EBA REPORT

RESULTS FROM THE 2020 LOW-DEFAULT AND HIGH-DEFAULT PORTFOLIOS EXCERCISE

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Executive summary

This summary report presents the key results of the 2020 supervisory benchmarking (SVB) exercise for both high-default portfolios (HDPs)[1] and low-default portfolios (LDPs).[2] The reference date for the data is 31 December 2019, and the submissions were received from 119 institutions at the highest level of consolidation.

The main objectives of this report are to

(i) provide an overview of the variability of risk-weighted assets (RWA) and of its drivers for IRB banks in EU Member States;

(ii) summarise the latest results of the supervisory assessment[3] of the quality of the internal approaches in use; and

(iii) provide evidence to policymakers for future activities relating to the IRB approach.

The data collection of this year's supervisory benchmarking (SVB) exercise contained for the first time more granular specialised lending (SLE) portfolios (aligned to the slotting approach risk categories) as well as the HDP retail portfolios consumer credits (RETO) and qualified revolving exposures (RQRR). Next to the general SVB analysis, a focus analysis on the variability of capital requirements for SLE exposures under the IRB approach is presented.

Summary on the general 2020 BM analysis

All in all, results are largely comparable to those of the last exercises, which can be seen as an indication of the general stability of bank portfolios and internal model outcomes.

As in the past years, the observed variability (in terms of Global Charge[4]) of institutions' overall IRBA exposure can mostly be explained by the different share of defaulted and non-defaulted exposures and by the portfolio mix of the individual institutions (i.e. the different distribution of IRB-exposures over exposure classes). For HDPs as well as for LDPs, around 60% of the total variability is explained via these two drivers. The residual variability (i.e. not explained by the aforementioned drivers) remains virtually unchanged if compared to the 2019 horizontal report.[5]

[1] Corporate non-SME, Corporate SME, Retail Residential Mortgages non-SME, Retail Residential Mortgages SME, Retail non-SME, Retail SME and Retail Qualifying Revolving.

[2] Large corporates with annual turnover of > EUR 200 m, corporates – specialised lending exposures, sovereigns and institutions.

[3] As mandated in Article 78 (3)

[4] Global Charge amount (= RWA + 12.5×EL)

[5] https://eba.europa.eu/sites/default/documents/files/document_library/Publications/Reports/2020/EBA%20Report%20-%20Results%20from%20the%202019%20Credit%20Risk%20Benchmarking%20Exercise.pdf

After having identified the two main drivers of the observed variability at total portfolio level, the variability within each sub portfolio (HDP and LDP) needs a closer look.

Analysing HDP portfolios, the current analysis emphasises (consistent with the 2019 results) that the variability of risk weights is mostly in line with the intention of the IRBA, i.e. the IRB RWs reflect the empirical risk.

In the outturn analysis, the 5-year backtesting figures (DR5Y/PD) are generally higher than the 1-year figures (DR1Y/PD), indicating decreasing default rates. Besides the improved economic conditions, this might be attributable to an early impact of the implementation of EBA's regulatory review of the IRB approach and the Targeted Review of Internal Models (TRIM) project as well as a result of the past EBA benchmarking exercises.

For the LDP portfolios, data at single counterparty level (i.e. identical obligor risk) are available. Compared to the 2019 benchmarking exercise, the analysis at counterparty level shows a slight decrease[6] of the observed overall RW variability for Large Corporates under AIRB, but it remained mostly stable for the other analysed LDP exposures.

Finally, the data collection of the 2020 BM exercise contains a refinement of the Large Corporates (LCOR) portfolios, which allows the BM metrics to be analysed separately for LCOR portfolios

(a) consisting of obligors with an annual turnover of more than EUR 200 m and,

(b) consisting of obligors with an annual turnover of more than EUR 200 m, but less than EUR 500 m and,

(c) consisting of obligors with an annual turnover of more than EUR 500 m.

The latter portfolio carries those entities which will most likely not be eligible any more for the AIRB approach under the revised Basel III framework. The data indicates that about 22% of the current EAD invested in LCOR and treated under the AIRB could be retained under the revised scope of the IRB approach.

Summary on the focus area of BM analyses for specialised lending

This is the first year that more granular, and therefore potentially more homogeneous, SLE portfolios have been collected in the benchmarking exercise. This more detailed data collection allows for a benchmarking assessment in particular for the different types of SLE (i.e. the risk categories real estate, project finance, object finance and commodities finance). As such, this analysis reveals that variability of RWAs calculated under the IRB approach for SLE stems among

[6] Compare figure 5 of the annex

others from an unequal distribution across banks in terms of type and volume of investment into SLE.

This reflects the different business strategies for this type of exposure. In particular Figure 7 below illustrates that while most banks hold none or only few investments in SLE, other institutions' LDP portfolios consist nearly exclusively of SLE.

In terms of geographical distribution, SLE are focused in DE, FR, GB and NL which concentrate the institutions investing in more than 80% of the overall SLE exposure. In terms of the risk categories, the most relevant (in terms of investing institutions and EAD) are real estate (IPRE & HVCRE[7]) and project finance.

A top-down analysis performed on the SLE portfolios shows (in Figure 8) that about 38% of the variability within this portfolio can be explained by the default status mix and the risk categorisation (i.e. CRR classification in project finance, object finance, commodity finance and real estate).

Another aspect that is assessed in the 2020 BM focus analysis is the variability of risk weights across different regulatory approaches towards the capital requirements calculation for this type of exposure. The SLE capital requirements calculation allows the choice between four different approaches: Standard Approach (SA), Slotting Approach (SLSC), Foundation IRBA (FIRB), Advanced IRBA (AIRB). It is, therefore, interesting to assess the variability stemming from the use of these different approaches. This may as well serve as input for a potential discussion on the review of the SLSC approach at the Basel table[8] and lastly, it underlines the impact to be expected under the finalised CRR 3 package.

The bottom-up analyses conducted show that the average RW consumption of SLE exposures is lower for AIRB models than for FIRB or those under SLSC.[9] The minimum RW collected for AIRB models regarding SLEs equals 18% whilst it is 22% and 59% respectively for FIRB and SLSC models. Furthermore, the median of the RWs is considerably lower for those supervised entities with internal PD and/or LGD models implemented for their SLE portfolios. The median RW for those under an AIRB approach equals 43% whilst this metric in case of FIRB is 56% and for SLSC is around 82%, thus reflecting a relevant degree of variability in RWAs. It should be noted in addition that the comparison of the median RW, as if it were calculated by the SA (around 89%/RW (SA) in Table 15), echoes the more significant impact which is expected for SLE portfolios under the IRB approach following the implementation of the finalised Basel III reform (due to the new SA output floors). It is interesting to see that the median RW under SLSC is close to the median RW under SA for the considered portfolios. However, the variability is higher under the SLSC as is to be expected.

[7] Stands for Income-producing Real Estate (IPRE) and High-volatility Commercial Real Estate (HVCRE)

[8] https://www.bis.org/bcbs/publ/d424_hlsummary.pdf

[9] Stands for specialised lending slotting criteria

Impact of COVID-19

While the data as of 31.12.2019 is not impacted by COVID-19, the actual data collection, delivery and analysis were clearly hampered by the pandemic. In detail, data deliveries were postponed by one month and fewer resources were available for data quality analysis. However, despite these challenges, a very good quality of the submitted data could be achieved.

The results and statistics, in particular in relation to average default rates, average PDs, average loss rates and average LGDs (as well as the corresponding ratios used for HDP benchmarking – DR/PD and LossRate/LGD) thus provide for a pre-COVID picture of the quality of IRB approaches. In addition, some CAs confirmed that in 2020, priority has been given to the monitoring of the actual credit quality rather than to the benchmarking of internal models due to the COVID pandemic.

Impact of EBAs regulatory review of the IRB approach

As a result of, in parts, excessive variability, observed among others in the EBA's report on comparability and procyclicality of own funds requirements under the IRB approach published in December 2013, the EBA developed a set of policies in its regulatory review of the IRB approach. This review contained a number of RTS and Guidelines aimed at harmonising the implementation of the IRB approach.[10] Where the reform of the Basel III standard tackles the observed variability of risk weights by limiting the scope of application of the IRB approach, EBA's regulatory review aims to enhance the robustness and the comparability of the internal risk estimates and own funds requirements of IRB institutions in the EU, thus ultimately restoring the trust in the IRB approach. A core component of the EBA's review of the IRB approach is the GL on default definition and the RTS on materiality threshold in the ongoing default identification, with its deadline for implementation by end of 2020 (i.e. application date from 1 January 2021).

