



HM Treasury

Risk Budgeting for Public Financial Institutions

Implementing economic capital-based controls

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Chapter 1

Purpose, objectives and scope

Purpose

1.1 This document sets out HMT’s approach to managing financial investment risk in public financial institutions, implementing the risk-based controls set out in the Financial Transaction Control Framework (FTCF).¹

1.2 It draws on the concept of Economic Capital (EC) modelling traditionally used in the private sector by banks and financial institutions to understand the capital needed to absorb losses in severe downside scenarios, safeguarding against insolvency and resolution.

1.3 This document provides guidelines on how risk models within public financial institutions can be used to create a risk metric to understand and manage the risks of Financial Transactions (FT) and guarantees they enter into.

Objectives

1.4 In the wider context of the FTCF, HMT has two primary objectives enabled by this guidance:

1.4.1 To **understand** the level of investment risk held across public financial institutions, creating a system for articulating cross-government risk appetite and allowing HMT to consider the trade-offs between risk and policy impact.

1.4.2 To **oversee and manage** the level of investment risk that public financial institutions are authorised to take through their delegated authority. This allows the government to make informed decisions on the use of FTs, and rebalance its portfolio where policy priorities shift.

Use of this guidance

1.5 With these objectives in mind, the guidance will have two primary uses for HMT:

1.5.1 **Risk benchmarking:** this comprises information that public financial institutions should provide to HMT and sponsoring

¹ HM Treasury, [Financial Transaction Control Framework](#) (2024).

departments on a consistent basis to aid with aggregation and comparison of risk across public financial institutions; and

1.5.2 Risk budgeting: risk budgets are an HMT and sponsor department set ceiling on the level of modellable investment risk a public financial institution may take on, expressed using the model output (risk metric). Public financial institutions are required to conduct ongoing monitoring against the risk budget, based on an assessment of the current level of investment risk (risk consumption). The agreed risk budget represents a Treasury condition on a specific category of expenditure (Financial Transactions). Generally, risk consumption that breaches the agreed risk budget is treated as spending without HMT consent, i.e. irregular spending.²

Benefits

1.6 This document represents a new approach to assessing and controlling the risk that government takes on through FTs. This approach is necessary to improve how government manages the scale of investment risk it is taking on, where public financial institutions are expanding their activity. Implementing this guidance will facilitate:

1.6.1 Informed fiscal choices: a clear understanding of risk across government portfolios enables better choices. This guidance builds on the approach currently used by institutions such as the National Wealth Fund (NWF) and UK Export Finance (UKEF), where EC models are used to agree risk budgets with HMT and their sponsor departments.

1.6.2 Increased transparency: risk models should be a meaningful measure of the actual investment risk in FT portfolios, including scenarios of extreme financial loss. This improves the transparency of the risk taken on by the government with public money.

Scope

1.7 This guidance applies to all designated public financial institutions. It covers their equity investments, loans and guarantees. Where public financial institutions are managing assets on behalf of departments via the service arm, or in separate accounts with different governance, the riskiness of those assets is expected to be measured alongside the risk correlation or concentration with the rest of their portfolio, using the approaches set out in this document. HMT may set risk budgets based on the institution's portfolio to include assets managed via the service arm. Such decisions are made by HMT in conjunction with sponsor department in accordance with the institution's planning process. Any agreements as to scope must be documented in the institution's financial framework.

² HM Treasury, [Managing Public Money](#) (2025). See A2.2.14 for treatment of failure to obtain Treasury authority and A2.2.37 for breaches of Treasury conditions.

1.8 Risk models should seek to capture all risks relevant to institutions' portfolios. The institutional accountability principle requires that each institution should consider and model risk accurately, in a Value for Money (VfM) way, accounting for risks which are material to their business. Non-modellable material risks should also be explicitly identified and considered in decision making. Where unquantifiable, they should be qualitatively outlined within an institution's risk modelling and will be considered in HMT's setting of risk budgets.

Box 1.A Public vs private approaches to economic and regulatory capital

The requirements within this document recognise the public sector context and specific policy mandates that public financial institutions operate within.

Public sector approach vs regulatory capital: this approach is distinct from regulatory capital approaches. HMT requires aggregation of investment risk for fiscal management. Regulatory approaches cannot always be transposed onto public financial institutions that achieve public policy objectives, so they are not expected to hold actual capital. While HMT will not achieve the same consistency applied to private sector banks or financial institutions under such regulatory capital frameworks, breach of such virtual limits is treated as breach of Treasury conditions. Breaches trigger the remediation and escalation procedures set out in **Annex E**.

"Virtual economic capital" in a UK public sector context: in the public sector context, EC is not intended as a measure of actual capital held or regulatory capital requirements. In public financial institutions EC is a virtual measure used to quantify and manage the downside risk in government investment portfolios. In contrast EC is calibrated to safeguard liquidity and systemic risk in the private sector. Public financial institutional risk modelling is designed to provide HMT with a robust tool to assess, compare, and report the downside risk across government investment portfolios.

1.9 This guidance applies to understanding and managing the risks associated with government FTs and guarantees. It is separate from wider risk management processes in the Orange Book,³ which focus on operations, people and processes and the risk reporting in line with accounting standards in Annual Reports and Accounts (ARA).

³ [Orange Book](#), HM Treasury, 2013.

1.10 Review: HMT recognises the guidance's approach is novel and complex. Therefore, the approach will be reviewed in full during 2027 and any changes made ahead of the financial year 2028/29.

Chapter 2

Principles-based approach

Overview

2.1 This guidance should be understood as a set of principles, directed at the objectives mentioned in Chapter 1. The principles recognise institutional accountability and the diverse mandates, modelling approaches, resources and asset portfolios across public financial institutions. This approach enables institutions to tailor risk models to their unique exposures and policy objectives, while maintaining the necessary comparability, rigour, and transparency required.

2.2 While risk modelling is critical for quantifying risk, it does not substitute for broader risk management approaches contained within the MPM mandated Framework Document and wider financial framework documents of institutions, which are agreed with sponsor departments and HM Treasury. Such documents typically involve the relevant institution reporting on its financial performance against agreed KPIs, product lines and drawdowns, among others.⁴ Public financial institutions are expected to embed risk models and risk consumption within a wider framework of governance, stress testing, scenario analysis, and qualitative risk assessment as appropriate to ensure comprehensive oversight of risk specific to FTs.

Principles

Risk reflectivity

2.3 Risk models must reasonably measure the risk of investments in downside scenarios for risk budgeting. This can be done using either the Standardised Approach (SA) set out in Basel III⁵ or more bespoke models where the relevant institution holds the data to conduct a risk reflective analysis. This depends on the suitability of the SA to a public financial institution's specific risks and the portfolio specific data available.

⁴ One such example for the British Business Bank is available [online](#).

⁵ Basel Committee on Banking Supervision, CRE20 to CRE22. The standardised approach assigns risk weights to exposure, with the resulting "risk weighted assets" as the product of the applicable standardised risk weights depending on the type of exposure.

Institutional accountability

2.4 Public financial institutions are responsible for selecting the most suitable risk model, balancing accuracy and cost at reflecting the risk in their portfolio. This recognises the varied capabilities across institutions. Institutions are responsible for embedding risk modelling into their governance and decision-making processes and ensuring that models capture the full spectrum of risks relevant to their portfolios.

Recognition of ongoing development

2.5 HMT recognises that public financial institutions vary significantly in their current risk modelling approaches and resources. Over time it is expected that government's ability to model and understand these risks will improve, through risk modelling, stress testing and associated processes such as qualitative outlines of non-modellable risks. In line with their business planning cycle, institutions should review, and where necessary, enhance their modelling to ensure ongoing suitability and risk reflectivity.

Calibration

2.6 Where possible and appropriate, public financial institutions should calibrate their models on a consistent basis to produce a 1-year risk measure to assist in risk benchmarking.

