of the bank's total risk-weighted assets that comes after the merger/acquisition.*

Disclosure

25.35

All banks with a BI greater than €1bn, or which use internal loss data in the calculation of operational risk capital, are required to disclose their annual loss data for each of the ten years in the ILM calculation window in accordance with the Pillar 3 requirements. This includes banks in jurisdictions that have opted to set ILM equal to one. Loss data is required to be reported net of recoveries, both before and after loss exclusions. All banks are required to disclose each of the BI sub-items for each of the three years of the BI component calculation window in accordance with the Pillar 3 requirements.