Therefore, the current SVB analysis in relation to default rates and in particular the outturn analysis should be considered with care at least in 2020 and 2021, as some institutions may have implemented a revised definition of default, but may not have implemented revised PD and LGD estimates yet. This is because the implementation date for the GL on PD and LGD and the GL on downturn LGD estimation is 1 January 2022 (for most portfolios). For stand-alone rating systems for exposures to institutions, financial institutions treated as corporates or large corporates as defined under the final Basel III framework, the implementation date is set as 1 January 2024 to provide enough time for institutions to withdraw IRB approval for those types of exposures for which this is implied by the final Basel III framework.

[10] https://eba.europa.eu/regulation-and-policy/credit-risk/discussion-paper-on-the-future-of-the-irb-approach

Impact of Brexit

It should further be pointed out that there might be an impact on the benchmarks and variability from Brexit. However, there was no evidence of a significant Brexit impact based on the data collection as of 31.12.2019. In other words, the impact of Brexit on the current benchmarks and analysis seems limited, probably due to the current transition period in 2020.

A main issue for the upcoming analysis as of end 2020 is the exclusion of UK banks. The limited impact as of 31.12.2019 might stem from changes of the consolidation scope.

As a result, for the 2020 exercise with data as of 31.12.2019, the UK banks have not been excluded. The impact of Brexit may be analysed in more detail in 2021 (depending on the future priorities of the analysis).

General remarks on the BM analysis

The graphs and tables in this report are presented in a comprehensive manner in an accompanying annex where more details on methodological choices and caveats of the analysis can be found.

Furthermore, even when a substantial part of the variability is explained by a few risk-based metrics, it is not straightforward for policymakers to assess the reasons for the remaining variability. In particular, one of the key challenges is to measure and compare the variability of the internal ratings-based (IRB) risk estimates, the variability of the standardised approach (SA) outcomes and the variability of the underlying empirical risk.

1. The EU benchmarking exercise

1. This summary report presents the key results of the 2020 SVB exercise for both HDPs and LDPs. The reference date for the data is 31 December 2019, and the submissions were received from 119 institutions at the highest level of consolidation contributing to this exercise.[11] Table 1 shows the number of institutions, broken down by SVB exposure class and regulatory approach.

2. The main objectives of this report are to (i) provide an overview of the existing RWA variability and drivers of differences; (ii) summarise the latest results of the supervisory assessment of the quality of the internal approaches in use; and (iii) provide evidence to policymakers for future activities relating to RWA differences.

Table 1: Use of different regulatory approaches by SVB exposure class

	Exposure class	AIRB	FIRB	SLSC	Number of participating institutions
LDP	LCOR	64	54	0	99
	COSP	30	17	43	72
	CGCB	27	31	0	49
	INST	33	43	0	63
HDP	CORP	64	54	0	99
	SMEC	61	51	0	95
	SMOT	74	0	0	74
	RETO	84	0	0	84
	RSMS	67	0	0	67
	MORT	97	0	0	97
	RQRR	43	0	0	43
ALL	**ALL**	**112**	**61**	**43**	**119**

SLSC, specialised lending slotting criteria; SMEs, small- and medium-sized enterprises.

The definitions of the supervisory benchmarking exposure classes can be found in Annex 1 of the ITS for the 2020 exercise (https://eba.europa.eu/regulation-and-policy/supervisory-benchmarking-exercises/its-package-for-2020-benchmarking-exercise).

3. **The graphs and tables in this report are presented in a comprehensive manner in an accompanying annex where all methodological choices and caveats on the analysis can be found.** The annex provides in addition to this report a visualisation of average risk estimates

[11] Ten banks were excluded for the analysis presented in this report due to failed data quality checks, which led to unreasonable results.

and portfolio compositions, with in particular their temporal evolution, a top-down analysis combining both LDPs and HDPs, the temporal evolution of the common counterparties analysis, and more detailed analyses of backtesting metrics, in particular using the newly collected RWA+ and RWA- metrics and presenting general backtesting results broken down by country.

4. In the 2020 SVB analysis, efforts were strengthened to improve data quality on an overall level. As part of this effort, a dedicated team analysed the submitted data based on the published additional quality checks. As a result, ten banks were excluded and thus the institutions relevant for the analysis distribute over the relevant exposure classes as follows (Table 1 after data quality exclusion):

	Exposure class	AIRB	FIRB	SLSC	Number of participating institutions
LDP	LCOR	61	50	0	93
	COSP	28	17	39	67
	CGCB	25	30	0	46
	INST	31	39	0	58
HDP	CORP	61	50	0	93
	SMEC	58	47	0	89
	SMOT	70	0	0	70
	RETO	79	0	0	79
	RSMS	64	0	0	64
	MORT	87	0	0	87
	RQRR	40	0	0	40
ALL	**ALL**	**102**	**57**	**39**	**109**

2. Overview of the variability observed in the benchmarking data

5. As for the previous year, the benchmarking reports provide simple metrics to measure the variability of the outcomes of internal models. As usual, the common metric for all types of exposure is the result of a 'top-down' analysis, which provides a share of variability explained by simple risk drivers. The limit of this analysis is that the remaining variability is not necessarily unwarranted, and does not imply that some underestimation (and hence undercapitalisation) is observed in the EU. As a matter of fact, the 2019 credit risk benchmarking report shows that the variability observed for the same types of exposure and the same institutions but using the 'standardised approach' leads to a similar variability level, both initially and post top-down normalisation.

6. Hence, in order to go further in the analysis, different data sets are used, depending on the type of exposures investigated:

    a. For the HDP exposures, the average default rates are collected in order to attempt to compare the variability of IRB estimates with the variability of empirical level of risk ('outturn analysis').

    b. For the LDP exposures, additional data are collected for a list of counterparties, which ensure a high level of normalisation of the default risk. In addition to a comparison of the deviations observed at counterparty level, the variability of the ranking of the counterparties can also be measured.

7. Under the IRB approach, the cost of capital of an exposure is twofold: first, the expected loss triggers deductions in capital[12] and, second, the unexpected loss implies own fund requirements measured via the risk weighting of the exposures. This aggregated cost, the GC,[13] is especially important to consider when assessing the variability at the institution level, since the cost of capital of defaulted assets under the FIRB approach comes entirely from the expected loss (hence, only looking at the RW variability would strongly overestimate the variability of cost in capital). While a similar concept can be defined for the standardised approach, via a sum of the RWAs and the accounting provisions, the latter is however currently not collected in the SVB exercise.

8. A top-down analysis can be performed with a methodology broadly unchanged from previous years. The top-down analysis approach shows that the overall variability has slightly decreased from the 2019 to 2020 exercise. A relevant share (around 65%) of the observed total variability can be explained by two simple drivers: the share of defaulted/non-defaulted exposures and the extent to

[12] Via the calculation of an expected loss (EL) in Article 158 of the CRR and its deduction via the shortfall of Article 159 and accounting provisions.

[13] The GC is calculated as (12.5 × EL + RWA) ÷ EAD (exposure at default).

which the portfolio composition (i.e. riskiness due to portfolio mix) contributes to differences in the average GC. However, a top-down approach does not explain the remaining unexplained variability. It should be noted that differences in institutional and supervisory practices, interpretations of regulatory requirements, business strategies or modelling choices may all contribute to the unexplained variability. It should be noted that unexplained variability may also be caused by effects, such as idiosyncratic variations in the riskiness within an exposure class, CRM (i.e. the business and risk strategy of the institutions in terms of the use of credit risk mitigation) and jurisdictional differences affecting the IRB risk parameters estimation (e.g. national laws on forced sales).

9. In the analysis of the evolution of top-down results between 2019 and 2020, the overall variability of GC in terms of normalised STD deviation is illustrated as normalised quantity with respect to GC variability as of 31.12.2019 (see Figure 1). Thus, the difference in the starting point of the 2019 and the 2020 top-down analyses illustrates a decrease of the overall normalised GC variability. The results depicted in the figure below are based on a common sample of 72 institutions.

