European Banking Authority

THE EBA METHODOLOGICAL GUIDE

INDICATORS FOR RISK ASSESSMENT AND RESOLUTION & DETAILED RISK ANALYSIS TOOLS

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Abbreviations

ABS	Asset-backed Securities
AFS	Available for Sale
AMA	Advanced Measurement Approaches
AQT	Asset Quality Risk Indicator
ASA	Alternative Standardised Approach
BIA	Basic Indicator Approach
CDS	Credit Default Swap
CEBS	Committee of European Banking Supervisors
CET1	Common Equity Tier I Capital Ratio
CIU	Collective Investment Undertaking
CON	Concentration Risk Indicator
COREP	Common Reporting
CRD IV	Capital Requirements Directive IV
CRE	Commercial Real Estate
CRM	Credit Risk Mitigation
CRR	Capital Requirements Regulation
CVA	Credit Valuation Adjustment
DRAT	EBA Detailed Risk Analysis Tool
DTA	Deferred Taxation Adjustments
EBA	European Banking Authority
ECB	European Central Bank
EEA	European Economic Area
EL	Expected Losses
ELA	Emergency Liquidity Assistance (ECB monetary operation)
FBDS	Forborne Debt Securities
FBE	Forborne Exposures
FBL	Forborne Loans
FMI	Financial Market Infrastructure
FINREP	Financial Reporting
FND	Funding Risk Indicator
FSB	Financial Stability Board
FVOCI	Fair Value through Other Comprehensive Income
GAAP	Generally Accepted Accounting Principles
IFRS	International Financial Reporting Standards
IP	Immovable Property
IRB	Internal Rating-based
ITS	Implementing Technical Standard
KRI	EBA Key Risk Indicator
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
LIQ	Liquidity Risk Indicator
MKR	Market Risk Indicator
MREL	Minimum Requirement for own funds and Eligible Liabilities
NACE	Nomenclature of Economic Activities from the European System of National and Regional Accounts
NFC	Non-Financial Corporations
NPDS	Non-Performing Debt Securities
NPE	Non-Performing Exposures
NPL	Non-Performing Loans

NSFR	Net stable Funding Ratio
OCI	Other Comprehensive Income
OPR	Operational Risk Indicator
OTC	Over the Counter
PD	Probability of Default
PFT	Profitability Risk Indicator
POCI	Purchased or Originated Credit-impaired
PSE	Public Sector Entities
RSL	Resolution
RWA	Risk-weighted Asset
SA	Standardised Approach
SFT	Secured Financing Transactions
SME	Small and Medium Enterprises
SNP	Senior Non Preferred
SPE	Special Purpose Entity
SVC	Solvency Risk Indicator
SVR	Sovereign Risk Indicator
TLTRO	Targeted Longer-term Refinancing Operation (ECB monetary operation)
TSA	Standardised Approach
XBRL	eXtensible Business Reporting Language

Introduction

Background

Since February 2011, the EBA has started collecting, on a quarterly basis, statistical information referring to a sample of 55 banks across 20 EEA countries. This first set of converging concepts and definitions comprising both prudential and financial information was used to compute 53 Key Risk Indicators (KRIs). These KRIs are ratios that aim at providing early warnings and signs of trends helpful to monitor potential risks and vulnerabilities in the EU banking sector.

Different building blocks and components[1] relied on early existing versions of COREP and FINREP reporting frameworks, at the time endorsed by the Committee of European Banking Supervisors (CEBS)[2], thus ensuring that a high degree of standardised concepts and definitions were being used to achieve comparable outcomes across different countries. However, not all Competent Authorities (CAs) had fully implemented these reporting guidelines and, as a result, data had to be collected on a best-efforts basis. Data collection was performed by the CAs either directly from financial institutions, or by mapping data previously available in national reporting frameworks onto the data items as defined in COREP and FINREP, or instead by using other sources to proxy the missing data. Over time, experience has shown that its best-effort nature and the lack of direct applicability of definitions and concepts in national reporting frameworks were hampering EU-wide comparability of the compiled figures, as well as timeliness and coverage of the first version of KRIs computed by the EBA.

The first set of KRIs constituted, nevertheless, the minimum feasible set of metrics compiled by the EBA to undertake its oversight and micro-prudential analysis role, by building meaningful risk dashboards and reports.

The EBA has been placing a greater emphasis on proportionate but still uniform reporting requirements, to ensure data availability and comparability across the EU. After a first noticeable moment of this journey was when introducing the first Implementing Technical Standards (ITS) on supervisory reporting[3], which serve as the 'backbone' for the collection and compilation of EU supervisory statistics, the focus on streamlined and proportionate reporting requirements has grown significantly up to 2024. Such attention has been thoroughly assessed and described in the EBA cost of compliance study[4] of June 2021, prepared after Article 430(8) of the CRR**.** In this context, the EBA is committed to regularly reassessing the usefulness and explanatory power of ratios and

[1] Raw data contributing to KRI numerators and denominators, collected according to the EBA DC 031/2011.

[2] FINREP rev1 as published by the CEBS on 24 July 2007, COREP as published by the CEBS on 6 January 2010.

[3] Commission Implementing Regulation (EU) No 680/2014, laying down implementing technical standards with regard to supervisory reporting of institutions according to Regulation (EU) No 575/2013 of the European Parliament and the Council.

[4] For additional information consult https://www.eba.europa.eu/cost-compliance-supervisory-reporting.

formulas presented in this Methodological Guide, herein described for the sake of public transparency and to allow interested parties to replicate the numbers included in EBA publications.

The different reporting technical standards set out reporting requirements, clarify the applicable scope of institutions and reports frequency, as well as reference and remittance dates. These standards include annexes specifying the reporting requirements in the form of templates and instructions. Additionally, they provide reporting instructions with a Data Point Model (DPM) and a set of validation rules that ensure consistent application of the requirements, as published on the EBA website.[5] The EBA also develops XBRL taxonomies to facilitate data exchanges for the data concerned. Since those first ITS in 2014, a significant number of technical standards and EBA Guidelines of different policy areas have introduced various reporting requirements that have been included in the EBA DPM, for which XBRL taxonomies have been developed. Consequently, the list of EBA risk and resolution indicators has been enlarged over time, usually with every EBA reporting framework release, while being maintained for amendments driven by the evolution of regulatory reporting requirements, as well as prudential and financial frameworks.

In terms of content, the EBA reporting framework covers in 2025 fully harmonised supervisory reporting requirements for solvency and risk exposure amounts, large exposures, real estate losses, financial information on assets and liabilities composition, liquidity, leverage ratio and asset encumbrance. All taken together provide a comprehensive set of harmonised data on all EU institutions, including also harmonised definitions for non-performing and forborne exposures, thus promoting a full comparison of asset quality across EU banks, among many other risk and financial stability domains. The information derived from EBA reporting requirements assists supervisors in their Pillar 1 monitoring and their assessments of Pillar 2 risks. Since 2018, reporting requirements on resolution planning were introduced in the EBA reporting framework, followed shortly after by reporting requirements on minimum required eligible liabilities (MREL), both of which allowing for the coverage within this Methodological Guide of indicators on resolution and MREL, from 2021 onwards. In subsequent versions of this Guide, other reporting areas and indicators were added, for example to better and closely monitor the use of external ratings or the use of the Standardised Approach (SA) in the credit risk framework.

Considering the merits that the several reporting technical standards have brought – in terms of more granular information, data harmonisation, coverage, frequency and timeliness – the EBA sought to enhance its set of initial KRIs, thus developing a comprehensive set of risk and resolution indicators (RIs), to extend EBA's analytical range to a greater extent of the dataset resulting from the different reporting domains within the EBA reporting framework. In the same vein, a set of Detailed Risk Analysis Tools (DRATs) have been developed since 2014 and firstly published by EBA in 2016. When taking these RIs and DRATs together, it is possible to go beyond a classical definition of indicators, typically based on ratios only. Instead, the existing set of RIs and DRATs allow for a wider range of data visualisation techniques to be deployed, increasing the analytical power extracted from their underlying data components.

[5] For more on the EBA reporting framework see EBA reporting frameworks.

Box 1. Areas covered by the harmonised reporting requirements of the EBA reporting framework

a. Own funds requirements and financial information in accordance with Article 430(1), point (a) of Regulation (EU) No 575/2013;

b. Losses stemming from lending collateralised by IP in accordance with Article 430a(1) of Regulation (EU) No 575/2013;

c. Large exposures and other largest exposures in accordance with Article 394 of Regulation (EU) No 575/2013;

d. Leverage ratio in accordance with Article 430(1), point (a) of Regulation (EU) No 575/2013;

e. Liquidity coverage requirements and net stable funding requirements in accordance with Article 412 and Article 430(1), point (d) of Regulation (EU) No 575/2013, Article 415, paragraphs 3 and 3a, of that Regulation.

f. Reporting on nets table funding ratio in accordance with Article 413 and Article 430(1), point (d) of Regulation (EU) No 575/2013, Article 415, paragraphs 3 and 3a, of that Regulation.

g. Reporting on additional liquidity monitoring metrics, in accordance with Article 415(3), point (b) and Article 430(1), point (d) of Regulation (EU) No 575/2013

h. Asset encumbrance in accordance with Article 430(1), point (g), of Regulation (EU) No 575/2013;

i. Supervisory benchmarking of internal approaches in accordance with Article 78(8) of Directive 2013/36/EU.

j. Reporting on interest rate risk in the banking book, in accordance with Article 84(5), Article 84(6) and Article 98(5a) of Directive 2013/36/EU.

k. Supplementary reporting for the purpose of identifying and assigning G-SII buffer rates in accordance with Article 131 of Directive 2013/36/EU.

l. Reporting of financial information in accordance with Article 430(3) or (4) of Regulation (EU) No 575/2013

Purpose and structure of this Guide[6]

The primary purpose of this Guide is to serve all compilers of indicators for risk assessment and resolution in general, as well as EBA internal users monitoring the EU's banking sector on a regular basis. Both this Guide and a comprehensive list of the indicators and DRATs are available on a

[6] The first version of this Guide published in 2016 benefited from the valuable contribution provided by the EBA workstream on risk indicators (WSRI) created under the aegis of EBA's Subgroup on Analysis Tools (SGAT), namely Achilleas Nicolaou (European Banking Authority), Andreas Pfeil (European Banking Authority), Angelos Vouldis (European Central Bank), Antigoni Kallergi (Bank of Greece), Antonella Romano (Banca d'Italia), Bernd Rummel (European Banking Authority), Carmen Fernandez (Banco de España), Elena Pastuhova (Bulgarian National Bank), Fátima Estacio Valero (Banco de España), Fernando Garcia (Banco de España), Frank Corleis (BaFin, Germany), Frank Zirschke (BaFin, Germany), Gabriel Mitrache (European Banking Authority), Giuseppe Minervini (Banca d'Italia), Joao Duarte (European Banking Authority), Jose Crespo (European Central Bank), Karim El Fathi (ACPR, France), Kiril Varadinov (Bulgarian National Bank), Luís Garcia (European Banking Authority), Luis Gomes Martínez (Banco de España), Pedro Pólvora (Banco de Portugal), Raquel Ferreira (European Banking Authority), Riccardo Reale (European Central Bank), Rita Neves Costa (European Banking Authority), Stefan Paduraru (European Banking Authority), Stefano Borgioli (European Central Bank), Teresa Urbano (European Banking Authority), Topias Leino (European Central Bank), Valentina Drigani (European Banking Authority), Wolfgang Strohbach (European Banking Authority).

devoted EBA webpage[7]. Previous versions are kept published in the mentioned webpage, for future reference and ongoing use on past reference dates. In addition, this Guide serves as users' support for interpreting indicators' concepts, data sources (i.e. precise coordinates of data points from the EBA reporting framework involved in each indicator's calculation), computation techniques for each indicator or DRAT, and clarity on methodological issues that may assist public users truthfully interpreting their economic relevance and analytical power.

Furthermore, this Guide fosters transparency on the computation methodology regarding those indicators used in the context of the EBA official publications, such as the EBA's risk assessment report, the EBA's Transparency exercise and the EBA Risk Dashboard. Most importantly, it informs the public on how these indicators are computed.

Last but not least, this Guide enables other competent authorities, including those outside the EU, to compute indicators following the same methodology, and thus compare, in a consistent manner, indicators for different samples of banks, as well as for the EU aggregates.

With this Guide, the EBA does not intend to bind any competent authority, in particular those in the EU, with such formulas or risk assessment frameworks. Hence, the application and use of the suggested concepts is not mandatory, aiming only at supporting the computation of risk and resolution indicators which are consistent with the numbers and analyses included in EBA publications. Naturally, some of the indicators listed will follow very closely regulatory definitions, as laid down in the Capital Requirements Regulation (CRR) and Capital Requirements Directive (CRD). Likewise, the internationally agreed standards issued by the Basel Committee on Banking Supervision serve as an important source of inspiration for many of the proposed indicators.

This Methodological Guide is a living document, therefore expected to evolve periodically. With every new release, the EBA intends to reflect its own experience when using the suggested indicators, while capturing newly emerging user needs or relevant changes in the EU regulatory and supervisory reporting landscape (e.g. to accommodate changes in accounting standards).

The Guide is structured in three parts. Parts I and II cover an introduction to each indicator, along with a description of its possible use and economic meaning, then concluding with useful references to key methodological concerns impacting indicators' calculation, when those arise. Part I includes risk indicators for the following categories, depending on the type of risk addressed or monitoring category. These types of risk and categories are as follows: liquidity, funding, assets quality and composition, profitability, concentration, solvency, operational, market and sovereign risk, standardised approach to credit risk, COVID-19[8], funding plans, remuneration, external credit ratings, SME monitoring, ESG and CRR3/CRD6 monitoring. Part II covers indicators capturing MREL indicators and different aspects of resolution planning and monitoring. Finally, Part III discusses selective methodological issues that may arise when compiling or using the suggested indicators and DRATs.

[7] https://www.eba.europa.eu/risk-and-data-analysis/data/guides-data

[8] Discontinued after the exclusion of the corresponding reporting requirements from the EBA reporting framework, release version 3.0.

Part I. Risk indicators by type of risk

I.1 Liquidity risk

I.1.1. List of risk indicators and relevant DRATs

Table 1: List of LIQs and relevant DRATs

Number	Name	Number	Name
LIQ 1	Core funding ratio (% of total liabilities) – 'Turner ratio'	**LIQ 11**	Liquid assets to total assets (liquid asset ratio)
LIQ 5	Withdrawable funding (% of total liabilities)	**LIQ 13**	Financial assets held for trading to total assets
LIQ 6	Term funding (% of total liabilities)	**LIQ 14**	Financial liabilities held for trading to total liabilities and equity
LIQ 8	Repos funding Ratio (% of items providing stable funding)	**LIQ 17**	Liquidity coverage ratio (%)
LIQ 9	Funding via derivatives (% of total items providing stable funding)	**LIQ 18**	Liquid assets to short-term liabilities
LIQ 10	Firm specific currency concentration (% of total items providing stable funding)	**LIQ 20**	Net Stable Funding Ratio

I.1.2. Introduction

Liquidity risk refers to the risk of a firm being unable to fund its increases in assets or to meet its financial obligations, as they fall due, without incurring unacceptable costs or losses through fund raising and asset liquidation. This can be either the result of the financial institution's inability to manage unplanned decreases and changes in funding sources, or their failure to recognise or address changes in market conditions, that may affect the institution's ability to liquidate assets quickly and with minimal loss in value.

A liquidity crisis could potentially have a negative impact on earnings and capital and, in the extreme, could cause the collapse of an otherwise solvent institution. Earnings and growth potential could also be negatively affected if an institution's liquidity position constrains it from undertaking a transaction at normal market price. Conversely, illiquidity may lead to foregone investment opportunities or fire sales of assets, which could ultimately result in insolvency.

The banking sector is particularly susceptible to liquidity risk, as credit institutions fulfil a maturity transformation role in the financial system. The main role of banks (or financial institutions) is to

take short-term deposits and savings and invest these funds in longer-term assets, such as mortgages.

In this sense, liquidity risk is also considered to be a systemic risk. The interconnectedness and general correlation of performance among financial sector institutions means that contagion effects can arise from liquidity crises in individual institutions. This has historically manifested itself in the form of bank runs when a single failed institution triggers depositor runs for other institutions as well.

Moreover, liquidity risk could have systemic effects through other mechanisms. As seen in recent times, uncertainty about the solvency of institutions can lead to liquidity hoarding and a subsequent 'drying up' of credit in short-term interbank lending markets; liquidity crises can subsequently have spill over effects on the real economy in the form of reduced credit availability.

I.1.3. Description of the relevant risk indicators

The set of LIQs are mainly sourced from COREP liquidity templates (e.g. C 61.00) as well as FINREP templates.

This set of indicators considers the composition of assets and liabilities from the perspective of their impact on the institution's liquidity. Within this category, there are indicators that directly compare institutions' holdings of certain types of assets against certain types of liabilities. A prominent example is the Liquidity Coverage ratio (Regulation (EU) No 61/2015), which can be used to compare unencumbered, liquid assets with short-term cash flows given a severe liquidity stress scenario. In the same vein, there are indicators that focus on the institution's asset composition or liability composition separately, such as the core funding ratio (LIQ 1).

On the assets side, liquidity indicators can be used to assess the relative liquidity of a firm's holdings, i.e. the ease with which banks could sell their assets without impacting prices, or to consider the institution's reliance on certain types of assets that form their liquidity buffers (e.g. LIQ 14). Please note that while liquidity may impact asset quality (see chapter I.3) and vice versa, both concepts (and the respective indicators) differ substantially. Liquidity represents a risk category whereas asset quality may be understood as the compound of different asset characteristics, among which liquidity risk may be one.

Due to the reporting requirements for major currencies, COREP liquidity templates also allow the analysis of liquidity risk for specific currencies. Such indicators are important to consider, as liquidity is not always fungible across different currencies. A key use for such indicators is to identify potential liquidity shortfalls and risk areas for firms within different jurisdictions.

Besides these risk indicators, a DRAT covering liquidity has also been developed. These indicators can be compiled either at the institution level, assessing potential weaknesses in the positions held

in a given currency, or at the level of the whole EU banking system in order to assess general patterns in the positions held in foreign currencies.

I.2 Funding risk

I.2.1. List of risk indicators and relevant DRATs

Table 2: List of FNDs and relevant DRATs

Number	Name	Number	Name
FND 1	Asset encumbrance to total assets	**FND 20**	Proxy of secured funding
FND 2	Encumbrance of central bank eligible assets	**FND 21**	Central Bank Eligible Unencumbered Own Assets and collateral available for encumbrance to total liabilities
FND 3	Encumbrance of debt securities issued by general governments	**FND 22**	Share of deposits in non-domestic markets
FND 4	Encumbrance of collateral received	**FND 23**	Share of financial liabilities in non-domestic markets
FND 5	Over collateralisation	**FND 24**	Share of deposits of households and non-financial corporations
FND 6	Contingent encumbrance	**FND 25**	Use of subordinated financial liabilities
FND 7	Encumbered assets at central bank	**FND 26**	Gains and losses of financial liabilities at fair value to their carrying amount
FND 8	% of total deposits covered by a deposit guarantee scheme to total liabilities	**FND 27**	Average interest expense of debt securities issued
FND 9	Debt securities to total liabilities	**FND 28**	Covered bonds to total liabilities
FND 10	Deposits from credit institutions to total liabilities	**FND 29**	Asset-backed securities to total liabilities
FND 11	Loans and advances (excl. trading book) to total assets	**FND 30**	Convertible compound financial instruments to total liabilities
FND 12	Debt-to-equity ratio	**FND 31**	Share of total liabilities in the accounting and regulatory scope of consolidation
FND 13	Off-balance-sheet items to total assets	**FND 32**	Loans and advances-to-deposit ratio for households and non-financial corporations
FND 17	Loan-to-deposit and advances ratio	**FND 33**	Asset encumbrance ratio
FND 18	Customer deposits to total liabilities	**FND 34**	Average interest expense of deposits
FND 19	Proportion of short-term liabilities with encumbered assets	**FND 35**	Customer deposits to total (non-interbank) loans
		FND 36	Credit growth to private sector

Number	Name
AQM 1	Term funding per currency

I.2.2. Introduction

Funding risk refers to the risk undertaken by a firm in accessing sufficient funds to meet its obligations when they fall due. Therefore, as in the case of liquidity risk, a bank's poor financial performance may lead to its reduced creditworthiness and, consequently, to its failure to access sufficient funds over a specific horizon. Implicitly, this will eventually make it unable to settle its obligations during this time.

Besides an institution's creditworthiness, the composition and quality of the funds (the so-called funding profile) are also important factors to identify the firm's funding risk profile. For instance, when a bank is able to finance itself at low costs – using customer deposits or other forms of long-term unsecured funds – it can be considered as an institution with a low funding risk profile.

Moreover, an analysis of asset encumbrance is critical to assess the ability of institutions to handle funding stress, as well their ability to switch from unsecured to secured funding under such stressed conditions. The main sources of asset encumbrance (i.e. the balance sheet liabilities for which collateral was provided by institutions) across the sample are repos, covered bonds issued, and over-the-counter derivatives or central bank funding such as TLTROs, ELA and so on. Banks may use their assets as collateral to facilitate either short-term funding (e.g. using repos) or long-term funding (e.g. using ABS or covered bonds to diversify their funding profile).

In this context, the EBA identifies 36 funding indicators and one DRAT (AQM 1).

I.2.3. Description of the relevant risk indicators

In general, FNDs can be divided into **two groups: indicators that are related to encumbrance of assets, and those relating to the composition and quality of funding and liabilities**. The former set of indicators, i.e. those based on asset encumbrance, consists of indicators FNDs 1 to 7 and FND 33, while the latter consists of FNDs 8 to 32 and FND 34 on funding and balance sheet structure.

Considering the specialisation of the above-mentioned indicators, it is clear that the indicators cannot be analysed independently, as they do not provide a sufficient level of information about the bank's funding structure and related risk profile. However, when observed jointly, they show a good and overall picture of the associated funding risks.

As mentioned above, the FNDs 1 to 7 and FND 33 are risk indicators for asset encumbrance.

Analysts should consider an asset encumbered if it has been pledged or if it is subject to any form of arrangement to secure, collateralise or credit enhance any transaction from which it cannot be freely withdrawn. This definition covers but is not limited to:

- **Secured financing transactions**, including repurchase contracts and agreements, securities lending and other forms of secured lending;

- **Various collateral agreements** – for instance, collateral placed for the market value of derivatives transactions;
- **Financial guarantees** that are collateralised;
- **Collateral placed at clearing systems**, CCPs and other infrastructure institutions as a condition for access to service;
- **Central bank facilities**;
- **Underlying assets from securitisation structures**, where the financial assets have not been derecognised;
- **Assets in cover pools** used for covered bond issuance.

Therefore, these risk indicators provide a deeper insight into the proportion of encumbered assets, proportionally to the total assets. Knowledge about the volume and composition of the assets and collateral available for encumbrance can provide insights into the degree of leverage an institution has in raising additional secured funding.

The FNDs 8 to 18 are employed to measure funding risk and mainly concern the bank's balance sheet, providing a general overview of its evolution. FND 8 indicates the share of guaranteed deposits in the total items providing stable funding. FND 9 and FND 10 take a closer look at the share of the wholesale funding of the firm. FNDs 11 to 13 observe the balance sheet structure and the evolution of the main balance sheet items. Finally, FND 17 and FND 18 offer an insight into how extensively loans can be financed by deposits, while the share of deposits in total liabilities may also provide a notion of the institution's funding profile.

Indicators FND 19 to 31 and, FND 32 and 34 offer insights into the concentration of funding, its geographical distribution, and the quality of the secured and unsecured funding of an institution.

Indicators FND 35 and 36 were added to the list after the review of the EB IMF-FSI Guide.

Complementary to these risk indicators, there is also a DRAT that falls under the area of funding. The DRAT provides a breakdown by currency of term funding, as defined in the domain of the Net Stable Funding Ration (NSFR).

I.2.4. Further methodological issues and potential ways to address them

Despite the rich information available in the context of the ITS on supervisory reporting, additional information may also be deemed necessary in order to properly size a bank's funding profile. This funding profile can be enriched by analysing additional market data on the actual funding costs, the

average saving rates, interbank rates for the major currencies, repo rates and capital market credit spreads.

However, there is still room for further developments. An area that is also not sufficiently covered concerns data regarding capital and the money market instruments of an institution. Furthermore, the CDS spreads of an institution can also provide an indication of how markets evaluate an institution's creditworthiness. Consequently, the higher the likelihood of an institution defaulting, judging by its CDS spreads, the higher the chance this will be reflected in its funding risk profile.

I.3 Asset quality

I.3.1. List of risk indicators and relevant DRATs

Table 3: List of AQTs and relevant DRATs

Number	Name	Number	Name
AQT 1	Non-performing debt instruments (loans and advances & debt securities) net of impairments to prudential own funds	**AQT 54**	Texas ratio
AQT 2	Non-performing debt instruments (loans and advances & debt securities) net of impairments to Tier one capital	**AQT 55**	Non-performing loans and advances plus foreclosed assets to total gross loans and advances plus foreclosed assets (NPA ratio)
AQT 3.1	Non-performing debt instruments (loans and advances & debt securities) other than held for trading to total gross debt instruments (NPE ratio)	**AQT 56**	Share of stage 1 debt instruments to total gross debt instruments (loans and advances & debt securities) - Financial assets at fair value through other comprehensive income
AQT 3.1.1	Non-performing debt instruments held for sale	**AQT 57**	Share of stage 2 debt instruments to total gross debt instruments (loans and advances & debt securities) - Financial assets at fair value through other comprehensive income
AQT 3.1.2	Non-performing debt instruments (including held for sale)	**AQT 58**	Share of stage 3 debt instruments to total gross debt instruments (loans and advances & debt securities) - Financial assets at fair value through other comprehensive income
AQT 3.2	Share of non-performing loans and advances (NPL ratio)	**AQT 59**	Share of stage 1 loans and advances to total gross loans and advances - Financial assets at fair value through other comprehensive income
AQT 3.2.1 to AQT 3.2.5	Share of non-performing loans and advances by counterparty sector (Central banks, General governments, Credit institutions,	**AQT 60**	Share of stage 2 loans and advances to total gross loans and advances - Financial assets

Number	Name	Number	Name
	Other financial corporations and Non-financial corporations) (NPL)		at fair value through other comprehensive income
AQT 3.2.5.1	Share of non-performing loans and advances at cost or at amortised cost by counterparty sector - Small and Medium-sized Enterprises (SMEs) (NPL)	**AQT 61**	Share of stage 3 loans and advances to total gross loans and advances - Financial assets at fair value through other comprehensive income
AQT 3.2.5.2	Share of non-performing loans and advances at cost or at amortised cost by counterparty sector - Large corporations (NPL)	**AQT 62**	Share of stage 1 debt instruments to total gross debt instruments (loans and advances & debt securities) - Financial assets at amortised cost
AQT 3.2.6	Share of non-performing loans and advances by counterparty sector – Households (NPL)	**AQT 63**	Share of stage 2 debt instruments to total gross debt instruments (loans and advances & debt securities) - Financial assets at amortised cost
AQT 3.2.7	Ratio of non-performing loans and advances to NFCs & Households (NPL-core)	**AQT 64**	Share of stage 3 debt instruments to total gross debt instruments (loans and advances & debt securities) - Financial assets at amortised cost
AQT 3.3	Non-performing debt securities to total gross debt securities (NPDS ratio)	**AQT 65.1**	Share of stage 1 loans and advances to total gross loans and advances - Financial assets at amortised cost
AQT 4.1 to AQT 4.5	Share of non-performing debt instruments by counterparty sector (Central banks, General governments, Credit institutions, Other financial corporations and Non-financial corporations). (NPE)	**AQT 65.2**	Share of stage 2 loans and advances to total gross loans and advances - Financial assets at amortised cost
AQT 5.1 to AQT 5.6	Share of non-performing debt instruments (loans and advances & debt securities) by country (residency counterparty) - (Central banks, General governments, Credit institutions, Other financial corporations, Non-financial corporations and Households)	**AQT 65.3**	Share of stage 3 loans and advances to total gross loans and advances - Financial assets at amortised cost
AQT 6.2 to AQT 6.3	Share of impaired assets that are past due by instrument type	**AQT 65.4**	Share of POCI loans and advances to total gross loans

Number	Name	Number	Name
	(Debt securities and Loans and advances)		and advances – Financial assets at amortised cost
AQT 8.1 to AQT 8.3	Share of impaired debt securities that are past due by sector (Central banks, General governments, Credit institutions, Other financial corporations and Non-financial corporations)	**AQT 68.1**	Share of financial instruments measured at FV through P&L in total financial instruments
AQT 10.1 to AQT 10.2	Accumulated impairment and accumulated negative change in fair value due to credit risk on non-performing exposure of debt instruments by country (Debt securities and Loans and advances)	**AQT 68.1.a**	Share of financial instruments measured at FV through P&L in total IFRS 9 assets
AQT 11	Proportion of defaulted exposures	**AQT 68.2**	Share of financial instruments measured at FV through other comprehensive income in total financial instruments
AQT 12	Value adjustments and provisions compared to original exposure	**AQT 68.2a**	Share of financial instruments measured at FV through other comprehensive income in total IFRS 9 assets
AQT 13	Risk Weight ratio (credit risk)	**AQT 68.3**	Share of financial instruments measured at (amortised) cost in total financial instruments
AQT 14	Post-CRM exposure to original exposure	**AQT 68.3a**	Share of financial instruments measured at (amortised) cost in total IFRS 9 assets
AQT 15	EL amount compared to original exposure	**AQT 69.1**	Movements from stage 1 to 2
AQT 16.1	Share of defaulted exposures by sector and country - General governments (Central, Regional and PSE), Central Banks, Multilateral Development Banks and International Organisations	**AQT 69.2**	Movements from stage 1 to 3
AQT 16.2 to AQT 16.4	Share of defaulted exposures by sector and country (Institutions, Corporates and Retail)	**AQT 69.3**	Movements from stage 2 to 3
AQT 17.1	Share of newly defaulted exposures (or increase of defaults for the period) by sector and country - General governments (Central, Regional and PSE), Central Banks, Multilateral Development Banks and International Organisations	**AQT 69.4**	Movements from stage 2 to 1