Risk Benchmarking and Risk Budgeting

2.7 Risk benchmarking provides HMT with a comparable 1-year horizon of risk across public financial institutions' portfolios. This assists HMT in analysing risk to support FT spending decisions made at fiscal events. Risk budgeting is an HMT spending control. The outputs of risk benchmarking may inform this process. However, the key aim for setting risk budgets is to reflectively account for and manage the risk in institutions' portfolios. This establishes a quantifiable level of investment risk such institutions may take on. The principles outlined above should be applied to achieve risk benchmarking and risk budgeting, as described in Chapter 1. This produces consistent risk metrics for cross-government risk benchmarking to achieve the aims of the calibration principle; but also derivation of measures for setting risk budgets for each institution that achieve the aims of the risk reflectivity principle.

Risk Benchmarking

2.8 For risk benchmarking, institutions should provide HMT with a risk measure derived from the Standardised Approach (SA) set out in Basel III. This generally takes the form of calculating risk weighted assets as the product of the Basel III-set standardised risk weights

applicable to the relevant exposure.⁶ The output is represented by the relevant exposure (the risk weighted asset) multiplied by the Basel III-set 8%. This represents the risk metric for the relevant exposure, i.e., the percentage of the exposure which is held as capital (virtual or otherwise) against the assessed credit risk.

2.9 Using the SA allows HMT to derive a consistent and comparable benchmark that serves as a starting point for understanding the risk in FTs on a whole-of-government basis. As technical capability improves, this approach may be revised where HMT can base its fiscal decisions on reliably consistent outputs from more advanced modelling within public financial institutions. This should be provided where requested by HMT, usually at fiscal events.

Risk Budgeting

2.9.1 For risk budgeting, institutions may apply the SA or develop a bespoke approach.

2.9.2 *Bespoke Approach calibration:* where institutions do not use the SA, they should calibrate a bespoke model to provide HMT with a risk measure that measures Value at Risk (VaR) on a 99% or higher confidence level.

2.9.3 *Institution-specific time horizons:* for risk budgeting, risk can be assessed over a primary time horizon that reflects the characteristics of the relevant portfolio (for example, a multi-year horizon for long-dated risk). Where the institution-specific time horizon is not 1-year, the institution must also produce a transparent 1-year equivalent measure and clearly explain the methodology and parameter changes used to derive it.

2.9.4 HMT will set risk budgets based on a time horizon that reflects the risks of an institutions' portfolio, but the default will be 1-year due to alignment with fiscal policy decisions such as budgets and spending reviews. Any deviations must be agreed with the Treasury, and do not replace the requirement to report a transparent, consistently derived risk metric using the SA for risk benchmarking.

⁶ See Chapter 4 for specific application of risk weighted assets under the SA to the determination of risk benchmarking and budgeting.

Chapter 3

Risk budgeting process

Overview

3.1 Risk budgets represent the maximum level of modellable investment risk appropriate for a public financial institution to hold, accounting for its existing portfolio, mandate and government's risk appetite. Based on the institution's modelling outputs, risk budgets will be usually provided by HMT to the institution based on the factors set out in Box 3.A. The risk budget is to be agreed between an institution, its sponsoring department and HMT, outlining the level of investment risk the institution is permitted to take on with public money.

3.2 This chapter provides an overview of how HMT will decide risk budgets. They will typically be set on a multi-year basis, aligned to the institution's relevant planning cycles, with periodic monitoring of risk consumption against the risk budget.

3.3 Risk budgets are a form of conditional spending consent on the level of investment risk permitted for the use of public funds for the execution of FTs. They are specific to holding virtual capital against exposure in FTs and guarantees. They are therefore supplementary to an institution's wider statutory, fiduciary or regulatory obligations. Institutions' Boards remain responsible for their internal risk appetite, risk management frameworks and compliance with regulation.

Determining risk budgets

3.4 HMT will agree risk budgets with public financial institutions and their sponsoring departments, where relevant, based on:

- the level of risk the institution needs to take on to achieve its policy objectives;
- risk modelling conducted by the institution;
- stress testing and other analysis;
- both Chief Risk Officer (CRO) assurance and Government Actuary's Department (GAD) (or external) assurance from the institution; and
- the institution's qualitative Statement on Non-modellable Risks.

Box 3.A Factors in setting risk budgets

Portfolio, Policy Baseline and Proposal - as part of its business planning cycle, the institution develops a plan likely setting out:

- proposed volumes and composition of FTs (loans, guarantees and equity);
- the associated risk profile (including expected path for the risk metric);
- expected financial return; and
- the policy rationale and benefits.

Requirements of business plan submitted to HMT - this may include:

- 5-year+ financial projections for FTs (volumes, estimated risk metric, expected losses and returns).
- A clear statement of mandate and policy objectives supported by the plan.
- A description of planned material changes (new products, sectors, structures).
- Sensitivity analysis for the estimated risk metric and/or scenario analysis consistent with the business plan.
- A Statement on Non-modellable Risk outlining material non-modellable risks relevant to the programme.

HMT Assessment - the relevant HMT Spending Team, with Balance Sheet Team support, assesses the institution's proposal and risk modelling outputs, considering the trade-offs between risk, return and policy impact.

In HMT's evaluation of spending proposals for FTs and associated programmes, Spending Teams, as part of the business planning process consider the institution's strategic, economic, commercial, financial and management cases for the FT portfolio, consistent with fiscal constraints, cross-government risk appetite and competing priorities.⁷ This mirrors the process for agreeing overall FT capacity and financial performance targets. HMT considers not only the individual institution's proposal but also the aggregate impact across all public financial institutions. HMT's aggregate risk budget is constrained by the Government's overall risk appetite and must reflect relative policy priorities and the differing mandates of institutions.

Using the risk modelling outputs and policy case, HMT can assess modellable risk on a consistent basis, compare risk, return and policy trade-offs across programmes, and make data-driven choices about which FTs to fund and at what scale. Broadly, such risk information

⁷ HM Treasury, [Financial Transaction Control Framework](#) (2024). See 5.1 on "The business case process for FTs".

supports advice to Ministers; it does not automatically change previously agreed settlements but may inform future prioritisation decisions in the fiscal event processes.

3.5 The estimated risk metric is an input and highly significant factor into decisions on risk budgets. The resulting risk budget is a separate policy decision that may sit above the modelled requirement to provide buffers for the risks captured within the risk model, account for volatility and any non-modellable risks in the Statement on Non-modellable Risks. As a result, the risk budget may be set at or above the risk metric needed to deliver a public financial institution's business plan.

Function of risk modelling to risk budgeting

3.6 Risk metrics should generally be calculated as an estimate of portfolio loss at a given high percentile confidence level (e.g., 99th percentile of the loss distribution) over a specified time horizon (e.g., a multi-year horizon for long-dated risk). The horizon used in setting the risk budget can be over multiple years but must be agreed with HMT. In line with the calibration principle, institutions are still expected to provide a 1-year risk metric for HMT's risk benchmarking.

Adjustments

3.7 Risk budgets will usually be set as nominal values (absolute amounts), with any deviation requiring HMT consent. Where agreed with HMT, risk budgets can incorporate automatic adjustments for asset revaluations, so that unrealised changes in asset values do not mechanically drive breaches where underlying risk has not increased. This approach is intended to recognise the institution's expected asset portfolio and risk profile.

3.7.1 Equity Revaluations: for portfolios with material equity exposure, and in any automatic adjustment agreed, HMT will distinguish between:

- Changes in the risk metric arising from fundamental factors stemming from underlying risk, (for example, deterioration in company profiles, in each case affecting the underlying equity asset); and
- changes in non-fundamental factors, such as changes in equity valuations where risk characteristics, i.e., fundamentals, are broadly unchanged.

3.7.2 Materiality of Revaluations to Risk Budget: accordingly, where asset valuations materially change, HMT and the institution may agree adjustments to avoid pro-cyclical breaches driven primarily by upside unrealised valuation movements caused by changes in non-fundamental factors. Such agreement is to be based on the institution evidencing that risk parameters in its model intended to account for fundamental factors, i.e., underlying equity or credit risk, remain

unchanged due to any revaluation. Where revaluations are due to increase in risk taking or deterioration in risk factors, the risk budget is not subject to any adjustment in line with this paragraph. Where adjustments apply, their scope, definitions and limits should be transparently documented as part of the institution's business plan and Statement on Non-modellable Risks. In the event of adjustments to the institution's risk budget to account for material upside valuation movements, the institution and sponsoring department where relevant, will monitor risk consumption over the course of one-year of the adjustment being implemented and will report on the adjustment for HMT to reconsider the appropriateness of the adjustment in light of the institution's risk consumption.