Figure 1: Comparison of the top-down analysis for the IRB GC, HDPs + LDPs, 2019 and 2020 exercises (common sample)

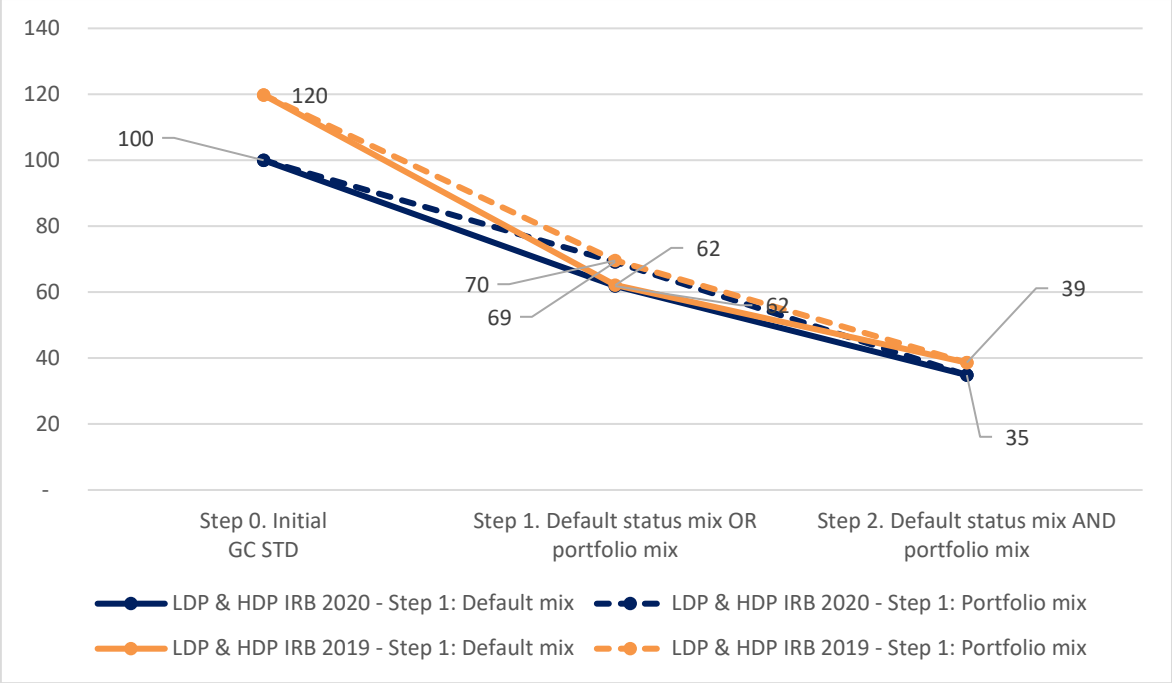


Figure 12 from chart pack. Sample: 72 institutions (only common institutions between 2019 and 2020 are kept). Initial GC STD 2020 = 100.

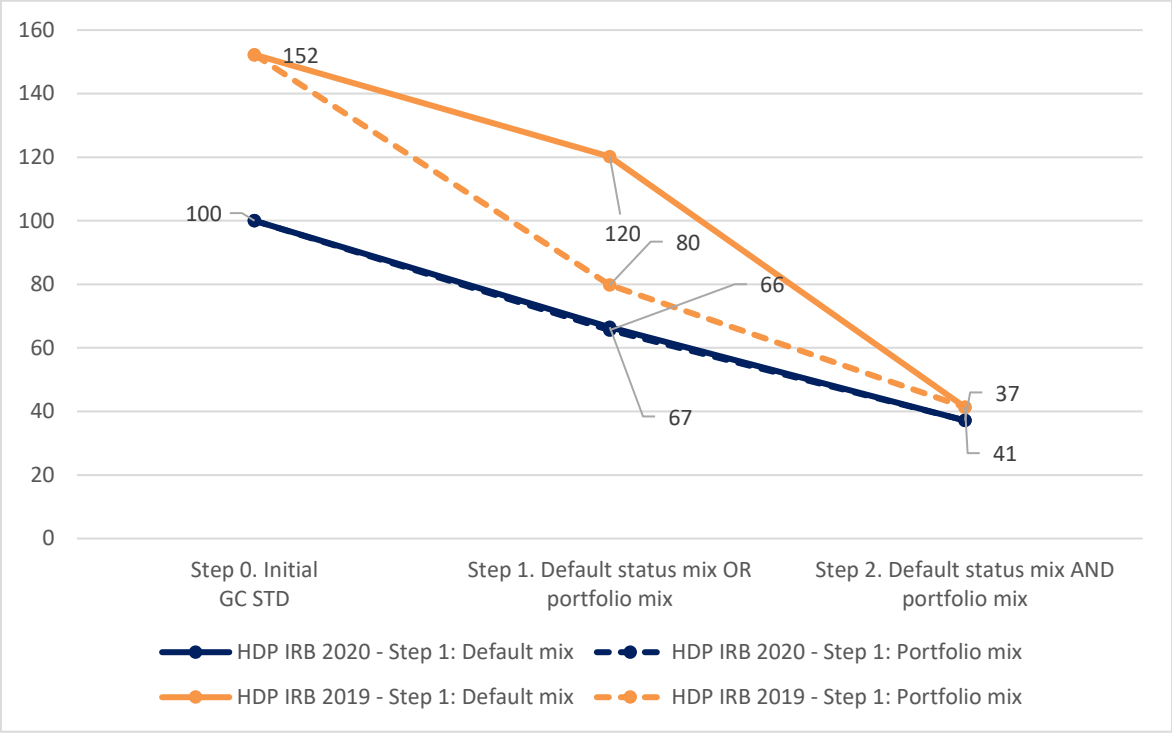
For the sake of comparison, based on last year's sample, the explained variability was 72% for both HDPs & LDPs (Figure 9 of the 2019 chart pack). Based on the common 2019-2020 sample, the 2019 explained variability is equal to 1-39/120 = 68%.

Analysing the variability in the HDPs

10. In the 2020 SVB exercise, the HDPs consist of seven broad types of exposures, mirroring the breakdown used in the common reporting framework. The HDP includes corporate exposures (defined as corporates with annual sales below EUR 200 million), broken down for SME and non-SME (latter defined as corporates with annual sales exceeding EUR 50 million) as well as retail exposures, broken down into SME and per CRR categories (mortgages, 'other' and revolving). The portfolios RETO (consumer credits) and RQRR (qualified revolving exposures) have been included in the benchmarking reporting for the first time in the current analysis.

11. A top-down analysis restricted to the HDP provides comparable results to the top-down analysis at total portfolio level. The difference in offset in the figure below, i.e. the difference in the overall variability observed in 2019 and in 2020 in HDP portfolios, is probably due to an improved data quality in the 2020 data collection. Besides, this might as well be attributable to an early impact of the implementation of the EBA's regulatory review of the IRB approach and the Targeted Review of Internal Models (TRIM) project as well as a result of the past EBA benchmarking exercises.

Figure 2: Comparison of the top-down analysis for the IRB GC, HDPs, 2019 and 2020 exercises (common sample)



Sample: 79 institutions (only common institutions between 2019 and 2020 are kept).

12. Going further in the analysis, the variability at portfolio level is analysed. In HDPs, the best way to assess the portfolio risk is to compare the level of estimated risk with the empirical observation. Misalignment between estimates (PDs and LGDs) and observed parameters (default rates and loss rates) could suggest that differences in RWAs between institutions might be driven by differences

in estimation practices (different levels of conservatism, adjustments to reflect long-run averages, different lengths of time series of the data available and included in the calibration of the cycle, assumptions underlying recovery estimates, etc.) and not only by differences in portfolio risk.

13. For this reason, Figure 3 illustrates the variability of ratio between the observed average 1-year default rate (observed average 5-year default rate) and the average PD of the considered portfolio in terms of the observed interquartile ranges. The results show that realised default rates are generally well below estimated values. Only the corporate portfolios indicate some potential underestimation that might, however, also be attributed to the improved economic conditions in 2019. The problem seems more pronounced for the 5-year backtesting values. This points to decreasing default rates. The observed ratios might as well result from an early impact of the EBA IRBA repair package and TRIM and/or the past EBA benchmarking exercises.

