

Market risk SREP methodology

Market risk in SREP

The following sections provide a more detailed description of the methodology for assessing market risk at significant institutions (SIs), as part of the Supervisory Review and Evaluation Process (SREP). The ECB uses a standardised risk-based methodology to assess market risk.

1 Introduction

The SREP market risk methodology:

- is consistent with the European Banking Authority (EBA) guidelines on SREP and assesses whether banks are complying with the ECB's supervisory expectations;
- is applied proportionately to SIs, taking into account the nature, scale and complexity of their activities;
- supports Joint Supervisory Teams (JSTs) in performing risk-based supervision while providing sufficient flexibility to cater for bank-specific elements, which means that the frequency, scope and depth of assessments vary in line with European banking supervision and bank-specific priorities;
- is comprehensive and includes backward and forward-looking perspectives that consider all relevant risk components and their possible mitigants;
- draws on best practices and is periodically updated to ensure alignment with the EBA guidelines on SREP and any relevant changes to regulations.

The factors that the ECB considers relevant when assessing the market risk of an institution include:

- the **size and materiality** of market exposures/activities;
- **risk factors** underlying the instruments held: interest rate risk¹ (excluding positions in the banking book), equity risk, credit spread risk, foreign exchange risk (including the gold position), commodity risk (including the precious metal position), and default and migration risks in the trading book;
- **features of the positions taken**: complexity, model risk, non-linear risk and gap risk;

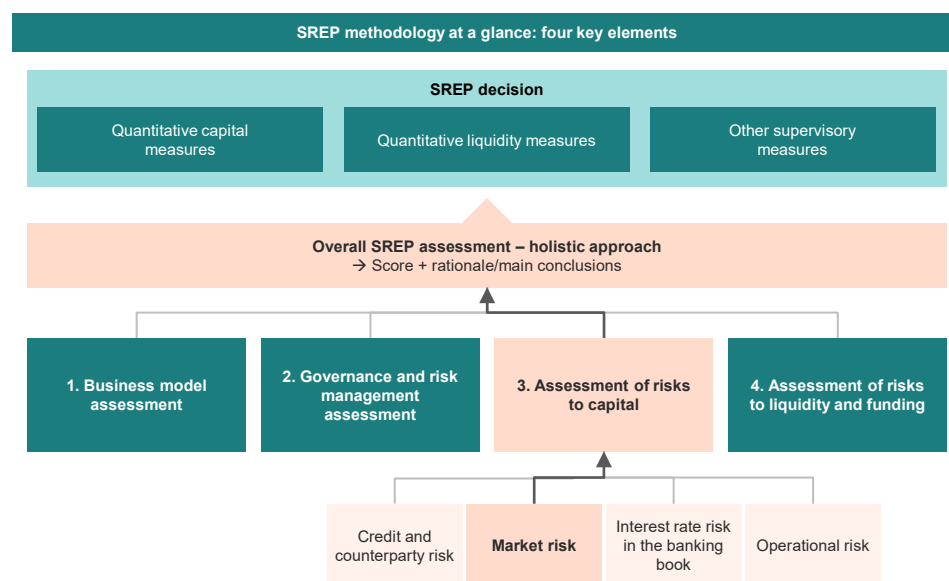
¹ Including inflation risk.

- **uncertainty regarding the fair value/exit price of a position:** risks related to market liquidity, market price uncertainty, bid-ask spreads and close-out costs;
- **relationships with the counterparties of transactions:** credit valuation adjustment risk and risks related to other fair value adjustments (whereby, despite being hybrid in nature, between credit and market risk-like drivers, counterparty credit risk is assessed under credit risk, in line with the EBA's guidelines);
- **the risk management practices of the institution:** hedging strategies, basis risk, concentration risk and correlation risk.

External factors – such as the economic environment, climate-related and environmental aspects, and geopolitical developments – are also considered.

As **Figure 1** shows, market risk is gauged as part of the assessment of risks to capital (Element 3 of SREP).

Figure 1
Overview of SREP methodology



As **Figure 2** indicates, the market risk assessment is based on (i) a quantitative assessment that considers the inherent risk (i.e. the risk level) and (ii) a qualitative assessment that considers the management and control framework (i.e. risk control). In the risk level assessment, JSTs assess risks or vulnerabilities that could have an impact on prudential elements of the institution if they were to materialise. In the risk control assessment, JSTs assess whether credit institutions have adequate processes and systems in place to identify, measure, evaluate, monitor, report and mitigate the level of market risk.