Loss estimates

3.8 The risk metric that will form the quantitative basis on which HMT will set risk budgets should cover:

- the expected loss;
- the unexpected loss estimates;⁸ and
- where appropriate, HMT will also consider modelled losses over the relevant time horizon in addition to a 1-year horizon for reporting purposes.

3.8.1 Expected losses should ordinarily be captured consistently with the institution's accounting framework. Risk metrics may be subject to accounting idiosyncrasies specific to the institution. Parameters for the risk metric may be subject to varying definitions adopted by the institution. HMT expects these matters to be outlined where applicable.

Risk appetite in response to markets and policy

3.9 To ensure flexibility and that the risk budget is realistic, risk budgets can be revised in response to policy changes that impact the institution's use of FTs.

3.10 This also encompasses external factors such as economic shocks. For multi-year programmes and portfolios whose risk profile changes materially over time (e.g., programmes with low initial default risk and higher risk over tenors), institutions should reflect the anticipated evolution of risk in their risk modelling.

3.11 The risk budget will be set based on the current portfolio and pipeline, and a forward-looking analysis of how the risk metric will evolve over time as the portfolio matures. Ongoing monitoring of risk consumption (i.e., the level of modellable investment risk which the institution has taken on, calculated using the agreed risk model at the valuation date and based on the existing portfolio) against the risk

⁸ For institutions using the Standardised Approach, the capital charge under that approach covers both expected and unexpected loss estimates. In such case, HMT does not expect institutions to include accounting provisions where those are covered by the SA's loss estimates.

budget is to be conditional on the current portfolio only. In setting a risk budget for the first time, HMT will consider the institution's portfolio over the course of the business planning period and the forecasted risk consumption path against that period.

Business planning

3.12 Risk budgets are set through the same business planning process as public financial institutions' other key financial targets and controls, e.g., target rate of return and total capacity, and must remain proportionate to the institution's overall capacity and mandate. HMT and sponsor departments should not routinely reopen the risk budgets annually; rather, they should review the previously agreed position and only reopen and update when the portfolio evolves, modelling develops or the policy objectives change. Institutions operate different planning timetables, so review points will be agreed bilaterally as part of planning processes. HMT may also revisit and adjust risk budgets in-year where material changes in risk profile or policy priorities arise. This process is led for HMT by the relevant Spending Team.

Process flows for risk budgeting

3.13 A detailed example of the process for risk budgeting is set out below, on the premise of the institution seeking an increase in its financial capacity for loans. The key stages of the process are applicable to the family of loans, equity and guarantees that an institution may enter. The process is principles-based and overseen by both the HMT Spending and Balance Sheet teams.

Example: risk budget-setting process

3.14 This is a step-by-step worked example, using hypothetical numbers, illustrating how HMT and sponsor departments may use an institution's risk modelling to set a risk budget, where an institution is also looking to expand its overall capitalisation. It is intended to be institution-agnostic to emphasise the principles-based approach. For illustration, the valuation date is assumed to be a specified reporting date agreed between HMT and the institution (e.g. quarter-end), rather than necessarily financial year-end.

3.14.1 Step 1: Baseline position (for current portfolio and policy)

- *Portfolio:* An institution has £40bn portfolio of financial assets and guarantees.
- *Model Output:* Using the public financial institution's risk model, the institution estimates that the portfolio loss at the 99th percentile over the relevant time horizon, based on the full £40bn being deployed, is £6bn.
- *Review:* As part of the business planning process, the institution shares its multi-year business plan, forecast path for the risk metric, stress-testing results and Statement on Non-modellable Risks with

HMT and its sponsor department. HMT Spending and Balance Sheet teams assess the model outputs within the context of the business plan and policy mandate. Where applicable, the institution also provides a reconciliation between accounting expected loss measures and the expected loss component used in the risk metric, explaining any differences between the model outputs and its accounting treatment with respect to scope and definitions.

- *Risk Budget*: Based on the above assessment, a risk budget of £8bn is set. This is the maximum amount of modellable investment risk permitted, reflecting policy appetite and providing a buffer of £2bn above the modelled risk metric of £6bn to absorb volatility, business plan risk (e.g. that higher risk assets may be invested in practice), model risk or unforeseen events that the relevant portfolio might be susceptible to. This £8bn limit is the risk budget. It is the binding constraint for breach assessment, which is monitored.

3.14.2 Step 2: Policy case for additional capital and risk taking

- The public financial institution and sponsoring department make the policy case that additional capital and risk taking would support the government's policy objectives.
- They propose an additional £10bn of capacity and that this capacity should be twice as risky as their existing capacity (£4bn risk metric per £10bn of assets, i.e., the additional capacity), which would consume greater economic capital and requiring an increase in their overall risk budget to be permitted.
- The institution re-runs its risk model to estimate the revised risk metric (not the risk budget) over the 5-year business plan, conditional on the expanded portfolio and pipeline. The institution provides further analysis by for example using the Green Book to produce a cost benefit analysis of the additional capital, risk and stress testing of the expanded portfolio.

3.14.3 Step 3: Agreeing a new risk budget

- *Model Output*: For a total portfolio of £50bn (£40bn existing + £10bn new), the institution's risk model estimates a revised baseline risk metric of £10bn (£6bn for the original £40bn, £4bn for the riskier £10bn).
- *Assessment*: HMT reviews the revised path for the risk metric over the planning horizon; results under severe but plausible stress scenarios; and the institution's Statement on Non-modellable Risks. The risk metric is considered in the context of the new portfolio composition and policy ambition.
- *Risk Budget*: HMT considers the modelling and policy case, then agrees a new risk budget with the institution and its sponsor. This risk budget may be set at or above the risk metric, depending on

appetite for additional buffer. For example, a nominal risk budget of £12bn may be set, providing a £2bn buffer above the modelled risk metric of £10bn risk metric to reflect model uncertainty, portfolio volatility and non-modellable risks.

- The institution agrees that risk consumption will not exceed the revised risk budget (£12bn), and the public financial institution provides regular reporting to the relevant HMT Spending Team to monitor both the risk consumption and risk budget.
- *Result:* HMT advises ministers on the higher overall capital for the public financial institution. Through this channel, a data driven decision based on the risk modelling is used to set a new risk budget, with the institution successfully increasing their overall capacity and risk taking in line with its mandate.

3.14.4 **Step 4:** Integration with Policy and Governance

- Given that the risk budget is treated as a condition for HMT spending consent, the institution may not approve new FTs if doing so would cause its total risk consumption to exceed the agreed risk budget set (in this example, £12bn). Risk consumption against the risk budget should be embedded within the institution's internal governance (e.g., investment committee papers, Board risk reports) and reported regularly to HMT.
- Where the institution anticipates that planned FTs could bring risk consumption close to, or above, the risk budget, it should engage early with HMT to consider options, including portfolio rebalancing, sequencing of deals, or a reassessment of the risk budget considering updated policy priorities and modelling (see **Annex E** on breach remediation).

Agreement of risk and total capacity

3.15 HMT agrees with the institution and its sponsor:

- the total capacity and associated financial targets (e.g. return expectations); and
- the corresponding risk budget, expressed using the risk metric and aligned to the approved programmes of FTs.

3.16 Risk budgets are therefore agreed through the same process as total capacity, returns targets and annual FT limits, ensuring integrated decisions on scale, risk, deployment, and policy impact.

3.17 Any variations from the guidance, for example in relation to the scope of the investments covered or the modelling approach, must be agreed between the public financial institution, HMT and relevant sponsoring departments.

Approach to breaches and remediation measures

Breach consequences

3.18 Breaching a risk budget (for example, issuing an FT such that the overall risk budget is exceeded) is equivalent to spending without HMT consent, i.e., irregular spending. The consequences of which are reflected by way of example in **Annexes E-F**.

3.19 The annexes provide a detailed example of how a breach can arise from a combination of new transactions, portfolio deterioration and model improvements. It also shows how Chapter 3 of this document works to structure HMT's and the institution's response. This guidance distinguishes between genuine risk taking versus better risk measurement, while treating the risk budget as a binding spending control.