Number	Name	Number	Name
AQT 17.2 to AQT 17.6	Share of newly defaulted exposures (or increase of defaults for the period) by sector and country (Institutions, Corporates, Retail, Equity and Other non-credit obligation assets	**AQT 69.5**	Movements from stage 3 to 2
AQT 18	Share of resecuritisations	**AQT 69.6**	Movements from stage 3 to 1
AQT 19	Share of impaired and past due >90 days collateralised loans	**AQT 69.7**	Deterioration rate - Movements from Stage 1 (to Stage 2 or Stage 3)
AQT 20	Quality of Off-Balance Sheet exposures (share of NP OBS exposures)	**AQT 69.8**	Default rate - Movements to Stage 3 (from stage 1 or 2)
AQT 20a.1	Quality of Off-Balance Sheet exposures (share of Stage1 OBS exposures)	**AQT 69.9**	Movements to Stage 1 (from stage 3 or stage 2)
AQT 20a.2	Quality of Off-Balance Sheet exposures (share of Stage 2 OBS exposures)	**AQT 69.10**	Movements to stages 1 and 2 from stage 3, compared to total financial instruments in stage 3
AQT 20a.3	Quality of Off-Balance Sheet exposures (share of Stage 3 OBS exposures)	**AQT 69.11**	Movements to stage 1 from stage 3, compared to total financial instruments in stage 3
AQT 21	Net allowances for credit losses : debt securities and loans and advances	**AQT 70.1**	Stage 1 Gross Carrying Amount Allocation - On balance sheet items
AQT 22.1	Share of fair value level for assets - Level 1	**AQT 70.2**	Stage 2 Gross Carrying Amount Allocation - On balance sheet items
AQT 22.2	Share of fair value level for assets - Level 2	**AQT 70.3**	Stage 3 Gross Carrying Amount Allocation - On balance sheet items
AQT 22.3	Share of fair value level for assets - Level 3	**AQT 71.1**	Coverage stage 1 - On balance sheet items
AQT 23	Share of large exposures in default	**AQT 71.2**	Coverage stage 2 - On balance sheet items
AQT 24.1 to AQT 24.2	Ratio of forborne assets by country (Debt securities and Loans and advances)	**AQT 71.3**	Coverage stage 3 - On balance sheet items
AQT 25	Past due (>90 days) but not impaired loans and advances to total loans and advances	**AQT 73.1**	Percentage of total credit risk allowances allocated to Stage 1 – On balance sheet items
AQT 26	Impaired and past due >90 days loans and advance to total loans	**AQT 73.2**	Percentage of total credit risk allowances allocated to Stage 2 – On balance sheet items
AQT 27	Change in allowances by type of instrument: loans and advances	**AQT 73.3**	Percentage of total credit risk allowances allocated to Stage 3 – On balance sheet items

Number	Name	Number	Name
AQT 28	Past due (>90 days) but not impaired debt instruments (loans and advances & debt securities) to debt instruments	**AQT 73.4**	Percentage of total credit risk allowances allocated to POCIs on-balance sheet items
AQT 31	Impaired financial assets to total assets	**AQT 74.1**	Allocation of non-credit impaired financial assets to stage 2
AQT 32	Impaired debt instruments to total debt instruments subject to impairment	**AQT 75.1.a**	Stage 3 Assets over total non-performing financial assets (after excluding POCI)
AQT 34	Impairments on financial assets to total operating income	**AQT 75.1.b**	Stage 3 Assets over total non-performing financial assets (excluding on-balance sheet and off-balance sheet exposures)
AQT 37	Forborne non-performing exposures to total forborne exposures	**AQT 75.2.a**	Stage 3 assets exposures over exposures subject to impairment non-performing exposures (including on-balance sheet and off-balance sheet exposures and excluding POCIs)
AQT 38.1	Share of non-financial corporations on total forborne exposures	**AQT 75.2.b**	Stage 3 and POCI assets exposures over total exposures subject to impairment non-performing exposures (including on-balance sheet and off-balance sheet exposures)
AQT 38.2	Share of households on total forborne exposures	**AQT 76.1**	Percentage of >30 days past due instruments classified as stage 1
AQT 39	Proportion of performing forborne exposures under probation	**AQT 76.2**	Percentage of >90 days past due instruments classified as stage 1 or stage 2
AQT 40	Coverage ratio for performing debt instruments (loans and advances & debt securities)	**AQT 76.3**	Share of >30 days past due instruments classified as stage 1 as a percentage of all assets which are > 30 days past due
AQT 41.1	Coverage ratio of non-performing debt instruments (loans and advances & debt securities)	**AQT 76.4**	Share of >90 days past due instruments classified as stage 1 or stage 2 as a percentage of all >90 days past due assets
AQT 41.1.1 to AQT 41.1.5	Coverage ratio of non-performing debt instruments (loans and advances & debt securities) - (Central banks, General governments, Credit institutions, Other financial corporations and Non-financial corporations)	**AQT 77.1**	Share of purchased or originated credit-impaired financial assets (POCIs) in relation to total assets subject to impairment
AQT 41.2	Coverage ratio of non-performing loans and advances	**AQT 78.1**	Off-balance sheet exposures - Share of stage 1 exposures

Number	Name	Number	Name
AQT 41.2.1	Coverage ratio of non-performing loans and advances - Central banks	**AQT 78.2**	Off-balance sheet exposures - Share of stage 2 exposures
AQT 41.2.2	Coverage ratio of non-performing loans and advances - General governments	**AQT 78.3**	Off-balance sheet exposures - Share of stage 3 exposures
AQT 41.2.3	Coverage ratio of non-performing loans and advances - Credit institutions	**AQT 79.1**	Coverage ratio of stage 1 financial assets
AQT 41.2.4	Coverage ratio of non-performing loans and advances - Other financial corporations	**AQT 79.2**	Coverage ratio of stage 2 financial assets
AQT 41.2.5	Coverage ratio of non-performing loans and advances - Non-financial corporations	**AQT 79.3**	Coverage ratio of stage 3 financial assets
AQT 41.2.6	Coverage ratio of non-performing loans and advances - Households	**AQT 79.4**	Coverage ratio of Purchased or Original credit-impaired financial assets
AQT 41.2.7	Coverage ratio for non-performing debt instruments held for sale	**AQT 80.1**	Level 1 financial assets as share of total financial assets
AQT 41.2.8	Coverage ratio for all non-performing debt instruments including held for sale	**AQT 80.2**	Level 2 financial assets as share of total financial assets
AQT 41.3	Coverage ratio of non-performing debt securities	**AQT 80.3**	Level 3 financial assets as share of total financial assets
AQT 42.1	Forbearance ratio (gross amount) (FBE)	**AQT_81.1**	Growth of inflows to non-performing loans and advances other than held for trading or trading or held for sale
AQT 42.1.1 to AQT 42.1.5	Forbearance ratio (gross amount) for debt instruments (FBE) - (Central banks, General governments, Credit institutions, Other financial corporations and Non-financial corporations)	**AQT_81.2**	Growth of outflows to non-performing loans and advances other than held for trading or trading or held for sale
AQT 42.2	Forbearance ratio- Loans and advances (gross amount) (FBL)	**AQT_81.3**	Growth of total inflows to non-performing loans and advances
AQT 42.2.1 to AQT 42.2.6	Forbearance ratio (gross amount) for loans and advances - (Central banks, General governments, Credit institutions, Other financial corporations, Non-financial corporations and Households)	**AQT_81.4**	Growth of total outflows to non-performing loans
AQT 42.3	Forbearance ratio - Debt securities (gross amount) (FBDS)	**AQT_82.1**	Commercial Real Estate to NFC SMEs NPL ratio
AQT 44	Variation of allowances	**AQT_82.2**	Commercial Real Estate to NFC other than SMEs NPL ratio

Number	Name	Number	Name
AQT 46	Net allowances by type of instrument : debt securities	**AQT_82.3**	Loans collateralised by commercial immovable property to NFC NPL ratio
AQT 47.1	Level of performing forborne loans not under probation (of total loans) (all gross)	**AQT_82.4**	Loans collateralised by residential immovable property to Households NPL ratio
AQT 47.2	Level of performing forborne loans under probation (of total loans) (all gross)	**AQT_84.2**	Default Rate of non-performing Loans and Advances
AQT 47.3	Level of non-performing forborne loans (of total loans) (all gross)	**AQT_83.2**	% Loans and advances in litigation status
AQT 48.1	Non-performing debt instruments (loans and advances & debt securities) to total gross debt securities and loans and advances (NPE at cost or at amortised cost)	**AQT_83.3**	% Non-performing Unsecured loans and advances without guarantees
AQT 48.2	Non-performing loans and advances to total gross loans and advances (NPL at cost or at amortised cost)	**AQT_83.4**	% Non-performing Loans and advances with an accumulated coverage ratio > 90%
AQT 48.2.1	Ratio of non-performing loans and advances to NFCs and Households (NPL-core at cost or at amortised cost)	**AQT_83.5**	% Non-performing Loans and advances collateralised by immovable property
AQT 48.3	Non-performing debt securities to total gross debt securities (NPDS at cost or at amortised cost)	**AQT_83.6**	% Non-performing Loans and advances collateralised by immovable property with LTV less than or equal to 60%
AQT 49.1	Non-performing debt instruments (loans and advances & debt securities) to total gross debt instruments (NPE at fair value through other comprehensive income or through equity subject to impairment)	**AQT_83.7**	% Non-performing Loans with a LTV higher than 60% and lower than or equal to 80%
AQT 49.2	Non-performing loans to total gross loans and advances (NPL at fair value through other comprehensive income or through equity subject to impairment)	**AQT_83.8**	% Non-performing Loans with a LTV higher than 80% and lower than or equal to 100%
AQT 49.3	Non-performing debt securities to total gross debt securities (NPDS at fair value through other comprehensive income)	**AQT_83.9**	% Non-performing Loans with a LTV higher than 100%
AQT 49a.1	Non-performing debt instruments to total gross debt instruments (loans and advances & debt	**AQT_83.10**	% Performing Loans and advances collateralised by immovable property

Number	Name	Number	Name
	securities) - NPE at strict LOCOM, or fair value through profit or loss or through equity not subject to impairment		
AQT 49a.2	Non-performing loans to total gross loans and advances (NPL at strict LOCOM, or fair value through profit or loss or through equity not subject to impairment)	**AQT_83.11**	% Performing Loans and advances collateralised by immovable property with LTV less than or equal to 60%
AQT 49a.3	Non-performing debt securities to total gross debt securities (NPDS at strict LOCOM, or fair value through profit or loss or through equity not subject to impairment)	**AQT_83.12**	% Performing Loans with a LTV higher than 60% and lower than or equal to 80%
AQT 50.1	Coverage ratio of non-performing debt instruments (loans and advances & debt securities) at cost or at amortised cost	**AQT_83.13**	% Performing Loans with a LTV higher than 80% and lower than or equal to 100%
AQT 50.2	Coverage ratio of non-performing loans and advances (at cost or at amortised cost)	**AQT_83.14**	% Performing Loans with a LTV higher than 100%
AQT 50.3	Coverage ratio of non-performing debt securities (at cost or at amortised cost)	**AQT_84.3**	Re-Default Rate of non-performing Loans and Advances
AQT 51.1	Coverage ratio of non-performing loans and debt securities (at fair value through other comprehensive income or through equity subject to impairment)	**AQT_84.4**	% Reduction of non-performing loans and advances due to partial or total loan repayment
AQT 51.2	Coverage ratio of non-performing loans and advances (at fair value through other comprehensive income or through equity subject to impairment)	**AQT_84.5**	% Reduction of non-performing loans and advances due to collateral liquidations
AQT 51.3	Coverage ratio of non-performing debt securities (at fair value through other comprehensive income or through equity subject to impairment)	**AQT_84.6**	% Reduction of non-performing loans and advances due to taking possession of collateral
AQT 51a.1	Coverage ratio of non-performing debt instruments (loans and advances and debt securities) at strict LOCOM, or fair value through profit or loss or through equity not subject to impairment	**AQT_84.7**	% Reduction of non-performing loans and advances due to sale of instruments

Number	Name	Number	Name
AQT 51a.2	Coverage ratio of non-performing loans and advances (at strict LOCOM, or fair value through profit or loss or through equity not subject to impairment)	**AQT_84.8**	% Reduction of non-performing loans and advances due to risk transfers
AQT 51a.3	Coverage ratio of non-performing debt securities (at strict LOCOM, or fair value through profit or loss or through equity not subject to impairment)	**AQT_84.9**	% Reduction of non-performing loans and advances due to write-offs
AQT 52.1	Forborne loans and debt securities to total gross debt securities and loans and advances (FBE at cost or at amortised cost)	**AQT_84.10**	% Reduction of non-performing loans and advances due to reclassification as held for sale
AQT 52.2	Forborne loans to total gross loans and advances (FBL at cost or at amortised cost)	**AQT_84.11**	% Increase of non-performing loans and advances due to purchase of exposures
AQT 52.3	Forborne debt securities to total gross debt securities (FBDS at cost or at amortised cost)	**AQT_84.12**	% Increase of non-performing loans and advances due to accrued interest
AQT 53.1	Forborne loans and debt securities to total gross debt securities and loans and advances (FBE at fair value through other comprehensive income or through equity subject to impairment)	**AQT_85.1**	Coverage Ratio of Total Collateral obtained by taking possession other than collateral classified as Property Plant and Equipment (PP&E)
AQT 53.2	Forborne loans to total gross loans and advances (FBL at fair value through other comprehensive income or through equity subject to impairment)	**AQT_85.2**	Ratio of Total Collateral obtained by taking possession other than collateral classified as Property Plant and Equipment (PP&E) > 5 years
AQT 53.3	Forborne debt securities to total gross debt securities (FBDS at fair value through other comprehensive income or through equity subject to impairment)	**AQT_85.3**	% Inflow of Collateral obtained by taking possession other than collateral classified as Property Plant and Equipment (PP&E)
AQT 53a.1	Forborne loans and debt securities to total gross debt securities and loans and advances (FBE at strict LOCOM, or fair value through profit or loss or through equity not subject to impairment)	**AQT_85.4**	% Outflow of Collateral obtained by taking possession other than collateral classified as Property Plant and Equipment (PP&E)
AQT 53a.2	Forborne loans to total gross loans and advances (FBL at strict LOCOM, or fair value through	**AQT_86.1**	% Non-performing forborne loans and advances that failed

Number	Name	Number	Name
	profit or loss or through equity not subject to impairment)		to meet the non-performing exit criteria
AQT 53a.3	Forborne debt securities to total gross debt securities (FBDS at strict LOCOM, or fair value through profit or loss or through equity not subject to impairment)		

I.3.2. Introduction

The asset quality framework reflects the quantity of existing and potential credit risks related with loan and investment portfolios (which are typically the majority of a bank's assets) and other assets, as well as off-balance-sheet transactions, which are granted or owned by an institution against various counterparties, such as corporates, retail customers, other credit institutions, governments, and others.

Credit risk is most simply defined as the potential risk that a bank borrower or counterparty will fail to meet its obligations in accordance with the pre-agreed terms. The goal of credit risk management is to maximise a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio, as well as the risk in individual credits or transactions.

The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking institution. This is therefore reflected on assets quality, as they show the existing and potential credit risks associated to loans and investment portfolios (which typically comprise the majority of a bank's assets).

The credit risk is one of the most relevant and supervised areas in a bank's business model. It is important to understand institutions' current state of play, monitor the trends and thus understand vulnerabilities drivers, and be in a position to react taking supervisory measures. Thus, is not surprising that were identified 232 asset quality indicators and 5 DRATs.

I.3.3. Description of the relevant risk indicators

Several AQTs have been identified in the context of the EBA risk indicators. Some of these ratios focus on the level of loan loss provisioning to cover defaulted, impaired or non-performing assets, while others cover different aspects of the asset quality concept, such as the fair value level according to IFRS and the importance of forbearance or exposures on re-securitised products.

Additionally, some of the indicators refer to more granular asset classes or counterparty sectors, such as corporates, large or foreign exposures towards borrowers in a country or group of countries, in a more detailed manner.

Some indicators can be computed for IFRS or national GAAP compatible IFRS, only. For national GAAP based on BAD, in some cases there is no equivalent indicator by definition, e.g. for indicators based on the fair value hierarchy or on the stages 1 to 3 according to IFRS 9.

In general, AQTs can broadly be divided into seven categories.

In the **first group** we have 13 indicators (namely AQT 1 to 5, 20, 20a, 37, 41 and 48 to 51a, 55, plus AQT 54, which covers the "Texas ratio") **referring to non-performing exposures** (loans, debt securities). These assets are compared to other significant figures (such as Tier 1 capital), or show the level of coverage, encumbrance, or the share by country of such assets. The EBA definition of non-performing exposures builds upon the definitions of impairment and default according to IFRS and Regulation (EU) No 575/2013 (CRR). The NPE definition is broader than these notions, with the setting of common identification and discontinuation criteria (90 days past-due or unlikeliness to pay) to serve as a more harmonised asset quality indicator across Europe to compare the banking institutions one to another.

The **second group includes 12 indicators** (AQT 6, 8, 10, 19, 25, 26, 28, 31, 32, 34, 40 and 75,) that specifically **refer to impaired assets**. Under IFRS, impaired assets are considered as stage 3 assets. More particularly, AQT 19 focuses on those impaired assets that have been collateralised, as this category can be considered particularly sensitive, since it may reflect the potential impact of cash flows (due to the costs for obtaining and selling the collateral) on whether foreclosure is probable.

AQT 22 analyses the structure of fair value assets based on their measurement methodology. The fair value hierarchy is a concept used in the IFRS accounting framework to reflect the way assets were evaluated in fair value within the books. In particular, there are three levels that reflect the inputs used to measure fair value, ranging from quoted prices in active markets to unobservable inputs. Level 3 demonstrates those assets that were valuated relying on unobservable price inputs and, therefore, have now become a potential source of loss in case of overestimation. Hence, AQT 22 tries to reflect this kind of particular risk. As there is no equivalent concept in national GAAPs based on BAD, the analysis is limited to banks applying IFRS. Note that AQT 68 shows the classification of financial instruments (at fair value through profit or loss, fair value through other comprehensive income and amortised cost respectively).

The fourth group of 8 indicators, namely AQT 24, 38, 39, 42, 47, 52, 53 and 53a, refer to the level of forbearance, i.e. the share of forborne exposures. The use of forbearance is interesting when considered from a risk policy perspective, especially over several periods of time – for example, when steep increases occur – in order to assess whether there has been some change in the bank's behaviour regarding this type of asset. This point of view may also reveal the share of successful forbearance at a given point of time, which can be deduced by looking at the amount of forborne exposures that have been reclassified from the non-performing to the performing category (described as loans under probation) and/or by measuring the proportionality of reclassified forborne loans.

Three other indicators, AQTs 11, 16 and 17, refer to 'defaulted exposures', allowing a comparison to a certain extent with non-performing indicators.

A sixth group identifies five indicators, AQTs 12, 21, 27, 44 and 46, that **cover value adjustments and allowances** (reducing the accounting value of an asset) by instrument (e.g. loans, equity etc.). Net value adjustments (flows of credit loss allowances, i.e. closing balance minus opening balance) provide information on the development of allowances for credit losses depending on the type of counterparty.

A seventh group of indicators, AQT 56 to 67, AQT 70 and 78 shows the share of assets and off balance sheet exposures (AQT 78) for impairment measurement under IFRS 9, classified by different stages. The impairment measurement under national GAAP based on BAD differs from this measurement. Therefore, these indicators can only be built for banks applying IFRS. To also note that indicator AQT 69 shows the transfer of financial assets between different stages.

Of the remaining indicators, **two indicators**, AQT 71 and 73 are built around the amount of IFRS **impairment losses by stage**. AQT 73 therefore shows the percentage allocation of credit risk allowances per stage (if compared to the total amount of impairments across all stages), while AQT 71 is showing the coverage ratio of exposures per stage (reflecting the total amount of loss allowances for each stage, compared with the total gross exposures per stage). **One indicator** - AQT 74 also shows the total amount of non-credit-impaired financial assets (stages 1 and 2 under IFRS 9) classified in stage 2 (i.e. assets for which the institution has concluded that credit risk has increased significantly since initial recognition).

One indicator (AQT 76) provides information on the use of the '30 days past due' and '90 days past due' indicators as backstops for transferring exposures from stage 1 to stage 2 (30 days past due) and from stage 2 to stage 3 (90 days past due).

Another indicator (AQT 77) shows the share of purchased or originated credit-impaired financial assets as a percentage of total assets subject to impairment.

Finally, the **remaining 5 indicators**, AQTs 13 to 15, 18 and 23 (including their sub indicators, e.g. by counterparty) are built based on COREP templates and provide **detailed information on defaulted exposures**, both outstanding and recorded during the observed period, regarding the EL compared to original risk exposures and risk-weighted measures. Among these, two indicators (AQT 18, AQT 23) cover the share of defaulted exposures within large exposures and re-securitisations.

Furthermore, all country breakdowns are subject to a threshold, and thus reported only by institutions whose foreign exposures are at least 10% of the total. Effectively, that means that all indicators based on them can be computed only for institutions with significant foreign exposures.

Following the introduction of new enhanced supervisory reporting for asset quality and more specifically on non-performing loans flows in ITS 2.9, the list of asset quality risk indicators has been enriched to capture cure, defaults and re-defaults rates, inflows and outflows of NPLs as well as collaterals. These indicators refer to AQT 81.1 to AQT 86.1.

To conclude, the DRAT presents 5 figures in the context of analysing asset quality. The first two, within the rankings of defaulted and non-performing exposures (RNPE1), DRAT codes 100 and 200, propose a ranking of countries according to the absolute and relative amounts of non-performing exposures respectively, with data extracted from FINREP template F 20.04. These indicators can provide insights into the geographical areas where EU banks recognise more financial assets as nonperforming. Within the asset quality matrices (AQM1), DRAT codes 100, 200 and 300 consist of a matrix (for IRB banks only) providing information on LGD, average PD on total IRB exposures and average PD without taking defaulted exposures into account.

I.3.4. Further methodological issues and ways to address these

Some of the above-mentioned indicators could be also presented using matrices – for example, with regard to those dealing with countries or country groups, or categories of assets (equity, loans, etc.), or counterparty sectors (households/retail, corporates, sovereign exposures types).

Furthermore, one should bear in mind that the Expected Losses (EL) used in AQT 15 are estimated and thus not effective values. They are very useful tools used for supervisors to assess the solvency of the banking industry. However, they should be compared with care to effective losses and defaults, as EL are calculated only for IRB exposures, and thus, do not reflect the whole amounts of the exposures.

Some indicators are multiplied by -1, in order to provide meaningful results.

I.4 Profitability

I.4.1. List of risk indicators and relevant DRATs

Table 4: List of PFTs and relevant DRATs

Number	Name	Number	Name
PFT 1	Staff expenses as % of total administrative expenses	**PFT 21.8**	Impairments (credit risk losses) to total equity
PFT 2	Total operating income per staff expenses	**PFT 22**	Return on regulatory capital requirements
PFT 4	Tax rate on continuing operations	**PFT 23**	Cost-income ratio
PFT 5.1	Structure of net interest income – central banks	**PFT 24**	Return on assets
PFT 5.2	Structure of net interest income – general governments	**PFT 24.1**	Net interest income to total assets
PFT 5.3	Structure of net interest income – credit institutions	**PFT 24.2**	Net fee and commission income to total assets
PFT 5.4	Structure of net interest income – other financial corporations	**PFT 24.3**	Net income on trading assets and liabilities to total assets
PFT 5.5	Structure of net interest income – non-financial corporations	**PFT 24.4**	Administrative expenses to total assets
PFT 5.6	Structure of net interest income – households	**PFT 24.4.1**	Administrative expenses and depreciation costs to total on balance and off-balance sheet assets
PFT 7	% of interest income earned domestically	**PFT 24.5**	Impairments on financial assets to total assets
PFT 8	% of interest expenses spent domestically	**PFT 25**	Net interest income to total net operating income
PFT 10	% of fee and commission income earned domestically	**PFT 26**	Net fee and commission income to total net operating income
PFT 11	% of total net operating income earned domestically	**PFT 29**	Net gains on financial assets and liabilities held for trading to total net operating income
PFT 12	Structure of fee and commission income net – payment services	**PFT 33**	Annual growth rate of the total net operating income
PFT 13	Structure of fee and commission income net – structured finance	**PFT 35**	Asset-deposit spread for central banks
PFT 14	Structure of fee and commission income net – asset management	**PFT 36**	Asset-deposit spread for general governments
PFT 15	% of total profit or loss earned/lost in domestic activities	**PFT 37**	Asset-deposit spread for credit institutions
PFT 16	% of total profit or loss earned/lost in non-domestic activities	**PFT 38**	Asset-deposit spread for other financial corporations

PFT 19	Return on Equity from continuing operations	**PFT 39**	Asset-deposit spread for non-financial corporations
PFT 21	Return on equity	**PFT 40**	Asset-deposit spread for households
PFT 21.1	Net interest income to total equity	**PFT 41**	Net interest margin
PFT 21.2	Net fee and commission income to total equity	**PFT 43**	Cost of risk
PFT 21.3	Net trading income (including Fair Value results) to total equity	**PFT 43.1**	Cost of Risk (IFRS)
PFT 21.4	Other operating income to total equity	**PFT 43.2**	Cost of Risk (nGAAP)
PFT 21.5	Staff expenses to total equity	**PFT 44**	Share of Net Ordinary Operating Income to Net Operating Income
PFT 21.6	Other admin. (incl. depreciation) expenses to total equity	**PFT 45**	Impairment and provisioning on financial assets to Net Ordinary Operating Income
PFT 21.6.2	Cash contributions and payment commitments to resolution funds and deposit guarantee scheme to total	**PFT 46**	Return on tangible equity
PFT 21.7	Provisions to total equity		

I.4.2. Introduction

A bank's profitability can be traced back to cyclical as well as structural aspects. Cyclical sources of profitability refer to, for instance, the level of the interest rates, the slope of the yield curve, the availability of high-yield assets, the burst or development of asset price bubbles and the economic environment, or the current phase of the business cycle, among others.

On the other hand, structural reasons that determine a bank's profitability could indicate how well a bank reacts to business developments – such as an increasing online banking activity – and, therefore, if the business model is appropriate and up to date. It can also indicate the structure of the economy as such and whether a bank has an appropriate business model to meet the demands, a bank's cost structure, relics from former management and business decisions. Examples of these points include portfolio decisions with long-term effects, a bank's management and how banks are affected by the regulatory environment.

There are several channels through which the risk of low profitability could materialise. Profitability is the first line of banks' defence against losses. In an economic downturn, a bank with a structurally low profitability will soon see their profits wiped-out and the losses damaging its solvency position.

Moreover, medium and long-term profitability prospects are reflected in banks valuations. Hence, a bank with poor market valuation might find very costly in terms of shareholder dilution to raise new capital to reinforce its solvency if needed.

Banks with low profitability might also encounter problems when seeking refinancing from the markets, i.e. other banks and investors are less willing to invest in the bank or lend it money.

Profitability does not come without risks. In attempt to improve profitability, a bank could cut costs, which could possibly result in insufficient internal control structures or lead to increased legal and reputational risks that could effectively have severe financial consequences. In their attempt to increase revenues, banks may also engage in a search for yield, and thus invest into risky assets that could potentially cause problems if these risks materialise.

Furthermore, the **risk of asset price bubbles** may also increase when many banks invest in the same asset class. Another structural problem for banks' balance sheets arises when banks try to raise profitability by increasingly using maturity transformations. In addition, banks may try to change their business model, which is a complex task that requires experienced management to be involved.

I.4.3. Description of the relevant indicators

The first indicators give an overview perspective of banks' income. Indicators PFT 21 to PFT 33 were initially employed in the context of the KRIs and were intended to measure banks' profitability, which mainly concerns a bank's income and gives a general overview of the development of the overall profitability. Also PFTs 41, 43 and 45 are dealing with a general overview perspective whereby for PFTs 44 and 45, extraordinary market conditions are excluded

Then, additional indicators allowing a deeper understanding of profitability's roots were included. These additional indicators, PFTs 1 to 19 and PFTs 35 to 40, provide useful insights into the income structure and the cost structure. Thus, these indicators may help to detect shifts in business models and their potential to increase banks' revenues. They also ease international comparisons or peer-to-peer analysis, allowing for differences in the income structure of banks to be scrutinized, as well as to identify relevant outliers.