The **risk level** assessment is performed by JSTs in the following three phases:

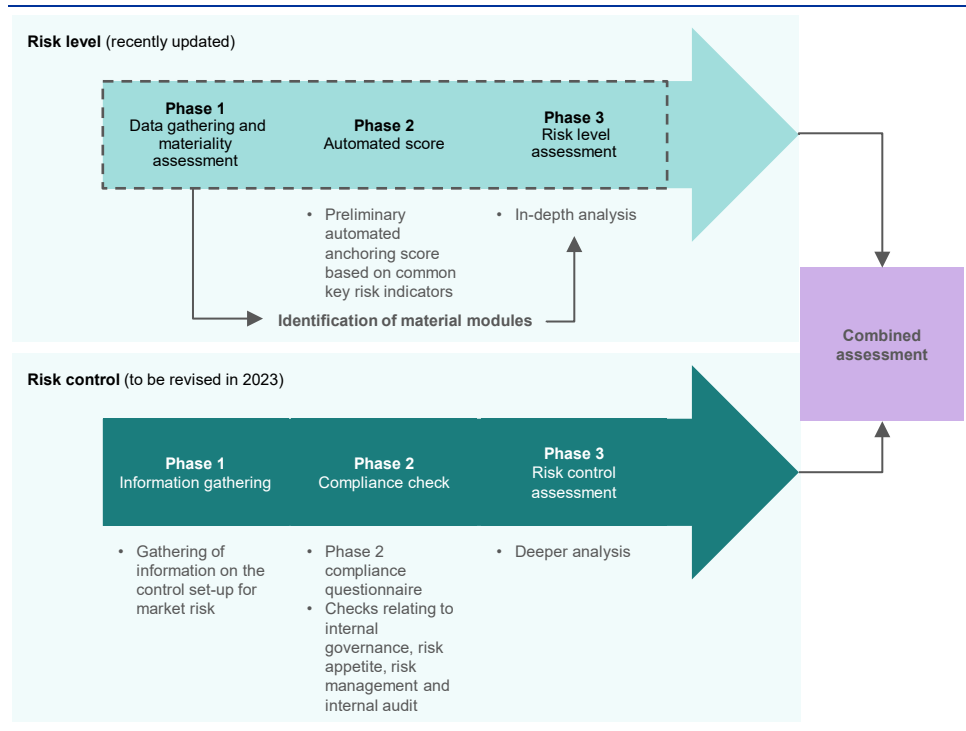
- Phase 1: supervisors gather data and assess the materiality of risks;
- Phase 2: an automated anchoring score is generated based on common key risk indicators;
- Phase 3: supervisors carry out a more in-depth market risk assessment, taking into account supervisory judgement regarding the bank specificities and applying constrained judgement.

The **risk control** assessment is also divided into three phases:

- Phase 1: supervisors gather data;
- Phase 2: supervisors conduct a formal compliance check for market risk control;
- Phase 3: supervisors carry out a more in-depth market risk assessment, taking into account supervisory judgement regarding the bank specificities and applying constrained judgement.

The assessment of market risk covers both the risk level and risk control, which are combined to form an overall market risk assessment. The supervisory judgement is summarised in an overall market risk score of between 1 and 4 (with qualifiers) and a rationale for that score.

Figure 2
Overview of SREP market risk assessment



The SREP methodology is rooted in the EBA guidelines on SREP and documents in which the ECB communicates its supervisory expectations as an integral part of the SREP framework.

The SREP methodology is subject to continuous improvement and alignment with identified best practices and new developments in the applicable regulations. The risk level methodology has been revised being applied as of SREP 2023, while the risk control methodology is due to be revised in 2023. The remainder of this document focuses on the updated risk level methodology; more information on the risk control methodology will be provided in due course.

2 Market risk level methodology

2.1 Phase 1

The **primary objective of Phase 1** is to conduct a materiality assessment of market risk, gain an overview of potential pockets of vulnerability, evaluate the market risk framework, and gather the data that are required to perform the main assessment in Phase 3.

The Phase 1 methodology comprises three main modules, covering the risks arising from (i) regulatory market risks, (ii) non-regulatory market risks and (iii) pricing-related risks. These three modules are further divided into sub-modules. This enables JSTs to focus on the most pertinent risks (**Table 1**).

- In the **regulatory market risk module**, JSTs assess any vulnerability to market risk stemming from exposures in the trading book (looking at all asset classes), as well as foreign exchange and commodity positions in the banking book² as defined in the EU's Capital Requirements Regulation (CRR).
- In the **non-regulatory market risk module**, JSTs assess any risk of losses being caused in the banking book by adverse movements in market prices/factors. This module is specific insofar as the risks it covers are only partially addressed by capital regulations, meaning that not all of them are accounted for under the Pillar 1 capital calculation framework.
- In the **pricing-related risks module**, JSTs assess the risk of losses in fair value positions arising from adverse movements in market price/factors which have an impact on the fair value adjustments used for accounting purposes – notably, credit valuation adjustments (CVAs) and other valuation adjustments (xVAs) – or from inaccurate determination of their fair values (valuation risk).