Implications of breaches

3.20 Breaches of risk budgets are treated as spending in breach of Treasury conditions and thus spending without necessary Treasury authority. Such expenditure is therefore irregular, and must be treated as such, in line with the guidance in MPM Annex 2.2.⁹

Anticipated breaches

3.21 Where breaches of the agreed risk budget are anticipated, the relevant institution should notify HMT and agree a suitable remediation plan. This will involve HMT collaborating with the institution to investigate the issue, implement corrective actions, monitor effectiveness and develop an overall remediation plan.

3.22 From the public financial institution, HMT will broadly require:

- justification of the breach.
- impact (if any) on credit and other risks (including non-modellable risks); and
- a forward-looking assessment of how new risk budgets, if set, are to be complied with. **Annex E's** escalation procedure should apply.

Improved modelling

3.22.1 In line with the 'recognition of ongoing development' principle, improvements to risk modelling approaches that more accurately measure risk will not generally count as a breach. In these cases, the public financial institutions, HMT and sponsoring department will work to restate the risk budget based on the improved modelling.

⁹ [Managing public money - GOV.UK](#)

Chapter 4

Approach to risk modelling

Overview

4.1 This chapter sets out the approach HMT expects public financial institutions to take to risk modelling. It is complementary to business-critical model requirements under the AQuA book.¹⁰ Institutions shall have regard to the wider guidance on the use of models in Managing Public Money.¹¹

4.2 **Risk modelling Approaches:** there are two high-level approaches referred to under this guidance:

4.2.1 **Standardised Approach:** that uses regulator-set risk weights and formulae for quantifying potential investment loss (as defined by economic capital), with little room for institution-specific modelling.¹²

4.2.2 **Bespoke Approach:** where the relevant institution holds the data to develop a model that enables a more risk reflective analysis. Bespoke methods might range from full stochastic models to an approach that is not unduly complex, for example models based on suitable development of stress or scenario analysis.

4.3 Table 4.A illustrates the difference between the standardised and bespoke approaches for a loan portfolio. Further examples are in **Annex G**. Institutions may need to produce two risk metric calculations for different purposes: (i) a SA metric for cross-government benchmarking; and (ii) a risk metric for risk budgeting, which may be the same SA metric or may be produced using a bespoke approach where the institution has the data and capacity.

Table 4.A standardised approach vs bespoke approach

Approach	Model	Risk budget
Standardised approach	<ul style="list-style-type: none"> Risk metric calculated as 8% multiplied by the risk weight (e.g. 100% for an 	<ul style="list-style-type: none"> Risk Budget = RWA × 8% (targets total VaR, includes both

¹⁰ [The AQuA Book - GOV.UK](#), 2025

¹¹ HM Treasury, Managing Public Money, 2025.

¹² As described in BASEL III, CRE20 ([CRE20 - Standardised approach: individual exposures](#)).

	<ul style="list-style-type: none"> unrated corporate loan) multiplied by the exposure at default. Risk metric = RWA x 8% = (Exposure x RW) x 8%. E.g. RW = 100% for unrated corporate. 	<ul style="list-style-type: none"> EL and UL implicitly).¹³ Do not add ECL on top - this would double-count expected losses. Can add specific provisions separately if not already risk-weighted.
Bespoke approach	<ul style="list-style-type: none"> (for example) Risk model incorporates a credit portfolio model that allows for PD, LGD, EAD and asset correlations. The risk model provides a stochastic simulation to estimate the full loss distribution. 	<ul style="list-style-type: none"> Risk Budget = Total VaR at 99%. VaR = Expected Loss (covered by provisions) + Unexpected Loss.

Source: HM Treasury

Using the standardised approach (SA) for risk budgeting

4.4 The SA may not accurately reflect real risk, particularly for public financial institutions, which often take on quasi-commercial, social, or policy risks atypical for simple "sovereign" or "corporate" categories in Basel III, for example.

4.5 Where institutions consider that the SA materially understates or overstates risk for their portfolio, they should:

- document this assessment in their Statement on Non-modellable Risks; and
- where proportionate, develop a bespoke approach. This could involve using the SA for part of a public financial institution's portfolio and a bespoke approach for other parts.
- Where the SA is materially misaligned with the institution's individual portfolio risk, institutions may supplement the SA with clearly labelled adjustments or overlays (e.g., mapping to more appropriate exposure classes or stress-based overlays). These

¹³ This is a regulatory-style capital proxy (as opposed to actual equity held) primarily intended to cover unexpected loss. Institutions should treat expected loss/provisions consistently with their accounting framework and avoid double counting.

adjustments or overlays should be reported alongside the unmodified SA benchmark and may be used as an input to risk budgeting where agreed with HMT.

4.6 The SA may be used as a starting point for public financial institutions, especially where data limitations or resource constraints make the development of bespoke risk models unviable. The SA provides:

4.6.1 Baseline Risk Modelling: through a clear, regulator-set framework for risk quantification, which is accessible and operationally straightforward. For public financial institutions that do not have expertise in quantitative risk modelling, the SA serves as a practical starting point with a lower cost of implementation.

4.6.2 Capturing of Initial Risk: through acting as a default mechanism to ensure that risk is not ignored, especially where institutions may not yet have the resources, data or expertise to build bespoke models to more accurately reflect risks. The SA provides a minimum standard of risk reflectivity, capturing at least the broad contours of portfolio risk, which is then supplemented by additional stress-testing and the Statement on Non-modellable Risks.

4.6.3 Transition to Bespoke Approach: by starting with the SA, institutions can systematically identify its limitations relative to their unique risk profiles. This can potentially be done through the results of stress testing, comparing the relative risk of assets under the SA to the relative riskiness of the portfolio under stress. Where material differences persist, institutions may develop bespoke models alongside the SA.

4.7 This means the SA is a sensible starting point. It safeguards against the absence of risk quantification while institutions build towards more bespoke modelling if needed. This staged approach supports the gradual development of modelling expertise, governance, and data infrastructure required for bespoke risk model methodologies.

How bespoke models should be calibrated

4.8 Bespoke models should still capture risk in severe downside scenarios over a time horizon along the following lines.

4.8.1 Confidence level: risk models should be calibrated to estimate the potential loss at a 99% (i.e. 1 in 100) or higher confidence level, reflecting the downside risk across the institution's portfolio. This means that the model should estimate the level of loss that would not be exceeded in 99 out of 100 scenarios.

4.8.2 Time horizon: risk models should be calibrated over a time horizon that is appropriate to the institution's portfolio and mandate (for example, reflecting long-tenor loans, guarantees or equity investments). Where bespoke models are not calibrated to a 1-year

horizon, institutions should explain how the risk metric compares to a 1-year risk metric in line with the principle on calibration.

What risks should be covered by models

4.9 Risk models should include all material financial risks. This is expected to include but is not limited to:

- Credit risk;
- Market risk;
- Concentration risk; and
- Material correlations between these risks.

4.10 This enables a holistic view of both scale and how risks interact within the whole of government's portfolio. This is to also allow reporting in the UKGI Annual Report on Government Financial Investments, which provides transparency as to risk.

4.11 Not all modellable risks will be applicable to all public financial institutions. However, where possible, risk models should also assess the correlation and concentration of risk where overall public financial institution risk may be greater or smaller than the sum of individual risks captured by the model.

4.12 In addition to detailing the materiality of concentration risk in the Statement on Non-modellable Risks, institutions may report a simple measure of portfolio concentration, such as the Herfindahl Hirschman Index, to HMT alongside their risk metric. The Working Group envisaged in Chapter 7, will develop further guidance on how concentration risk may be more accurately reflected in risk metrics over time to allow HMT setting of a risk reflective risk budget.

4.13 Operational risk does not need to be quantitatively modelled in risk models unless the institution is exposed to it. Where operational risks materially affect the risk of FTs (for example, reliance on complex systems or delivery partners), they should be included in the model. Where this is not possible due to the chosen methodology, operational risks are to be described qualitatively in the Statement on Non-modellable Risks.

Scope of exposures and "point in time" measurement

4.14 Risk metrics should be calculated at a clearly defined valuation date, based on all relevant existing FTs on the institution's balance sheet and FTs managed on behalf of government through their service arm. Whether risk budgets will apply to service arm investments will be agreed with HM Treasury.