These additional profitability indicators can be broadly split into four groups: the **first set** focuses on the cost structure, namely staff and administrative expenses and taxes; the **second group** looks at the geographical structure of income and expenses; the **third** shows the structure of the interest income; and the **fourth** set focus on the structure of fee and commission income

These indicators explain not only the main drivers of revenues, but also how meaningful are the amounts depleted with staff expenses. These indicators analyse how much of the administrative expenses can be attributed to staff expenses, and how many euros of staff or administrative expenses are required to earn one euro of total operating income. Thereby, it can be analysed how personnel-intensive or staff-dependent a bank's business model is.

Furthermore, these indicators can provide an overview of the cost structure of the bank. In a peer comparison, e.g. among banks with similar business models, these indicators also allow one to learn

about the potential deficits of a bank. The risk indicator looking at the tax rate on continuing operations allows one to study how much of the earnings from continuing operations banks have to pay as taxes. This is, in particular, interesting if compared internationally.

In the second group, income and expenses are analysed separately, according to whether they are earned or spent domestically or non-domestically. PFT 15 and PFT 16 demonstrate the percentage of total profits or losses earned/lost in domestic (PFT 15) versus non-domestic activities (PFT 16).

Some indicators show information for the main sources of income by geographic origin. PFTs 7 to 11 provide a more granular view by analysing the main income and expenses according to their geographic origin. In particular, these PFTs demonstrate what percentage of interest income, interest expenses, dividend income, fee and commission income and total net operating income is generated by domestic entities. All such indicators can contribute to our understanding of how dependent a bank's business model is on domestic and non-domestic income respectively.

The third group of indicators, PFTs 5 and 35 to 40, provides a more detailed insight into the origin of interest income, specifically, what share of the interest income is generated by the business with households and credit institutions. These indicators do not necessarily add up to a total of 100%, as there may be also other sources of interest income that are classified as less important in this analysis and thus are not observed separately (for example, the net interest income on interest-bearing assets).

The fourth group of indicators, PFTs 12 to 14, observes the sources of fee and commission income. Such indicators show the share of fees and commissions earned by the main activities of payment services, structured finance and asset management respectively.

I.4.4. Further methodological issues and ways to address them

As illustrated in Part III of the Guide, some of the new indicators may involve numerators and denominators with either positive or negative signs. Occasionally, this may raise concerns about the interpretability of their results. Consequently, those profitability indicators with both negative numerator and denominator should be normally artificially transformed into negative (see also Part II.2 'Negative values in numerators and denominators of ratios'). This kind of adjustment is particularly required for this type of risk indicators. In particular, indicators that refer to Cost of Risk (PFT_43, PFT_43.1 and PFT_43.2) are multiplied by -1 in order to provide results with the relevant sign.

The 'follow-the-money' approach, as explained in detail in Part II of this Guide, could be further studied by splitting the respective indicators into more granular subcomponents. At this stage, only few of the new risk indicators were defined in this context. To fully pursue the 'follow-the-money' approach, it would be necessary to define additional risk indicators.

Another relevant methodological discussion concerns the cost of risk indicator. The cost of risk only includes P&L effective changes due to credit risk. These are for instance newly recognised impairments (provisions) for loans, but also write-offs, which are directly recognised in the P&L. As such, they also include the effects from the disposal of NPLs, for instance in case existing provisions are not sufficient in case of the disposal (net book value lower than the disposal price). In such case the impact is negative. However, if provisioning is higher and the net book value of respective loans is lower than the disposal price, the effect would be positive. This approach also implies that, for example, changes in provisions, which do not affect the P&L as such (like the usage of provisions due to the derecognition or write off) are not considered in the cost of risk.

I.5 Concentration risk

I.5.1. List of risk indicators and relevant DRATs

Table 5: List of CONs and relevant DRATs

Number	Name	Number	Name
CON 1	Total large exposures	**CON 9**	Interests in SPE
CON 2	Exposures equal to or over 10% of capital[9]	**CON 10**	Interests in asset managers
CON 3	10 largest exposures to institutions	**CON 11**	Interests in other unconsolidated structured entities
CON 4	10 largest exposures to unregulated financial entities	**CON 12**	Large exposures to capital
CON 5	Non-domestic assets	**CON 13**	Loan concentration by economic activity
CON 6	Loans collateralised by Immovable Properties (IPs)	**CON 14.1**	HHI Index of loans and advances to NFC
CON 7	Residential mortgage loans to households	**CON 14.2**	HHI Index of performing loans and advances to NFC
CON 8	CRE loans	**CON 14.2**	HHI Index of non-performing loans and advances to NFC

Number	Name	Number	Name
DRAT 1	Distribution matrix of original exposure by sector and country	**DRAT 13**	Distribution of loans and advances to non-financial corporations by NACE codes and country
DRAT 2	Distribution matrix of defaulted exposure by sector and country	**DRAT 14**	Distribution of loans and advances cumulative impairments by NACE codes and country
DRAT 3	Distribution matrix of observed new defaults by sector and country	**DRAT 15**	Distribution of liquid assets among currencies
DRAT 4	Distribution matrix of provision coverage ratio by sector and country	**DRAT 16**	Total inflows minus outflows by currencies (A - B)
DRAT 5	Distribution matrix of write-offs by sector and country	**DRAT 17**	Exposures by sector (all portfolios)

[9] According to Article 392 CRR (definition of a large exposure)

DRAT 6	Distribution matrix of RWA by sector and country of non-defaulted exposures	**DRAT 18**	Exposures by sector (trading book)
DRAT 7	Distribution matrix of own funds requirements for credit risk (as calculated for capital buffers) by country	**DRAT 19**	Top 10 counterparties classified as institutions
DRAT 8	Distribution of overall losses from property by country group	**DRAT 20**	Top 10 counterparties classified as unregulated financial entities
DRAT 9	Distribution of loss rates from property by country	**DRAT 21**	Top 10 counterparties classified as non-financial corporations
DRAT 10	Distribution of FINREP assets and off-balance-sheet items by country	**DRAT 22**	Top 10 counterparties classified as institutions by number of large exposures
DRAT 11	Distribution of FINREP default rates by assets and off-balance-sheet items and by country	**DRAT 23**	Top 10 counterparties classified as unregulated financial entities by number of large exposures
DRAT 12	Distribution of FINREP coverage ratios by assets and off-balance-sheet items and by country	**DRAT 24**	Top 10 counterparties classified as non-financial corporations by number of large exposures

I.5.2. Introduction

This set of indicators aims at analysing concentration risk. Concentration risk (CON) refers to the risk of a financial institution suffering heavy losses, which could eventually lead to insolvency due to the default of a single counterparty or a set of counterparties. Monitoring excessive concentration is a key aspect, as most of the recent banking crises have resulted exactly from this type of risk (although they were amplified by other factors).

Concentration risk is important at micro and macro level. While the focus on single counterparties is more relevant at a micro level, aggregated data can reveal how a financial system concentrates such risks. Monitoring the significance of exposures towards counterparties revealing high PDs could also be of interest.

Nevertheless, for a banking system as a whole, the analysis of concentration on correlated counterparties, such as country, sector or collateral type, is of higher importance, as it can be used both to detect concentration risk as such and to examine possible contagion effects through interconnectedness.

I.5.3. Description of the relevant indicators

The first group of indicators (CON 1 to CON 4) are focused on large exposures. An exposure is classified as 'large' if its value is equal to or exceeds 10% of the Tier 1 capital of the institutions[10]

The remaining exposures reported under large exposures reporting can be grouped into four categories: 1) exposures over EUR 300 million[11]; 2) the top 20 exposures when the reporting institution is using the IRB approach; 3) the top 10 exposures to institutions; and finally 4) the top 10 exposures to unregulated financial entities[12].

CON 1 covers total large exposures (original) as a share of total (original) exposures and, therefore, it is intended to be the main indicator, referring to the concentration towards a single counterparty. CON 2 covers exposures equal to or exceeding 10% of the Tier 1 capital of the institution, while CON3 and 4 respectively cover the third and the fourth category as described above.

While first group of indicators focused on large exposures, the second group of CONs 5 to 11 concern all exposures and are, therefore, intended to measure the concentration on counterparties, which can be correlated.

CON 5 measures the degree of internationalisation for a bank or a banking system. CONs 6 to 8 measure the exposures to residential and commercial real estate loans, which are traditionally one of the main sources of potential risks for banks.

CONs 9 to 11 measure the interests in three categories of entities (which are connected to the reporting institution) that may as well be a source of risk, namely: securitisation vehicles, asset managers and other structured entities. For these indicators, the underlying data is available only on a semi-annual frequency.

I.5.4. Description of the relevant Detailed Risk Analysis Tools

In the context of the DRAT for concentration risk, matrices demonstrate the distribution of assets and exposures or other dimensions by country, sector (according to COREP and NACE breakdowns), currency or asset class. Such indicators could also be used to identify areas of excessive concentration or, more generally, to visualise the interconnectedness between countries or sectors through a map. For that reason, these indicators have been chosen to be included in this section, even though some of them could have also fallen under the categories of asset quality, profitability or liquidity.

The country tables consist of individual EEA Member States, along with additional 16 countries against which EU banks have the highest exposures. The number 16 has been chosen as the gap between the 16th and the 17th country (respectively, South Africa and Chile) is wider than between other positions. In parallel, exposures corresponding to the 17th country onwards start to be less

[10] For more details, see Article 392 of the CRR.

[11] In accordance with Article 9(g) of the Commission Implemented Regulation EU No 680/2014

[12] In accordance with Article 394 (1) and (2) of the CRR.

significant in quantitative terms and their inclusion in the tables may add little value to the overall analysis.

Regarding sectoral breakdown, it is necessary to signal that COREP sectors are different for SA and IRB exposure and, therefore, they need to be grouped in order to facilitate comparability (for the relevant methodological issues, please refer to section I.5.3 below). NACE breakdowns are based on the higher-class level of the standard (i.e. 19 sectors, identified by a single letter code). Otherwise, any further aggregation may have resulted in less relevant information.

Furthermore, DRATs 1, 7, 10, and 17 provide breakdowns of total exposures (or own funds requirements in the case of DRAT 7) by sector/instrument and/or country (the first two stem from COREP by exposure class, the other two from FINREP by sector and instrument).

DRATs 13 and 18 focus on two subsets of exposures – more particularly, loans to the non-financial sector and trading book. These indicators aim at monitoring, respectively, the so-called 'sectoral risk', and market risk/interconnectedness.

DRATs 2 to 5, DRATs 11 to 12 and DRAT 14 relate to defaults, losses and coverage ratios and, therefore, provide insight into from where problems may arise for a bank or a banking system. These are indicators related to asset quality and their concentration.

DRAT 6 shows the distribution or RWAs of non-defaulted exposures. Hence, it demonstrates the distribution of capital requirements and, compared with DRAT 1, it may be used to understand how risky each sector or country could be perceived by banks.

The reporting templates on IP losses are the basis for DRATs 8 and 9, which cover only EU countries. DRATs 15 and 16 refer to the currency concentration, thus focusing only on liquid assets for which data is available. Concretely, it should be noted that assets denominated in the bank's reporting currency are excluded. This implies that only the combination of banks with the same reporting currency will be considered significant for more details (see also Part II.5). Moreover, for the aggregates, reported currencies will not necessarily be the most significant ones, as a currency representing 5% only in one bank would be included, while, theoretically, another representing 4.9% in all other banks would be excluded. The final list of currencies to be displayed in that context can only be defined once sufficient back data is available and the currencies demonstrate their predominance.

Finally, DRAT 19 to DRAT 24 are derived from large exposures templates and they intend to rank the counterparty institutions by reporting institutions. These indicators determine those that are the most recurrent counterparties of EU banks, classified as institutions, unregulated financial entities and non-financial corporations.

I.5.5. Further methodological issues and potential ways to address them

For each large exposure, three different values are available: original exposure, exposure value before application of exemptions and Credit Risk Mitigation (CRM) (but after provisions), and exposure value after application of exemptions and CRM. Among them, the most suitable metric needs to be chosen and used for the computation of the relevant risk indicators.

Despite the fact that the second option seems the most suitable, as it is the value that qualifies an exposure to be flagged as 'large', it was decided to use the first option (original exposures). This is due to the fact that original exposures are collected in many templates and, therefore, when it comes to computing concentration ratios, it is easier to find a suitable denominator and comparative term. Indicators on the other two values could be added, provided that the denominator is consistent.

Additionally, all country breakdowns are subject to a threshold and thus reported only by institutions whose foreign exposures are at least 10% of the total. Effectively, that means all indicators based on these figures (CON 5 and DRATs 1 to 7 and 10 to 14) can be computed only for institutions with significant foreign exposures.

Alternatively, assuming that all the figures referring to institutions not reporting the geographical breakdown information are assigned to domestic totals, total exposures for COREP and total assets and off-balance-sheet items for FINREP could also be used. However, this approach has the disadvantage of potentially underestimating foreign exposures for those institutions. A similar approach could also be used to add data on own country when they are not reported for all indicators based on template FINREP 20.00, such as DRATs 9 to 13.

Finally, exposure classes in COREP are different in the SA and in the IRB approach. Therefore, to make them comparable, a mapping is proposed, as illustrated in the comprehensive list of risk indicators and DRATs available at the EBA website. This implies some degree of approximation, as definitions are not exactly the same, but the only alternative would be to have separate tables for SA and IRB exposures and such tables, each providing a partial picture, would be of limited use.

I.6 Solvency risk

I.6.1. List of risk indicators and relevant DRATs

Table 6: List of SVCs and relevant DRATs

Number	Name	Number	Name
SVC 1	Tier 1 capital ratio	**SVC 16.2**	IRB shortfall relative to Common Equity Tier 1 Capital
SVC 2	Total capital ratio	**SVC 16.3**	IRB excess relative to Common Equity Tier 1 Capital
SVC 3	CET 1 capital ratio (transitional with CRR3)	**SVC 17**	Net DTA that rely on future profitability to total Tier 1 capital
SVC 4	Credit risk exposure amounts of total risk exposure amounts	**SVC 18**	Adjustments to CET 1 due to prudential filters to total Tier 1 capital
SVC 5	SA risk-weighted exposure amounts of total credit risk exposure amounts	**SVC 19**	Deductible goodwill and other intangible assets to total Tier 1 capital
SVC 6	Securitisation risk exposure amounts of total credit risk exposure amounts	**SVC 21**	Capital and share premium to total equity
SVC 7	IRB approach risk exposure amounts of total credit risk exposure amounts	**SVC 22**	Accumulated OCI to total equity
SVC 8	Market risk exposure of total risk exposure amounts	**SVC 23**	Retained earnings and reserves to total equity
SVC 9	Operational risk exposure of total risk exposure amounts	**SVC 24**	Treasury shares to total equity
SVC 10	Settlement risk exposure of total risk exposure amounts	**SVC 25**	Minority interests to total equity
SVC 11	Other risk exposure of total risk exposure amounts	**SVC 26**	Equity to total liabilities and equity
SVC 12	Leverage ratio (fully phased-in definition of Tier 1)	**SVC 27**	Tier 1 capital to 'total assets – intangible assets'
SVC 13	Leverage ratio (transitional definition of Tier 1)	**SVC 28**	Annual growth rate of RWAs
SVC 14	Regulatory own funds to accounting own funds	**SVC 30**	Total capital ratio (fully phased-in definition)
SVC 15	Transitional adjustments due to grandfathered CET 1 Instruments to total Tier 1 capital	**SVC 31**	Adjustments due to the application of IFRS 9 transitional arrangements (Regulation (EU) 2017/2395) relative to Common Equity Tier 1.
SVC 16.1	IRB shortfall to total Tier 1 capital	**SVC 33**	CET1 capital headroom (OCR & P2G)

SVC 32	CET1 capital requirements (OCR and P2G)	**SVC 34**	CET 1 capital ratio (transitional pre-floored)

I.6.2. Introduction

Solvency risk can be understood as the risk of an institution lacking the ability to absorb losses or decrease in earnings. Hence, insolvent firms have persistently and disproportionately large liabilities compared to RWAs. As a result, banks are unable to borrow further funds so as to face unexpected loss events. Specific regulatory capital requirements and compulsory values for SVCs are the most traditional measures that supervisors have used to avert such bank failures.

Noticeably, some of the indicators included in this risk type are so crucial that they have been set as a legal requirement that institutions need to abide with.

Box 3: Updated CET 1 Capital Ratio Risk Indicators with CRR3

Effective from March 2025, CRR3 aims to strengthen the risk measurement framework and capital adequacy standards, ensuring that banks hold sufficient capital to adequately cover their total exposure to various risk categories. This adjustment impacts the components the Total Risk Exposure Amount (TREA) and, consequently, the indicators that rely on TREA, such as the CET 1 capital ratios.

With CRR3, the following CET 1 capital ratio risk indicators are in place:

a. CET 1 Capital Ratio (Transitional with CRR3): This indicator continues from the transitional CET 1 capital ratio under CRR2 and is calculated as Common Equity Tier 1 capital divided by the Total Risk Exposure Amount.

b. CET 1 Capital Ratio (Transitional Pre-Floored): This new indicator has no direct correspondence with CRR2 and is calculated as Common Equity Tier 1 capital divided by the Total Risk Exposure Amount (pre-floored).

c. CET 1 Capital Ratio (Fully Loaded with CRR3): This indicator will be introduced and calculated from 2026, corresponding to the fully phased-in/fully loaded CET 1 capital ratio under CRR2.

Further details on the computation of the first two indicators can be found in the List of Risk Indicators, while the fully loaded will be available from 2026.

I.6.3. Description of the relevant risk indicators

SVCs, such as SVCs 1 to 11, SVCs 26 to 28, 32 and 33 are employed for measuring solvency risk and are mainly concerned with the composition of an institution's risk profile, the compulsory capital requirements indicators, compliance level and the divergence of regulatory capital from accounting figures. They are all structured in such a way that would facilitate monitoring and assessment of regulatory capital-requirements compliance from period to period.

The rest of the SVCs can be broadly structured into four categories:

- SVCs 12 to 13 and SVC30 observe the mandatorily calculated regulatory leverage and own funds ratios, as prescribed by Regulation (EU) No 575/2013
- SVC 14 compares the published financial statements' own funds against supervisory capital. A large divergence between these ratio components signals low future loss-absorbing ability and an adversely high impact of prudential filters (see Article 32-35, Regulation (EU) No 575/2013);
- The ratios of SVCs 21 to 25 elaborate the composition of the core components of the accounting equity;
- The ratios of SVCs 15 to 19 decompose transitional or phase-in adjustments to regulatory own funds allowed by the competent national authorities, and are intended to measure solvency risk for the institution in the case that national discretions are lifted.

Finally, SVC 31 measures the CET 1 add-back arising from the application of IFRS 9 transitional arrangements (Regulation (EU) No 2017/2395). Note that, as the application of these transitional arrangements is optional for banks in the EU, this indicator is only applicable to those institutions applying these arrangements.

I.6.4. Further methodological issues and ways to address them

Ratios which decompose transitional or phase-in adjustments to regulatory own funds (SVCs 12, 13, and 15 to 19) have Tier 1 as a denominator, as a minimum Tier 1 ratio is prescribed by Article 92(1)(b) of Regulation (EU) No 575/2013 and it contains the largest amount of adjustments between the two options for a denominator (CET 1 or Tier 1). In addition, total capital ratio (30) iscomputed with fully phased-in definitions.

I.7 Operational risk

I.7.1. List of risk indicators and relevant DRATs

Table 7: List of OPRs and relevant DRATs

Number	Name	Number	Name
OPR 1	Total Risk Exposure for Op Risk (% of Total Risk Exposure)	**OPR 11**	Conduct risk as % of Own Funds Requirements for OpR
OPR 5	OpR Loss as Percentage of Own Funds Requirements for OpR	**OPR 12**	Employment practices and Workplace Safety loss as % of Own Funds Requirements for OpR
OPR 6	Internal Fraud Loss as percentage of Own Funds Requirements for OpR	**OPR 13**	Clients Products and Business Practices loss as % of Own Funds Requirements for OpR
OPR 7	External Fraud Loss as percentage of Own Funds Requirements for OpR	**OPR 14**	Damage to Physical Assets loss as % of Own Funds Requirements for OpR
OPR 8	Business Disruption and System Failures Loss as percentage of Own Funds Requirements for OpR	**OPR 15**	Execution, Delivery & Process management loss as % of Own Funds Requirements for OpR
OPR 9	Total Risk Exposure for OpR compared to Total Risk Exposure for Credit Risk	**OPR 16**	Provisions for pending legal issues and tax litigation as % of Own Funds
OPR 10	Total Risk Exposure for Market Risk compared to Total Risk Exposure for OpR	**OPR 17**	Largest gross loss amount (single loss event) as % of CET1

I.7.2. Introduction

OpR can be described as the risk of loss resulting from inadequate or failed internal processes, systems and people intervention, or from external events.

A representative selection of different OpR types included in this context is:

- People: may include fraud, breaches of employment law, unauthorised activity, key person risk, inadequate training or supervision;
- Processes: failures in payment or settlement, deficient documentation, valuation or pricing errors, project management failures and internal or external reporting problems;

- Systems: typically, this would include system failures, errors in system development and implementation, and inadequate IT resources;

- External events: these would include, amongst others, crime, outsourcing risks, natural disasters, regulatory and political risks, as well as competition.

To that end, OpR usually reflects losses that are identified in a number of event types included in the new reporting framework, as follows:

1. Internal fraud: this category would include misappropriation of assets, tax evasion, and bribery;

2. External fraud: this would cover, for example, theft of information, hacking damage, third-party theft and forgery;

3. Employment practices and workplace safety: this would include, for example, discrimination, employee compensation, and worker health and safety;

4. Clients, products and business practices: this category would include market manipulation, antitrust and account churning;

5. Damage to physical assets: this would occur due to natural disasters, terrorism, vandalism, and so on;

6. Business disruption and system failures: software or hardware failures and disruption of services;

7. Execution, delivery and process management: data entry errors, accounting errors and failed reporting requirements.

Even though legal risk is included as the risk of changing legislation and arbitrary court decisions, it excludes strategic and reputational risks.

OpR, by its nature, is unavoidable and it is neither willingly incurred nor is revenue driven. Moreover, it is not diversifiable and thus it cannot be fully eliminated. However, it can be transferred (e.g. by insurance).

OpR is manageable to some extent by introducing proper controls that would keep relevant losses within the risk appetite levels defined by the board of a bank. Thus, OpR is ultimately all about the failure of controls.

I.7.3. Description of the relevant risk indicators

OpR requires a specific type of management, as well as data collection processes, to cover both the high frequency and low cost events but also the low frequency and high impact events throughout the institution.

The first group of indicators covers OPRs 1 to 4 and 9 and 10 fall in this group and they intend to **measure the relative importance of OpR exposures** and subtypes compared to other risk exposures (either the total, from other risk categories, or within the OpR category).

In general, low values are expected for these indicators compared to other risk classes, as OpR should not be one of the main risk categories in the institution's business model.

However, trends over time and spikes such as low frequency or high impact events, along with peer group analysis, could provide an indication of the overall quality of controls the institution has in place to manage this type of risk. Some of these indicators provide information on the size of the risk exposure for different OpR measurement approaches, such as OPRs 2, 3 and 4.

The second group of risk indicators provide insight into the loss size across different event types as well as overall:

- OPR_6 indicates which share of the Operational minimum capital requirement had to be used for internal fraud losses during the previous business year;
- OPR_7 indicates which share of the Operational minimum capital requirement had to be used for external fraud losses during the previous business year;
- OPR_8 indicates which share of the Operational minimum capital requirement had to be used for Business disruptions and system failures during the previous business year;
- OPR_12 indicates which share of the Operational minimum capital requirement had to be used for Workplace safety losses during the previous business year;
- OPR_13 indicates which share of the Operational minimum capital requirement had to be used for Clients, Products and Business Practices losses during the previous business year;
- OPR_14 indicates which share of the Operational minimum capital requirement had to be used for Damage to physical assets losses during the previous business year;
- OPR_15 indicates which share of the Operational minimum capital requirement had to be used for Execution, Delivery & Process management losses during the previous business year;
- OPR_16 which was (included in the Profitability section in the previous editions of this Guide) provides a good indication about the potential operational risk losses the institution might suffer from legal issues and tax litigation. As an operational risk indicator it has a good forward looking perspective and indicates the loss potential from already known events.

Higher proportions of an event type may indicate areas where controls need to improve or where remedial actions need to be put in place. These indicators attempt to provide an indication of the high or low impact of the OpR compared to the number of events that have occurred in the institution for a given period of time. Special attention should also be paid to those cases where a few events have a high impact in the institution, as these could cause a destabilising effect and are more difficult to control and manage.

Despite the increased number of risk indicators that can be computed across each event and business line combination, this study concentrates on the main types that can give a general flavour of what the level of OpR is in a particular institution.

I.7.4. Further methodological issues and ways to address them

A few methodological issues need to be considered, which mainly affect the availability of data for the calculation of the risk indicators.

Regarding the relevant indicator for years -3, -2 and -1, this is generally the net interest income plus the net non-interest income. The methodological issue is due to the accounting standard base on which this will be calculated (GAAP vs IFRS). Therefore, the use of different standards may affect the comparability of the final computed ratios. Reporting obligations for templates C 17.01.a and C 17.01.b depend on the methodology the institution uses.

- BIA: Templates are not required when an entity reports OpR under the basic indicator approach.
- TSA/ASA: Institutions under these approaches are expected to report only rows 910, 920, 930, 940 and column 080 of template C 17.01.a, which are the total of business lines and total of event lines, if the total individual assets (FINREP) <1% total individual assets in the country. If it is higher than 1%, then they would report the full template.

Templates used for the computation of OpR indicators have different frequencies. For example, templates C 17.01.a and C 17.01.b are semi-annual, while the rest are quarterly, meaning that there will be two quarters where there will be no data available to compute risk indicators feeding from these templates.

I.8 Market risk

I.8.1. List of risk indicators and relevant DRATs

Table 8: List of MKRs and relevant DRATs

Number	Name	Number	Name
MKR 1	OTC trading derivatives to total trading derivatives	**MKR 11**	Total unsettled transactions to risk-weighted exposure amounts
MKR 2	Commodities trading derivatives to total assets	**MKR 12**	Total unsettled transactions for more than 46 days to total unsettled transactions
MKR 3	Commodities derivatives to total assets	**MKR 13**	Proportion of derivatives and SFT to total risk-weighted exposure amounts
MKR 4	Total long positions in non-reporting currencies to total long positions	**MKR 14**	Total long and short positions on commodities to total exposures
MKR 5	Total short positions in non-reporting currencies to total short positions	**MKR 15**	Share of risk exposure amounts of CIUs to risk exposure amounts
MKR 6	Share of risk exposure amounts of traded debt instruments to risk exposure amounts	**MKR 16**	Interest rates trading derivatives to total assets and liabilities
MKR 7	Share of risk exposure amounts of equity to risk exposure amounts	**MKR 17**	Interest rates trading derivatives with positive MtM to total assets
MKR 8	Share of risk exposure amounts of foreign exchange to risk exposure amounts	**MKR 18**	Interest rates trading derivatives with negative MtM to total liabilities
MKR 9	Share of risk exposure amounts of commodities to risk exposure amounts	**MKR 19**	Interest rates derivatives to total assets and liabilities
MKR 10	Stress indicator		

I.8.2. Introduction

Market risk can be defined as the risk of losses in on-balance-sheet – and, in rare cases, on off-balance-sheet – positions arising from adverse movements in market prices. From a prudential point of view, market risk stems from all the positions included in banks' trading book, as well as from commodity and foreign exchange risk positions in the banking book.

Traditionally, trading book portfolios consist of liquid positions that are easy to trade or hedge.

I.8.3. Description of the relevant risk indicators

Overall, MKRs provide deeper insights into the role of various market risk portfolios and exposure types.

More particularly, these indicators can be structured into the following categories:

- MKR 6 to MKR 9, MKR 11, and MKR 13, which describe 'risk-weight exposure amount' participation by instrument type. High values on these indicators usually point to the instrument types that aggravate capital-adequacy compliance. Moreover, MKR 13 explicates the marketability of trading book positions at the time of reporting;

- MKR 4, MKR 5 and MKR 14, which decompose the long or short positions of the institution. Such analysis is especially valuable in cases where market conditions render the liquidation of buyers' positions more difficult than sellers' positions or vice versa;

- MKR 1 to 3, which demonstrate the trading activity of commodities or derivatives as reflected in the trading book or the balance sheet when carried out in a given period;

- MKR 10, which is specially targeted for institutions using internal models that measure how current value-at-risk compares to the stressed value-at-risk. MKR 8 measures FX-risk participation within the total market risk own funds requirements faced by an institution using the SA.

I.8.4. Further methodological issues and potential ways to address them

The application of additional market risk ratios, especially with regard to internal models, is vital to avert sudden and possible failures that could eventually cause losses. Therefore, geographical or currency analysis of certain instrument types can uncover major potential risks for the reporting institution. At the same time, the set of legally binding reporting templates is, by nature, limited and cannot always expose specific inefficiencies in the risk handling that concerns the trading portfolio.

On a more practical basis, after examining the list of risk indicators, supervisors should also try to determine any hidden market risk within the banking book, in the portfolio of instruments subject to prudent valuation adjustments and credit value adjustments (CVA).