In addition, JSTs can assess any other aspect which is materially important to the market risk profile of an institution. Thus, the modular structure in Phase 1 facilitates

² Excluding structural FX risk, which is included in the non-regulatory market risk module (see Table 1 and the related footnote 4).

a more proportionate assessment, while supervisory efforts in Phase 3 focus on the material risk drivers for each institution.

Table 1
Modular structure of the risk level assessment

Modules	Sub-modules
Regulatory market risk	Interest rate risk in the trading book
	Credit spread risk and default risk in the trading book
	Equity risk in the trading book
	FX position risk
	Commodity risk
	Model risk from regulatory models and residual risk
Non-regulatory market risk	Credit spread risk in the banking book ³
	Equity risk in the banking book
	Structural FX risk ⁴
Pricing-related risk	CVA risk
	xVA risk
	Valuation risk

The market risk assessment is based on a wide range of information, including supervisory reporting and other relevant sources.

First, the materiality of the different modules is calculated automatically on the basis of available data sources, which include:

- implementing technical standards (ITS) on supervisory reporting (e.g. FINREP/COREP, including FRTB reports);
- regular information on the securities holdings of monetary and financial institutions which is collected by the Eurosystem and made available to JSTs;
- additional information received via the Short-Term Exercise (STE) – e.g. the STE on market risk.

A number of key risk indicators are calculated in order to check the materiality of the three modules and their respective sub-modules. Those indicators fall into three different categories, seeking to capture three complementary time views: **backward-looking indicators** (e.g. indicators measuring the historical volatility of market impacts over several quarters); **point-in-time indicators** (e.g. indicators capturing the size of positions exposed to market risk relative to the overall size of the balance

³ Note that in view of the publication of the new EBA guidelines on the management of interest rate risk and credit spread risk in the banking book (EBA/GL/2022/14), which will apply from 31 December 2023 for provisions on credit spread risk in the banking book, further methodological developments will be carried out in 2023 in order to ensure compliance with those new guidelines, especially with regard to the scope and treatment of this risk in the SREP.

⁴ Note that structural FX risk is capitalised as part of the market risk framework in accordance with the CRR and could have been included in the regulatory market risk module; nevertheless, it has been included in the non-regulatory market risk module on account of differences in its nature.

sheet); and **forward-looking indicators** (e.g. indicators measuring the potential impact that market movements could have on current positions in prudential terms). Those indicators signal riskiness and are considered when deciding which modules to include in the in-depth assessment in Phase 3.

Second, JSTs make a final decision on the material modules, also taking into account additional information such as the following:

- internal management data in banks' internal reports (e.g. ICAAP reports and internal audit reports);
- qualitative information such as market risk budgets and strategies, risk appetite frameworks for market risk, market risk policies and procedures, accounting policies and procedures with regard to the trading and banking books, and details of a bank's assets and liabilities committee and board risk committee;
- supervisory information such as findings from on-site inspections, deep dives, previous risk assessment system reports and other routine reporting;
- non-harmonised reporting by national competent authorities.

JSTs will categorise modules as either material or immaterial. When making its final decision on the materiality assessment, the JST always considers the results of the automatic assessment and takes into account the specificity and complexity of the institution in question.

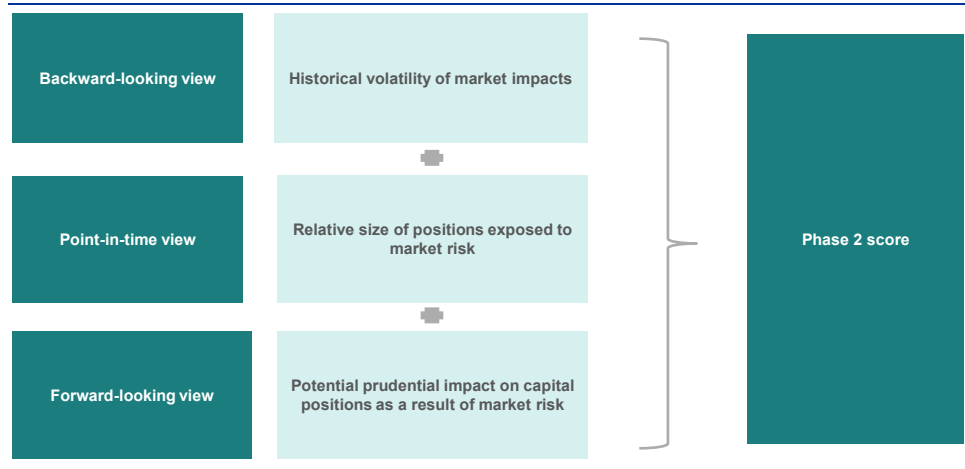
2.2 Phase 2

The purpose of Phase 2 is to produce an automatic anchoring score for the institution's market risk level. The Phase 2 score is risk-based, and the methodology is applied consistently across all SIs. This serves as a starting point, on the basis of which JSTs can consider more detailed bank-specific circumstances and apply expert judgement. The Phase 2 methodology captures various aspects, so that the preliminary assessment of an institution's market risk profile is sufficient and comprehensive.