Bespoke models (IRB or stochastic models)

4.15 These approaches permit use of internal models for determining the risk metric. The Internal Ratings-based (IRB) approach set out in Basel III may be a starting point for public financial institutions

developing bespoke models but is not prescribed here. Stochastic parameters within such models may assist public financial institutions in ensuring their models are risk reflective. Where the IRB requires implementation in line with regulatory requirements, such as those in Basel III (as amended and supplemented from time to time) and directions by the PRA, public financial institutions are required to consider the value for money of such implementation assessed against their relevant portfolios. Where bespoke models are considered, they should be based on good quality data and robust analytical processes to ensure risk reflection. As such, other than the SA, Basel III and its requirements serve only as reference points.

4.16 The bespoke approach adopted should be transparent to why the risk metric differs across loans, guarantees, and equity. It should also be able to defend why the institution's exposures are riskier or safer than "standard" financial transactions or capital requirements set out in the SA (i.e., be a defensible capital attribution). Any additional or adjusted measures should be presented as supplementary analysis rather than as the headline risk metric used for risk budgeting.

Collaboration for applicable technical standards

4.17 Through the economic capital working group, HMT and UKGI (FInTAG) will work closely with institutions in defining high standards for and sharing best practice across public financial institutions on data quality, model approval processes, technical model architecture and modelling approaches such as exposure classification, parameter estimation and the treatment of non-modellable risks.

Chapter 5

Agreement of modelling approach and assurance

Overview

5.1 This chapter sets out the process for agreeing a suitable risk modelling approach for a public financial institution with HMT. It relies on the institution's own assessment of the risk reflectiveness of their modelling approaches, as detailed in Chapters 3 and 4.

Institutional assurance of models

5.2 Primary responsibility for the model design, implementation and day-to-day assurance rests with the public financial institution, with HMT providing an additional layer of oversight focused on risk budgeting, fiscal implications and cross-government consistency. Each public financial institution is required to:

5.2.1 alongside its business planning process, obtain sign-off from its Chief Risk Officer confirming that the adopted risk quantification approach remains risk-reflective and fit for purpose. This is to be shared with HMT, reflecting the institution's current and forecast portfolio and risk environment.

5.2.2 Maintain ongoing and robust model governance with clear change control procedures in place to ensure that any modifications to the guidance are appropriately reviewed and documented.

5.2.3 as set out in Chapter 6, HMT also expects to see a qualitative Statement on Non-modellable Risks. This should cover:

- Material non-modellable risks;
- any exceptions to, or changes in, mandatory parameters; and
- other model changes or assumptions that materially affect risks relevant to the institution's portfolio.

Treasury oversight and approval

5.3 Building on the institutional assurance above, HMT Spending Teams and relevant policy teams will:

- monitor the current risk consumption of the institution alongside its forecast path over the portfolio's tenor;

- align modelling with business planning, with HMT assessing whether the institution's risk model, assumptions and Statement on Non-modellable Risk are consistent with its business plan, mandate, pipeline and stated risk appetite;
- maintain cross-government consistency, with public financial institutions and HMT ensuring that methodologies take due account of any relevant technical standards or common parameters mandated by the working group in Chapter 7; and
- request additional assurance before agreeing revised risk budgets if appropriate, for example where there are significant model changes, unusually high-risk growth, or concerns about risk reflectivity.

5.4 The modelling approach used for setting risk budgets should be agreed with HMT as part of a public financial institution's business planning. This allows for the costs of developing models to be balanced with the benefits of more tailored modelling and any opportunity costs for other approaches to risk quantification, e.g., stress testing.

5.5 The above will also give institutions and HMT stability in risk modelling and risk budgeting respectively. This seeks to preserve institutional accountability for risk management, while enabling HMT to make informed, comparable and fiscally-aware decisions through setting of risk budgets across public financial institutions.

Validation and monitoring

5.6 Where appropriate, for instance: when a model is first adopted or first produced, where significant changes are made, or where it is identified that risk models may no longer be risk reflective, public financial institutions may receive external validation of their approach. This could be provided by GAD. The institution is responsible for obtaining appropriate validation, but this must be shared with their sponsoring department, and HMT.

5.7 Risk modelling across public financial institutions will differ, with ongoing monitoring and assessment assisting HMT and sponsor departments in setting risk budgets. In collaboration with UKGI in an advisory capacity, HMT will:

- continuously review wider risk modelling best practice;
- consider wider portfolio risk dynamics, e.g., as part of the UKGI annual Financial Investment Report; and
- revise processes where new or unforeseen risks emerge, to ensure meaningful guidance for public financial institutions.

Chapter 6

Non-modellable risks

Overview

6.1 While many risks will be captured by the institution's risk model, HMT must ensure that non-modellable risks do not materialise on a systemic basis. As a result, HMT's focus is on ensuring identification of where risks are likely to lead to systemic consequences in the context of public financial institution FTs.

Approach

6.2 Some risks are inherently difficult or impossible to model with precision (for example, certain policy, structural or operational risks). These non-quantifiable or low-data risks are important to understand because they affect realisation of losses for FTs but are not always captured in risk models. Institutions are expected to manage these risks within their portfolio, and stress test their potential to materialise alongside active portfolio management.

Distinction from current guidance

6.3 Some aspects of non-modellable risks are likely to be covered via existing guidance (e.g., the Orange Book, internal risk registers, or framework documents). In contrast, this document is focused on 'difficult to identify' risks that apply to FTs and guarantees. While institutions' models may capture such risks in the risk metric and risk budget, this document accounts for ensuring identification, mitigation and reporting on such non-modellable risks to provide HMT with a transparent view of risks latent in the whole-of-government's FT portfolio.

6.4 Non-modellable risks should be documented for HMT's fiscal choices on the direction of the government's portfolio. The statutory ARA disclosures contained in the Government Financial Reporting Manual (FReM) and the Orange Book, serve a broader corporate purpose and encompass risks in relation to people, day-to-day operations and processes. These frameworks cannot reliably fulfil HMT's systemic identification objective due to their broad remit in capturing a wider range of risks. For HMT, the emphasis is on understanding the materiality, scale and importance of these risks. This is because the impact of these non-modellable risks on institutional portfolios is not always known. The Statement on Non-modellable Risks on non-modellable risks assists in closing this gap through its requirement for institutions to qualitatively report on non-modellable risks where they are material to the portfolio.

Transparency in non-modellable risks

6.5 The guiding principle for managing non-modellable risks is transparency. Alongside the annual CRO statement outlined in paragraph 5.2.1 affirming that the modelling approach taken by public financial institutions is risk reflective, the Statement on Non-modellable Risks should outline the relevant non-modellable risks.

6.6 This could include, but is not limited to, risks in relation to:

6.6.1 **Product:** innovative, politically sensitive, or one-off transactions not adequately captured by models;

6.6.2 **Investment structures:** exposures with special credit enhancements, guarantees, or policy risk-sharing outside standard model assumptions; and

6.6.3 **Policy mandates:** where policy risk is faced from wider government policy choices that cannot be accurately reflected in models.

Chapter 7

Cross-government risk modelling, management, and policy decisions

Overview

7.1 This chapter sets out the approach for cross-government risk modelling and management via the Risk Modelling Working Group (Working Group).

7.2 Recognising the need for ongoing collaboration, shared learning, and technical alignment across public financial institutions, the Working Group's objective is to help institutions collectively address complex risk issues, share best practice, and develop robust, context-sensitive models that reflect both policy objectives and technical rigour. This is separate from the assurance required of Chapter 5.

7.3 Where the Working Group considers issues are sufficiently material or technically complex that they could affect risk budgets or cross-government aggregation, HMT may leverage cross-government technical expertise for focused technical advice.

7.4 HMT will convene the Working Group, chaired by UKGI and supported by a UKGI secretariat. The purpose of the group is to:

7.4.1 facilitate joint learning and knowledge exchange between public financial institutions on risk modelling methodologies, parameterisation, and governance;

7.4.2 provide a forum for technical support, peer review, and troubleshooting of modelling challenges; and

7.4.3 with the support of HMT, encourage further alignment of modelling approaches and parameter definitions where appropriate, without imposing undue prescription.