Figure 3: Key backtesting metrics at portfolio level

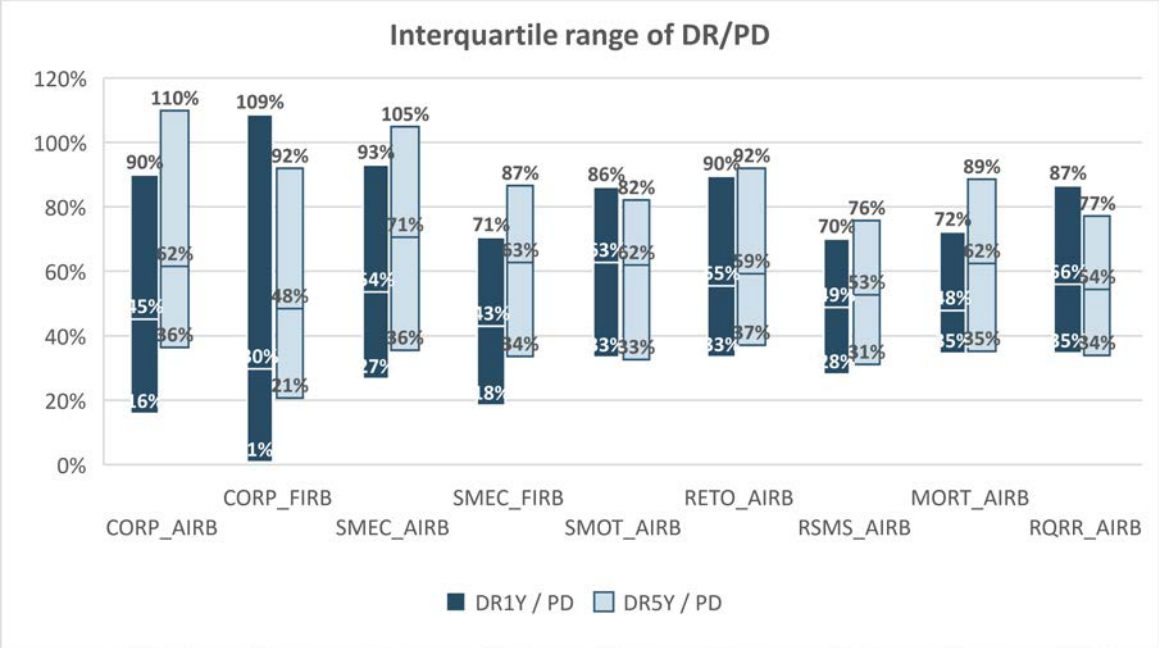


Figure 18 from the chart pack: interquartile range of the ratio of the DR 1Y to PD and the ratio of the DR 5Y to PD, for non-defaulted exposures, by SVB exposure class and regulatory approach.

14. In line with last year's exercise, the variability of the HDP portfolios has been analysed under IRBA and as if it were calculated by means of the SA in relation to a proxy for the level of risk. One simple and convenient way to visualise how the RW under the IRB approach and the RW under the SA relate to the underlying level of risk is to compare their related distributions with the distributions of 'implied RW', defined as the average RW recalculated using the observed default rates[14] at the

[14] The data collected allow the use of both a 1-year and a 5-year exposure value-weighted average default rate. These data points are complemented by the average LGD and maturity at the grade level to calculate the implied RW.

grade level. In particular for mortgages, Figure 26 illustrates that the IRB RW reflect the 'true risk' much better than the corresponding RW in SA.

15. The distributions are based on the exposure value within each rating grade. The results are comparable to those of last year. The IRBA approach does much better reflect the underlying empirical risk than the SA.

Figure 4: Distribution of RW (IRB), RW (SA) and implied RW, mortgage portfolio

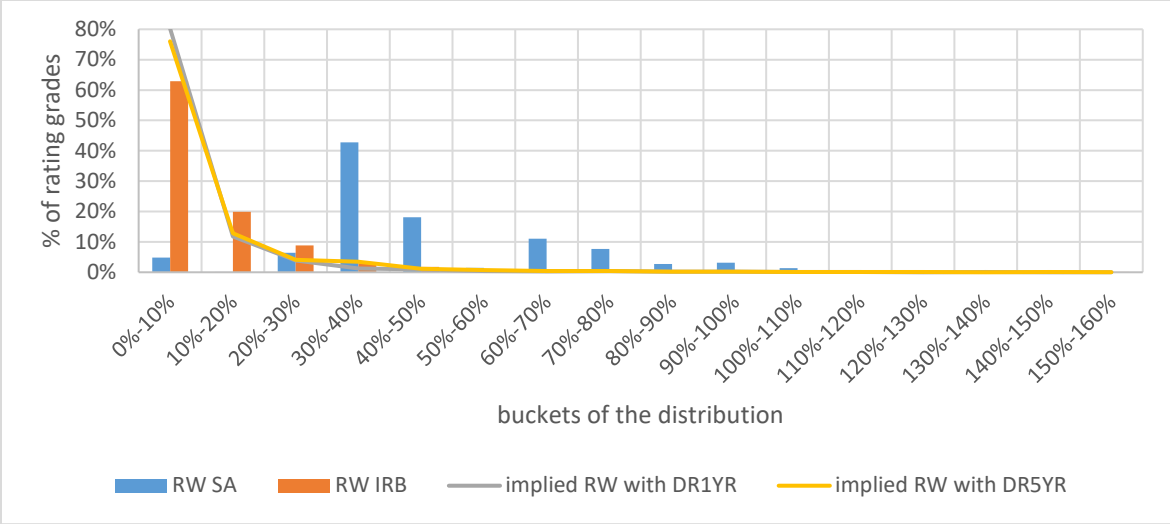


Figure 26 of the chart pack. missing values due to y-axis capped at 80%: RW (DR5Y) between 0% and 10%, 80%.

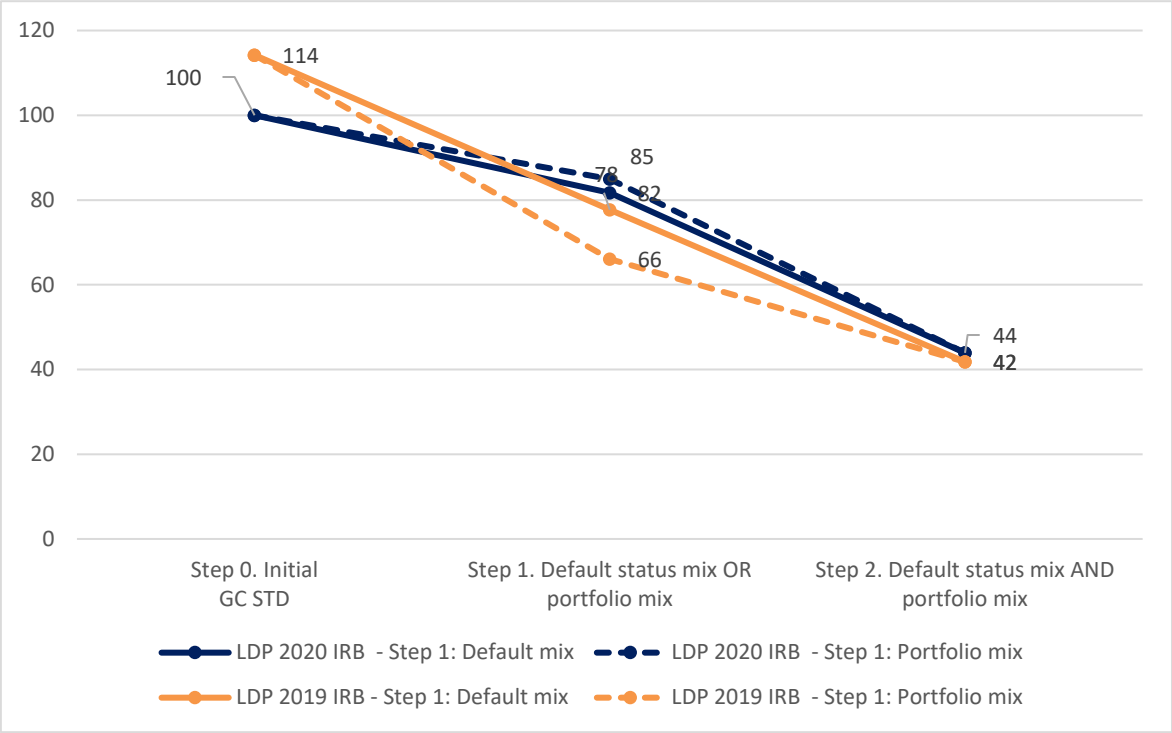
Analysing the variability in the LDPs

16. In the 2020 SVB exercise, the LDPs consist of four broad type of exposures: large corporates (with turnover above EUR 200 million), corporates - specialised lending, institutions and central governments and central banks (sovereigns). Whereas a top-down methodology can be performed across exposure classes,[15] the analysis within the exposure classes cannot be based on backtesting results due to the scarcity of defaults. Instead, it is possible to compare the IRB parameters and RWs for identical obligors to which the institutions have real exposures (common counterparty analysis) to control underlying risk.