The 'arbitrage' of capital requirements, which refers to the exchange of market risk capital requirements for lower credit risk capital requirements, can only be avoided after both the banking book and the trading book have been evaluated simultaneously and over different reporting time points.

I.9 SME risk indicators

I.9.1. List of risk indicators and DRATs

Table 9: List of SMEs and relevant DRATs

Number	Name	Number	Name
SME 1	Share of SME exposures in total exposures	**SME 8**	Probability of default for SME exposures (IRB only)
SME 2.1 to SME 2.2	Share of SME exposures in exposures to the real economy (corporates, retail and secured by IP) for SA/IRB approach	**SME 9**	Probability of default for SME exposures subject to SME Supporting Factor
SME 3	Share of SME exposures subject to SME Supporting Factor in total exposures	**SME 10**	LGD for SME exposures
SME 4	% change (year-on-year) of SME exposures	**SME 11**	LGD for SME exposures subject to SME Supporting Factor
SME 5	% (year on year) growth of SME exposures subject to SME Supporting Factor	**SME 16**	Increase in CET1 capital ratio with the application of SME supporting factor

I.9.2. Introduction

In accordance with Article 8(1)(f) of the Regulation (EU) No 1093/2010 on establishing a European Supervisory Authority, the EBA shall 'monitor and assess market developments in the area of its competence, including, where appropriate, trends in credit; in particular, to households and SMEs'. Therefore, it seems natural for the EBA to develop indicators with a view to monitor the SME lending trends in the EU on an ongoing basis.

I.9.3. Description of the relevant risk indicators

The purpose of SME monitoring is to keep track of lending trends to SMEs and their riskiness in the context of the banking sector.

As such, the following groups of indicators are proposed:

- SMEs 1, 2 and 4 refer to SME lending indicators, which provide information on the lending trends to SMEs and their importance in terms of SME exposures in the overall banking sector;

- SMEs 8 to 11 and 16 on SME riskiness indicators provide information about the asset quality and the riskiness of SME related exposures.

More particularly, SME 1 covers the share of SME exposures in total exposures and thus gives broader information on the weight of SME exposures in total bank exposures. SME lending is based on the non-harmonised SME definitions used by each bank.

SME 2 reflects the share of SME exposures in exposures to the real economy (corporates, retail, and secured by IP) and allows the assessment of the relative importance of SME lending as compared to other lending to the private sector.

SME 4 monitors the annual growth of SME exposures during the period. This figure does not represent new business, merely growth in the exposure amount. This indicator offers information on the development (increases or decreases) in the volume of SME exposures, independent from their level.

SME 8 monitors the PD for SME exposures. It offers information on the PD associated with SME exposures in the case of IRB banks. It should be noted that part of the information on expected and unexpected loss is captured by LGD.

SME 10 gives information on the LGD associated with SME exposures.

SME 16 refers to the increase in the Common Equity Tier 1 Capital associated to the application of the SME Supporting Factor.

I.9.4. Further methodological issues and potential ways to address them

The CRR uses the term SMEs in two contexts. According to the first one, in order to be eligible for the retail exposure class, one of the conditions is that an exposure has to be an exposure to an SME (or one or more natural persons) in both the SA and the IRB approach, in accordance with Article 123 and Article 147 (CRR). The definition of SMEs is not specified for this purpose. However, the relevant reporting instructions[13] state that for the identification of SMEs for the purposes of the articles of the CRR (other than Article 501), institutions may apply their own definition of SMEs using the Commission Recommendation 2003/361/CE of 6 May 2003 only as guidance.

In the second context, CRD IV/CRR has introduced a deduction in the capital requirements for exposures to SME exposures through the application of an SME supporting factor equal to 0.7619. To be subject to the SME supporting factor, SMEs are identified using the Commission Recommendation 2003/361/EC of 6 May 2003, applying only the turnover criterion (turnover should not exceed EUR 50 million). In addition, the exposures should be included in 'retail',

[13] The EBA Single Rulebook Q&A 2013_27

‘corporate’ or ‘secured by mortgages on IP exposure classes and the amount owed should not exceed EUR 1.5 million, in accordance with Article 501 of the CRR.

I.10 Sovereign risk indicators

I.10.1 List of risk indicators and DRATs

Table 10: List of SVRs and relevant DRATs

Number	Name	Number	Name
SVR 1	General government treated as financial assets held for trading to total general government exposures	**SVR 18**	Share of exposures with a maturity > 10 years in total sovereign exposures
SVR 2	General government designated at fair value through Profit and Loss to total general government exposures	**SVR 19**	Share of exposures to Central Governments in total sovereign exposures
SVR 3	General government treated at fair value through other comprehensive income to total general government exposures	**SVR 20**	Share of exposures to Regional Governments or local authorities in total sovereign exposures
SVR 4	General government treated at amortised cost to total general government exposures	**SVR 21**	Share of exposures to Public Sector entities in total sovereign exposures
SVR 5	General government exposures treated in other accounting portfolios including non-trading and nGAAP to total general government exposures	**SVR 22**	Share of exposures to International Organisations in total sovereign exposures
SVR 8	Stage 1 Sovereign financial assets at amortised cost in as a percentage of total	**SVR 23**	Share of exposures to Other General Government exposures in total sovereign exposures
SVR 9	Stage 2 Sovereign financial assets at amortised cost as a percentage of total	**SVR 24**	Share of exposures under Credit Risk Framework in total sovereign exposures
SVR 10	Stage 3 Sovereign financial assets at amortised cost as a percentage of total	**SVR 25**	Share of exposures under Market Risk Framework in total sovereign exposures
SVR 11	Purchased or originated credit impaired financial assets at amortised cost as a percentage of total	**SVR 26**	Percentage of General Governments Loans and Advances and Debt Securities to Total Loans and Advances and Debt Securities

SVR 12	Ratio of impairment and accumulated negative changes in fair value due to credit risk to gross carrying amount for sovereign exposures	**SVR 27**	Share of sovereign off-balance sheet exposures
SVR 13	Share of exposures with a maturity < 1 year in total sovereign exposures	**SVR 28**	Coverage ratio of sovereign exposures
SVR 14	Share of exposures with a maturity of 1 to 2 years in total sovereign exposures	**SVR 29**	Share of Sovereign Exposures of Total Assets
SVR 15	Share of exposures with a maturity of 2 to 3 years in total sovereign exposures	**SVR 30**	Share of Sovereign Exposures to Country X of Total Sovereign Exposures
SVR 16	Share of exposures with a maturity of 3 to 5 years in total sovereign exposures	**SVR 31**	Share of Sovereign Exposures to Country X of Total Assets
SVR 17	Share of exposures with a maturity of 5 to 10 years in total sovereign exposures	**SVR 32**	Ratio of Sovereign Exposures to Total Capital

I.10.2. Introduction

The purpose of sovereign risk indicators is to monitor sovereign exposures and identify pockets of risks stemming from these exposures. Sovereign risk refers to the probability that the government defaults to its obligations. The indicators provide a profiling of the sovereign exposures, namely by the where these exposures are booked, maturity, stages and sectorial breakdown.

I.10.3 Description of the relevant risk indicators

The set of SVRs are mainly sourced from COREP (C 33) as well as FINREP templates. Thirty two risk indicators have been identified that may be used to assess the Sovereign exposures and risks undertaken by the banks.

The indicators are bundled into six main categories:

1) SVR 01 – SVR 08 show the share of exposures to sovereign entities (i.e. Debt Securities and Loans and Advances to General Government) in respect to the total exposure to all counterparties. Each indicator represents a section of the book.

2) SVR 09 – SVR 12 analyse the stages of all sovereign exposures as a percentage of the total.

3) SVR 13 – SVR 18 provide a breakdown of the maturity profile of sovereign exposures.

4) SVR 19 – SVR 26 provide a sectorial breakdown of the sovereign exposures.

5) In addition, indicator SVR 27 describes the off-balance sheet weight for sovereign exposures, and SVR 28 gives a broad measure of the cost of holding these exposures.

6) Lastly, SVR 29 – SVR 32 provide a risk measure of the sovereign exposures. In particular, they give a measure of the sovereign exposures in relation to total assets and total capital, as well as the share of per country sovereign exposures in relation to total sovereign exposures.

I.11 RDB risk indicators

I.11.1 List of risk indicators and DRATs

Table 11: List of RDBs and relevant DRATs

Number	Name	Number	Name
RDB 1	Cash balances on Total Assets	**RDB 4**	Loans and advances on Total Assets
RDB 2	Equity instruments on Total Assets	**RDB 5**	Derivatives on Total Assets
RDB 3	Debt securities on Total Assets	**RDB 6**	Other assets on Total Assets

I.12 Covid-19 risk indicators

I.12.1 List of risk indicators and DRATs

Table 12: List of CVDs and relevant DRATs

Number	Name	Number	Name
CVD 1	Granted obligors on total obligors, EBA-compliant moratoria	**CVD 22**	Share of HHs on total loans subject to EBA moratoria
CVD 2	Granted over total, EBA-compliant moratoria	**CVD 23**	Share of NFCs on total loans subject to EBA moratoria
CVD 3	Granted EBA compliant moratoria over total loans	**CVD 24**	Share of non-performing HH loans subject to EBA-compliant moratoria
CVD 4	Granted EBA compliant moratoria to NFC and HHs over total loans to NFC and HHs	**CVD 25**	Share of non-performing NFC loans subject to EBA-compliant moratoria
CVD 5	Granted HHs loans EBA compliant moratoria over total HHs loans	**CVD 26**	Coverage of HH NPLs subject to EBA-compliant moratoria
CVD 6	Granted NFCs loans EBA compliant moratoria over total NFCs loans	**CVD 27**	Coverage of NFCs NPLs subject to EBA-compliant moratoria
CVD 7	Share of legislative moratoria within loans subject to EBA-compliant moratoria	**CVD 28**	Total coverage of loans subject to EBA-compliant moratoria
CVD 8	Share of extended moratoria within loans subject to EBA-compliant moratoria	**CVD 29**	Total coverage of HH loans subject to EBA-compliant moratoria
CVD 9	Share of expired moratoria within loans subject to EBA-compliant moratoria that were expired	**CVD 30**	Total coverage of NFC loans subject to EBA-compliant moratoria
CVD 10	Granted COVID-19 related forbearance measures over total loans	**CVD 31**	Ratio of performing non-EBA-compliant COVID-19 related forbearance measures / total loans
CVD 11	Granted COVID-19 related forbearance measures to NFC and HHs over total loans to NFC and HHs	**CVD 32**	NPL ratio of total loans related to COVID-19 forbearance measures which are non EBA moratoria
CVD 12	Granted HHs loans COVID-19 related forbearance measures over total HHs loans	**CVD 33**	Contribution of loans with other covid 19 forbearance to the NPL ratio of loans
CVD 13	Granted NFCs loans COVID-19 related forbearance measures over total NFCs loans	**CVD 34**	Provision Coverage Ratio on loans subject to COVID-19-related forbearance measures, stage 2

CVD 14	Share of called public guarantee in newly originated loans and advances subject to public guarantee schemes	**CVD 35**	Provision coverage ratio of NPLs subject to non EBA moratoria related forbearance measures
CVD 15	Newly originated loans and advances subject to public guarantee over total loans	**CVD 36**	Share of households on total loans subject to non EBA moratoria related forbearance measures
CVD 16	Newly originated HHs loans and advances subject to public guarantee over HHs loans	**CVD 37**	Share of non-financial corporations on total loans subject to non EBA moratoria related forbearance measures
CVD 17	Newly originated NFC loans and advances subject to public guarantee over total NFC loans	**CVD 38**	NPL ratio of new lending guaranteed by the public sector
CVD 18	NPL ratio, total loans subject to EBA moratoria	**CVD 39**	Contribution of non performing new loans with state guarantee to the NPL ratio of loans
CVD 19	Contribution of loans with EBA compliant moratoria to the NPL ratio of loans	**CVD 40**	Provision Coverage Ratio on new lending guaranteed by the public sector, stage 2
CVD 20	Provision Coverage Ratio on loans subject to EBA-compliant moratoria, stage 2	**CVD 41**	Provision coverage ratio of NPLs, new lending guaranteed by the public sector
CVD 21	Provision coverage ratio of NPLs subject to EBA moratoria		

I.12.2 Introduction

In response to the need to address negative economic consequences of COVID-19 pandemic, the European Union (EU) and Member States have introduced a wide range of mitigating measures to support the real economy and the financial sector.

For this purpose, the EBA developed guidelines (GLs) on reporting and disclosure of exposures subject to measures applied in response to the COVID-19 crisis. The report of this data commenced with the reference date of June 2020. The GLs explicitly refer to the temporary character of these reporting requirement.

Following such, the EBA designed a set of risk indicators to monitor the scope and effects of the use of EBA-compliant moratoria as defined in the Guidelines on legislative and non-legislative moratoria on loan repayments applied in the light of the COVID-19 crisis and other COVID-19 related forbearance measures, which is deemed crucial for the purposes of risk analysis of individual institutions and for the overall financial stability in the EU. These are the indicators presented in this section.

I.12.3 Description of the relevant risk indicators

The set of COVID-19 risk indicators are sourced from FINREP templates (F 90, F 91 and F 18) and they can broadly be divided into five main categories.

In the **first group**, we have indicators CVD_1 to CVD_17 that are different indicators of composition. For example, one of them is CVD_2 that represents the percentage of loans granted EBA compliant moratoria on those applied. Another one is CVD_11 that is the percentage of loans granted other COVID-19 forbearance measures on total loans to non-financial corporations and households. For this last indicator we have also the breakdown of loans to households (CVD_12) and to non-financial corporations (CVD_13).

In the **second group** we have CVD_19, CVD_33 and CVD_39 that are indicators of contribution to the NPL ratio of loans with EBA compliant moratoria, loans with other COVID-19 forbearance measures and loans with state guarantees.

In the **third group** we have CVD_18, CVD_32 and CVD_38 that are NPL ratio of loans subject to EBA compliant moratoria, loans subject to other COVID-19 forbearance measures and loans with state guarantees.

In the **fourth group** we have CVD_20, CVD_21, CVD_26 to CVD_30, CVD_34, CVD_35, CVD_40 and CVD_41 that are different coverage ratios i.e. on loans subject to EBA compliant moratoria, stage 2 (CVD_20), or on loans subject to other COVID-19 forbearance measures, stage 2 (CVD_34) or on new lending guaranteed by the public sector, stage 2 (CVD_40).

Finally, in the **fifth group** we have CVD_22 to CVD_25 and CVD_36 and CVD_37 that can help to detect high or higher risk concentration among sectors (considering separately loans to households and to non-financial corporations).

I.13 Funding plans risk indicators

I.13.1 List of risk indicators and DRATs

Table 13: List of FDPs and relevant DRATs

Number	Name	Number	Name
FDP 1	Loans and Advances to Deposit ratio - households, non-financial corporations and general governments - current	**FDP 102**	Difference between the proportion of credit institutions deposits in total balance sheet at current position and at Year 2.
FDP 2	Loans and Advances to Deposit ratio - households, non-financial corporations and general governments - 1 Year	**FDP 103**	Difference between the proportion of credit institutions deposits in total balance sheet at current position and at Year 3.
FDP 3	Loans and Advances to Deposit ratio - households, non-financial corporations and general governments - 2 Year	**FDP 104**	Proportion of non-financial corporations deposits in total liabilities - current position date
FDP 4	Loans and Advances to Deposit ratio - households, non-financial corporations and general governments - 3 Year	**FDP 105**	Difference between the proportions of non-financial corporations deposits in total balance sheet at current position and at Year 1.
FDP 5	Loans and Advances to Deposit ratio - households and non-financial corporations - current	**FDP 106**	Difference between the proportion of non-financial corporations deposits in total balance sheet at current position and at Year 2.
FDP 6	Loans and Advances to Deposit ratio - households and non-financial corporations - 1 Year	**FDP 107**	Difference between the proportion of non-financial corporations deposits in total balance sheet at current position and at Year 3.
FDP 7	Loans and Advances to Deposit ratio - households and non-financial corporations - 2 Year	**FDP 108**	Proportion of households deposits in total liabilities - current position date
FDP 8	Loans and Advances to Deposit ratio - households and non-financial corporations - 3 Year	**FDP 109**	Difference between the proportions of households deposits in total balance sheet at current position and at Year 1.
FDP 9	Repurchase agreement at current position which will disappear over the next year.	**FDP 110**	Difference between the proportion of households deposits in total balance sheet at current position and at Year 2.

FDP 10	Repurchase agreement at current position which will disappear over the next year - starting point being 1 Year position	**FDP 111**	Difference between the proportion of households deposits in total balance sheet at current position and at Year 3.
FDP 11	Reverse repurchase agreement at current position which will be reimbursed over the next year	**FDP 112**	Proportion of total equity in total liabilities - current position date
FDP 12	Reverse repurchase agreement at current position which will be reimbursed over the next year - starting point being 1 Year position	**FDP 113**	Difference between the proportions of total equity in total balance sheet at current position and at Year 1.
FDP 13	Loans and advances to credit institutions and to other financial corporations (excl. Reverse repos) - current position	**FDP 114**	Difference between the proportion of total equity in total balance sheet at current position and at Year 2.
FDP 14	Loans and advances to credit institutions and to other financial corporations - 1 Year position	**FDP 115**	Difference between the proportion of total equity in total balance sheet at current position and at Year 3.
FDP 15	Deposits from credit institutions and to other financial corporations (excl. Reverse repos) - current position	**FDP 116**	Growth of total balance sheet between current position and Year 1
FDP 16	Deposits from credit institutions and to other financial corporations - 1 Year position	**FDP 117**	Growth of total balance sheet between current position and Year 2
FDP 17	Amount of long term debt securities maturing over the next year - starting point being current date	**FDP 118**	Growth of total balance sheet between current position and Year 3
FDP 18	Amount of long term debt securities maturing over the next year - starting point being planned 1 year	**FDP 119**	Comparison between planned Year 1 position for cash and cash balance at central banks and observed position 1 year later (for cash and cash balance at central banks).
FDP 19	Amount of short term debt securities maturing over the next year - starting point being current position	**FDP 120**	Comparison between planned Year 1 position for loans to households and observed position 1 year later (for loans to households).
FDP 20	Amount of short term debt securities maturing over the next year - starting point being Planned 1 year	**FDP 121**	Comparison between planned Year 1 position for loans to households (Domestic activities) and observed position 1 year later (for loans to households' domestic activities).

FDP 21	Net outflow resulting from stress scenario 1 - from current position to planned Year 1 position	**FDP 122**	Comparison between planned Year 1 position for loans to households (EEA activities) and observed position 1 year later (for loans to households EEA activities).
FDP 22	Net outflow resulting from stress scenario 1 - from planned position Year 1 to planned position Year 2.	**FDP 123**	Comparison between planned Year 1 position for non-performing loans to households (EEA activities) and observed position 1 year later (for non-performing loans to households).
FDP 23	Net outflow resulting from stress scenario 2 - from current position to planned Year 1 position	**FDP 124**	Comparison between planned Year 1 position for accumulated impairment on loans to households (EEA activities) and observed position 1 year later (for accumulated impairment on loans to households).
FDP 24	Net outflow resulting from stress scenario 2 - from planned position Year 1 to planned position Year 2.	**FDP 125**	Comparison between planned Year 1 position for loans to non-financial corporations and observed position 1 year later (for loans to non-financial corporations).
FDP 25	Net outflow resulting from stress scenario 3 - from current position to planned Year 1 position	**FDP 126**	Comparison between planned Year 1 position for domestic loans to non-financial corporations and observed position 1 year later (for domestic loans to non-financial corporations).
FDP 26	Net outflow resulting from stress scenario 3 - from planned position Year 1 to planned position Year 2.	**FDP 127**	Comparison between planned Year 1 position for EEA loans to non-financial corporations and observed position 1 year later (for EEA loans to non-financial corporations).
FDP 27	Net outflow resulting from stress scenarios 1,2, 3 - from current position to planned Year 1 position	**FDP 128**	Comparison between planned Year 1 position for non-performing loans to non-financial corporations and observed position 1 year later (for non-performing loans to non-financial corporations).

FDP 28	Net outflow resulting from stress scenarios 1,2, 3 - from planned position Year 1 to planned position Year 2.	**FDP 129**	Comparison between planned Year 1 position for accumulated impairment on loans to non-financial corporations and observed position 1 year later (for accumulated impairment on loans to non-financial corporations).
FDP 29	Part of HQLA that are considered as counterbalancing capacity to cash outflow resulting from stress scenarios 1,2 and 3. Starting date being current position date	**FDP 130**	Comparison between planned Year 1 position for loans to credit institutions (excl. Reverse repos) and observed position 1 year later (for loans to credit institutions - excl reverse repos).
FDP 30	Part of HQLA that are considered as counterbalancing capacity to cash outflow resulting from stress scenarios 1,2 and 3. Starting date being planned year 1 date	**FDP 131**	Comparison between planned Year 1 position for loans to other financial corporations (excl. Reverse repos) and observed position 1 year later (for loans to other financial corporations - excl reverse repos).
FDP 31	Counterbalancing capacity of FDP_39 minus cash outflow resulting from stress scenario 1,2,3 of FDP_36. Starting date= current position.	**FDP 132**	Comparison between planned Year 1 position for loans to central banks (excl. Reverse repos) and observed position 1 year later (for loans to central banks - excl reverse repos).
FDP 32	Counterbalancing capacity of FDP_40 minus cash outflow resulting from stress scenario 1,2,3 of FDP_37. Starting date = Planned Year 1 position.	**FDP 133**	Comparison between planned Year 1 position for loans to general governments (excl. Reverse repos) and observed position 1 year later (for loans to general governments - excl reverse repos).
FDP 33	Supplementary counterbalancing capacity to stress scenarios 1,2,3 provided that counterbalancing capacity of HQLA is lesser than net cash outflows involved by stress scenarios 1,2,3. Starting date is current position date.	**FDP 134**	Comparison between planned Year 1 position for positive MtM derivatives and observed position 1 year later (for positive Mtm derivatives).
FDP 34	Total counterbalancing capacity including initial adjusted HQLA (FDP_29) and supplementary counterbalancing capacity (FDP_3) - starting date being current position date	**FDP 135**	Comparison between planned Year 1 position for Debt securities and observed position 1 year later (for Debt securities).

FDP 35	Liquidity surplus/shortfall after occurrence of stress scenarios 1,2,3 within 1 year and use of available counterbalancing capacity (adjusted HQLA as determined in FDP_39) and supplementary counterbalancing capacity (FDP_45). Starting date is current position date.	**FDP 136**	Comparison between planned Year 1 position for equity instruments and observed position 1 year later (for equity instruments).
FDP 36	Proportion of positive MtM derivatives in total assets - current position date	**FDP 137**	Comparison between planned Year 1 position for other assets and observed position 1 year later (for other assets).
FDP 37	Difference between the proportion of positive MtM derivatives in total balance sheet at current position and at Year 1.	**FDP 138**	Comparison between planned Year 1 position for total assets and observed position 1 year later (for total assets).
FDP 38	Difference between the proportion of positive MtM derivatives in total balance sheet at current position and at Year 2.	**FDP 139**	Comparison between planned Year 1 position for repos and observed position 1 year later (for repos).
FDP 39	Difference between the proportion of positive MtM derivatives in total balance sheet at current position and at Year 3.	**FDP 140**	Comparison between planned Year 1 position for deposits from households and observed position 1 year later (for deposits from households).
FDP 40	Proportion of reverse repos in total assets - current position date	**FDP 141**	Comparison between planned Year 1 position for deposits from households (domestic activities) and observed position 1 year later (for domestic activities deposits from households).
FDP 41	Difference between the proportion of reverse repos in total balance sheet at current position and at Year 1.	**FDP 142**	Comparison between planned Year 1 position for deposits from households (EEA activities) and observed position 1 year later (for EEA activities household deposits).
FDP 42	Difference between the proportion of reverse repos in total balance sheet at current position and at Year 2.	**FDP 143**	Comparison between planned Year 1 position for deposits from non-financial corporations and observed position 1 year later (for non-financial corporations).

FDP 43	Difference between the proportion of reverse repos in total balance sheet at current position and at Year 3.	**FDP 144**	Comparison between planned Year 1 position for deposits from domestic activities non-financial corporations and observed position 1 year later (for domestic activities non-financial corporations).
FDP 44	Proportion of equities instruments in total assets - current position date	**FDP 145**	Comparison between planned Year 1 position for deposits from EEA activities non-financial corporations and observed position 1 year later (for EEA activities non-financial corporations).
FDP 45	Difference between the proportion of equities instruments in total balance sheet at current position and at Year 1.	**FDP 146**	Comparison between planned Year 1 position for deposits from Domestic activities SMEs and observed position 1 year later (for Domestic activities SMEs).
FDP 46	Difference between the proportion of equities instruments in total balance sheet at current position and at Year 2.	**FDP 147**	Comparison between planned Year 1 position for deposits from EEA activities SMEs and observed position 1 year later (for EEA activities SMEs).
FDP 47	Difference between the proportion of equities instruments in total balance sheet at current position and at Year 3.	**FDP 148**	Comparison between planned Year 1 position for deposits from credit institutions and observed position 1 year later (for credits institutions deposits).
FDP 48	Proportion of debt securities in total assets - current position date	**FDP 149**	Comparison between planned Year 1 position for deposits from other financial corporations and observed position 1 year later (for other financial corporation deposits).
FDP 49	Difference between the proportion of debt securities in total balance sheet at current position and at Year 1.	**FDP 150**	Comparison between planned Year 1 position for deposits from central banks and observed position 1 year later (for central banks deposits).
FDP 50	Difference between the proportion of debt securities in total balance sheet at current position and at Year 2.	**FDP 151**	Comparison between planned Year 1 position for deposits from general governments and observed position 1 year later (for general government deposits).

FDP 51	Difference between the proportion of debt securities in total balance sheet at current position and at Year 3.	**FDP 152**	Comparison between planned Year 1 position for short-term debt securities issued and observed position 1 year later (for short-term debt securities).
FDP 52	Proportion of loans to households in total assets - current position date	**FDP 153**	Comparison between planned Year 1 position for long-term debt securities issued and observed position 1 year later (for long-term debt securities).
FDP 53	Difference between the proportions of loans to households in total balance sheet at current position and at Year 1.	**FDP 154**	Comparison between planned Year 1 position for short-term unsecured debt securities issued and observed position 1 year later (for short-term unsecured debt securities).
FDP 54	Difference between the proportion of loans to households in total balance sheet at current position and at Year 2.	**FDP 155**	Comparison between planned Year 1 position for long-term debt unsecured securities issued and observed position 1 year later (for long-term unsecured debt securities).
FDP 55	Difference between the proportion of loans to households in total balance sheet at current position and at Year 3.	**FDP 156**	Comparison between planned Year 1 position for long-term unsecured (HoldCo) debt securities issued and observed position 1 year later (for long-term unsecured - HoldCo - debt securities).
FDP 56	Proportion of loans to non-financial corporations in total assets - current position date	**FDP 157**	Comparison between planned Year 1 position for long-term secured debt securities issued and observed position 1 year later (for long-term secured debt securities).
FDP 57	Difference between the proportions of loans to non-financial corporations in total balance sheet at current position and at Year 1.	**FDP 158**	Comparison between planned Year 1 position for long-term covered bonds issued and observed position 1 year later (for long-term covered bonds issued).
FDP 58	Difference between the proportion of loans to non-financial corporations in total balance sheet at current position and at Year 2.	**FDP 159**	Comparison between planned Year 1 position for negative MtM derivatives and observed position 1 year later (for long-term covered bonds issued).

FDP 59	Difference between the proportion of loans to non-financial corporations in total balance sheet at current position and at Year 3.	**FDP 160**	Comparison between planned Year 1 position for total equity and observed position 1 year later (for total equity).
FDP 60	Proportion of loans to financial institutions in total assets - current position date	**FDP 161**	Comparison between planned Year 1 position for other liabilities and observed position 1 year later (for other liabilities).
FDP 61	Difference between the proportions of loans financial institutions in total balance sheet at current position and at Year 1.	**FDP 162**	Comparison between planned Year 1 position for liquidity buffer and observed position 1 year later (for liquidity buffer).
FDP 62	Difference between the proportion of loans to financial institutions in total balance sheet at current position and at Year 2.	**FDP 163**	Comparison between planned Year 1 position for net liquidity outflow and observed position 1 year later (for net liquidity outflow).
FDP 63	Difference between the proportion of loans to financial institutions in total balance sheet at current position and at Year 3.	**FDP 164**	Comparison between planned Year 1 position for total outflow and observed position 1 year later (for total outflow).
FDP 64	Proportion of loans to financial institutions in total assets - current position date	**FDP 165**	Comparison between planned Year 1 position for ASF and observed position 1 year later (for ASF).
FDP 65	Difference between the proportions of loans financial institutions in total balance sheet at current position and at Year 1.	**FDP 166**	Comparison between planned Year 1 position for RSF and observed position 1 year later (for RSF).
FDP 66	Difference between the proportion of loans to financial institutions in total balance sheet at current position and at Year 2.	**FDP 167**	Comparison between planned Year 1 position for deposits covered by a DGS and observed position 1 year later (for deposits covered by a DGS).
FDP 67	Difference between the proportion of loans to financial institutions in total balance sheet at current position and at Year 3.	**FDP 168**	Comparison between planned Year 1 position for interest income and observed position 1 year later (for interest income).
FDP 68	Proportion of cash and central bank loans in total assets - current position date	**FDP 169**	Comparison between planned Year 1 position for interest expense and observed position 1 year later (for interest expense).
FDP 69	Difference between the proportions of cash and central bank loans in total balance sheet at current position and at Year 1.	**FDP 170**	Comparison between planned Year 1 position for fee and commission income and observed position 1 year later (for fee and commission income).