7.5 The Working Group is to meet regularly and maintain channels for ad-hoc discussion as issues arise. Membership will at least include representatives from HMT, UKGI, GAD, and all designated public financial institutions.

Key areas for collaboration and joint learning

7.6 The Working Group will focus on several thematic areas, drawing on experience and lessons across the sector:

7.6.1 **Further Standardisation of Parameters:** This could include, but is not limited to the following

- **Exposure Definitions:** product type and sector classifications, that allow a unified descriptive view of each portfolio.
- **Stochastic Parameters:** refining the parameters in similar categories (e.g., PD, EAD, recovery assumptions, correlations, and discounting) where assets are similar across public financial institutions.
- **Credit Risk Mitigants:** accounting for credit risk mitigants and standardising how they are accounted for. For example, collateral, credit-risk transfer mechanisms, derivatives and other strategies that have risks (systemic or otherwise) unique to public financial institutions.

7.6.2 **Risk Data Capture and Modelling Practices.** Exploration of best practice in modelling approaches from relevant expert bodies and from public financial institutions' data collection, validation, and scenario analysis. To fulfil the requirements set out in the FTCTF to report on government's financial investments and aligned to spending settlement conditions agreed with sponsoring departments, public financial institutions will be required to share risk modelling outputs with UKGI. Institutions are encouraged to contribute data and modelling outputs with UKGI to support developing of cross-government datasets for risk benchmarking and stress testing. UKGI will act as the central repository and facilitator for data sharing, ensuring appropriate handling of commercially sensitive information. Such data may be used to:

- develop aggregate risk measures and portfolio analytics across government;
- support benchmarking and model validation for individual institutions; and
- identify emerging trends, data gaps, and opportunities for improvement in risk modelling practices.

7.6.3 **Non-Modellable Risks:** Jointly developing qualitative frameworks to identify, assess, and report non-modellable risks.

7.6.4 **Stress Testing and Systemic Risk Analysis:** Coordination of cross-institutional stress tests, focusing on portfolio correlations and systemic risk exposures, including the potential for wrong-way risk to materialise. Outputs may feed into UKGI's annual investment report and inform HMT's portfolio-wide risk management.

7.6.5 Technical Support and Peer Review. Institutions can request peer review or technical support from the group, leveraging collective expertise to address specific modelling or implementation challenges.

Future development and continuous improvement

7.7 The Working Group is intended as a permanent feature of the cross-government risk management landscape. Over time, its remit may evolve to encompass new risk types, modelling techniques, or policy priorities. The group's work will be reviewed annually.

Annex A

Core economic capital concepts

Table A.1 Concepts

Concept	Description	Further resources
Risk model	The analytical framework used to estimate potential losses on financial transactions under downside scenarios. A risk model incorporates relevant risk drivers (e.g., credit, market, concentration and correlations) and produces the quantitative output used for risk budgeting. It should reflect the institution's portfolio, data, and mandate, consistent with the principles of risk reflectivity and institutional accountability.	
Risk metric	The quantified estimate of investment risk produced by the risk model, typically expressed as the potential loss at a high percentile confidence level over an appropriate time horizon. The risk metric captures both expected and unexpected losses and forms the quantitative basis for setting the risk budget. This encompasses total VaR. Risk Metric = Expected Loss + Economic Capital.	

Risk consumption	The current level of modellable investment risk, calculated using the agreed risk model and based on the institution's existing portfolio and prevailing conditions. Risk consumption is measured against the risk budget and determines the remaining headroom for undertaking further financial transactions.	
Risk Budget	All FTs carry the inherent risk of potential losses. A risk budget will place a constraint on the level of risk that a public financial institution can undertake by setting a ceiling on the scale of losses it should experience in a low probability downside economic scenario.	<u>HM Treasury "Financial Transaction Control Framework" (March 2025)</u>
Economic Capital (EC)	<p>The amount of capital required to absorb unexpected losses over a specified time horizon at a given confidence level, typically defined as the difference between a high percentile loss estimate and expected loss over that horizon.</p> <p><i>The principles of economic capital modelling will be applied in order to assess the Risk Budget. Therefore, the purpose of Economic Capital in the public sector context is not strictly the same as for a regulated commercial bank subject to the Basel Regulatory framework.</i></p>	<u>Basel Committee "Range of practices and issues in economic capital frameworks" (2009); PRA Supervisory Statement SS31/15 "The Internal Capital Adequacy Assessment Process (ICAAP)"</u>

Virtual Economic Capital (VEC)	Economic capital framework applied to institutions that don't hold equity capital directly. Used when the economic capital limit represents maximum value-at-risk rather than actual capital held.	<u>HM Treasury "Financial Transaction Control Framework" (March 2025)</u> ; <u>Bank of England "The PRA's methodologies for setting pillar 2 capital" (July 2021)</u>
Confidence Level	Statistical confidence interval for capital adequacy.	<u>Basel Committee "Supervisory Review Process" (Pillar 2)</u> ; <u>Bank of England Working Paper No. 380 "Economic capital and the assessment of capital adequacy" (2009)</u>

Source: HM Treasury

Annex B

Methodological approaches and concepts

Table B.1 Concepts and approaches

Concept or approach	Description	Further resources
Basel Standardised Approach	<p>Basel approach using fixed risk weights for different exposure types and credit ratings.</p> <p>Calculation: Risk Weighted Assets (RWA) x Capital Ratio (8% or 10.5% including buffers) = Minimum Capital Requirement, i.e. Regulatory Capital.</p> <p>$RWA = Exposure \times Risk\ Weight$ (sought from Basel Risk Weights table)</p> <p>RWs are the key component and can look differently if IRB is used.</p>	<p><u>Basel III "Standardised approach for credit risk" (CRE 20-CRE 22); Bank of England "Implementation of the Basel 3.1 standards: Credit risk – Standardised approach"</u></p>
Risk-Weighted Assets (RWA)	<p>Assets weighted by their credit risk according to regulatory frameworks.</p>	<p><u>Basel III "International Convergence of Capital Measurement and Capital Standards" (2017); PRA Rulebook "Credit Risk: Standardised Approach" (CRE 20)</u></p>
Internal Ratings-Based (IRB) Approach	<p>Basel approach using internal estimates of risk parameters rather</p>	<p><u>Basel III "Internal ratings-based approach for credit</u></p>

	<p>than standardised weights. This approach has two tiers, Foundation (F-IRB) and Advanced IRB (A-IRB). In F-IRB internal estimates are used for PD; in A-IRB internal estimates are used for PD, LGD, EAD.</p>	<p><u>risk" (CRE 30-CRE 36); PRA Policy Statement PS7/17 "Internal Ratings Based (IRB) approaches"</u></p>
<p>Stochastic modelling (for credit risk)</p>	<p>A subset of the IRB approach. This is a modeling method using probability distributions and scenario simulations (for risk factors affecting credit risk assessment) to model risk. Incorporates correlations, diversification, and tail risks.</p>	<p><u>Basel Committee "Supervisory guidance on model risk management" (2017); Bank of England Working Paper No. 928 "The case for fully integrated models of economic capital" (2009)</u></p>

Source: HM Treasury

Annex C

Risk parameters and measurements

Table C.1 Credit risk parameters

Parameter	Description	Further resources
Probability of Default (PD)	Likelihood that an obligor will default within a specified timeframe (typically one year).	<i>Basel III "Definition of default" (CRE 36.1-36.7); PRA Supervisory Statement SS11/13 "Internal Ratings Based (IRB) approaches: Probability of Default (PD) estimation"</i>
Loss Given Default (LGD)	Percentage of exposure lost if default occurs, after recoveries.	<i>Basel III "Requirements specific to PD, LGD and EAD estimation" (CRE 36.21-36.88); Bank of England Working Paper No. 593 "Loss given default models incorporating macroeconomic variables" (2016)</i>
Exposure at Default (EAD)	Outstanding amount at time of default, including drawn and undrawn commitments. <i>Calculation complexity varies: simple for term loans, complex for guarantees and revolving facilities.</i>	<i>Basel III "Exposure at default (EAD)" (CRE 36.89-36.105); PRA Policy Statement PS4/18 "Credit risk: Internal ratings-based approaches – Exposure at default"</i>
Correlation (ρ)	Statistical measure of how asset returns move together. Critical for diversification benefits.	<i>Basel Committee "An Explanatory Note on the Basel II IRB Risk Weight Functions" (2005); Bank of England Working Paper No. 604</i>