17. In the same fashion as presented for the HDP portfolio, the top-down analysis can be performed for the GC computed under the IRB approach. A similar share of the variability as in the HDP is explained by relatively simple risk drivers (see annex of this report), and the results are stable over the years when the approach is run on a common sample of institutions. Figure 5 shows that the proportion of explained variability is around 60% on the common sample.

[15] Only on IRB risk metrics, since the SA risk metrics were not reported by all institutions.

Figure 5: Comparison of the top-down analysis, LDPs, 2019 and 2020 exercises (common sample)



Sample: 72 institutions (only common institutions between 2019 and 2020 are kept).

18. For each institution, it is possible to calculate RW deviations on a set of common counterparties based on the distance between the internal estimates and the median estimates of the sample of institutions. These deviations are aggregated at institution level (based on the median of the deviations at counterparty level), hence giving an estimate of the position of the institutions in terms of estimate of risk compared with their peers. Table 2 shows the interquartile ranges of the RW deviations resulting from the use of benchmarks. A complete description of the methodology and caveats for this analysis can be found in the annex of this report.

Table 2: Summary statistics on the RW deviations (interquartile range) by SVB exposure class and regulatory approach (%)

		AIRB					FIRB	
		Dev 1 (ALL)	**Dev2 (PD)**	**Dev3 (LGD)**	**Dev4 (M)**	**Dev5 (LGD_{unsec})**	**Dev 1 (ALL)**	**Dev2 (PD)**
Large corporates	**2020**	**9%**	**8%**	**6%**	**7%**	**5%**	**8%**	**5%**
	2019	13%	8%	8%	6%	5%	8%	7%
Sovereigns	**2020**	**8%**	**2%**	**4%**	**3%**	**4%**	**3%**	**4%**
	2019	7%	4%	5%	5%	4%	6%	5%

Institutions	**2020**	**9%**	**3%**	**7%**	**6%**	**7%**	**7%**	**5%**
	2019	8%	4%	9%	5%	7%	7%	5%

NB: this table presents a gross comparison of the metrics between 2019 and 2020, without controlling the sample composition of institutions and counterparties reported (see next section).

19. The results in Table 2 show that all interquartile ranges of the RW deviations resulting from the use of benchmarks are below or are equal to 9 percentage points. The interquartile ranges are in general lower for FIRB than for AIRB. As could be expected, the deviation for FIRB is mainly explained by the PD effect. Compared to the 2019 exercise, the overall interquartile ranges for large corporates under AIRB and sovereigns under FIRB have decreased, while they stayed mostly stable for the other portfolios and approaches.

20. The variation in PD is generally not risk-based, as the risk assessment of the same counterparties by different institutions should not be expected to significantly differ. This variability is limited, and is not necessarily unexplained or undue. For instance, in some specific cases, such as the ones described in Article 172(1)(e) of the CRR (e.g. country transfer risk, associated guarantee), the PD of the same obligor may be different for different facilities. Furthermore, a difference in the estimates may also be explained by different default experiences or different chosen scopes of the applicable rating model.

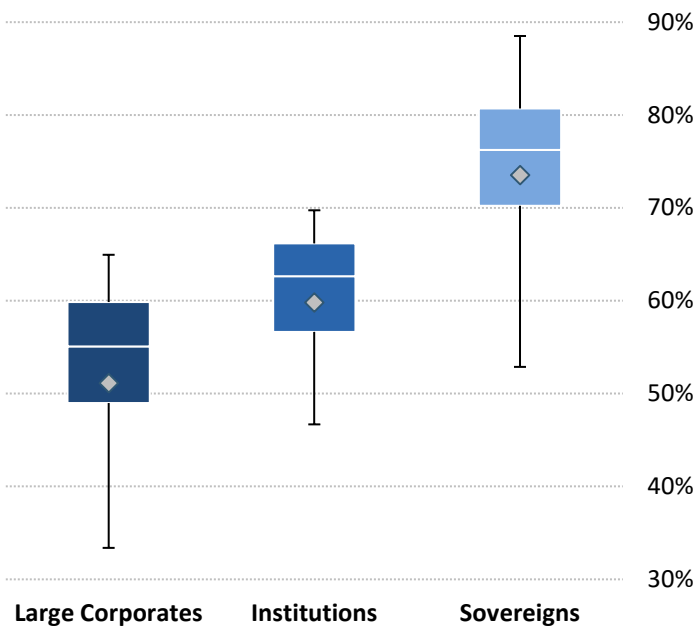
21. As highlighted by its name, one key component of the internal ratings-based approach is its capacity to rate and rank the obligors according to their relative level of risk. Thus, the variability can be analysed in two dimensions: first as the variability of the risk parameters in absolute terms,[16] and second as the variability of the ranking of the counterparties (i.e. variability of the risk parameters relatively to each other).[17] This distinction of the variability coming from the risk differentiation and the risk quantification is very relevant to policymakers, as it triggers different corrective measures.[18] One possibility for assessing the efficiency of the risk differentiation is to measure the commonality of the ranking among institutions over the common sample of obligors. The Kendall tau coefficient is a simple metric to assess this commonality, and can be seen as a correlation coefficient: a Kendall tau equal to 1 means that two institutions rank their common counterparties in the same manner, while a Kendall tau equal to -1 means they rank their common counterparties in opposite manners. More explanation of this metric can be found in the annex of this report.

[16] For example, for counterparties *X* and *Y*, institution *A* estimates PD(*X*) and PD(*Y*) differently from institution *B*.

[17] For example, institution *A* assesses that PD(*X*) < PD(*Y*) while institution *B* assesses that PD(*X*) > PD(*Y*).

[18] For instance, the EBA believed the risk quantification part of the IRB framework was insufficiently detailed, and therefore focused its comprehensive review on this part of the framework.

Figure 6: Interquartile range, median and average of Kendall tau metrics



Sample: 92 institutions (based on institutions that, for a given exposure class, share with at least four other institutions at least five counterparties in common (under the same regulatory approach)).

22. Generally speaking, Figure 6 shows that the ranking of the counterparties is, as experienced in past exercises, very consistent among institutions, with Kendall tau metrics being positive for all asset classes, and generally above 50%. It is, however, likely that the higher values for sovereigns and institutions are to be explained by the more common use of shadow ratings models (external ratings), with therefore a higher concordance expected.

23. As of the current exercise, it is possible to split the large corporates exposure class into those covering counterparties with turnover below EUR 500 m and above. This split allows an assessment of the impact (e.g. in terms of eligible exposure for the IRB approach) of the revised Basel III framework. The latter portfolio carries those entities that will most likely not be eligible any more for the AIRB approach under the revised framework. The data indicate that 22% of the current EAD under the AIRB could be retained under the revised scope of the AIRB approach.