FDP 70	Difference between the proportion of cash and central bank loans in total balance sheet at current position and at Year 2.	**FDP 171**	Comparison between planned Year 1 position for fee and commission expense and observed position 1 year later (for fee and commission expense).
FDP 71	Difference between the proportion of cash and central bank loans in total balance sheet at current position and at Year 3.	**FDP 172**	Comparison between planned Year 1 position for administrative expenses and observed position 1 year later (for administrative expenses).
FDP 72	Proportion of repos in total liabilities - current position date	**FDP 173**	Comparison between planned Year 1 position for net gains or losses on trading assets/liabilities and observed position 1 year later (for net gains or losses on trading assets/liabilities).
FDP 73	Difference between the proportions of repos in total balance sheet at current position and at Year 1.	**FDP 174**	Comparison between planned Year 1 position for net gains or losses on non-trading assets/liabilities and observed position 1 year later (for net gains or losses on non-trading assets/liabilities).
FDP 74	Difference between the proportion of repos in total balance sheet at current position and at Year 2.	**FDP 175**	Comparison between planned Year 1 position for net operating income and observed position 1 year later (for net operating income).
FDP 75	Difference between the proportion of repos in total balance sheet at current position and at Year 3.	**FDP 176**	Comparison between planned Year 1 position for impairment/reversal of impairment on assets not measured at fair value and observed position 1 year later (for impairment/reversal of impairment on assets not measured at fair value).
FDP 76	Proportion of negative MtM derivatives in total liabilities - current position date	**FDP 177**	Share of total long-term unsecured debt securities issued over total liabilities
FDP 77	Difference between the proportions of negative MtM derivatives in total balance sheet at current position and at Year 1.	**FDP 178**	Share of additional Tier 1 instruments over total liabilities

FDP 78	Difference between the proportion of negative MtM derivatives in total balance sheet at current position and at Year 2.	**FDP 179**	Share of Tier 2 instruments over total liabilities
FDP 79	Difference between the proportion of negative MtM derivatives in total balance sheet at current position and at Year 3.	**FDP 180**	Share of Senior non-preferred instruments over total liabilities
FDP 80	Proportion of issued debt securities (original maturity >= 1 year) in total liabilities - current position date	**FDP 181**	Share of Senior unsecured (HoldCo) instruments over total liabilities
FDP 81	Difference between the proportions of issued debt securities (original maturity >= 1 year) in total balance sheet at current position and at Year 1.	**FDP 182**	Share of Other long-term unsecured instruments over total liabilities
FDP 82	Difference between the proportion of issued debt securities (original maturity >= 1 year) in total balance sheet at current position and at Year 2.	**FDP 183**	Share of total long-term secured debt securities issued over total liabilities
FDP 83	Difference between the proportion of issued debt securities (original maturity >= 1 year) in total balance sheet at current position and at Year 3.	**FDP 184**	Share of covered bonds over total liabilities
FDP 84	Proportion of issued debt securities (original maturity <1 year) in total liabilities - current position date	**FDP 185**	Share of asset backed securities over total liabilities
FDP 85	Difference between the proportions of issued debt securities (original maturity < 1 year) in total balance sheet at current position and at Year 1.	**FDP 186**	Share of total long-term unsecured debt securities issued over total liabilities in one year
FDP 86	Difference between the proportion of issued debt securities (original maturity < 1 year) in total balance sheet at current position and at Year 2.	**FDP 187**	Share of additional Tier 1 instruments over total liabilities in one year
FDP 87	Difference between the proportion of issued debt securities (original maturity < 1 year) in total balance sheet at current position and at Year 3.	**FDP 188**	Share of Tier 2 instruments over total liabilities in one year
FDP 88	Proportion of central bank deposits in total liabilities - current position date	**FDP 189**	Share of Senior non-preferred instruments over total liabilities in one year

FDP 89	Difference between the proportions of central bank deposits in total balance sheet at current position and at Year 1.	**FDP 190**	Share of Senior unsecured (HoldCo) instruments over total liabilities in one year
FDP 90	Difference between the proportion of central bank deposits in total balance sheet at current position and at Year 2.	**FDP 191**	Share of Other long-term unsecured instruments over total liabilities in one year
FDP 91	Difference between the proportion of central bank deposits in total balance sheet at current position and at Year 3.	**FDP 192**	Share of total long-term secured debt securities issued over total liabilities in one year
FDP 92	Proportion of general government deposits in total liabilities - current position date	**FDP 193**	Share of covered bonds over total liabilities in one year
FDP 93	Difference between the proportions of general government deposits in total balance sheet at current position and at Year 1.	**FDP 194**	Share of asset backed securities over total liabilities in one year
FDP 94	Difference between the proportion of general government deposits in total balance sheet at current position and at Year 2.	**FDP 195**	Public sector funding (repo-based funding) as a proportion of total liabilities
FDP 95	Difference between the proportion of general government deposits in total balance sheet at current position and at Year 3.	**FDP 196**	Pricing spread for households and NFC
FDP 96	Proportion of other financial corporations deposits in total liabilities - current position date	**FDP 197**	Pricing spread for households and NFC in one year
FDP 97	Difference between the proportions of other financial corporations deposits in total balance sheet at current position and at Year 1.	**FDP 198**	Price for long-term unsecured funding
FDP 98	Difference between the proportion of other financial corporations deposits in total balance sheet at current position and at Year 2.	**FDP 199**	Price for long-term secured funding
FDP 99	Difference between the proportion of other financial corporations deposits in total balance sheet at current position and at Year 3.	**FDP 200**	Price change for long-term unsecured funding in one year
FDP 100	Proportion of credit institutions deposits in total liabilities - current position date	**FDP 201**	Price change for long-term secured funding in one year

FDP 101	Difference between the proportions of credit institutions deposits in total balance sheet at current position and at Year 1.	

I.13.2 Introduction

Funding plan indicators aim at meeting several purposes. The first one is to assess the ability of credit institutions to provide relevant forecasts on the short and middle term evolution of main risk indicators: structure of balance sheet, amount of liquidity buffer, profitability, etc The second purpose is to identify credit institutions which plan significant changes in the nature of business model. The third purpose is to assess potential weaknesses of funding sources, namely an excessive dependency to wholesale funding.

I.13.3 Description of the relevant risk indicators

FDP_1 to FDP_8 consist in monitoring the planned evolution of ratios loans to deposits from current position to the next 3 years. These ratios are determined according 2 perimeters: i) households and non-financial corporations and ii) households, non-financial corporations and general governments. Usually, loans to deposits ratios are computed under the first perimeter. The second perimeter may be interesting to take into account specific business models (e.g. banks specialising in local and regional authorities).

FDP_9 to FDP_35 measures the counterbalancing capacity of credit institutions in case of a total dry-up of market refinancing sources. These sources are as follows: i) reverse repurchase agreements (reverse repos)/repurchase agreements (repos), ii) deposits excluding repos from credit institutions and other financial corporations and iii) markets financing through issuance of short term and long term securities. The dry-up occurs within 1 year and is supposed to be counter-balanced by the liquidity buffer at the starting date of stressed context affecting markets refinancing sources. There are 2 starting dates: current position and planned year 1. From each starting date to ending date (starting date + 1 year) it is assumed that the liquidity buffer will not increase. Indeed, given total dry-up of market funding sources, it seems unrealistic to envisage purchase of level 1 or 2 (LCR definition) securities or a generation of cash inflow by business development. Additional assumptions are made: no leakage of deposits from households, non-financial corporations, general governments and unlimited access to central banks refinancing through repos. If the counterbalancing capacity exceeds net cash outflows resulting from market financing dry-up, it involved the capacity to maintain its initial stock of loans to non-financial agents during next year (from starting date).

FDP_36 to FDP_115 aim at identifying significant planned changes in business-model. The structure of balance sheet of each planned years (year 1 to year 3) is compared to the initial structure at

current position date. Note that significant changes do not necessarily involve changes in business model: it might detect erroneous reporting (e.g. significant changes of balance sheet structure in year 1 followed by a return to initial situation in year 2). FDP_116 to FDP_118 are designed to detect quickly and simply potential large overestimations (or underestimations) of forecasts. They measure the growth of balance sheet from current position date to respectively Year 1, Year2 and Year 3. For example, a growth of total balance sheet by 100% within 3 years is at first sight not plausible and requires further investigations before any analysis of Funding Plans data.

FDP_119 to FDP_176 are indicators that assess the accuracy of funding plans. Funding plan templates are available from 15 March of year N+1. The current position is end-year N and planned year 1 corresponds to end year N+1. Therefore, the time horizon of forecasts for year 1 is not 12 months but 9-and-a-half months. It is expected that planned year 1 forecasts will not differ (or to a marginal extent) from corresponding observed values (funding plans template at end year N+1). If numerous differences are found outside the range [-5%, 5%] for important items, the relevance of funding plans is questionable. At this stage, the comparison of observed values and forecasted values for year 2 and year 3 is debatable. Beyond 1 year, a forecast exercise is generally not very reliable. A rather good quality is plausible for forecasts of main indicators. However, an ex-ante choice of a range for discriminating between acceptable and non-acceptable differences seems hazardous.

FDP_177 to FDP_195 are indicators that show the importance of market based funding or public sector funding for a bank's' funding profile. The ability to access funding markets is crucial in order to raise regulatory capital to increase capital ratios or senior debt instruments that are eligible for MREL purposes. An overreliance on public sector funding might be beneficial in the short term, but will ultimately have to be replace by market based funding, if and when public sector funding programs will be removed (e.g. TLTRO).

FDP_196 to FDP_201 are indicators related to banks' cost of funding. Information about the spread between the interest banks receive from loans to households and NFC and the interest banks pay on deposits from households and NFC provides insights into banks' pricing policy and serves as an indication of the viability of banks' business model. Information about banks' costs to access funding markets is vital to understand banks' ability to raise regulatory capital or MREL eligible debt.

I.13.4 Further methodological issues and potential ways to address them

Indicators FDP_9 to FDP_35 are based on a stress-scenario which is the aggregation 3 sub stress scenarios: i) dry-up of funding through repo markets, ii) leakage of financial institutions deposits and iii) dry-up of securities markets leading to the impossibility of any new issuance and the obligation reimburse maturing within 1 year issued securities. It is possible to test several combinations of i), ii) and iii) and not necessarily the aggregation of these 3 items. At this stage, the current list of indicators does not provide such a flexibility.

There is room to improve the suggested stress-scenario by adding assumptions on various levels of deposits leakage (from non-financial agents) and on cash outflows from derivatives activities (inspired by LCR methodology). There is also a possibility to relax some assumptions of the existing stress-scenario in order to obtain a stress-scenario involving only an idiosyncratic shock. Currently, the stress-scenario assumes a global crisis on markets.

The unavailability of relevant data leads to the use of proxies. For instance, liquidity buffers may include borrowed securities (maturity of borrowing exceeding 1 month). The absence of HQLA breakdown between borrowed and non-borrowed securities, leads to build an estimate of the proportion of such borrowed securities in HQLA. A second example is the following: haircuts applied by central banks for repos transactions with commercial bank are not considered (cash obtained is equal to the market value of securities).

Some areas of Funding Plans are not covered (or insufficiently) by current indicators: P&L and resolution template. FDP_1 to FDP_8 indicators may be completed by additional indicators assessing the structure and features of funding (e.g. proportion of deposits covered by a Deposit Guarantee Scheme, proportion of debt securities issued refinancing loans to non-financial agents…). It should be noticed that elements of Funding Plans related to NSFR are not exploited as the European regulatory NSFR is not implemented yet.

I.14 Remuneration risk indicators

I.14.1 List of risk indicators and DRATs

Table 14: List of RMNs and relevant DRATs

Number	Name	Number	Name
RMN 1	Ratio of variable remuneration of identified staff to gross revenue	**RMN 3**	Ratio of variable remuneration of identified staff to dividend paid out
RMN 2	Ratio of variable remuneration of identified staff to total own funds	**RMN 4**	Ratio of variable remuneration of identified staff to retained profits

I.14.2 Introduction

Different to risks that translate into risk weighted assets, risks that result from inappropriate remuneration policies and practices lead potentially to operational risks, reputational risks and can also have an impact on the level of own funds as they reduce profits that could otherwise be retained or paid out as dividend.

There are some limitations to the amounts of variable remuneration that can be paid when the situation of Articles 140 and 141 b of CRD or Article 16 of BRRD apply, these are however only directed towards institutions that breach certain regulatory requirements, which triggers a reduction of possible distributions. An appropriate system of remuneration policies provides staff and in particular staff whose professional activities have a material impact on the institutions risk profile (identified staff) with the appropriate incentives to behave in line with the institutions strategy and risk appetite. Therefore it is appropriate that banks pay out some variable remuneration to staff. However, depending on the economic situation a high pay out of variable remuneration can conflict with the interests of shareholders or could weaken the own funds of the firm. The latter is relatively unlikely as according to EBA benchmarking results[14] the pay out of variable remuneration to identified staff equals on average only 1.5 % of institutions own funds.

I.14.3 Description of the relevant risk indicators

[14] See Figure 30 in https://eba.europa.eu/sites/default/documents/files/document_library/Publications/Reports/2020/897301/Report%20on%20remuneration%20benchmarking%20and%20High%20Earners.pdf

The first two indicators provide for insight into the economic capacity to pay out variable remuneration to identified staff; the third and fourth indicators provide insight on how distributions are made in relative terms to different stakeholders.

Values of such indicators could provide for a traffic light system that could trigger the follow-up with competent authorities and institutions if the distribution of profits or capital to staff would raise concerns. Traffic lights would need to be calibrated in light of benchmarking results, assuming that all banks – potentially in one Member State – would be subject to the same economic developments that would require adjustments to the performance based variable remuneration of identified staff.

RMN 1 - Ratio of variable remuneration of identified staff to gross revenue

This indicator would provide insight into the distribution of revenues. The distribution of staff could be disproportionate compared to the building up of capital and distributions to shareholders. This could lead not only to issues regarding the built up of capital, but also to reputational risks and funding risks as shareholders might feel that profits should be rather retained or distributed in the form of dividends. On the other hand, very low values could indicate that the remuneration policy does not provide for appropriate incentives for identified staff.

RMN 2 - Ratio of variable remuneration of identified staff to total own funds

In particular, where profits are low, such an indicator could identify situations where identified staff receives a bonus that is draining capital reserves, while the performance of the institution is low. A higher ratio compared to other firms with the same ROE could indicate an inappropriate remuneration policy.

RMN 3 - Ratio of variable remuneration of identified staff to dividend paid out

The indicator would provide information on how different stakeholders would benefit from profits made by the institution. A very high ratio would indicate that there might be an imbalance between the distribution to staff and shareholders and that this could have an impact on the reputation of the bank and its abilities for future funding, as the relative profitability of investments might be lower as at other peer banks.

RMN 4 - Ratio of variable remuneration of identified staff to retained profits

The indicator would provide information on how much is paid out to staff rather than being paid out in dividends. The same reasoning as above applies.

I.14.4 Further methodological issues and potential ways to address them

The availability of data (identified versus all staff) is a challenge as the total amount of bonuses cannot be considered. Furthermore, if the ratio of identified staff / all staff is not harmonised and differs between institutions, it might pose challenges to form benchmarks. Some of these challenges can be overcome as there is a relationship between that ratio and the size of the institutions which would need to be taken into account when calibrating indicators.

The pairs of indicators (RMN_1 and RMN_2) and (RMN_3 and RMN_4) are necessary to look into 2 aspects, 1) what is the impact to the financial stability and 2) what is the distribution to different stakeholders. However, the 2 indicators within each pair of indicators are closely linked, which would need to be considered in their future calibration or the development of a combined indicator.

I.15 External credit ratings' risk indicators

I.15.1 List of risk indicators and DRATs

Table 15: List of EXTs and relevant DRATs

Number	Name	Number	Name
EXT 1	Overall share of RWEA derived through an external rating in the credit risk SA	**EXT_9**	Materiality of RWEA derived through an external credit rating in the total credit risk framework
EXT 2	Share of RWEA derived through an external rating in the credit risk SA, for sovereigns	**EXT_10**	Materiality of sovereign exposures in the CR SA
EXT 3	Share of RWEA derived through an external rating in the credit risk SA, for institutions	**EXT_11**	Materiality of institution exposures in the CR SA
EXT 4	Share of RWEA derived through an external rating in the credit risk SA, for corporates	**EXT_12**	Materiality of covered bonds exposures in the CR SA
EXT 5	Share of RWEA derived through an external rating in the credit risk SA, for covered bonds	**EXT_13**	Materiality of corporate exposures in the CR SA
EXT 6	Share of RWEA derived through an external rating in the credit risk SA, for claims on institutions and corporate with a short-term credit assessment	**EXT_14**	Materiality of claims on institutions and corporate with a short-term credit assessment in the CR SA
EXT 7	Share of RWEA derived through an external rating in the credit risk SA, for those exposures classes where the use of external ratings is allowed.	**EXT_15**	Materiality in the CR SA of exposures where the use of external ratings is allowed.
EXT 8	Share of RWEA for securitisation positions derived through the Securitisation External Ratings Based Approach (SEC-ERBA)		

I.15.2 Introduction

Article 161(3) of the CRD requires the EBA, in cooperation with ESMA and EIOPA, to: *'publish a biannual report analysing the extent to which Member States' law refers to external credit ratings for regulatory purposes and the steps taken by Member States to reduce such references. Those reports shall outline how the competent authorities meet their obligations under Article 77(1) and*

(3) and Article 79(b). Those reports shall also outline the degree of supervisory convergence in that regard. '.

Accordingly, an EBA Report on external credit ratings' reliance was published on 17th of May 2021, with a recommendation to drop to the said mandate, based on the limited reliance found on external credit ratings, against a background of non-material references to external credit ratings in Member States' law and international developments in Regulation to limit over-reliance. In particular:

a. References to external credit ratings are not material in Member States' law;

1. CRD requirements reducing reliance on external ratings were transposed into national law, namely those related to enhanced internal risk assessment capacity, promotion of internal models for own funds requirements when proportional, and reducing reliance on external credit ratings. These requirements are covered in Articles 77(1) and (3) and Article 79(b) CRD, as specified in the mandate. Strengthening or monitoring additional ad-hoc supervisory incentives seems of limited use as baseline principles to reduce reliance are implemented across the board;

b. The final Basel III framework[15] introduces revisions to the standardized approach of the credit risk framework to reduce mechanistic reliance on external credit ratings through enhanced due diligence. These new requirements should be implemented in the EU, as recommended by the EBA in its policy advice on credit risk to the EU Commission, published in August 2019[16].

2. The introduction of the new securitization framework into the CRR aimed, inter alia, at limiting reliance on external credit ratings. This was achieved through the revised hierarchy of approaches, which set out formulaic approaches based on the credit risk drivers of the securitised exposures higher in the hierarchy, and by incorporating other relevant risk drivers into the External Ratings Based Approach, i.e. maturity and tranche thickness for non-senior exposures, and through due diligence requirements.

In addition, the report was supported by the quantitative evidence found through the EBA Supervisory Reporting data, namely descriptive statistics on the weight of external credit ratings in the computation of RWEA, sourced from EBA Supervisory Reporting data. These statistics showed that the share of credit risk RWEA derived through an external credit rating in the EU-27 remains limited, both under the SA and under the securitisation framework.

As a safeguard against the recommendation to drop the CRR mandate to produce a report on reliance on external ratings on a regular basis, an ongoing monitoring should be performed on the use of external ratings in the calculation of RWEA in the EU.

[15] Basel III: Finalising post-crisis reforms (bis.org)

[16] https://eba.europa.eu/sites/default/documents/files/Policy%20Advice%20on%20Basel%20III%20reforms%20-%20Credit%20Risk.pdf

I.15.3 Description of the relevant risk indicators

The indicators on the relevance of external credit ratings in the RWEA calculation can be presented into three groups:

- EXTR 1 to 7 focus on the Standardised Approach (SA) of the Credit Risk (CR) framework, with specific breakdowns for those exposure classes where the use of external credit ratings is allowed.

3. EXTR 8 refers to the Securitisation positions in the Credit Risk framework, and displays the share of RWEA computed using the External Ratings Based Approach (SEC-ERBA).

4. EXT 9 provides an indication of the overall relevance of external credit rating in the computation of risk weighted exposures amount in the total credit risk framework.

- EXT 10 to EXT 15 describe the materiality of the exposures, to gauge their relative importance.

Regarding EXT 1 to EXT 7, the indicators capture, within the SA of the CR framework, which is the share of risk weighted exposure amounts that is derived through an external credit rating by a nominated ECAI. Further, it provides a breakdown by those exposure classes in the standardised approach where the use of external ratings is allowed, in order to identify if any rating category displays higher reliance.

EXT 8 gauges the share of securitisation positions in the credit risk framework that are computed using the External Ratings Based Approach (SEC-ERBA), following the developments introduced in the revised securitisation framework, as per Part Three, Chapter 5 of the CRR.

EXT9 describes the materiality of the risk weighted exposure amounts that are computed using an external credit assessment in the overall CR framework, be it in the SA or through SEC-ERBA.

EXT 10 to EXT 15 describe the materiality of the exposure classes where the use of external ratings is allowed, which is necessary to put into perspective the extent of ratings' use.

I.16 Standardised Approach of Credit

I.16.1 List of risk indicators and DRATs

Table 16: List of CRSs and relevant DRATs

Number	Name	Number	Name
CRS 1	Share of SA exposure values in the CR framework	**CRS 3**	Share of exposure values of central governments and central banks, regional governments and local authorities, and public sector entities under the permanent partial use of the CR SA
CRS 2	Overall share of exposure values under the permanent partial use of the CR SA	**CRS 4**	Overall share of exposure values under the SA of CR with prior supervisory permission to carry out a sequential IRB implementation

I.16.2 Introduction

The EBA work on the IRB repair, together with the finalisation of the Basel III framework[17], may bring differences in the split of SA/IRB exposures in the credit risk framework that are to be monitored over time.

Further, article 148(1) of the CRR requires that institutions implement the Internal Ratings Based (IRB) Approach for all exposures, unless they have received the permission of competent authorities to use the Standardised Approach (SA), which may be granted on a temporary basis in the context of a sequential roll-out of the IRB approach, or on a permanent basis. Developing indicators on the partial use of the SA for institutions granted permission to use the IRB approach contributes to monitoring the IRB implementation.

Finally, the final Basel III framework[18] allows the implementation of the IRB Approach only to selected exposure classes. Once the Basel III framework is incorporated in the CRR, the EBA intends to review the RTS on IRB assessment methodology, and in particular the articles on the PPU and the sequential implementation of the IRB Approach in order to make sure that they fit with the change in philosophy in the implementation of the IRB approach. It would be therefore important to monitor the IRB implementation through the risk indicators.

I.16.3 Description of the relevant risk indicators

[17] Basel III: Finalising post-crisis reforms (bis.org)

[18] Basel III: Finalising post-crisis reforms (bis.org)

The indicators allow to capture the partial use of the Standardised Approach for institutions that have been granted permission to use the Internal Ratings Based Approach. In particular, they are designed to disentangle the permanent from the temporary use:

CRS 1: captures the share of risk-weighted exposure amounts under the SA in the overall credit risk framework.

CRS 2: captures the share of exposures under the permanent partial use (PPU) in the SA

CRS 3: captures the share of sovereign exposures that have been granted PPU in the SA.

CRS 4: captures the share of SA exposures under a sequential roll-out of the IRB approach in the SA.

I.17 ESG indicators

I.17.1 List of risk indicators and DRATs

Table 17: List of ESGs and relevant DRATs

Number	Name	Number	Name
ESG 1	Share of exposures to NFCs in sectors highly contributing to climate change (excl. environmentally sustainable exposures)	**ESG 8**	Share of mortgages with estimated EE (residential and commercial) - total
ESG 1.1	Share of exposures to NFCs in sectors highly contributing to climate change (excl. environmentally sustainable exposures) - NACE section A	**ESG 8.1**	Share of mortgages with estimated EE - lowest two EE brackets (residential and commercial)
ESG 1.2	Share of exposures to NFCs in sectors highly contributing to climate change (excl. environmentally sustainable exposures) - NACE section B	**ESG 8.2**	Share of mortgages with estimated EE - medium two EE brackets (residential and commercial)
ESG 1.3	Share of exposures to NFCs in sectors highly contributing to climate change (excl. environmentally sustainable exposures) - NACE section C	**ESG 8.3**	Share of mortgages with estimated EE - top two EE brackets (residential and commercial)
ESG 1.4	Share of exposures to NFCs in sectors highly contributing to climate change (excl. environmentally sustainable exposures) - NACE section D	**ESG 9**	Share of exposures sensitive to physical risk - Total
ESG 1.5	Share of exposures to NFCs in sectors highly contributing to climate change (excl. environmentally sustainable exposures) - NACE section E	**ESG 9.1**	Share of exposures sensitive to physical risk - Short- term
ESG 1.6	Share of exposures to NFCs in sectors highly contributing to climate change (excl. environmentally sustainable exposures) - NACE section F	**ESG 9.2**	Share of exposures sensitive to physical risk - Long- term
ESG 1.7	Share of exposures to NFCs in sectors highly contributing to climate change (excl. environmentally sustainable exposures) - NACE section G	**ESG 10.1**	Average weighted maturity, NFC exposures s.t. physical risk
ESG 1.8	Share of exposures to NFCs in sectors highly contributing to climate change (excl. environmentally sustainable exposures) - NACE section H	**ESG 10.2**	Average weighted maturity, mortgage exposures s.t. physical risk
ESG 1.10	Share of exposures to NFCs in sectors highly contributing to climate change (excl. environmentally sustainable exposures) - NACE section L	**ESG 11**	GAR total - Stocks
ESG 2	Share of exposures to NFCs in sectors highly contributing to climate change (excl. environmentally sustainable	**ESG 11.1**	GAR NFCs - Stocks

Number	Name	Number	Name
	exposures and exposures towards companies excluded from EU Paris-aligned Benchmarks)		
ESG 3	Share of exposures to companies excluded from the Paris-aligned benchmarks (in sections A-H and L)	**ESG 11.2**	GAR HHs - Stocks
ESG 4	Share of exposures to top 20 carbon-intensive NFCs (excl. environmentally sustainable exposures)	**ESG 111**	GAR - stocks (loans and advances)
ESG 5	Average weighted maturity, all NFCs	**ESG 12**	GAR coverage
ESG 5.1	Average weighted maturity, NFCs in sectors highly contributing to climate change	**ESG 13**	GAR - flows
ESG 5.2	Average weighted maturity, top 20 carbon - intensive firms	**ESG 13.1**	GAR NFC - flows
ESG 6	Difference in non-performing exposure shares for NFCs in sectors highly contributing to climate change vs. NFCs in other sectors	**ESG 13.2**	GAR HHs - flows
ESG 7	Share of mortgages for which energy performance is provided - total (residential and commercial)	**ESG 14**	Share of GAR assets in total assets
ESG 7.1	Share of mortgages in the lowest 2 EE brackets (residential + commercial)	**ESG 14.1**	Share of taxonomy-eligible, but not aligned assets (as % of total GAR assets)
ESG 7.2	Share of mortgages in the medium 2 EE brackets (residential + commercial)	**ESG 14.2**	Share of taxonomy-aligned assets (as % of GAR assets)
ESG 7.3	Share of mortgages in the top 2 EE bracket (residential + commercial)	**ESG 14.3**	Share of non- taxonomy-aligned, non-eligible assets (as % of GAR assets)
ESG 7.4	Share of mortgages in the 2nd highest EE bracket (residential and commercial)	**ESG 15.1**	Share of assets funding climate related activities beyond the GAR/BTAR - Loans
ESG 7.5	Share of mortgages in the top EE bracket (residential and commercial)	**ESG 15.2**	Share of assets funding climate related activities beyond the GAR/BTAR - Bonds

I.17.2 Introduction

Under its founding regulation Article 19(1)(f), the EBA is to develop a monitoring system for the assessment of material environmental, social and governance risks, taking into account the Paris Agreement. The European Commission's renewed sustainable finance strategy further envisages the EBA to contribute to its systemic monitoring of material climate-related financial stability risk, also expanding to other environmental risks[19].

[19] The NGFS defines environmental and climate related risk as sub-components of nature-related financial risk.

The EBA has developed a first set of indicators to measure ESG risk based on an ad hoc data collection of ESG P3 disclosure data conducted in June 2024 and December 2024, and to be carried out on a semi-annual basis until the ESG framework to collect this prudential data is fully implemented. Given the nature of the quantitative P3 disclosure data, ESG indicators to-date cover only climate-related aspects. For the time being, the EBA has selected a list of key indicators, taking into account the availability of P3 data (first disclosure reference dates) and the complexity of indicators and information.

As the development of an EBA ESG Risk Monitoring Framework continues and matures, the set of ESG indicators will be expanded and further developed or amended going forward.