The automatic score for the overall market risk level is **based on key risk indicators** for the three time views considered in Phase 1 and covers all aspects of market risk (i.e. all three modules).

Figure 3 summarises the approach adopted in Phase 2. The scores for the quantitative risk indicators used in Phase 2 are calculated by comparing a supervised institution's values with predefined thresholds based on the risk appetite of the SSM.

Figure 3
Approach to determining Phase 2 scores



The Phase 2 framework is purely quantitative in nature, which ensures that it is based on harmonised and consistent indicators and thresholds. **The Phase 2 score does not seek to capture all idiosyncratic elements linked to a bank’s market risk profile or to assess specific features of a bank, such as its business model (e.g. diversified lender, G-SIB or universal bank). Indeed, Such aspects are considered during the in-depth assessment performed by the JST in Phase 3.**

2.3 Phase 3

In Phase 3, JSTs conduct a comprehensive bank-specific assessment. This results in a final risk level score which reflects the institution’s specific market risk level. While the Phase 2 market risk score serves as an anchoring score, Phase 3 gives JSTs the flexibility to consider institution-specific aspects of the various risk drivers. Phase 3 follows a consistent risk-based framework, resulting in possible adjustment of the Phase 2 score.

JSTs consider information from various sources, including peer comparisons

The Phase 3 assessment takes into account insights gained from on-site inspections, deep dives and horizontal analysis (such as targeted or thematic reviews) whenever available. Peer comparison is also embedded in this assessment and supported by internally available tools.

The adequacy of processes and procedures is essentially a risk control topic and feeds into the risk control assessment; however, there may be consequences for the reliability of quantitative information analysed in the risk level assessment.

The quality and reliability of quantitative metrics reported by the supervised entity is considered, in order to prevent metrics from being biased. Such bias (which could, for example, stem from a lack of prudence or deficiencies in the area of risk control) could result in an excessively positive assessment of the supervised entity’s risk position.

The Phase 3 assessment allows JSTs to focus on the material modules and sub-modules as identified in Phase 1. This main assessment phase takes account of the five key perspectives described in the EBA guidelines in order to provide comprehensive analysis of a given area of market risk (e.g. a module or sub-module):

- **Strategy:** This refers to the choices that the institution makes regarding the level of market exposure and market risk it is willing to accept, particularly when it comes to choices about the bank's business model, business lines and products, as well as the limits set by the institution for implementing its risk appetite. It also encompasses decisions about the mitigation of risk (hedging strategies, collateralisation, etc.). The assessment of a bank's strategy should also cover recent and/or planned changes.
- **Nature and composition of market risk activities:** This assessment reflects the realisation of institutions' strategies (including hedging). It aims to achieve an overview of exposure to market risk by business line and product, based on the complexity and liquidity of products, as well as concentrations and correlations of risk factors in the portfolios, the related risk drivers and relevant risk measures (sensitivity, value at risk, expected shortfalls, etc.).
- **Profitability:** This refers to the actual realisation of the market activities in the institution's profits and losses (P&L) and other comprehensive income as a result of its strategy, the nature and composition of its portfolios, market movements and the institution's ability to efficiently manage its exposure to market risk. The assessment of profitability encompasses analysis of its evolution over time (i.e. trends and volatility), as well as related sources (trading revenue, commission, etc.), broken down by business line/desk and product. In addition, profitability is also assessed against the risk profile of the institution.
- **Market view:** This is a holistic assessment of major trends and movements in the financial markets, as well as changes and developments that could have an impact on the level of risk borne by the institution. Special emphasis is placed on the markets (both domestic and international) and macro/micro risk factors that are identified as being particularly relevant to the institution in question.
- **Prudential view:** This covers the impact that market risk could potentially have on the institution's prudential position, as well as current and future capital requirements in terms of market risk, CVA risk and valuation risk. It also covers any other potential prudential impact (e.g. the impact of market risk in the banking book). It uses the results of stress tests, as well as relevant ICAAP information, to identify possible additional sources of market risk (e.g. tail-risk events).

© **European Central Bank, 2023**

Postal address 60640 Frankfurt am Main, Germany

Telephone +49 69 1344 0

Website www.ecb.europa.eu

All rights reserved. Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.

For specific terminology please refer to the [ECB glossary](#) (available in English only).

PDF

ISBN 978-92-899-6108-0,

doi:10.2866/648758

QB-05-23-212-EN-N