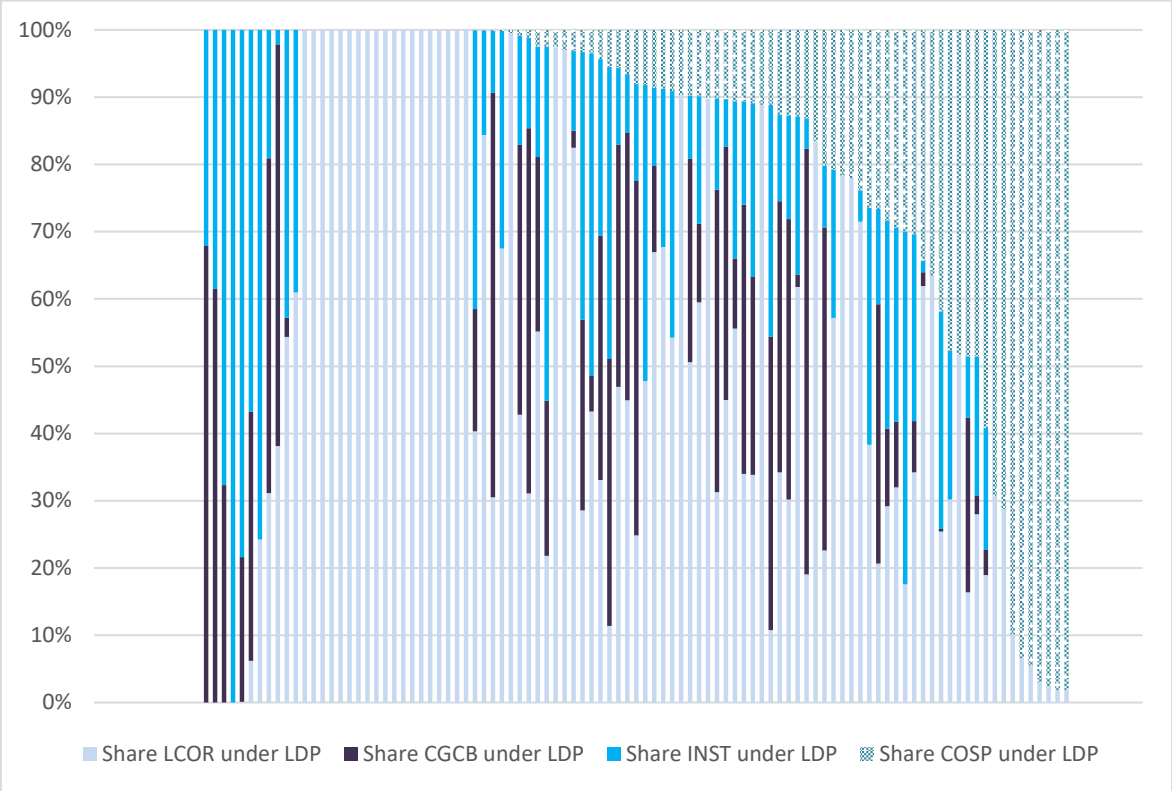
3. Focus BM-analyses on SLE

3.1 General statistics on the materiality of the specialised lending exposure class

3.1.1 Overall breakdown

24. The overall breakdown of LDPs shows the wide range of institutions' different investment strategies in SLE. About a third of the institutions do not invest in SLE at all, for another third the SLE portfolio does not cover more than 20% of its LDP exposures, and finally there are a few specialised institutions that are mainly investing in SLE.

Figure 7: Portfolio composition of the LDP: proportions of large corporates, institutions and sovereigns in LDPs (sorted by proportion of specialised lending exposures in LDPs from smallest to largest)



25. The materiality is given both in terms of percentage of volume (exposure value) and risk (GC) using the total level portfolio reported for the SVB:

Table 3: Share of the SLE portfolio (COSP) in comparison to the total corporate portfolio and the total portfolio

	% of corporates		% of total portfolio	
	EAD	GCA	EAD	GCA
max	87%	96%	87%	96%
p90	51%	53%	20%	32%
Q3	20%	20%	6%	11%
median	6%	5%	1%	2%
Q1	0%	0%	0%	0%
p10	0%	0%	0%	0%
min	0%	0%	0%	0%
n	98	98	109	109

% of corporates = (COSP) / (COSP + CORP + LCOR + SMEC); % of total portfolio = COSP / (ALL)
*EAD: exposure at default. GCA: Global Charge amount (= RWA + 12.5*EL)*

26. Table 3 shows that the materiality of the specialised lending exposure portfolio is low for most of the institutions when compared to their total portfolio. It is however **a non-negligible part of the corporate portfolio for a substantial (25%) number of them**.

3.1.2 Breakdown per country of the reporting institution

27. The general statistics on the number of institutions and on the volume of transactions (measured via the exposure at default) can be presented by country of the reporting institutions and by exposure type (CRR breakdown[19]):

[19] The CRR in itself does not introduce a categorisation of specialised lending exposures. By CRR breakdown, this report refers to the category introduced in the RTS on Assigning Risk Weights to Specialised Lending Exposures under Article 153(9) of Regulation (EU) No 575/2013, which derives from the categorisation given in the Basel III framework

Table 4: Number of institutions per type of exposure (CRR classification), by country of the institutions

No of institutions	Total	Project finance	Object finance	Commodities finance	IPRE & HVCRE
AT	4	4	3		3
DE	15	12	10	3	15
ES	5	5	3		3
FR	5	4	3		5
GB	6	4			6
IE	3	3			
IT	6	6	3		6
NL	3	3			
NO	5	5	5	5	5
SE	3				
Other countries	11	9	10	5	9
EU	66	55	37	13	52
	100%	83%	56%	20%	79%

The countries' statistics are only given in the case where they contain at least three reporting institutions. In the case where fewer than three institutions reported the data for a data point in a given country, these institutions are included in the row 'Other Countries'. The percentages are not additive, given that some institutions invest in several types of exposures.

Table 5: Volume of transactions (EAD) per type of exposure (CRR classification), by country of the institutions

EAD (bil)	Total	Project finance	Object finance	Commodities finance	IPRE &HVCRE
AT	26	6	0		20
DE	278	69	28	1	180
ES	39	28	1		10
FR	166	41	36		74
GB	84	19			57
IE	3	2			
IT	38	17	1		19
NL	50	21			
NO	11	0	2	1	9
SE	4				
Other countries	22	13	11	27	28
EU	721	216	79	29	397
	100%	30%	11%	4%	55%

The countries' statistics are only given in the case where they contain at least three reporting institutions. In the case where fewer than three institutions reported the data for a given country, these institutions are included in the row 'Other Countries'.

28. Table 4 and Table 5 illustrate the distribution of SLE exposure over EU countries, showing that:

a. 66 of the analysed institutions have exposures belonging to the specialised lending category.

b. In terms of volume of transactions, four countries (DE, FR, GB, NL) concentrate the institutions investing in more than 80% of the total SLE exposure. In all SLE categories with the only exception of commodities finance, more than 50% of the investments in these

categories are covered by German or French institutions. In the category commodities finance, it is in particular notable that half of the volume is realised by one institution.

29. In terms of type of exposures, Table 4 and Table 5 show that:

a. the most important category, both in terms of numbers of institutions as well as in terms of volume of transaction, is the category IPRE & HVCRE.

b. while there is a high number of institutions investing in project and object finance, the materiality in term of volume of transaction is much lower than in the category IPRE & HVCRE.

c. the category commodities finance remains marginal, both in term of number of institutions investing in this type of exposure as well as in terms of volume of transactions.

30. Apparently, in the area SLE, a specialisation of some institutions in certain business areas (niche areas) has taken place, which makes benchmarking, i.e. a direct comparison, complicated.

3.1.3 Breakdown per country of residence of the exposures

31. The general statistics on the number of institutions and on the volume of transactions can be presented by country of residence of the exposures:

Table 6: Number of institutions and volume of transaction per country of counterparty

Country of counterparty	No. of institutions	EAD (bil)	EAD (%)
AT	23	16	2%
AU	24	15	2%
BE	29	13	2%
BG	8	1	0%
BR	11	2	0%
CA	25	6	1%
CH	26	10	1%
CN	11	8	1%
CY	19	1	0%
CZ	17	12	2%
DE	36	118	16%
DK	28	2	0%
EE	4	0	0%
ES	38	26	4%
FI	21	3	0%
FR	40	55	8%
GB	44	79	11%

GR	14	5	1%
HK	15	10	1%
HR	11	2	0%
HU	19	4	1%
IE	32	14	2%
IL	12	1	0%
IT	29	29	4%
JP	13	6	1%
KR	6	3	0%
LT	3	0	0%
LU	40	32	4%
LV	3	0	0%
MT	17	1	0%
NL	37	40	6%
NO	28	16	2%
PL	19	8	1%
PT	24	6	1%
RO	10	2	0%
RU	13	3	0%
SE	25	5	1%
SG	19	12	2%
SI	4	0	0%
SK	11	4	1%
TR	15	3	0%
US	36	89	12%
EU	67	726	100%
Other Countries	49	66	9%

The countries' statistics are only given in the case where they contain at least three reporting institutions. In the case where fewer than three institutions reported the data for a given country, these institutions are included in the row 'Other Countries'.

32. Table 6 shows that five countries of investment capture half of the EAD of SLE transaction (DE, FR, GB, NL, US) and more than two-thirds of the investments are captured adding three other countries (ES, IT, LU). There are obviously high concentrations of investments.

3.2 Focus on the variety of business models (distributions of exposures by specific types of the specialised lending exposures)

33. The diversity of business models can be illustrated by the differences in the percentage of investments for each type of specialised lending (both in terms of volume of transaction as well as in terms of risk).