I.17.3 Description of the relevant risk indicators

A first group of indicators (ESG 1 to ESG 6) covers banks' exposures to non-financial corporates (NFCs) in sectors highly contributing to climate change[20]. Indicators cover exposure shares as well as the relative performance and maturity of these exposures.

ESG 7 to ESG 8.3 relate to the energy performance of exposures secured by residential and commercial immovable properties, measuring banks' relative exposures across different brackets of energy performance scores and how much of this is based on estimates.

ESG 9 to ESG 10.2 measure banks' exposure to physical risk through NFC and residential and commercial real estate exposures where the collateral is exposed to climate change events, including maturity characteristics.

Another group of indicators (ESG 11 to ESG 13.2 and ESG 111) assesses in how far banks' assets are aligned with the EU taxonomy. Indicators include the Green Asset Ratio (GAR), covering the 'as is' status (stocks) and developments over time (flows) as well as the GAR coverage (how much of banks' assets are considered as part of the green asset ratio assessment).

ESG 14 to ESG 14.3 provide a picture of banks' assets included in the GAR assessment. This includes the potential of banks' current balance sheets becoming taxonomy aligned by measuring the share of assets that are eligible to be assessed under the EU taxonomy (but that are not yet aligned).

ESG 15.1 and ESG 15.2 cover institutions' exposures that are not included as 'green' in the GAR and BTAR but that still support counterparties in the transition and adaptation process for the objectives of climate change mitigation (according to standards other than EU Taxonomy).

[20] Based on sectors identified in the Commission Delegated Regulation 2020/1818 supplementing Climate Benchmark Standards (NACE code A-H and L).

I.17.4 Further methodological issues and potential ways to address them

Due to the very recent nature of ESG data and its collection, data quality and consistency is likely to remain a key focus in the near future. Data disclosed and submitted is likely to be revised and adjusted across submissions in the short term until ESG data and related indicators become more stable. Refer to section III.1.5 for additional information on data quality assurance procedures.

ESG data collected via the Pillar 3 disclosure templates do not directly measure financial risk. They intend to capture climate-related risks (for example transition or physical risks) which in turn can transform into financial implications for banks' balance sheets. However, the potential financial implications would depend on many other factors and on how the risks are managed. In addition, the aggregate nature of the disclosure templates necessarily leads to certain simplifications and templates and indicators are not able to reflect all specificities, including of specific counterparties in certain industry sectors or in certain geographical locations.

I.18 CRR3/CRD6 implementation

I.18.1 List of risk indicators and relevant DRATs

Table 17: List of CRR3s and relevant DRATs

Number	Name	Number	Name
CRR3 1	Floored RWAs (current year)	**CRR3 17**	Number of banks with cap in article 465(2)
CRR3 2	Share of output floor RWAs (% of total RWAs) (current year)	**CRR3 18**	Share of output floor risk weighted assets without cap in article 465(2) (% of Floored RWAs)
CRR3 3	Number of banks constrained by risk-based requirements (current year)	**CRR3 19**	Share of output floor risk weighted assets with cap in article 465(2) (% of Floored RWAs)
CRR3 4	Number of banks constrained by the output floor (current year)	**CRR3 20**	Credit risk Tier 1 MRC Impact (% of total Tier 1 MRC)
CRR3 5	Number of banks constrained by the leverage ratio (current year)	**CRR3 21**	Market risk Tier 1 MRC Impact (% of total Tier 1 MRC)
CRR3 6	Number of banks with output floor RWAs (current year)	**CRR3 22**	Output floor Tier 1 MRC Impact (% of total Tier 1 MRC)
CRR3 7	CET 1 Shortfall (current year)	**CRR3 23**	Total risk-based Tier 1 MRC Impact (% of total Tier 1 MRC)
CRR3 8	Tier 1 Shortfall (current year)	**CRR3 24**	Leverage ratio Tier 1 MRC Impact (% of total Tier 1 MRC)
CRR3 9	Total capital Shortfall (current year)	**CRR3 25**	Total Tier 1 MRC Impact (% of total Tier 1 MRC)
CRR3 10	CET 1 Shortfall share (% of CET 1 capital) (current year)	**CRR3 26**	Market risk RWA share (% of Floored RWAs)
CRR3 11	Tier 1 Shortfall share (% of Tier 1 capital) (current year)	**CRR3 27**	Market risk RWA with FRTB share (% of Floored RWAs)
CRR3 12	Total capital Shortfall share (% of total capital) (current year)	**CRR3 28**	FRTB proxy Tier 1 MRC Impact (% of total Tier 1 MRC)
CRR3 13	CET 1 ratio (with floored RWAs projections) (current year)	**CRR3 29**	Output floor Tier 1 MRC Impact with FRTB (% of total Tier 1 MRC)
CRR3 14	Tier 1 ratio (with floored RWAs projections) (current year)	**CRR3 30**	Total risk-based Tier 1 MRC Impact with FRTB (% of total Tier 1 MRC)
CRR3 15	Total capital ratio (with floored RWAs projections) (current year)	**CRR3 31**	Leverage ratio Tier 1 MRC Impact with FRTB (% of total Tier 1 MRC)
CRR3 16	Number of banks without cap in article 465(2)	**CRR3 32**	Total Tier 1 MRC Impact with FRTB (% of total Tier 1 MRC)

I.18.2 Introduction

Following the implementation of the Regulation (EU) 2024/1623 amending Regulation (EU) No 575/2013 as regards requirements for credit risk, credit valuation adjustment risk, operational risk, market risk and the output floor (hereafter CRR3) and the directive (EU) 2024/1619 amending Directive 2013/36/EU as regards supervisory powers, sanctions, third-country branches, and environmental, social and governance risks (hereafter CRD6)**, the EU supervisory reporting framework has been adapted to require European institutions to provide CRR3/CRD6 solvency data from the March 2025 reference date.** However, the CRR3 follows a transitional implementation and therefore requires a detailed monitoring of the impact of certain elements of the CRR3 that are not applicable from 1 January 2025 (i.e. transitional arrangements). Additionally, certain elements of the Basel III framework, such as the FRTB framework, are expected to be incorporated into CRR3 at a later stage. Therefore, it is valuable to monitor its impact once implemented. The risk indicators as part of the CRR3/CRD6 implementation dashboard are shown on the aggregate level and, where applicable, by country and bank size breakdowns.

I.18.3 Description of the relevant risk indicators

The set of CRR3/CRD6 indicators are sourced from COREP templates but also require re-calculations to obtain projected values (i.e. for the different years of the output floor implementation) or to implement proxies. All risk indicators that reflect projected values are built under a static balance sheet assumption.

The first set of indicators in the CRR3/CRD6 implementation dashboard show the expected impact **of the output floor** on banks' capital requirements during the implementation phase and after all output floor transitional arrangements have expired. This set of indicators contains:

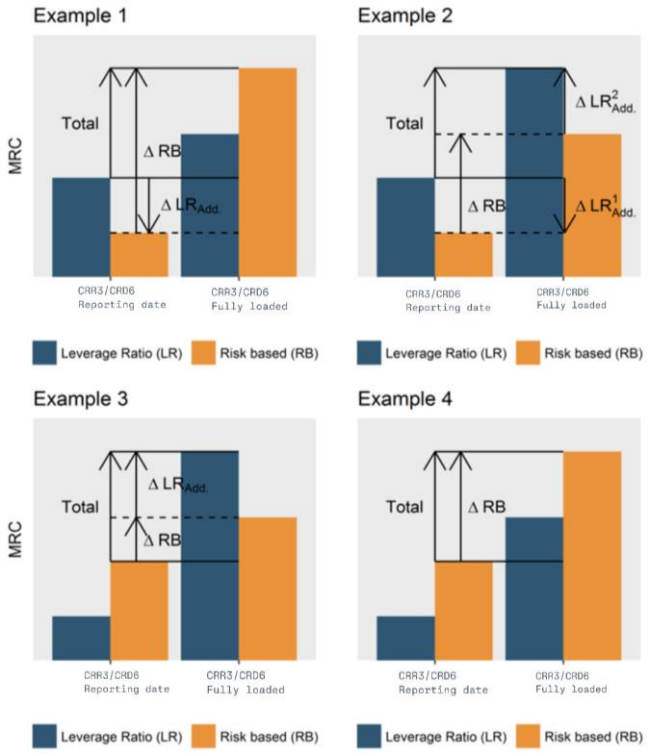
- Output floor (OF) RWAs by year of output floor implementation. The floored RWAs are re-calculated for each year applying the different calibrations of the output floor (i.e. 50%, 55%, 60%, 65%, 70%, 72.5%). The transitional arrangements that apply to the output floor will also be reverted following the timing of their application laid out in the CRR3. For a given reporting date, the output floor RWAs are reported directly via COREP (i.e. realised values). However, to obtain projected values for the reporting year+i (where i is 1, 2, etc.) until 2030 (i.e. output floor calibration), the output floor RWAs are re-calculated using the different output floor calibrations. Until 31 December 2029, we also consider the application of the cap in Article 465(2) of the CRR3, which provides a 125% cap on the incremental increase in a bank's RWAs during the transitional period for the implementation of the output floor. Therefore, for a given reporting year+i (where i is 1, 2, etc. and year+i <= 2029), we consider as the floored RWAs: MIN(MAX(C 02.00.b-r0036-c0010, x% * C 02.00.a-r0010-c0020), 125% * C 02.00.b-r0036-c0010), where 'x' denotes the

corresponding output floor calibration. From year 2030, in addition to the change in the output floor calibration, certain transitional arrangements that expire on 31 December 2029 are reversed. In particular, the cap in Article 465(2) of the CRR3 is no longer applied and the effect of the transitional arrangements related to Article 465(5b) on exposures secured by mortgages on residential property between 55% and 80% of the property value and Article 465(4) on IRB exposures subject to counterparty credit risk under the IMM. The fully loaded implementation also reverses the effects of other transitional arrangements related to: exposures secured by mortgages on residential property up to 55% of the property value; exposures to unrated corporates with a PD estimate; SEC-IRBA; internal assessment approach; and specific treatment of senior tranches in qualifying NPE securitisations. Those transitional arrangements are reported in COREP template 10 and COREP template 13, respectively. The output floor RWAs result from the difference between the floored RWAs, which depend on the calibration of the output floor as described above, and the pre-floored RWAs, which are obtained directly from supervisory reporting. Formally, this translates into OF $RWAs_{year(OF=x\%)}$ = Floored $RWA_{year(OF=x\%)}$ - Pre-floored RWAs, where Pre-floored RWAs = C 02.00.b-r0036-c0010. The share of OF RWAs is consequently obtained as OF $RWAs_{year(OF=x\%)}$ / Floored $RWA_{year(OF=x\%)}$.

- Tier 1 minimum required capital (T1 MRC) impact of the fully loaded implementation of the output floor. This risk indicator shows the relative increase in T1 MRC between the reporting date and the fully loaded CRR3/CRD6 implementation at the end of the transitional period. The basic idea of this metric is to show the increase in the minimum amount of capital that banks will need to hold to comply with the regulatory capital requirements: (Total T1 MRC_{fully_loaded} / Total T1 $MRC_{reporting\_date}$) - 1. In order to arrive at the total T1 MRC, we need to consider both risk-based (RB) and leverage ratio-based (LR) capital requirements, respectively. Hence, we consider Total T1 $MRC_{reporting\_date}$ = MAX(LR T1 $MRC_{reporting\_date}$, Total RB T1 $MRC_{reporting\_date}$) and Total T1 MRC_{fully_loaded} = MAX(LR T1 MRC_{fully_loaded}, Total RB T1 MRC_{fully_loaded}). The risk-based T1 MRC are the total RWAs at the reporting date and at the fully loaded date, respectively, times the corresponding capital requirement. Through a static balance sheet assumption, it is assumed for the fully loaded MRC that the capital requirements remain constant from the reporting date. The RWAs at the reporting date and at the fully loaded date are obtained according to the procedure described above. For the purpose of this metric, the impacts will be calculated separately for credit risk (CR) and market risk (MR).[21] The leverage ratio-based T1 MRC can be obtained via LR T1 $MRC_{reporting\_date}$ = C 47.00-r0300-c0010 * C 47.00-r0420-c0010 and LR T1 MRC_{fully_loaded} = C 47.00-r0290-c0010 * C 47.00-r0420-c0010, respectively. Consequently, the LR T1 MRC = MAX(0, LR T1 MRC_{fully_loaded} - Total RB T1 MRC_{fully_loaded}) - MAX(0, LR T1 $MRC_{reporting\_date}$ - Total RB T1 $MRC_{reporting\_date}$). This provides all necessary ingredients to

[21] CRR3/CRD6 transitional arrangements included in the reporting framework 4.0 are limited to Article 465 of the CRR3 (i.e. output floor). There is ongoing work to incorporate other transitional arrangements in the CRR3/CRD6 supervisory reporting framework to measure the impact of the fully loaded implementation also on risk types other than the output floor (namely credit risk and market risk). Therefore, although in the dashboard editions based on reporting framework 4.0 only the output floor category is expected to be impacted, future editions will show the impact related to the credit and market risk categories.

compute the T1 MRC impact of the fully loaded implementation of the output floor. The interaction between risk-based and leverage ratio-based MRC is as follows:



- Number of banks by constraining factor and year of output floor implementation. For each year of the output floor implementation, this metric shows the number of banks by constraining factor (i.e. risk-based, output floor, or leverage ratio). To obtain the number of banks constrained by risk-based requirements, it is necessary to check for how many banks the total risk-based T1 MRC before the application of the output floor is equal to the total risk-based T1 MRC after the application of the output floor, and which is greater than that of the leverage ratio. The number of banks with output floor as constraining factor is obtained by counting the banks for which the risk-based T1 MRC after the application of the output floor is greater than the risk-based T1 MRC before application of the output floor and the leverage ratio-based T1 MRC. Similarly, the number of banks with leverage ratio as constraining factor is computed by checking for which banks the leverage ratio-based T1 MRC is greater than the total risk-based T1 MRC. Lastly, the number of banks with output floor RWAs is obtained from the number of banks whose output floor RWAs are greater than 0. The risk-based and leverage ratio-based T1 MRCs should be calculated according to the procedure described above.

- Capital shortfalls by year of output floor implementation. The capital shortfalls are re-calculated for each year applying the different calibrations of the output floor (i.e. 50%, 55%, 60%, 65%, 70%, 72.5%) and considering the reversion of the transitional arrangements that apply to the output floor at each projection year. The same calculation is applied to the different layers of capital (CET1, Tier 1, Total Capital). The capital shortfall is defined as

the difference between the currently available capital and the minimum required capital (MRC). Formally, the shortfall for a given capital layer is calculated as $Shortfall_{year(OF=x\%)}$ = MIN(0, available capital - $MRC_{year(OF=x\%)}$), where the available capital is obtained directly via supervisory reporting and the MRC is obtained according to the procedure described above, i.e. the corresponding RWAs depending on the different calibrations of the output floor (i.e. 50%, 55%, 60%, 65%, 70%, 72.5%) and the application of the relevant transitional arrangements times the corresponding capital requirement.

- Capital ratios by year of output floor implementation. The capital ratios are re-calculated for each year applying the different calibrations of the output floor (i.e. 50%, 55%, 60%, 65%, 70%, 72.5%) and considering the reversion of the transitional arrangements that apply to the output floor at each projection year. The same calculation is applied to the different layers of capital (CET1, Tier 1, Total Capital). To compute this metric, we simply consider the available capital as of the reporting date (numerator) and the floored RWAs depending on the different calibrations of the output floor as described above (denominator).

- Analysis of the application of the cap in Article 465(2) of the CRR3. Impact of the cap measured as the number of banks benefiting from the cap and the share of output floor RWAs (output floor RWAs / total RWAs) if the cap is not applied.

The second set of indicators shows the impact of the implementation of the FRTB framework. The implementation of the FRTB framework in the EU has been delayed and the current framework will continue to apply until 1 January 2026. It is therefore necessary to measure the impact of the implementation of the FRTB framework to get an overview of the final implementation of the revised Basel III framework in the EU. However, supervisory reporting does not allow to measure such impact as it does not yet reflect the FRTB framework. The set of FRTB proxy indicators is intended to reflect the impact of the FRTB framework by substituting banks' market risk RWAs with the FRTB SA RWAs that banks would have reported as non-modelled RWAs since 1 January 2025. In cases where banks have reported the FRTB template, i.e. C 91.00-r0010-c0200 > 0, the FRTB RWAs are the values reported in C 02.00.a-r0520-c0200 for both the total risk exposure amount (TREA) and the standardised risk exposure amount (S-TREA). For banks that do not report the FRTB template, i.e. C 91.00-r0010-c0200 = 0 or missing, the FRTB RWAs are: 1.3 * C 02.00.a-r0540-c0010 + 3.5 * C 02.00.a-r0550-c0010 + 1.2 * C 02.00.a-r0560-c0010 + 1.9 * C 02.00.a-r0570-c0010 for TREA and 1.3 * C 02.00.a-r0540-c0020 + 3.5 * C 02.00.a-r0550-c0020 + 1.2 * C 02.00.a-r0560-c0020 + 1.9 * C 02.00.a-r0570-c0020 for S-TREA. The floored RWAs and the set of output floor RWAs are re-calculated after such a substitution. The following risk indicators are computed based on this FRTB proxy:

- Total RWA volumes and share of market risk RWAs before and after the application of the FRTB proxy. The results are shown at the reporting date and at the end of the transitional period. The share of market risk RWAs without the proxy are calculated by dividing the market risk RWAs reported in COREP by the total RWAs resulting as a projection for the fully loaded implementation described above. The share of market risk RWAs with the FRTB proxy is obtained by dividing the proxied market risk RWAs by the projected total RWAs,

taking into account the proxied market risk RWAs and the subsequent effect on the output floor RWAs.

- Tier 1 minimum required capital (T1 MRC) impact of the FRTB proxy. The risk indicator shows the relative increase in the T1 MRC between the fully loaded implementation with and without the FRTB proxy. The basic idea of this metric is to show the increase in the minimum amount of capital that banks must hold to comply with the regulatory capital requirements after the introduction of the FRTB framework:[22] (Total T1 MRC_{FRTB_proxy} / Total T1 MRC_{fully_loaded}) - 1. To arrive at the total T1 MRC, we need to consider both risk-based (RB) and leverage ratio-based (LR) capital requirements. Hence, we consider the Total T1 MRC_{fully_loaded} = MAX(LR T1 MRC_{fully_loaded}, Total RB T1 MRC_{fully_loaded}) and Total T1 MRC_{FRTB_proxy} = MAX(LR T1 MRC_{fully_loaded}, Total RB T1 MRC_{FRTB_proxy}). The T1 MRC_{fully_loaded} are the total RWAs at the fully loaded date (calculated as described above) times the corresponding capital requirement. The T1 MRC_{FRTB_proxy} are the total RWAs at the fully loaded date, taking into account the FRTB proxy for the market risk RWAs times the corresponding capital requirement. The leverage ratio-based T1 MRC can be obtained via LR T1 MRC_{fully_loaded} = C 47.00-r0290-c0010 * C 47.00-r0420-c0010, respectively. Consequently, the LR T1 MRC = MAX(0, LR T1 MRC_{fully_loaded} - Total RB T1 MRC_{FRTB_proxy}) - MAX(0, LR T1 MRC_{fully_loaded} - Total RB T1 MRC_{fully_loaded}). For the purpose of this metric, the effects for market risk and output floor are calculated separately. For the market risk RWAs, we use the FRTB RWAs resulting from the application of the proxy. For the output floor T1 MRC impact of the FRTB proxy, we use the output floor RWAs, which are recalculated based on the output floor formula but by substituting the original market risk RWAs with the FRTB proxy: MAX(C 02.00.b-r0036-c0010 - original market risk RWAs + FRTB RWAs, x% * C 02.00.a-r0010-c002).

[22] The market risk RWAs with the application of the FRTB are proxied as described above.

Part II. Indicators for resolution monitoring

II.1 Resolution indicators

II.1.1 List of indicators and DRATs

Table 18: List of RSLs and relevant DRATs

Number	Name	Number	Name
RSL 1	Liabilities excluded from bail-in	**RSL 11**	Ratio of intragroup bail-in-able liabilities
RSL 2	Liabilities governed by the law of a third-country, excluding intragroup, excluded from bail-in	**RSL 12**	Ratio of liabilities of credit institutions
RSL 3	Liabilities governed by the law of a third-country, excluding intragroup, not excluded from bail-in	**RSL 13**	Ratio of bail-in-able liabilities other than deposits
RSL 4	Liabilities governed by the law of a third-country, excluding intragroup, excluded and not excluded from bail-in	**DRAT – RSL 1**	Top 10 critical functions
RSL 5	Share of non-covered deposits out of total liabilities not excluded from bail-in	**DRAT – RSL 2**	Indicator of total market share for critical functions
RSL 6	Share of derivatives out of total liabilities not excluded from bail-in	**DRAT – RSL 3**	Share of each of the TOP 10 CF in total reported CF
RSL 7	Share of non-covered deposits and derivatives out of total liabilities not excluded from bail-in	**DRAT – RSL 4**	% Critical Services (CS) that are more difficult to substitute - the ratio between the CS with an estimated time for substitutability of more than six months (c0090) and the total number of CS
RSL 8	Share of own funds and subordinated debts (including SNP) out of total own funds and liabilities not excluded from bail-in	**DRAT – RSL 5**	% Critical Services governed in third-country laws - the ratio between the CS contracts in third-countries (c0110) and the total number of CS

RSL 9	Ratio of bail-in-able liabilities	**DRAT – RSL 6**	% Critical Services with no resolution proof contract - the ratio between the CS without resolution proof contracts (c0120) and the total number of CS
RSL 10	Ratio of intragroup liabilities	**DRAT – RSL 7**	% Critical FMIs (CFMI) governed in third-country laws - the ratio between the CFMI's contracts in third-countries (c0110) and the total number of CS

II.1.2 Introduction

With a view to understand the development and potential areas of improvement, the EBA collects the information resolution authorities receive under the dedicated resolution reporting framework, from 2019 (on a voluntary basis) and from 2020 as a mandatory exercise.

The specific resolution-reporting framework can also be characterised by a predominant set of qualitative pieces of information. This allows resolution authorities to understand how to best prepare for resolution action in case of failure, but are not particularly suitable for risk indicators.

Some of the most important pillars of the resolution framework, that can be captured as indicators given the information available under the reporting framework, relate to critical functions, bail-in processes and contracts and liabilities governed by third country law where the bail-in and stay powers have to be specifically contractually recognise to provide clarity and predictability on the resolution execution.

II.1.3 Description of the relevant indicators

DRAT - RSL_1 captures the most frequent critical functions institutions identify in the self-assessment process and report accordingly to the resolution authority.

DRAT - RSL2 indicates the combined market share, as reported by institutions, in a given jurisdiction, for a given economic function. It should allow the resolution authority to calibrate market shares where those are far from 100% in total.

DRAT - RSL3 is a variant of DRT-RSL1 and provides an overview of how much the 10 most frequent critical functions represent in total reported critical functions

DRAT - RSL4 captures the percentage of critical services that take a longer time to substitute (more than 6 months) in the total reported critical services. It can be computed per institution or per jurisdiction.

DRAT - RSL5 captures the percentage of critical services that are under contracts governed in third-country laws in the total reported critical services reported. it can be computed per institution or per jurisdiction.

DRAT – RSL6 captures the percentage of critical services under contracts that are not deemed resolution proof. It can be computed per institution or per jurisdiction.

DRAT – RSL7 captures the percentage of critical FMIs (CFMI) governed in third country laws in the total reported FMIs.

RSL_1 captures total liabilities excluded from bail-in compared to all liabilities.

RSL_2 captures liabilities governed by the law of a third-country, excluding intragroup, excluded from bail-in over total liabilities.

RSL_3 captures liabilities governed by the law of a third-country, excluding intragroup, not excluded from bail-in over total liabilities.

RSL_4 captures liabilities governed by the law of a third-country, excluding intragroup, excluded and not excluded from bail-in, over total liabilities.

RSL_5 provides the percentage of non-covered deposits over total liabilities not excluded from bail-in

RSL_6 provides the proportion of derivatives out of total liabilities not excluded from bail-in.

RSL_7 indicates the proportion of non-covered deposits and derivatives out of total liabilities not excluded from bail-in.

RSL_8 indicates the proportion of own funds and subordinated debts (including SNP) out of total liabilities not excluded from bail-in.

RSL_9 indicates the proportion of bail-in-able liabilities out of total liabilities.

RSL_10 indicates the proportion of intragroup liabilities out of total liabilities.

RSL_11 indicates the proportion of intragroup bail-in-able liabilities in total bail-in-able liabilities.

RSL_12 indicates the proportion of liabilities of credit institutions in total liabilities.

RSL_13 indicates the proportion of bail-inable liabilities other than deposits out of all bail-in-able liabilities.

II.1.4 Further methodological issues and potential ways to address them

The determination of critical functions lies ultimately with the resolution authority, therefore reports from institutions can be overturned by resolution authorities' assessment. What an institution indicates as a critical function can be considered as not a critical function by the resolution authority, or, on the contrary, the resolution authority can decide to attribute certain critical functions to the institution that the institution itself does not identify.

Further, the ITS allow the identification of custom critical functions in addition to setting some designated critical functions that need to be assessed. In some case, these custom critical functions could be similar to the pre-defined ones but not counted in the frequency due to the automated means which don't necessarily take into account similar but not exact matches.

II.2 MREL indicators

II.2.1 List of indicators and DRATs

Table 19: List of MRLs and relevant DRATs

Number	Name	Number	Name
MRL 1	MREL_TREA + CBR requirement (% of TREA)	**MRL 9**	internal MREL_TEM requirement (% of TEM)
MRL 2	MREL_TREA subordination (% of TREA)	**MRL 10**	Binding internal MREL requirement (% of TREA)
MRL 3	MREL_TEM requirement (% of TEM)	**MRL 11**	internal MREL shortfall (% of TREA) (compliance date in the future)
MRL 4	MREL_TEM subordination requirement (% of TEM)	**MRL 12**	Subordinated debt as a ratio of TREA
MRL 5	Binding MREL requirement (% of TREA)	**MRL 13**	Senior non-preferred as a ratio of TREA
MRL 6	Binding MREL subordinated level (% of TREA)	**MRL 14**	Senior unsecured as a ratio of TREA
MRL 7	Shortfall (% of TREA) (compliance date in the future)	**MRL 15**	Structured notes as a ratio of TREA
MRL_8	internal MREL_TREA + CBR requirement (% of TREA)	**MRL_16**	MREL eligible deposits as a ratio of TREA

II.2.2 Introduction

One of the cornerstones of a credible resolution regime is the requirement for institutions to have, at all times, adequate levels of own funds and specific types of liabilities to ensure a credible and feasible resolution. This requirement ensures that a resolution, necessary for the continuation of critical functions and/or avoidance of adverse effects on the financial system, can be financed by placing the burden of losses on shareholders and creditors of the institution. This aims to minimise the impact of the failure of the institution on the wider economy and the financial system and the cost to the taxpayer.

In the EU, the Bank Recovery and Resolution Directive (BRRD), introduced back in 2015 the concept of a minimum requirement for own funds and eligible liabilities (MREL) to ensure that European banks have financial resources in sufficient quantity and quality to cover losses upon failure and to restore the viability of the institution. BRRD was updated by the 2019 Banking Package, which harmonized the calibration of MREL for all banks, clarified the subordination level for top tier banks and fished out banks, TLAC for GSIBs, the eligibility criteria for meeting MREL and introduced the concept of internal MREL as a way to ensure transfer of losses and recapitalization within a group.

Article 45l(1and (2) of BRRD require EBA to monitor MREL, in cooperation with the competent authorities and resolution authorities. EBA meets this mandate primarily via the MREL Dashboard and the MREL section of the Risk Assessment Report. Both products rely on the risk indicators listed here. This cover in particular the calibration of the MREL requirement – how the requirement is computed both a Total Risk Exposure Amount (TREA) and Total Exposure Measure (TEM) basis and resulting in a binding requirement - and the MREL resources other than own funds.

II.2.3 Description of the relevant risk indicators

The risk indicators are mainly based on the data collected via the ITS on reporting of MREL decisions[23] which is reported from authorities to the EBA and the ITS reporting and disclosure of MREL and TLAC[24].

MRL 1 is the MREL requirement plus combined buffer requirement expressed in terms of total risk exposure measure (i.e. risk weighted assets).

MRL 2 is the MREL subordination requirement expressed in terms of total risk exposure measure (i.e. TREA or risk weighted assets).

MRL 3 is the MREL requirement expressed in terms of Total Exposure Measure (i.e. TEM or leverage ratio exposure).

MRL 4 is the MREL subordination requirement in terms of Total Exposure Measure (i.e. TEM leverage ratio exposure).

MRL 5 is the binding requirement, that is the maximum between the TREA based and TEM based MREL, whichever is higher in monetary amount; then expressed as % of TREA.

[23] https://www.eba.europa.eu/activities/single-rulebook/regulatory-activities/recovery-resolution-and-dgs/implementing-2

[24] https://www.eba.europa.eu/activities/single-rulebook/regulatory-activities/resolution/implementing-technical-standards-disclosure-and-reporting-mrel-and-tlac

MRL 6 is the binding subordination requirement, that is the maximum between TREA and TEM based subordination requirements, whichever is higher in monetary amount; then expressed as % of TREA.

MRL 7, is the MREL shortfall expressed as % of TREA for institutions with a compliance date in the future.