		<u>"Measuring and modelling dependencies in economic capital" (2016)</u>
Effective Maturity (M)	Remaining time to maturity of exposure. Longer maturity increases risk weight in IRB formula. Typically capped at 5 years.	<u>Basel III: Maturity Adjustment (CRE 32)</u>
Asset Correlation (ρ)	Correlation of obligor's asset returns to systematic risk factor. In Basel III, ranges 0.12-0.24 for corporates, varies inversely with PD.	<u>Basel Committee "Explanatory Note on Basel II IRB Risk Weight Functions" (2005); Bank of England Working Paper 604 "Measuring and modelling dependencies"</u>
Default Correlation	Probability of joint defaults between obligors. Driven by common systematic factors (industry, geography, macro conditions).	<u>Basel Committee "Range of practices in economic capital" (2009)</u>

Source: HM Treasury

Table C.2 Concentration risk parameters

Parameter	Description	Further resources
Herfindahl-Hirschman Index (HHI)	Sum of squared exposure shares: $HHI = \sum(w_i^2)$. Ranges 0 (perfectly diversified) to 10,000 (single exposure).	<u>https://www.philadelphiafed.org/-/media/frbp/assets/economy/articles/economic-insights/2023/q1/bt-has-the-banking-industry-become-too-concentrated.pdf</u>
Granularity Adjustment	Capital add-on for concentrated portfolios. Based on size and number of exposures in portfolio.	<u>Basel Committee "IRB Approaches" (CRE 31.8)</u>

Source: HM Treasury

Table C.3 Liquidity risk parameters

Parameter	Description	Link
Liquidity Coverage Ratio (LCR)	High-quality liquid assets divided by net cash outflows over 30 days. Basel III requires $\geq 100\%$.	Basel III: LCR Standard (2013) ; Bank of England "Liquidity Coverage Ratio" rules
Net Stable Funding Ratio (NSFR)	Available stable funding divided by required stable funding over 1 year. Basel III requires $\geq 100\%$.	Basel III: NSFR Standard (2014)

Source: HM Treasury

Table C.4 Interest rate risk (IRBBB) parameters

Parameter	Description	Further resources
DV01 (Dollar Value of 01)	Change in portfolio value for 1 basis point interest rate move. Key sensitivity measure.	Basel Committee "Interest rate risk in banking book" (2016)
Key Rate Duration	Sensitivity to specific points on yield curve (e.g., 2yr, 5yr, 10yr rates). Captures curve reshaping risk.	

Source: HM Treasury

Annex D

Risk typology

Table D.1 Risk types typically considered by financial institutions

Risk	Description	Further resources
Systematic Risk	Risk affecting entire markets/economies, cannot be diversified away. <i>Common factors include GDP, interest rates, inflation; institution-specific interpretation of how these affect their portfolios.</i>	<u>Basel Committee "Range of practices and issues in economic capital frameworks" (March 2009)</u> ; <u>Bank of England Working Paper No. 471 "Macro stress testing with a macroeconomic credit risk model for the UK" (2013)</u>
Idiosyncratic Risk	Risk specific to individual borrowers/investments, which can be diversified.	<u>Basel III "Foundation IRB approach" (CRE 31)</u> ; <u>PRA Supervisory Statement SS3/18 "Pillar 2A capital planning and management"</u>
Tail Risk	Risk of extreme losses in the worst-case scenarios. <i>Critical for stochastic models; typically captured through Value-at-Risk and Expected Shortfall measures.</i>	<u>Basel Committee "Fundamental review of the trading book" (2019)</u> ; <u>Bank of England Working Paper No. 506 "Coherent measures of risk" (2014)</u>
Market Risk	The risk of losses due to changes in demand, interest rates, exchange rates, or asset prices. This requires monitoring of market trends and reducing exposure in isolation and in a portfolio.	<u>'SoP' The PRA's methodologies for setting Pillar 2 capital</u> <u>HM Treasury "Financial Transaction Control Framework" (March 2025)</u>

Operational Risk	<p>The risk of losses from process failures, systems, or events (e.g., fraud, cyber risk, system failures).</p> <p>This requires good controls, capability, reporting, and training staff to recognise and properly address risks.</p>	<p>'SoP' The PRA's methodologies for setting Pillar 2 capital</p>
Country Risk	<p>The risk of losses due to instability in a country where the transaction is taking place. This requires country-risk assessments before engaging in cross-border transactions.</p>	<p>Country Risk Analysis: Theory, Methodology, and Applications SpringerLink</p> <p>Microsoft Word - Country Risk and Sovereign Risk_FINAL_v4.docx</p>
Model Risk	<p>The risk of losses due to errors in models used for valuation, risk analysis, or decision-making. This requires capable analytical staff and robust quality assurance processes for critical models.</p>	<p>SS1/23 – Model risk management principles for banks Bank of England</p> <p>Model Risk Management</p>
Pricing Risk	<p>The risk of pricing an FT without understanding its financial implications, leading to poor Value for Money.</p> <p>This requires negotiators with commercial expertise and benchmarking to market rates.</p>	

Source: HM Treasury

Annex E

Example breach remediation process

Overview

E.1 This annex sets out an illustrative process for managing and remediating actual breach of an institution's risk budget. Breaches of risk budgets are treated as spending in breach of Treasury conditions and thus spending without Treasury authority and will be irregular as set out in MPM Annex 2.2.

E.2 A breach occurs when the institution's risk consumption, as calculated by its agreed risk model, exceeds the risk budget set by HMT. This may arise due to new transactions, unexpected losses or model changes that materially increase the estimated risk metric. The buffer within the risk budget is designed to absorb shocks, but if it is exceeded the institution is in breach and must take corrective action.

E.3 As set out in Chapter 3, risk budgets are treated as conditions for HMT consent for spending, so a breach ordinarily constitutes irregular spending, subject to the limited carve-out described below.

E.4 Where a breach arises solely because of an agreed improvement in modelling methodology that results in more accurate risk measurement (rather than additional risk-taking), HMT and the institution will work to restate the risk budget on the improved basis, the breach will normally be treated as technical rather than as irregular spending, provided no new FTs were approved exceeding the previous risk budget.

Example process

E.5 Step 1 - Notification:

- The institution notifies their HMT spending team of the breach, providing a breakdown of actual or anticipated breach. The breakdown should include:
- Drivers of the breach (e.g. new transactions, portfolio migration, unexpected losses, model or parameter changes). Where breach (actual) is due to poor financial risk management, i.e., risk consumption has not been monitored and this has inadvertently led to the institution exceeding the risk budget, it will be treated as irregular spending.

- An updated risk metric calculation and comparison to the agreed risk budget.
- An assessment of the impact on key modellable risks (credit, market, concentration and correlations).
- A summary of relevant non-modellable risks from the institution's Statement on Non-modellable Risk (e.g. policy, structural, delivery or other factors that may affect loss realisation).

E.6 Step 2 - remediation and review:

- Initial Review: Based on the institution's modelling outputs, HMT assess whether the breach is due to model error, data quality, or genuine portfolio risk (for example, new risk-taking or deterioration in fundamentals), or primarily to valuation-driven changes such as equity revaluations. To support their assessment HMT may seek relevant advice. Where valuation effects are the main driver and underlying risk is broadly unchanged, HMT and the institution may adjust the relevant risk budget to reflect the updated portfolio value, without automatically classifying the event as irregular spending. HMT evaluates both quantitative risks (credit, market, operational) and qualitative risks (policy, concentration, structural) as per the assurance framework.
- HMT will ask the institution to demonstrate and test the technical soundness of the underlying models and the adequacy of risk parameterisation (PD, LGD, EAD, M). Further independent assurance, for example from GAD, may be requested to support this.
- Materiality is assessed: if a risk or model change is likely to materially affect the institution's risk budget, it is explicitly considered in setting new limits.
- Remediation Plan: Institution proposes corrective actions, which could include but is not limited to: pauses on new investment until risk consumption is back within the risk budget; active portfolio management, perhaps via offloading or restructuring particular risk; and model recalibration (e.g., tighten lending criteria for new exposures).