3.2.1 CRR type of specialised lending exposures

Table 7: EAD share, with respect to total EAD for the SLE portfolio, per COREP categories

	Project finance	Object finance	Commodities finance	IPRE &HVCRE
max	100%	100%	39%	100%
p90	100%	45%	19%	100%
Q3	84%	26%	14%	89%
median	44%	8%	6%	63%
Q1	22%	2%	1%	24%
p10	6%	1%	0%	11%
min	0%	0%	0%	0%
Number of institutions	**55**	**37**	**13**	**52**

The statistics are calculated only based on the non-defaulted exposures (as the type of exposure is not collected for defaulted exposures).

Table 8: GCA share, with respect to total GCA for the SLE portfolio, per COREP categories

	Project finance	Object finance	Commodities finance	IPRE &HVCRE
max	100%	100%	29%	100%
p90	100%	39%	25%	100%
Q3	84%	23%	21%	86%
median	47%	8%	4%	62%
Q1	23%	4%	1%	26%
p10	4%	1%	0%	11%
min	0%	0%	0%	0%
Number of institutions	**55**	**37**	**13**	**52**

The statistics are calculated only based on the non-defaulted exposures (as the type of exposure is not collected for defaulted exposures).

34. Table 7 and Table 8 show that while some institutions concentrate their investment in either project finance or real estate, with a quarter of them having more than 80% of their SLE exposures in these types of exposure, the categories object finance and commodities finance are almost never chosen for concentrating the majority of the SLE investments.

3.2.2 FINREP type of specialised lending exposures (corporate breakdown)

Table 9: EAD share, with respect to total EAD for the SLE portfolio, per FINREP categories

	Household	Non-financial corporations	Other financial corporations
max	10%	100%	100%
p90	4%	100%	66%
Q3	2%	100%	14%
median	1%	98%	5%
Q1	0%	94%	3%
p10	0%	83%	0%
min	0%	2%	0%
Number of institutions	**23**	**64**	**40**

The statistics are calculated only based on the non-defaulted exposures (as the type of exposure is not collected for defaulted exposures).

Table 10: GCA share, with respect to total GCA for the SLE portfolio, per FINREP categories

	Household	Non-financial corporations	Other financial corporations
max	19%	100%	100%
p90	5%	100%	65%
Q3	2%	100%	12%
median	0%	99%	4%
Q1	0%	95%	1%
p10	0%	82%	0%
min	0%	2%	0%
Number of institutions	**23**	**64**	**40**

The statistics are calculated only based on the non-defaulted exposures (as the type of exposure is not collected for defaulted exposures).

35. Table 9 and Table 10 show that most of the SLE are classified as non-financial corporations.

3.3 Focus on the slotting approach (distributions of exposures by risk category, type of exposures and country of institution)

36. For the slotting approach, Art. 153(5) defines eight predefined weights for non-defaulted exposures for four different risk categories and two different remaining maturities types. The ITS on benchmarking therefore defines the following 'rating' categories:

- Rating 1: category 1 with remaining maturity less than 2.5 years (RW=50%)
- Rating 2: category 2 with remaining maturity less than 2.5 years (RW=70%)
- Rating 3: category 3 with remaining maturity less than 2.5 years (RW=115%)
- Rating 4: category 4 with remaining maturity less than 2.5 years (RW=250%)
- Rating 5: category 1 with remaining maturity equal or more than 2.5 years (RW=70%)
- Rating 6: category 2 with remaining maturity equal or more than 2.5 years (RW=90%)
- Rating 7: category 3 with remaining maturity equal or more than 2.5 years (RW=115%)
- Rating 8: category 4 with remaining maturity equal or more than 2.5 years (RW=250%)

37. Table 11 shows the distribution of EAD among these different ratings. It is interesting to see that rating 3-4 and rating 7-8 only cover a small part of the total exposure under the slotting approach, meaning the SLE under SLSC are categorised mostly as rather low-risk exposures. Moreover, most of the exposures are rather long-term investments with a remaining maturity of more than 2.5 years.

Table 11: Share of EAD per risk category, total SLE under slotting approach

EAD share, with respect to total EAD for the SLE portfolio	No. of institutions	Category 1 -2	Category 3 -4	Category 5 - 6	Category 7 -8	Total
AT	4	21%	3%	68%	8%	100%
DE	4	19%	1%	69%	11%	100%
ES	5	28%	16%	52%	3%	100%
FR						100%
GB	4	26%	5%	41%	28%	100%
IT	6	13%	4%	70%	13%	100%
Other Countries	11	21%	1%	71%	7%	100%
Total (EU)	34	23%	8%	61%	8%	100%

The countries' statistics are only given in the case where they contain at least three reporting institutions. In the case where fewer than three institutions reported the data for a given country, these institutions are included in the row 'Other Countries'.

Table 12: Share of EAD per risk category, total SLE – PROJECT FINANCE - under slotting

EAD share, with respect to total EAD for the SLE portfolio	No. of institutions	Category 1 -2	Category 3 -4	Category 5 - 6	Category 7 -8	Total
AT	4	24%	1%	71%	4%	100%
ES	5	23%	22%	52%	3%	100%
IT	6	1%	0%	83%	16%	100%
Other Countries	10	7%	1%	70%	22%	100%
Total (EU)	25	18%	14%	60%	8%	100%

The countries' statistics are only given in the case where they contain at least three reporting institutions. In the case where fewer than three institutions reported the data for a given country, these institutions are included in the row 'Other Countries'.

Table 13: Share of EAD per risk category, total SLE – OBJECT FINANCE - under slotting approach

EAD share, with respect to total EAD for the SLE portfolio	No. of institutions	Category 1 -2	Category 3 -4	Category 5 - 6	Category 7 -8	Total
Other Countries	14	12%	0%	82%	6%	100%
Total (EU)	14	12%	0%	82%	6%	100%

The countries' statistics are only given in the case where they contain at least three reporting institutions. In the case where fewer than three institutions reported the data for a given country, these institutions are included in the row 'Other Countries'.

Table 14: Share of EAD per risk category, total SLE – IPRE and HVCRE - under slotting approach

EAD share, with respect to total EAD for the SLE portfolio	No. of institutions	Category 1 -2	Category 3 -4	Category 5 - 6	Category 7 -8	Total
DE	4	25%	0%	72%	3%	100%
FR	4	50%	1%	46%	2%	100%
GB	4	32%	6%	39%	23%	100%
IT	6	20%	5%	63%	11%	100%
Other Countries	13	30%	3%	61%	6%	100%
Total (EU)	**27**	**29%**	**3%**	**60%**	**8%**	**100%**

The countries' statistics are only given in the case where they contain at least three reporting institutions. In the case where fewer than three institutions reported the data for a given country, these institutions are included in the row 'Other Countries'.

3.4 General statistics on specialised lending exposure risk metrics

Table 15: General statistics on specialised lending exposures

		ALL	AIRB	FIRB	SLSC
GC (%)	max	265%	246%	126%	265%
	p90	111%	73%	101%	147%
	Q3	90%	60%	81%	107%
	median	71%	48%	59%	92%
	Q1	50%	35%	50%	83%
	p10	34%	25%	46%	76%
	min	21%	20%	23%	63%
	n	66	27	16	39
RW (%)	max	194%	182%	109%	194%
	p90	97%	64%	93%	113%
	Q3	81%	54%	77%	94%
	median	65%	43%	56%	82%
	Q1	47%	32%	47%	76%
	p10	31%	22%	44%	70%
	min	20%	18%	22%	59%
	n	66	27	16	39
RW SA (%)	max	149%	125%	114%	149%
	p90	100%	100%	103%	100%
	Q3	96%	95%	91%	97%
	median	89%	88%	82%	92%
	Q1	77%	83%	59%	72%
	p10	17%	14%	4%	54%

		ALL	AIRB	FIRB	SLSC
	min	0%	0%	0%	0%
	n	53	23	8	32
PD (%)	max	99.00%	14.32%	3.25%	99.00%
	p90	2.89%	4.73%	1.74%	1.67%
	Q3	1.66%	1.79%	0.90%	0.95%
	median	1.15%	1.36%	0.57%	0.00%
	Q1	0.43%	1.24%	0.42%	0.00%
	p10	0.01%	0.92%	0.37%	0.00%
	min	0.00%	0.29%	0.09%	0.00%
	n	50	27	16	20
LGD (%)	max	50%	36%	45%	50%
	p90	45%	35%	45%	45%
	Q3	41%	30%	45%	41%
	median	29%	24%	43%	13%
	Q1	15%	15%	41%	0%
	p10	1%	11%	40%	0%
	min	0%	8%	37%	0%
	n	52	27	16	19

The number of institutions in column ALLX does not represent the sum of the number of institutions using AIRB, FIRB and SLSC, as one institution might use more than one approach.