MRL 8 is the internal MREL requirement plus combined buffer requirement in terms of TREA.

MRL 9 is the internal MREL requirement in terms of TEM.

MRL 10 is the maximum between risk-weighted and leverage based internal MREL requirements, whichever is higher in monetary amount; then expressed as % of TREA.

MRL 11 is the internal MREL shortfall expressed as % of TREA for institutions with a compliance date in the future.

MRL 12 is the Subordinated debt as a ratio of TREA.

MRL 13 is the Senior non-preferred as a ratio of TREA.

MRL 14 is the Senior unsecured as a ratio of TREA.

MRL 15 is the Structured notes as a ratio of TREA.

MRL 16 is the MREL eligible deposits as a ratio of TREA.

Part III. Other methodological issues for the compilation of indicators

The second part of this Guide is devoted to relevant methodological issues that could affect the intrinsic analysis extracted from the different indicators or should at least be taken into consideration when using these for analytical purposes.

III.1 Scope of the data

When analysing risk indicators, it is important to be aware of three facts that might not be directly observed, but can severely impact computed indicators and the economic meaning from the values they assume: (i) the **valuation methods** according to which the information is collected, (ii) the changes in the **reporting sample** when the indicator refers to an aggregation of reporting institutions, and (iii) the **level of consolidation**.

Despite the fact that, at a first glance, these issues seem to be totally unrelated, they all have an important feature in common: they are usually hidden behind the data and are often not adequately explained.

III.1.1. Accounting standards

FINREP has been developed based on accounting standards in order to achieve reliable data by aligning supervisory reporting of financial information with accounting standards. In general, the financial institutions have to submit financial information in accordance with the accounting standards applied in their annual accounts (IFRS under Regulation (EC) No 1606/2002 or national GAAPs).

For financial information, the ITS on supervisory reporting includes reporting templates both for IFRS and for national GAAP. Specific national GAAP reporting templates harmonise the reporting of financial institutions under these accounting standards, while respecting the differences between national GAAPs and vis-à-vis IFRS.

The reporting in accordance with the applicable accounting standards means that, despite harmonised reporting formats and instructions, differences in the applicable accounting standards prevent full harmonisation of the data collected from financial institutions. These differences between national GAAPs have an ex-ante impact as they require that reporting requirements be designed to suit the specific features of the national GAAPs, and an ex-post effect regarding data availability and comparability between national GAAP data and with IFRS FINREP data. Where a national GAAP is defined as IFRS-related, the national GAAP reporting may provide information that

is more comparable to IFRS than to other national GAAPs. Thus, an explicit understanding of the respective national GAAPs is necessary for analytical purposes.

Although the final aim of this manual is to define standard set of risk indicators, both for IFRS and for national GAAP, in some specific cases the risk indicators are only applicable for financial institutions applying IFRS, as indicated in the List of Risk Indicators and DRATS available at the EBA website.

In any case, differences in accounting standards shall be borne in mind when comparing risk indicators stemming from countries with different accounting standards or financial institutions of the same country applying different accounting standards.

III.1.2. Valuation methods

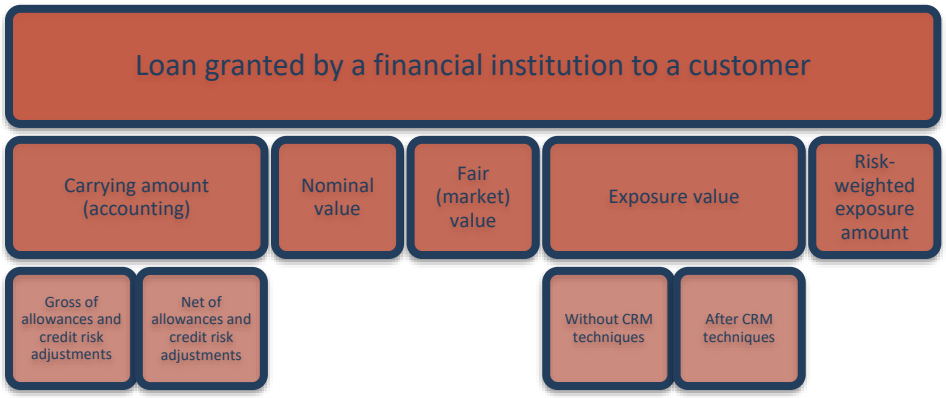
The supervisory data reported by financial institutions, can be calculated according to different methods. These different approaches could have an effect on the reported figures themselves. For example, a loan granted by a credit institution to a customer can be reported under the ITS on supervisory reporting, at a **nominal value**, amortised **cost** or **fair value,** then with or without allowances, provisions and credit risk adjustments, as a risk exposure amounts or as an exposure value for instance (see Table 10). Even with such a stylised approach and without entering further levels of granularity, it becomes apparent that there are **seven different methods of measuring the same loan**.

When the valuation method used for the collection of a given data point is not adequately expressed, there is a risk that the information could be misinterpreted by users, as they will not be able to understand how the reported amount is calculated and what this implies in terms of substance. Further to the above-mentioned loan example, even within the domain of accounting information, it is not the same to report a loan with or without allowances and provisions.

Moreover, in order to ensure an adequate level of quality, it is also required that components of an indicator include only granular data points using consistent valuation[25] methods. The use of more than one valuation method may significantly hamper the relevant indicator's ability to provide meaningful information. In other words, mixing cost-based and fair-value-based amounts in the context of the same building component for an indicator, e.g. numerator or denominator, may severely distort the content of this particular data point.

[25] The same is valid for accounting frameworks in the specific case of financial information, as the aggregation of information prepared under different accounting frameworks generates more noise than added value.

Table 20: Different methods of measuring the same loan



The indicators presented in this Guide will not be affected by limitations laid down in the previous paragraphs, as they always stem from a distinctive EU-wide harmonised reporting framework (FINREP and COREP templates), where valuation methods are clearly defined and used in a distinguished manner. This is certainly one of the benefits the implementation of the EBA ITS on supervisory reporting brings to the field of supervisory reporting.

In any case, such differences in valuation methods shall be borne in mind when comparing indicators stemming from different reporting frameworks – for example, carrying amounts in FINREP against exposure values in COREP, where underlying valuations are usually different.

III.1.3. Composition of the sample

The composition of the sample is particularly important when performing a time series analysis. In particular, as the indicators refer to an aggregation of several reporting institutions, it is especially important to keep track of all the possible changes occurred in the underlying data. This attention ensures that variations throughout different periods accurately reflect the evolution of the indicators and that they are not contaminated by changes such as institutions' mergers or acquisitions in the underlying reporting sample. The indicators reflect the evolution of institutions despite changes such as institutions' mergers or acquisitions in the underlying reporting sample.

In an ideal world, the answer to such a change in data would be to adjust the indicators values to the new sample each time, by adding or removing the occurrence. Nonetheless, this option entails continuous work in changing the time series, which may, ultimately, end up hampering the overall quality of the underlying data. Furthermore, when the time series comprises a significant number of observations, the task becomes certainly burdensome. An intermediate solution is to consider two values for each observation: the first from the current period and one from the previous one. In this case, the volume of the information collected doubles, but, on the other hand, it is ensured that period-to-period variations reflect the actual evolution of this indicator.

A more pragmatic approach is to define strict criterion for the entry and exit of the reporting sample. In this way, every change in it is adequately documented and shared with information's users. In such cases, the quality of the information is not of the maximum possible level, but the record of additions and removals in the sample serves as a warning tool when looking at the time evolution of a given indicator.

This is the solution implemented by the EBA to disseminate information on EU's largest banks, as established by Decision EBA/DC/130.[26] Article 3 of this Decision describes the entry and exit criteria for the sample, which have the clear objective of providing as much stability as possible to the sample of reporting institutions contributing to the computation of these risk indicators and DRATs. Institutions are required to leave the sample once the criteria set out in **Article 3 over 3 consecutive years** have not been fulfilled. The 3 consecutive year's condition exists to avoid those cases where an institution close to the entry threshold continuously enters and exits the sample. For the purpose of full transparency and accountability, the composition and evolution of the sample of reporting banks is published and periodically updated on the EBA website.[27]

III.1.4. Level of consolidation and reporting requirements

In most cases, the ITS on supervisory reporting requires reporting both on an individual entity level and on a consolidated level. Consequently, there are different levels of consolidation to be applied when it comes to the submission of the information. If not known by the analyst and especially when aggregating reporting institutions, these levels of consolidation may hinder the quality and accuracy of the analysis. The following paragraphs briefly describe these issues.

The scope of consolidation in prudential regulation (CRD IV/CRR) is not the same as in accounting (financial reporting). In broad terms, while the latter includes all entities, regardless of their activities, under the control of the parent entity, the provisions in CRD IV/CRR exclude three groups of entities from the scope of consolidation: (i) **insurance corporations and other financial institutions**; (ii) **non-financial corporations**; and (iii) **entities not material in size for the group as a whole**. While these three groups of institutions are not expected to be core activities of any reporting institution, sometimes they give rise to non-negligible differences between the values reported in the accounting and in the supervisory domain. Thus, the ITS on supervisory reporting requires use of the prudential scope of consolidation for financial information as well.

FINREP templates F 17.01, F 17.02 and F 17.03 provide an overview of the size of these differences. In these templates the amounts are reported according to the accounting scope of consolidation. Although most of these differences are not expected to be significant, there are a number of causes where it can significantly change the final figures.

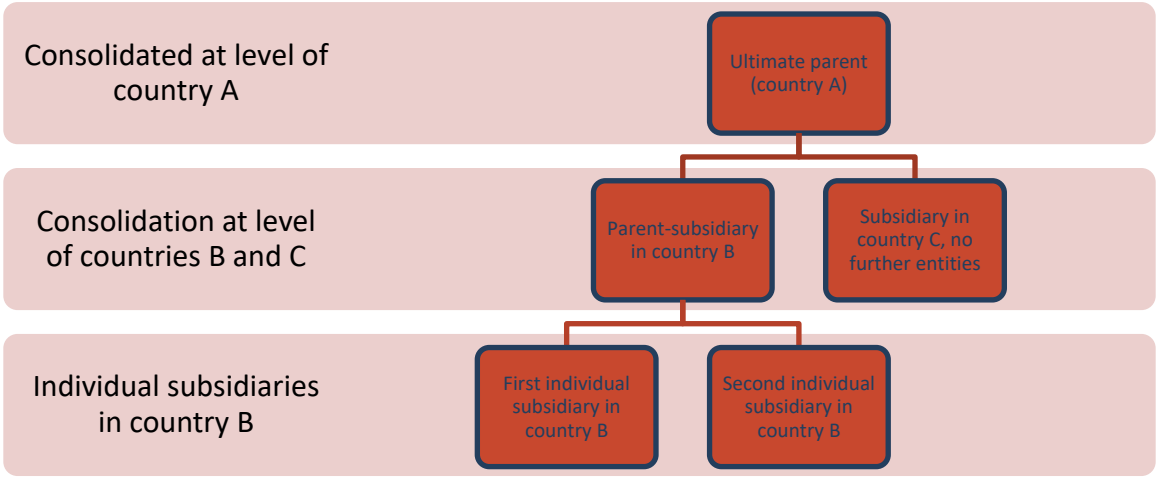
[26] Decision EBA/DC/2015/130

[27] List of reporting institutions to EBA

Furthermore, the current structure of the EU banking system is one where there are numerous large cross-border banks with activities in many EU countries. In each country, these activities are usually organised with a parent and different subsidiaries, so there is a consolidated group in that country. Under the provisions of the ITS on supervisory reporting, with the notable exception of liquidity reporting,[28] not only the ultimate parent in the EU should submit consolidated information but also the intermediate parent the institution may have in any other EU country.

Therefore, when aggregating this information across countries, it may lead to double counting, as the same group (activities of the consolidated group in a given country) are reported twice: (i) **within the ultimate consolidated group**, and (ii) **within the consolidated group at country level**. The stylised example, in Table 11 below, aims at illustrating this point.

Table 21: Consolidation levels



From the above example, the individual subsidiaries in country B are considered twice at the consolidated level, as they are part of the consolidated group reported in country B (itself a sub-consolidated level) and also of the ultimate consolidated group located in country A.

When the information for countries A and B is aggregated for the EU, the EBA removes the double counting of the individual subsidiaries. In reality, the structure of most EU banks is far more complex than the one shown in Table 2, as there are many other layers and relationships across countries and, in some cases, more than one parent institution for a given country. Nonetheless, the example outlined above should raise awareness among users of supervisory data and the limitations this could bring to their analysis.

[28] According to the ITS on supervisory reporting, liquidity information shall only be submitted at the individual level and at the level of the ultimate parent institution in the EU.

III.1.5. Data quality assurance procedures

Computing risk indicators requires a significant amount of good quality and reliable data. In an ideal scenario, all collected data would be accurate, complete, and consistent. However, like any other type of data, the reported data may encounter quality issues. In this sense, conducting rigorous consistency and quality checks for all the building components of a risk indicator is of paramount importance. A failure to identify potential problems during the data collection phase may result in transmitting these errors to the individual risk indicators and thus hamper analysis, confusing or misleading potential users.

In order to ensure the data quality, a well-established framework of rules is desirable. To that end, the EBA, in cooperation with the other competent authorities, has established a well-defined data quality framework in order to ensure that the reported data is of adequate quality in the context of the EBA's ITS on supervisory reporting and when issues are spotted, there is a clear follow-up process.

In brief, the ITS data quality assurance framework relies on a two-step process. In the first place, ITS data submissions have to conform to a set of validation rules. Usually, these are linear checks that ensure the consistency of the reported data. For example, a typical validation rule will check whether reported subtotals add up to the figure reported as the total for a particular economic concept. The failure to meet validation will either block the relevant data submission or trigger a warning message for the reporter. Most of these validation rules are embedded in the XBRL taxonomies, which are not necessarily mandatory for institutions reporting to national competent authorities (NCAs); however, they are mandatory for secondary reporting, i.e. for competent authorities (i.e. the ECB and NCAs not under the SSM) when reporting to the EBA.

In the second stage, a new set of tests are performed by the EBA competent authorities. In fact, the EBA – together with the competent authorities – is in charge of conducting completeness checks to ensure that the expected number of items has been submitted in a timely and complete manner. Additionally, other quality and plausibility checks are performed to ensure that the risk indicators do not contain outliers or values that fall outside the expected range reported in the excel file List of Risk Indicators.

In case of necessity, the EBA reserves the right to address extreme outliers and implausible values as needed. The treatment is tailored to the specific circumstances, which means that a universal rule cannot be established. Overall, values that fall outside the expected range may still be deemed valid if a discussion with the reporting institution confirms and justifies their plausibility. Otherwise, the EBA can address these outliers appropriately, which may involve their exclusion from further analysis.

III.2 Negative values in numerators and denominators of ratios

From a mathematical perspective, the numerators and denominators of certain ratios are constructed in such a way that they can show both positive and negative values. This is particularly common for ratios that include net income items, which obviously are more prone to different business cycles and increased volatility. Therefore, the possible combinations in a ratio where positive or negative signs could get involved are illustrated as follows.

Table 22: Possible signs combination in a ratio

Numerator	Denominator	Ratio
Positive	Positive	Positive
Positive	Negative	Negative
Negative	Positive	Negative
Negative	Negative	Positive

While the first three combinations do not pose any methodological issues, the fourth combination, i.e. both a negative numerator and denominator, will produce a positive indicator that could be potentially quite misleading (see Box 2 for a stylised, illustrative example).

Indeed, ignoring this issue could lead to seriously misleading results. For example, in those cases where the reporting institution is precisely performing worse (with both variables in the indicator taking negative values), the calculated value of the ratio would place it together with 'normal performers', i.e. those with positive values, potentially even amongst the best performers across the sample of institutions.

With the above in mind, three alternative actions can be considered:

- **Dropping out the reporting institutions for which both numerators and denominators are negative from computing ratios.** While this alternative would ensure that positive values of KRIs actually reflect positive performance of the underlying reporting institutions, this would hamper the analysis, as the sample would not contain all the reporting institutions, excluding, precisely, those that are probably in a weaker position and therefore deserving closer attention by micro prudential and macro prudential supervisors. If these ratios are further aggregated by country, the effects of this choice would be amplified. In other words, **following this alternative would provide a partial and probably overly optimistic view**;

- **Compute the ratio by using absolute values**. This option would remove the impact that the signs of the numerator and denominator have on the signed value taken by the computed

ratio. However, this is actually its main drawback, as the distinction between positive and negative values of the indicator is of the utmost relevance. The adoption of this alternative **would imply a relevant loss in the analytical value of the ratio itself, given that gains and losses would be treated equally**;

- **Artificially transforming the value of the ratios**. This solution would group those entities with a **negative numerator and denominator** together with those that only have one of them flagged as negative. The advantages of this approach are that the sample would remain the same and the users of the data would be assured that positive values certainly reflect positive performances. The only concern with the proposal is that it obliges one to adjust ex-post the values reported, a task which requires resources and manual intervention and may lead to man-made errors.

In summary, the **third option seems to be the most appropriate**. The first option, which is followed by the EBA, can also be pursued by allocating a -100% to the ratio or by setting the value of the ratio to be the minimum of the sample considered. These two solutions, though, imply that the amended data would not show any direct relationship with what the relevant institution has reported,[29] so they are less preferable in that sense.

Box 2. An illustrative stylised example of the methodological concerns when numerators and denominators of a ratio take positive and negative values.

In order to illustrate the discussion in this section, it may be useful to look at a stylised example to better understand the effect that negative numerators and denominators in a ratio can have when analysing the information.

Let us suppose the following values of the numerators and denominators of a ratio (Figure 1) on a sample of reporting institutions. Green values show positive values for numerator and denominator, which would generate a positive ratio. In the case of red and orange values, the ratio would have a negative sign, as they have either the numerator or the denominator with negative sign. Finally, those items in blue would have a positive ratio from having a negative numerator and denominator. The values of these ratios are sorted in Figure 2.

[29] The allocation of the -100% or the minimum amount in the sample could seem arbitrary and may impair the analytical power of the indicator. In these cases, even small and minor negative amounts would give rise to classifying the reporting institution among the worst.

Figure 1: Plotted values of numerators and denominators

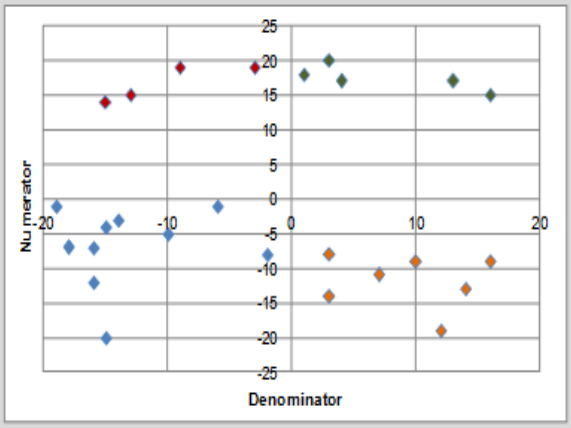
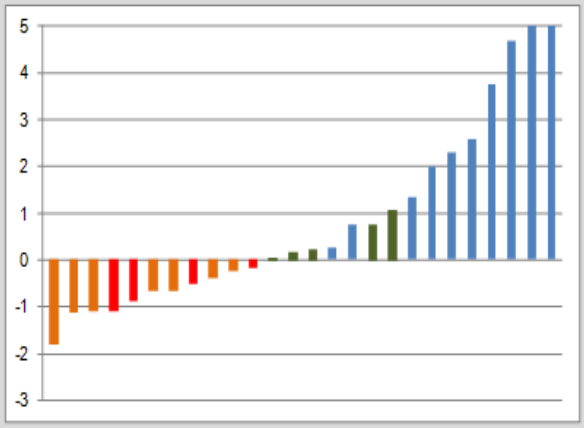


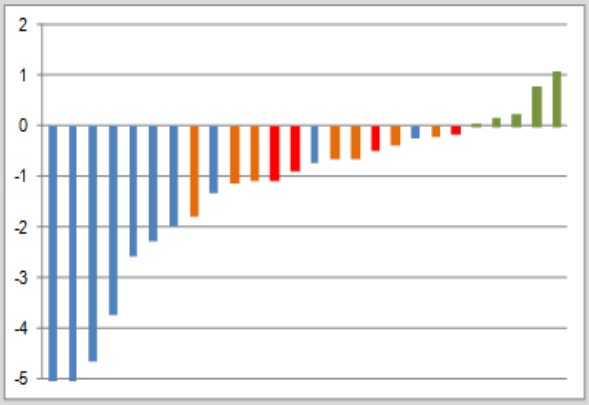
Figure 2: Sorted values of the resulted ratios



In this case, those data points with negative numerators and denominators are the ones placed in the top positions of the ratio. If we translate this situation to a ratio which, for example, has as numerators and denominators net gains or losses, these institutions would be perceived as the 'best performers', while the reality is that they are the 'worst performers'. Therefore, it is necessary to ex-post work on the calculated values of these ratios to avoid this kind of issue, as it may have negative consequences for our analysis.

The most suitable option would be to change the sign of those ratios with the negative numerator and denominator into negative, in order to not have positive ratios that could provide the wrong picture. If that is implemented in our stylised example, the results would be as in Figure 3.

Figure 3: Values of hypothetical ratios with artificial changes in the sign



For illustration purposes, Figures 4 and 5 depict how the different values of the risk indicators would look in this example if the alternatives of allocating the minimum value and -100% to those ratios with a negative numerator and denominator were adopted. As can be observed, such solutions would entail a significant loss of analytical power of the values reported.

Figure 4: Values of hypothetical ratios with allocation to the minimum value

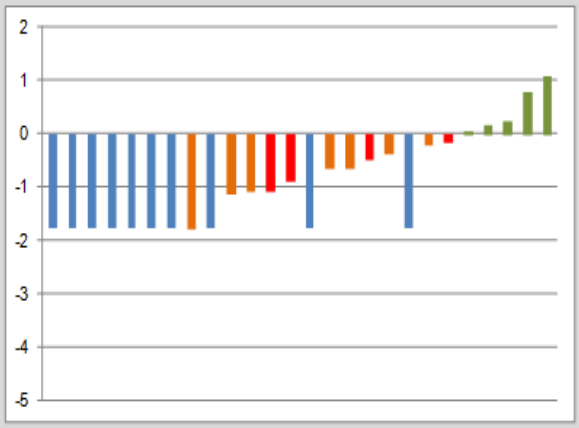
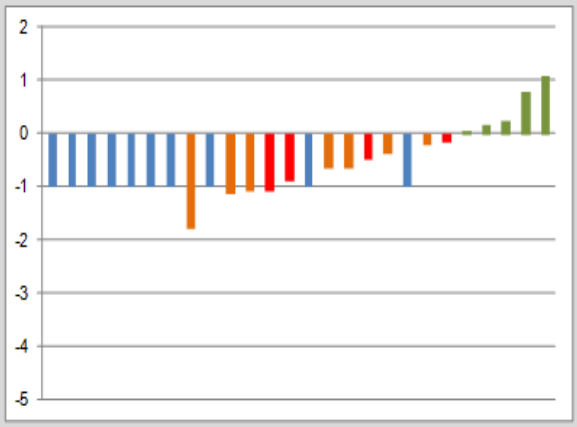


Figure 5: Values of hypothetical ratios with allocation to -100%



III.3 Using statistical measures (averages, percentiles, and standard deviations)

The indicators presented are commonly published and used in an aggregated form. In other words, they do not cover just one institution but several of them – for example, those used in the context of the EBA Risk Dashboard. However, different types of aggregation can be carried out, such as by country, by size or by nature of the underlying reporting institutions, and others. In all these cases, the analytical power of a given indicator is not fully applied if only one observation is used from the relevant sample, whether this is an average, median or a weighted average.

The simply use of averages may hide potential outliers. In particular, from a prudential point of view, the interest is not often on the average of the institutions included in the sample, but on the possible outliers which may exist. In a similar vein, simple averages do not take into account the relative importance of institutions; for instance, in the specific case of a sample composed of banks of different sizes, the smallest bank may have the same weight in the determination of the average than the largest bank in the sample. Thus, it is necessary to complement the value of the indicator with additional statistical measures that may provide additional information. The following paragraphs aim at describing, in brief, some of the most common statistical measures.

A first option is to use weighted averages. The use of weighted averages aims at considering the relative weight of each individual institution in the sample in the calculation of the value of a certain indicator. The relative weight is calculated by referencing an external variable (e.g. total assets), which is expected to provide a solid estimation of the weight of each institution in the sample. Therefore, with the use of weighted averages, larger institutions count more than smaller institutions and the final value of the indicator may have a bias towards this set of institutions, hiding those smaller institutions from view. This is illustrated in the theoretical example below, where larger institutions take the lowest values.

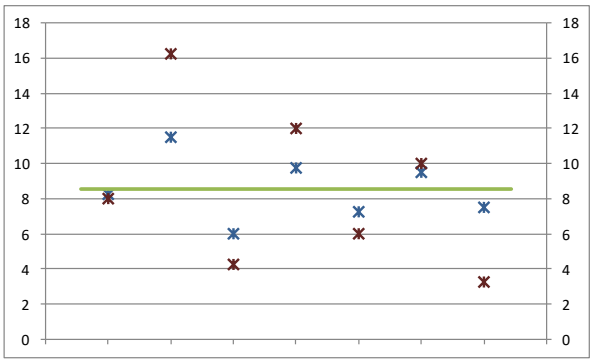
Table 23: Signs in the calculation of growth rates between two different values

Value of indicator	External variable
8.25	90
11.50	70
6	140
9.75	45
7.25	80
9.5	60
7.5	110
Simple average:	8.54
Weighted average:	8.07

Weighted averages are always used in the context of the EBA risk indicators' aggregates.

This analysis can be enriched by using dispersion measures. With regard to the dispersion of values of an indicator, as selected by each reporting institution in the sample, the most basic statistical measure used is the standard deviation - which measures the distance from the observation of a given institution to the average. **Low values** of the standard deviation point to a **concentration around the average**, whereas **high values** of the standard deviation indicate a **wide range** of values (see, for example, Chart 6 below, where the standard deviation of the red dots would be higher than that of the blue dotes, while both have the same average). In that sense, it must be noted that the standard deviation does not provide any further information on how the individual observations are placed in relation to the average, so that values above and below the average are treated the same.

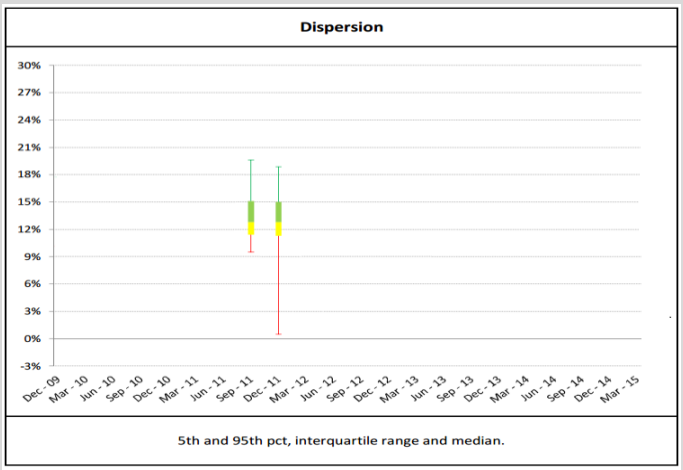
Figure 6: Relative positions of values in relation to the sample's standard deviation



To overcome this limitation, it is possible to use percentiles. This measure allows the users to better understand the range of values taken by the individual reporting institutions. The percentile X represents the value that takes the observation that represent up to X of the total sample. For example, the percentile 10 represents the value of the indicator taken by the individual observation that includes 10% of the sample. The most common percentiles used are the quartiles (25%, 50% and 75%). Maximum and minimum amounts are widely used as well. Applying percentiles helps the user to recognize the concentration of values taken by a given indicator and the potential existence of outliers. For example, if the third quartile is situated very far from the average, it may indicate that most of the values across the distribution for a particular indicator are above the average and that there are a reduced number of observations well below the average that determine the final value of the average.

Chart 7 depicts the quartiles of two series, and it can be observed how the second series has a wider interquartile range than the first.

Figure 7: Comparison of the interquartile ranges from two hypothetical samples



Source: The EBA risk dashboard

The 50% percentile, i.e. the median, represents the value that cuts the sample into two halves, one with values above the median and the second with values below. If we continue with our example in the previous paragraphs, the previous two series have an average of 8.54, whereas they have a median of 8.25 and 8 respectively. That broadly indicates that both series have more observations under the average than above the average, but the latter observations are more distant from the average value than the former.

Finally, in a different domain, a statistical measure that may be used for assessing concentration is the Herfindahl index. This index is primarily used to assess the competition and concentration in a given industry by looking at the relative importance of the firms involved. If 'S' represents the market share of each firm in the industry, expressed as a percentage, the Herfindahl index can be calculated as follows:

$$H = \sum_{i=1}^{N} S_i^2$$

Here, N is the number of firms in the industry. Increases in the Herfindahl index generally indicate a decrease in competition (increase in concentration), whereas decreases indicate a reduction in concentration (i.e. a competitive industry with no dominant players). When 'S' is expressed as a percentage (e.g. 0.1), the Herfindahl index ranges from 1/N to 1.