E.7 Step 3 - Policy Choices for HMT:

- Restrictions: HMT may restrict or suspend approval of new FTs that would further increase risk exposure.
- Adjustment: HMT may revise risk budgets, require additional capital buffers, or adjust risk appetite for the institution. In doing so, HMT will agree with the CST a revision of the risk budgets following a better and more accurate understanding of the risk the relevant institution faces.

Annex F

Worked example of a breach

Overview

F.1 Below is a worked example that uses the numbers in the step-by-step process in 3.14, implementing the principles in Chapter 3.

Worked Example

F.2 Baseline (from Chapter 3):

- Portfolio: £50bn of financial assets.
- Baseline risk consumption: £10bn.
- Risk budget set by HMT: £12bn (i.e. £10bn baseline risk consumption + £2bn buffer).
- At the point the risk budget is set, risk consumption = £10bn, headroom = £2bn.

F.3 How a breach might occur:

- **Year 1:** Portfolio performs broadly as expected. The institution originates the planned additional £10bn of higher risk assets. Actual credit performance is broadly in line with assumptions. A routine annual model run shows risk consumption of £10.5bn due to modest portfolio growth and slightly higher concentration in a few sectors.
- **Result:** Risk consumption: £10.5bn; Risk budget: £12bn; Headroom: £1.5bn – no breach, but reduced buffer. The institution and HMT note the reduced headroom in business planning but do not change the risk budget.
- **Year 2:** Deterioration and new transactions push risk consumption over the budget. During the next year, three things happen:
 - Macroeconomic deterioration: a sector that features heavily in the new £10bn programme experiences a downturn. Probability of default (PD) and loss given default (LGD) assumptions are revised upwards for that sector. On a stand-alone basis, this adds £1bn to the risk consumption.
 - New commitments within mandate: The institution approves several new deals (still within its existing spending approval and policy mandate) in that same sector, adding further

concentration. These new exposures add a further £0.3bn to risk consumption.

- Model recalibration: As part of the annual validation cycle, the institution improves its modelling of correlations between this sector and the rest of the portfolio. This reveals higher tail risk than previously captured, adding £0.5bn to risk consumption.
- **After re-running the risk model:**
 - Previous risk consumption: £10.5bn
 - +£1.0bn (worse PD/LGD)
 - +£0.3bn (new, concentrated exposures)
 - +£0.5bn (correlation recalibration)
 - New risk consumption: £12.3bn.
- Compared to the risk budget of £12bn, risk consumption = £12.3bn. The breach is £0.3bn above the budget.
- Irregular spending treatment: The element of the breach arising from new risk taking (£0.3bn) is treated as irregular spending unless and until ministers retrospectively regularise it by agreeing a revised risk budget. The technical component from improved modelling (£0.5bn) is recognised as a measurement issue, but it still informs the decision on whether and how to reset the risk budget. This is set out below.

F.4 Illustration of Equity Revaluation Effects: The example above is primarily geared towards credit risk issues driving the breach. If, in the example above, the portfolio included a significant equity component and a temporary market rally increased portfolio values without materially increasing underlying risk, the risk metric might rise because of higher absolute exposure values, even if risk parameters are stable. In such a case, HMT and the institution would assess whether an adjustment to the relevant risk budget is appropriate, rather than treating the increase as a breach driven by new risk taking. In such equity scenarios, the principles outlined in 3.7 are applied.

F.5 Breach Process in Practice:

- **Step 1 - Notification:** The institution's risk team identifies that the recalculated risk consumption (£12.3bn) exceeds the £12bn risk budget. The institution undertakes the following: (1) it promptly notifies HMT and (2) It provides a breakdown of the drivers:
 - £1.0bn from updated PD/LGD for the stressed sector;
 - £0.3bn from new transactions in that sector;

- £0.5bn from improved correlation modelling.
- It updates HMT on: (1) the revised risk metric and consumption against the risk budget; (2) Impact on credit and concentration risk (e.g. higher single sector concentration); (3) Relevant non-modellable risks from its Statement on Non-modellable Risk (e.g. policy pressure to continue lending into the stressed sector or delivery risk if projects are delayed, among others).
- **Step 2 - Remediation and review:** HMT assesses: (1) model vs real risk: concludes that £1.0bn of the increase reflects genuine portfolio deterioration and new risk taking; £0.5bn reflects better modelling of correlations (i.e. improved measurement); the £0.3bn reflects recent investment decisions that increased concentration.
 - Materiality: The £0.3bn breach is material as it fully exhausts the previous £2bn buffer and slightly exceeds the risk budget. The institution proposes a remediation plan, potentially including but not limited to:
 - Pause on new approvals in the stressed sector until risk consumption falls back within the risk budget.
 - Active portfolio management options: (1) Explore secondary sales or risk sharing structures for a subset of the higher risk exposures; (2) Tighten eligibility criteria for any future deals in that sector.
 - Further model and data work by the public financial institution will be requested (potentially with further independent assurance, e.g., from GAD) to validate the new correlation assumptions and ensure no further structural understatement of risk.
- **Step 3 - Policy choices for HMT:** Based on this analysis, HMT may decide:
 - In the short term: (1) maintain the existing £12bn risk budget to signal that the breach from new risk taking is not acceptable without ministerial agreement; (2) require a pause on new FTs in the stressed sector and enhanced reporting until risk consumption is brought back under £12bn.
 - In the medium term and subject to ministerial agreement: consider, through the next business planning round, whether a higher risk budget is warranted considering: (1) the improved model; (2) the government's policy appetite for exposure to that sector; and (3) cross government fiscal risk aggregation.
 - Remediation: If ministers agree that the higher underlying risk is appropriate and affordable, HMT may propose a revised risk budget (e.g. £13bn), explicitly recognising that: part of the

increase (£0.5bn) is due to better measurement; and part reflects a policy choice to hold more risk.

Annex G

Risk modelling approaches

Table G.1 Illustration of approaches

Product	SA	SA-Risk Budget	Bespoke (IRB/IMA-Inspired)	Bespoke-Risk Budget
Loans	$EC = RWA \times 8\%$ $= (\text{Exposure} \times RW) \times 8\%$ $RW = 100\%$ (unrated corporate)	Risk Budget = $RWA \times 8\%$ (targets total VaR, includes both EL and UL implicitly) Do not add ECL on top - this would double-count expected losses For Stage 3 only: Can add specific provisions separately if not already risk-weighted	$EC = VaR_{99\%} - EL$ Using credit portfolio model with: PD, LGD, EAD for each exposure Asset correlations Monte Carlo simulation	Risk Budget = Total VaR at 99% Components: EL (covered by provisions) + UL (covered by capital) Capital requirement = UL only (since EL already reduces equity via provisions)
Guarantees	$EC = RWA \times 8\%$ $= (\text{Commitment} \times CCF \times RW) \times 8\%$		$EC = VaR_{99\%} - EL$ Adjusted for CCF and commitment drawdown risk	
Equity Investment	$EC = RWA \times 8\%$ $= (\text{Exposure} \times RW) \times 8\%$ $RW = 400\%$ (direct equity stakes) Or 300% if using PD/LGD methods	Risk Budget = EC $= (\text{Exposure} \times 400\%) \times 8\%$	Portfolio Historical VaR approach: $EC = \text{Portfolio Value} \times VaR_{99.9\%} \text{ Loss Rate}$ Using: · Historical simulation on	

	Per Basel CRE60.6-60.10		portfolio • VC/PE index data or own performance • 1-year horizon (or hold-to-maturity) Key benefit: Recognizes diversification; VaR% ↓ as portfolio matures	
Fund Investment	Three Basel hierarchy approaches: a) Look-through (preferred): Apply underlying company-level RWs b) Mandate-based: • 250% RW (mature companies >5yr) • 400% RW (companies <5yr) Requires documented fund mandate c) Fallback: 1250% RW (no info) Per Basel CRE60.27-60.37	Risk Budget = EC (varies by approach) Best practice: mandate-based	Portfolio VaR with look-through: Request portfolio company data from fund managers (top 20-30 companies = ~70% exposure) Apply historical simulation to underlying companies	

Source: HM Treasury

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