In order to transform the Herfindahl index to a range between [0,1], the normalised Herfindahl index (H^*) is introduced, which can be calculated as follows:

$$H^* = \frac{(H - 1/N)}{1 - 1/N}$$

Here, H is the Herfindahl index as calculated above. It is rather straightforward to extend the use of the Herfindahl index to other fields, especially to the area of concentration risk. For example, in the case of exposures in different countries, the Herfindahl index can be used to assess whether the exposures of a certain institution are concentrated to a reduced number of countries or not. It can also provide interesting comparative information for those banks more active on a cross-national basis.

For example, let us assume the following exposures of three reporting institutions towards a small set of countries.

Table 24: Herfindahl indices

	Reporting institution X		**Reporting institution Y**		**Reporting institution Z**	
	Exposure	[0,1]	Exposure	[0,1]	Exposure	[0,1]
Country A	50	0.5	5	0.05	80	0.8
Country B	10	0.1	20	0.2	20	0.2
Country C	5	0.05		0		0
Country D	25	0.25	25	0.25		0
Country E		0	20	0.2		0
Country F	10	0.1	30	0.3		0
Total exposures	100	1	100	1	100	1
Normalised Herfindahl index		**0.202 (20.2%)**		**0.082 (8.2%)**		**0.616 (61.6%)**

The Herfindahl index of the third reporting institution is significantly higher than the other two, as it concentrates its activities in only two countries. Similarly, the second reporting institution has the lowest value of the index, as its exposures appear to be more diversified among the countries.

In addition to the measurement of concentration of exposures in certain countries, the Herfindahl index can be used in other areas within the ITS on supervisory reporting, such as concentration of exposures across exposure classes, sectors of the counterpart and currencies.

III.4 Reporting by currency in the ITS liquidity templates

The framework for the reporting of **liquidity templates** (LCR, NSFR) is defined in Article 415 of the CRR, Articles 15 and 16 of the ITS on supervisory reporting, and Annexes XII and XIII of the latter.

In accordance with Article 415(2) (a and b) of the Regulation (EU) No 575/2013 (CRR), an institution shall separately report items in Article 415(1) to the competent authorities when it has aggregate liabilities in a currency different from the reporting currency (under paragraph 1) amounting to or exceeding 5% of the institution's or the single liquidity subgroup's total liabilities or a significant

branch in accordance with Article 51 of Directive 2013/36/EU in a host Member State. In other words, institutions shall report separately for all significant currencies. In practice, this implies that the reporting template must be filled separately for each significant currency.

However, the liquidity report misses some relevant pieces of information. For instance, what is missed in the current reporting requirements for liquidity is the reporting of positions in the reporting currency, which should be part of the requirements not only for the sake of completeness, but also for analytical reasons. Therefore, any analysis by currency of the liquidity risk of a given institution would miss precisely the most relevant currency: **the reporting currency**.

The only data available in the reporting currency already incorporates all other significant currencies. In fact, the reporting currency already incorporates all other significant currencies, which, in the case of large cross-border institutions, is expected to be important in absolute terms. Analogously, any analysis by currency that is based on aggregated data (for example, liquidity risks from USD positions by EU banks) will not be complete, as it would exclude those cases where the currency is a reporting currency of an institution that also reports other significant currencies.

The existence of reporting thresholds also hampers data analysis. Similarly to other parts of the ITS on supervisory reporting, where there are thresholds, the introduction of the **5% threshold in the definition of significant currencies** must be considered when carrying out any analysis of the data. Any analysis by currency shall be aware of the fact that when that currency is not significant for a number of banks, it is not reported. In other words, information on a given currency is only reported when it reaches the minimum threshold for it to be considered as significant.

This approach excludes positions of marginal importance, for the bank's balance sheet, but also has the potential to trigger adverse consequences. These risks are mainly related to the evolution of exchange rates, high risk of assets or liabilities held in that currency. To sum up, the reporting threshold prevents a full coverage of each currency to be reported, a fact that, in some extreme cases, may lead to the omission of some important facts (for example, many institutions with small but risky exposures towards a given currency).

III.5 The use of flow data in risk indicators – what is really meant?

The use of flows, instead of positions, may create challenges when calculating the risk indicators and in the subsequent analysis of the results. For many risk indicators, it is common that the numerator, the denominator or both express a concept that extends over a period of time (flow), rather than the static situation of an item at a point in time (stock). In such cases, and especially when the underlying data is submitted with a higher frequency than annually, the question that

may arise is which period of time is this flow intended to cover. In other words, when an indicator is referring to flows over a period, it is not clear when that period starts and how the underlying data should be computed.

Financial indicators are especially affected by this time dimension. For instance, when computing the 'Return on Equity' (RoE), defined as the ratio between the net profit of the period and the equity of the reporting institution, the net profit covers cumulative net profit during the financial year. This results in different calculation periods for each reference date according to the methodology used for its collection. In fact, this is particularly the case for financial reporting, whereas other prudential reporting often requires non-cumulative flows for each quarter of the calendar year.

For the calculation of such indicators, and in order to annualise flow data, EBA uses the extrapolation approach. This methodology has some drawbacks such as the assumption that the information behaves consistently and that it can be extrapolated for the whole year, and that negative values could potentially increase the forecast error in extrapolating flows based solely on one or two quarters. Nevertheless, this methodology seems to be the most appropriate in the field of supervisory reporting and returns the most coherent results for various analyses.

In order to replicate this approach, the amounts for each quarter are extrapolated on a year-to-date (YTD) basis, over a period covering 12 months. This means that, on an YTD basis, amounts for Q1 would be multiplied by four, the second quarter by two, and the third quarter by four thirds. The main drawback of this option, as mentioned, is that from a methodological standpoint, it assumes the information behaves consistently across all quarters of the year and that it can be extrapolated for the entire year. While this can be the case for the YTD data of the third quarter, which covers 9 of the 12 months of the year, this assumption becomes more dubious for the data in the first quarter, which only covers 3 months, and which may give an estimated value for the whole year that is quite far from the real observed one 9 months later. Furthermore, negative values (i.e. a net loss) could potentially increase the forecast error in extrapolating flows based on one or two quarters.

Box I – Other alternative approaches to calculate indicators using flow data

There are obviously other three alternatives to calculate indicators based on flow information. The next paragraphs describe other acceptable methodologies that can be adopted, when underlying information is reported on a quarterly basis.

1. Only use the amounts of the quarter. For this case, the flow information for quarterly reported data would cover 3 months, irrespective of whether it is the first, second, third or fourth quarter of the year. Despite the consistency this solution introduces in the indicators' compilation, as all the quarters would contain amounts purely generated during 3 months. One possible reason for this stems from the fact that some important charges in the profit or loss account (where all the items are reported as accumulated flows) are made in the last quarter of the year; therefore, under this approach, indicators for the fourth quarter would depart from the values reported in the previous quarters, showing a strong seasonality over the years. Calculating flow-based indicators for each

quarter would be justified when analysis is focusing on the latest trends or on the activities during a quarter – for example, when analysing an individual bank's trading income or impairments.

2. Consider the last four quarters (moving year). In this case, the natural year is not followed and all the observations cover the period of the last 12 months. That would mean, for example, that for Q1, data from Q2, Q3 and Q4 of the previous year would also be considered. Such a solution ensures consistency across observations, as all of them would cover periods of the same length (12 months), and it would avoid the seasonality of the previous alternative. Nonetheless, although sound from a methodological point of view, this option implies that the link between the natural and the accounting (which often coincides with the natural) year is broken, so it is not very widely used in the domain of supervisory statistics. This approach would be preferred for sector-wide computations, where it is important to have comparable data.

3. Compute the data on a year-to-date (YTD) basis. This is the solution adopted in the ITS on supervisory financial reporting (see Article 2(2)) and reinforced by Q&A 126 and 619, in which FINREP is concerned. In this case, data of the first quarter would cover 3 months, data of the second quarter 6 months, data of the third quarter 9 months and data of the fourth quarter 12 months. At the end of the natural year, in the period covering 12 months, the counter would start again and the first quarter would cover 3 months and so on. In spite of the inconsistency in the duration of the period covered by the flows, this alternative is widely used in supervisory reporting.

In the following, the example of the RoE demonstrates the key differences of these four alternatives.

Table 25: RoE ratio based on different flow measures

	Q1	Q2	Q3	Q4
Net profit for the period				
1. Extrapolation of YTD	Q1 x 4	(Q1 + Q2) x 2	(Q1 + Q2 + Q3) x 4/3	Q4 + Q3 + Q2 + Q1
2. Amounts generated in the quarter	Q1	Q2	Q3	Q4
3. Last four quarters (moving year)	Q1 + Q4t-1 + Q3t-1 + Q2t-1	Q2 + Q1 + Q4t-1 + Q3t-1	Q3 + Q2 + Q1 + Q4t-1	Q4 + Q3 + Q2 + Q1
4. YTD basis	Q1	Q2 + Q1	Q3 + Q2 + Q1	Q4 + Q3 + Q2 + Q1
Equity	As of 31 March	As of 30 June	As of 30 September	As of 31 December

Assuming a net profit in each quarter of 200, 150, 250 and 50 (and 200, 150 and 50 for the second, third and fourth quarters of the previous year), and a total equity of 1 000 constant during the year, the return of equity according to the four alternatives would take the following values.

Table 26: Numerical representation of table

	Q1	Q2	Q3	Q4
Net profit for the period				
1. Extrapolation of YTD	200 x 4 = 800	(200 + 150) x 2 = 700	(200 + 150 + 250) x 4/3 = 800	50 + 250 + 150 + 200 = 650
2. Amounts generated in the quarter	200	150	250	50
3. Last four quarters (moving year)	200 + 50 + 150 + 200 = 600	150 + 200 + 50 + 150 = 550	250 + 150 + 200 + 50 = 650	50 + 250 + 150 + 200 = 650
4. YTD basis	200	150 + 200 = 350	250 + 150 + 200 = 600	50 + 250 + 150 + 200 = 650
Equity	1 000	1 000	1 000	1 000
RoE				
1. Extrapolation of YTD	0.80	0.70	0.80	0.65
2. Amounts generated in the quarter	0.20	0.15	0.25	0.05
3. Last four quarters (moving year)	0.60	0.55	0.65	0.65
4. YTD basis	0.20	0.35	0.60	0.65

From this basic numerical example, it can be seen how the method considering only amounts generated in the quarter produces indicator values much lower than those generated by the other three methodologies, as the other approaches cover a period of 12 months. It is also worth noting how the moving year, the YTD basis and the extrapolation of YTD converge to the same value at the end of the fourth quarter, but following a different path in the previous quarters. While the calculation of the "last four quarters in a moving year" provides the most stable range of values, the incremental component embedded in the YTD basis is clearly seen, as is the highest volatility in the values taken when extrapolating the YTD data to the full natural year.

Finally, besides the need to annualise the flow data to estimate the numerator, one also needs to normalize the denominator. Due to their volatility, many financial indicators are also adjusted using an average value between two periods. This is the case for the RoE, where the denominator (Equity) should be calculated as an average between the last year-end period and the current quarter. For instance, to estimate the RoE for a second quarter the following formula applies:

$$(1) \qquad RoE_{Q2,Year_t} = \frac{(Profit\ or\ loss_{\ Q1,Year_t} + Profit\ or\ loss_{Q2,Year_t}) \times 2}{(Total\ equity_{Q4,Year_{t-1}} + Total\ equity_{Q2,Year_t})/2}$$

It is understood, that all methodologies have advantages and disadvantages in calculating the indicators. The decision of which methodology should be used therefore depends on the purpose of the analysis, and it should take into account which indicator is being considered. The stylised example used in this section has outlined how the choice between the four calculation methods can have an important impact on the values serving as input to the indicator under analysis; in a way, it shows that the analysis itself may change depending on which alternative is finally taken. The use of YTD data – which is detailed in row 1 – Extrapolation of YTD in tables 16 and 17 above -

, also when annualised to the full year, is the most suitable in the field of supervisory reporting, and thus the **one used by the EBA when computing relevant risk indicators**.

III.6 The 'follow-the-money' approach

The understanding of firms' business models and the risk embedded is a key challenge for supervisory authorities[30]. A starting point is a detailed analysis of companies' financial statements and reports to obtain a deeper understanding of the drivers of revenues and trends that are developing in the firm. Also, to determine whether these patterns are consistent with the firm's stated risk appetite and are sustainable. This 'follow-the-money' approach enables supervisors to focus on the main businesses whose failure would cause problems for the firm; as compared to other business units whose failure could have no or little impact on the firm performance.

Nowadays, the most common practices focus their analysis in financial risks; however, this analysis can be extended to other possible causes of failure. All supervisory authorities focus on the main financial risks (such as credit, market, etc.) by improving their already existing models, but this in-depth analysis may lead to a lack of vision regarding the whole risk of the firm. On the other hand, supervisory authorities could have a clearer vision about the risk drivers embedded in the risk of the firm and could increase the effectiveness of their activity by directing their efforts towards the specific area whose failure might cause problems for the company. This 'follow-the-money' proposal starts from a very common financial formula – return on equity (RoE) – in order to understand the drivers of revenues and to determine where the relevant risks are.

The starting point to assess the firm's business model and the risk embedded in it is the RoE formula, which makes clear the main sources of capital yield:

$$\text{RoE} = NoP/Asset \times Asset/Equity \times EbT/NoP \times NP/EbT$$

Here

$NoP\ /\ Asset$ = Net operating profit/Total leverage ratio exposures =

= ***Net asset yield contribution***

$Asset/Equity$ = Total leverage ratio exposures/T1 capital =

= ***1/Leverage contribution***

EbT/NoP = Profit or loss before tax/Net operating profit =

= **Non-operating incomes or expenses contribution**

NP/EbT = Net profit/Profit or (-) loss before tax =

= Tax effect on the capital yield =

[30] See also: http://www.financialstabilityboard.org/publications/r_101101.pdf.

= **1 – Tax rate**

According to this formula, one can assume that the results of the bank's business model is based on internal factors that are managed by the firm, such as **asset** and financial structure, or on **external factors not managed** by the firm and which may depend on one-time factors that are unlikely to occur in the future, or contingent on factors such as **fiscal policy**. Obviously, the main part of the capital yield should be the asset yield contribution but, in financial intermediaries, leverage is often a key driver of capital yield.

This approach enables us to analyse the return on investment. More important, these indicators can be broken down in information available in the report and therefore combining different pieces of information to understand the main drivers of the business models risks. Before moving forward, it is worth recapping the abbreviations that will be used later in the discussion on the return on investment. Some of them have already been used for the analysis of RoE and are disclosed in Table 17 below.

Table 27: Building components of the RoE ratio

AdE	Administrative expenses	Loanb	Loan to banks
AdV	Added value = Operating income - Administrative cost (without staff expenses)	Loanp	Loan to private
BankB	Banking book	NetFop	Net financial other operations
Depb	Banking deposits	NetH	Net financial hedging
Depp	Private deposits	NetT	Net trading
EbT	Earnings before tax	NetTrP	Net trading profit
Equity	Own funds	NI	Net interest
FiA	Financial asset	NIF	Net interest and fee
FiAo	Financial other asset	NoP	Net operating profit
FiL	Financial liabilities	OpI	Operating income
InE	Interest expenses	OpP	Operating profit
InEb	Interest expense from bank	RWA	Risk-weighted asset
InEp	Interest expenses from private	RWAcr	Credit risk-weighted asset
InEs	Interest expenses from securities	RWAmr	Market risk-weighted asset
InIb	Interest income from banks	Sec	Securities
InIbb	Interest income from banking book	StaffE	Staff expenses
InIo	Interest income from other	TrB	Trading book
InIp	Interest income from private		

To that end, the firm's core business should be analysed using a step-by-step approach, taking the return on investment as the starting point.

First step:

$$RoI = OpP/Asset \times NoP/OpP$$

Here

$OpP\ /\ Asset$ = Asset performance

$NoP\ /\ OpP$ = Weight of risk

Second step:

$$OpP\ /\ Asset = OpI/Asset \times OpP/OpI$$

Here

$OpI\ /\ Asset$ = Banking activity performance

$OpP\ /\ OpI$ = Bank's efficiency level

Third step:

$$OpI/_{Asset} = \frac{NI}{FiA} \times \frac{FiA}{Asset} \times NIF/NI \times OpI/NIF$$

Here

NI/FiA = Banking activity

$FiA/Asset$ = Share of financial asset of total asset

NIF/NI = Component fee

OpI/NIF = Trading performance

The third step shows the contribution of different banking business activities: banking, services and trading. In this case, the banking activity is proxied by the formula:

$$NI\ /\ FiA = InI/FiA - (InE/FiL \times FiL/FiA)$$

It could be useful to further analyse how this margin is determined. Below there are some examples of how this stream of analysis can be pursued more in depth.

Income analysis: contribution of different portfolios to the interest income.

$$InI\ /\ FiA = (InIb/Loanb \times Loanb/FiA) + (InIp/Loanp \times Loanp/FiA) + (InIo/FiAo \times FiAo/FiA)$$

Funding analysis: the cost of different liabilities that are used for funding.

$$InE\ /\ FiL = (InEb/Depb \times Depb/FiL) + (InEp/Depp \times Depp/FiL) + (InEs/Sec \times Sec/FiL)$$

Trading performance analysis: the main drivers for the trading performance $(OpI|NIF)$ are:

$NetT/OpI$ = Contribution of trading activity

$NetH/OpI$ = Contribution of hedging activity

$NetFop/OpI$ = Contribution of financial operations other than trading and hedging

After analysing the main sources of income, the analysis may continue with the second driver of the asset performance: the efficiency of the bank. The starting formula, taken from step 2 above, is: OpP/OpI

The level of bank efficiency mainly depends on two factors:

Structural efficiency $AdE/Asset$

Staff efficiency $StaffE/AdE$

Usually, the expense for the staff is a key element of the bank's costs, so it could be useful to verify the level of staff efficiency in the different funding bank's activities and performance.

Funding activities:

Deposits $Depp/N° emp$

Securities $Sec/N° emp$

Fund management $FM/N° emp$

Performance:

Income $OpI/N° emp$

Cost $AdE/N° emp$

Value added $AdV/N° emp$

In order to verify the bank's productivity, there are two indicators that can be used:

Staff unit cost $StaffE/N° emp$

Profit per employee $OpP/N° emp$

Furthermore, for the bank's core business, a risk-adjusted return analysis should be performed. At this stage, it is considered that the banking book reflects the bank's core business. The starting point for this analysis would be:

$$InIbb/BanB = InIbb/RWAcr \times RWAcr/BanB$$

Here

$InIbb/RWAcr$ = Risk-adjusted return on asset

$RWAcr/BanB$ = Risk management effect

A similar analysis can be carried out on the trading book:

$$NetTrP/TrB = NetTrP/RWAm\,r \times RWAmr/TrB$$

Here

$NetTrP/RWAmr$ = Risk-adjusted return on asset

$RWAmr/TrB$ = Risk management effect

Last but not least, banking activities typically rely heavily on leverage, which may be risky if used at an extreme level. According to the Basel and European CRR/CRD IV frameworks, the level of a bank's own funds is related to the RWA (or risk exposure amounts as in CRR/CRD IV terminology), so it could be useful to verify how much of the leverage depends on the management effect.

$$Asset/Equity = Asset/RWA \times RWA/Equity$$

Here

$Asset/RWA$ = Risk management effect

$RWA/Equity$ = Leverage risk adjustments

To sum up, the analysis hereby presented is based on the profit and loss account of a given institution, and aims at determining the main drivers therein. Among others, these drivers can derive from the core activities of the institution (banking book) or from its trading activities (trading book). In parallel, this approach pays special attention to the efficiency and productivity of an institution, a domain usually scarcely assessed. Therefore, in order to carry out this analysis, several indicators (as set out in Table 18 below) must be compiled. Out of this set, the main indicators (the first layer) are included under the PFTs section (I.4 of this Guide).

Table 28: Building components of the 'follow-the-money' approach

Number	Formula	Name
PFT 21	*NP/Equity*	Return on equity

PFT 17	*NoP/Asset*	Return on investments
PFT 18	*Asset/Equity*	Leverage
PFT 19	*EbIT/NoP*	Non-operating earnings
PFT 20	*NP/EbIT*	Tax effect
	OpP/Asset	Operating profit to total asset
	NoP/OpP	Net operating profit as % of operating profit
	OpI/Asset	Operating income to total asset
	OpP/OpI	Operating profit as % of operating income
	NI/FiA	Net interest to financial asset
	FiA/Asset	Financial asset as % of total asset
	NIF/NI	Net interest and fee as % of net interest
	OpI/NIF	Operating income to net interest and fee
	InI/FiA	Interest income to financial asset
	InE/FiL	Interest expenses to financial liabilities
	FiL/FiA	Financial liabilities to financial asset
	INIb/Loanb	Interest income from credit institutions to credit institutions loan
	Loanb/FiA	Credit institutions loan as % of total financial asset
	InIp/Loanp	Interest income from corporate to corporate loan
	Loanp/FiA	Corporate loan as % of total financial asset
	InIo/FiAo	Interest income from other to other loan
	FiAo/FiA	Other financial asset as % of total financial asset
	InE/FiL	Interest expenses to financial liabilities
	InEb/Depb	Banking interest expenses to banking deposit
	Depb/FiL	Banking deposit as % of total financial asset
	InEp/Depp	Corporate interest expenses to corporate deposit
	Depp/FiL	Corporate deposit as % of total financial asset
	InEs/Sec	Securities' interest expenses
	Sec/FiL	Securities as % of total financial asset
	NetT/OpI	Net trading as % of operating income
	NetH/OpI	Net hedging as % of operating income
	NetFop/OpI	Net other financial operations as % of operating income
	AdE/Asset	Administrative expenses to total asset
PFT 1	*StaffE/AdE*	Staff expenses as % of total administrative expenses

Depp/N° emp	Corporate deposit to number of employees
Sec/N° emp	Securities to number of employees
FM/N° emp	Fund management to number of employees
OpI/N° emp	Operating income to number of employees
AdE/N° emp	Administrative expenses to number of employees
AdV/N° emp	Added value to number of employees
StaffE/N° emp	Total staff expenses to number of employees
OpP/N° emp	Operating profit to number of employees
InIbb/BanB	Interest income from banking book to banking book
InIbb/RWAcr	Interest income from banking book to credit risk-weighted asset
RWAcr/BanB	Credit risk-weighted asset to banking book
NetTrP/TrB	Net trading profit to trading book
NetTrP/RWAmr	Net trading profit to market risk-weighted asset
RWAmr/TrB	Market risk-weighted asset
Asset/RWA	Total asset to risk-weighted asset
RWA/Equity	Risk-weighted asset to equity

III.7 Peer group analysis

In line with the discussion in previous sections II.1 and II.2, the risk indicators presented in this Guide may be used over an aggregation of reporting institutions. At this point, how reporting institutions are combined together becomes important and it is where the concept of the 'peer group' arises.

Peer group analysis (PGA) can be defined as the process of comparing an institution to its peers (peer group). A peer group is a set of entities that share **similar characteristics** on the basis of analytically relevant criteria. PGA has been used to compare the performance or positioning of an institution to its competitors, for investment selection, stock valuation, fraud detection, executive compensation, clustering analysis, and so on.

PGA can also be extended to assess how a particular strategy or change in market conditions might affect the position of an institution compared to its peers, which is known as peer group risk (PGR). Ultimately, this means introducing sensitivity analysis to PGA. In either PGA or PGR, the introduction of the temporal dimension adds more power and insight to the analysis.

The definition of 'peer group' depends on the purpose of the study, and will have an important impact on the analysis performed. Once the objective of the study is clear, a target set of dimensions can be chosen to slice and dice the data to select the peers, and the wide variety of risk indicators within each group can be used to compare a specific institution to the group or the group to population averages.

A wide variety of peer groups can be created by combining different data dimensions, and descriptive statistics can be calculated to examine the dispersion and concentration of institutions within the group. The creation of customised peer groups and PGA can be greatly facilitated by data available in a flexible IT infrastructure, one which could allow users to slice and dice data across several dimensions and automatically generate statistics and trend analysis. In this context, the facts (risk indicators) could potentially become dimensions, generally after a bucketing on the risk indicator has been performed. Though the main data source would be risk indicators generated from regulatory returns, the addition of external information, either available internally to Competent Authorities or from market sources, would only enrich the analysis and extracted insights.

There are several methodologies for choosing peers, some of which are:

1. **Data model:** this method compares the mean, median and variance (as well as potentially other statistical measures) of each variable for potential groups. The peer group's mean and median for the different risk indicators would ideally be close to the target institution's values and the variation close to zero;

2. **Cluster analysis:** it is a statistical technique that identifies entities sharing similar features in a multidimensional environment by minimising a measure of distance among the risk indicators evaluated;

3. **Threshold approach:** it uses thresholds on data to narrow the population and find a set of peers. Thresholds are usually selected arbitrarily and can consist of a set of rules rather than a single value point;

4. **User defined:** the user directly decides the peers to whom they will be compared.

The number of peers within a group required to provide a meaningful analysis varies from author to author, some stating that groups should be comprised of 10-12 members while others limiting the size to 10-30. Ultimately, the size of the group would depend on the objective of the PGA and the available dimensions in the dataset to generate groups of similar characteristics.

Once the groups have been defined, we can start comparing the different risk metrics within the group and across groups. It is common to use intragroup (e.g. top 5-10 average or best in class) or population averages to compare the different institutions and to look at the evolution of measures over time. Averages here may mean weighted averages, trimmed averages (where x% of the top and bottom observations have been removed) or a combination of both. By comparing the evolution of these indicators, it may be possible to identify outliers in the group, diverging/converging trends that can indicate changes in the risk profile of the entity within the group, and even transitions to other groups. All these signs are worthy of investigation.

Risk metrics or performance metrics would correspond to the list of risk indicators, calculated at the appropriate aggregation level determined by the dimensions used to generate the peer groups. Thus, for example, it is not the same to aggregate values at a country level as to aggregate the input values and then calculate the indicator, the latter being preferred to the former. When a risk indicator is used as a dimension, it generally loses its relevance as a risk measure.

Some useful dimensions that could be used to create peer groups are:

- **Asset size:** this variable has extensively been used to define the systemic importance of an institution and its impact on the local economy. Though not the only variable used, we could reuse here the readily available classifications of systemically important financial institutions or any other classification elaborated;

- **Business lines:** retail (deposit-taking) banks, commercial banks, and mortgage banks;

- **Type of ownership:** public-government controlled entities, privately owned banks, and bailed-out entities;

- **Country and currency dimensions**;

- **Portfolio:** residential Buy to let (BTL), Credit Risk Exposures, Standardised Approach (SA), Internal ratings-based (IRB), credit cards, car loans, loan and advances, debt securities, securitisations, and so on;

- **External ratings:** in this category, we can also consider the impact and probability risk ratings to be developed by the ECB in combination with traditional ratings from Standard & Poors, Fitch and Moody's;

- **Strategy:** although a more difficult topic to classify, institutions could be classified depending on their business strategy or business model. As this is generally focused on the asset side, attention should also be given to the liability side in terms of their funding strategies.

Clearly, this is not an exhaustive list, but it helps to understand the concept of a dimension.

An issue that one should be aware of is the level of aggregation at which the PGA is conducted. Analysis on an individual institutional level provides more granularities and a better understanding of the evolution and differences with peers, especially if the user has knowledge on the entities from some sort of supervisory engagement. However, this provides information on specific institutions and confidentiality limitations may apply. In these situations, aggregation of the data is required to ensure that individual information cannot be derived from the information available, and the outputs are suitable for external publication.

Although PGA is a useful tool that is widely used in business and finance, it is not free of risks and limitations that the user should be aware of:

1. Compare like with like: the main objective when defining peer groups is to ensure that participants in each group are approximately similar so that we can compare like with like. This may be a difficult task as peer selection may change depending on the dimensions or methodology used, and it is not always clear what is the right set of dimensions (and hierarchy) and some of these can be difficult to identify or measure. Because of the difficulty to identify or measure, strategies, business models or investment objectives are usually not taken into account when selecting groups, leading to poor peer selections;
2. Poor metric definitions: if the metrics are not well defined, there might be inconsistencies in the calculation and uncertainty from the analyst on how to interpret the data. As the new set of risk indicators is well defined based on the XBRL taxonomy, this risk is minimal in our context;
3. Annualising data: this may falsely represent performance, especially when institutions realise a one-time or seasonal source of income that will not reoccur over time;
4. Survivorship bias: this happens when institutions close their business or merge and, therefore, are no longer in the universe of entities. As the surviving institutions may present better performance results or be bigger in size, averages may be upwardly biased. The composition of the universe is also affected by institutions coming in and out of the reporting requirements as they fulfil or fail to fulfil the conditions to be in the sample;

5. Singular benchmark for decision-making: when PGA is used in decision-making, actions based on what peers have done rather than on an institution's own merits may lead to wrong decisions. In addition, this could lead to a bias for the status quo, as the entity may lean towards avoiding changes to stay similar to its peers. It is also important to understand the underlying reasons for the trends or performance changes we see in the PGA, and why they have been better or worse. Similar strategies in different institutions do not necessarily produce the same outputs and it is important to understand the reasons why they worked or did not work before implementing them for another entity within the group. Furthermore, it is relevant to notice that data aggregation would make it more difficult to gain insights over the underlying reasons of an issue or the problem may pass unnoticed after the aggregation;
6. Materiality: it is difficult to estimate the threshold beyond which divergences from the institution's peers become an issue too big to ignore and below which they are movements from the normal course of business.

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