38. Table 15 shows that GC and RW under the AIRB are generally lower than under the FIRB and in general show a higher volatility. However, PD estimates appear generally to be higher under the AIRB compared to the FIRB, but on the other hand LGD estimates are generally lower. There seem to be some compensation effects. It is also interesting that the risk weights under the slotting approach are mostly higher than the risk weights under the standard approach.

39. The variability of risk parameters seems to be highest in the CRR category IPRE & HVCRE followed by object finance and project finance.

Table 16: General statistics on specialised lending exposures, by CRR type of exposures

		Project finance			Object finance			Commodity finance			IPRE & HVCRE		
		AIRB	FIRB	SLSC	AIRB	FIRB	SLSC	AIRB	FIRB	SLSC	AIRB	FIRB	SLSC
GC (%)	max	110%	108%	275%	154%	134%	206%	77%			246%	160%	223%
	p90	77%	88%	120%	104%	129%	156%	64%			140%	92%	145%
	Q3	58%	76%	109%	74%	109%	109%	49%			75%	58%	103%
	median	45%	63%	94%	51%	80%	95%	41%			45%	52%	92%
	Q1	40%	54%	82%	31%	60%	85%	36%			29%	41%	79%
	p10	36%	46%	78%	19%	53%	71%	31%			20%	40%	75%
	min	21%	42%	68%	11%	40%	68%	26%			12%	23%	63%
	n	22	14	28	18	8	17	10	2	2	22	11	31
RW (%)	max	101%	98%	201%	114%	115%	153%	72%			182%	135%	168%
	p90	70%	83%	100%	95%	114%	120%	58%			131%	85%	112%
	Q3	53%	73%	95%	64%	102%	95%	43%			65%	54%	91%
	median	43%	60%	84%	42%	73%	86%	38%			42%	50%	82%
	Q1	36%	51%	73%	28%	57%	78%	33%			28%	40%	72%
	p10	35%	44%	71%	18%	51%	65%	28%			18%	39%	69%
	min	19%	40%	65%	10%	38%	65%	22%			12%	22%	59%
	n	**22**	**14**	**28**	**18**	**8**	**17**	**10**	**2**		**22**	**11**	**31**
	max	106%	100%	149%	103%	100%	106%	108%			162%	123%	106%

		Project finance			Object finance			Commodity finance			IPRE & HVCRE		
RWSA (%)	**p90**	100%	99%	100%	100%	100%	104%	103%			100%	111%	100%
	Q3	98%	96%	98%	98%	100%	100%	97%			96%	97%	96%
	median	93%	93%	94%	93%	99%	97%	88%			84%	82%	84%
	Q1	86%	81%	83%	84%	0%	93%	74%			75%	73%	69%
	p10	78%	46%	7%	25%	0%	68%	16%			49%	36%	21%
	min	0%	5%	0%	0%	0%	53%	0%			0%	0%	0%
	n	**18**	**7**	**23**	**15**	**5**	**14**	**99**	**2**	**11**	**18**	**6**	**25**
PD (%)	**max**	2.23%	1.80%	99.00%	8.04%	3.04%	1.46%	2.36%			14.32%	4.62%	1.78%
	p90	1.87%	1.13%	1.67%	5.03%	2.37%	0.93%	2.23%			4.64%	1.36%	1.26%
	Q3	1.19%	0.86%	1.39%	3.26%	1.78%	0.18%	1.92%			2.02%	0.74%	0.89%
	median	0.85%	0.60%	0.00%	1.92%	1.05%	0.00%	1.21%			1.42%	0.40%	0.00%
	Q1	0.62%	0.47%	0.00%	1.13%	0.59%	0.00%	0.99%			0.91%	0.27%	0.00%
	p10	0.31%	0.39%	0.00%	0.77%	0.36%	0.00%	0.74%			0.51%	0.22%	0.00%
	min	0.29%	0.35%	0.00%	0.67%	0.31%	0.00%	0.66%			0.18%	0.09%	0.00%
	n	22	14	12	18	8	88	10	2	11	22	11	17
LGD (%)	max	48%	45%	50%	43%	45%	50%	42%			63%	45%	50%
	p90	38%	45%	45%	34%	45%	44%	35%			43%	45%	43%
	Q3	35%	45%	44%	29%	45%	20%	29%			31%	43%	35%
	median	27%	45%	0%	21%	43%	0%	24%			23%	42%	0%
	Q1	19%	44%	0%	10%	40%	0%	18%			13%	41%	0%
	p10	15%	42%	0%	8%	39%	0%	15%			8%	39%	0%
	min	11%	39%	0%	5%	37%	0%	8%			6%	38%	0%

	Project finance			Object finance			Commodity finance			IPRE & HVCRE		
n	22	14	11	18	8	77	10	2	11	22	11	15

The statistics are only given in the case where they contain at least five reporting institutions. In the case where fewer than five institutions reported the data, the cells are left empty.

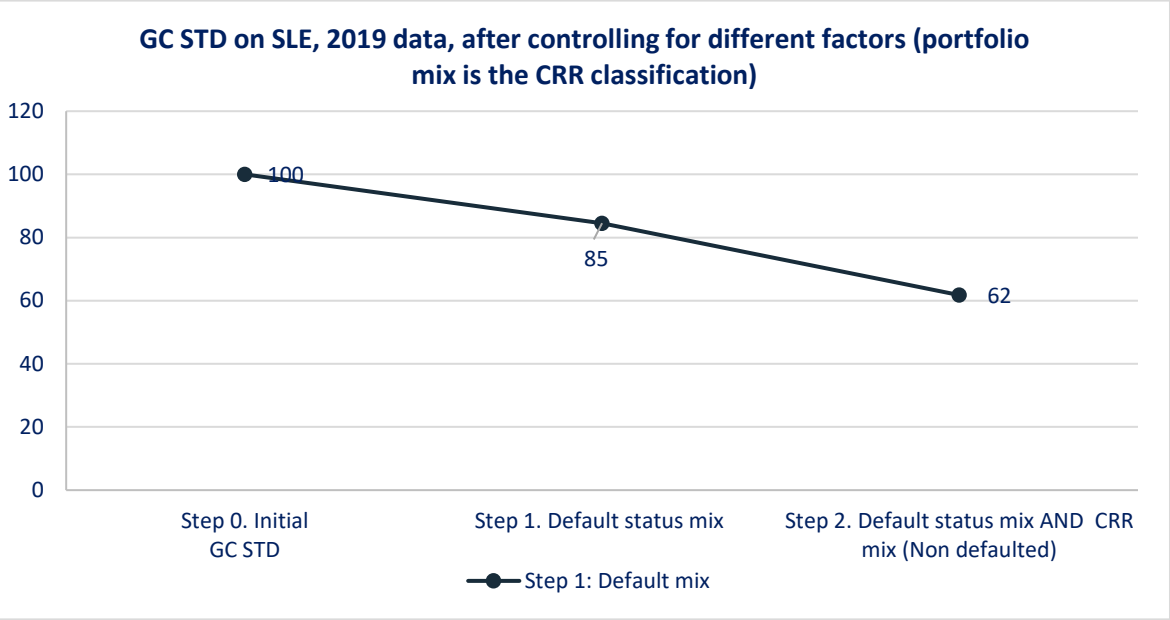
3.5 Top-down analysis applied to the SLE portfolio

40. Leveraging on the top-down analysis provided in Section 2, the EBA ran the analysis on the SLE, using three different breakdowns:

a. (Step 1) Default split: the exposures split according to their defaulted status (defaulted versus non-defaulted). The exposure values of the defaulted SLE exposures represent 2.5% of the total SLE exposure value for all the institutions. To determine the impact of the default split, this share is commonly transferred to the institutions' portfolios, while the GC (in percentage) applied to this exposure share is that of the institution (or the benchmark-median if the GC of the bank if not present and/or 0). The default part of the portfolios has not been split in step 2 and has been supposed to be always 2.5% for all the banks.

b. (Step 2) CRR split: the non-defaulted exposures are split according to their type, using the CRR classification (project finance 28.3% (of the EAD), Object finance 10.5%, commodities finance 7.0%, real estate exposures 51.7%).[20]

Figure 8: Top-down analysis, using the CRR classification



Sample: 71 institutions (only institutions with SLE portfolio are kept).

41. The variability is normalised with the initial GC variability starting at 100. The initial standard deviation of the SLE portfolio is 49%. In the case where no GC is available for a specific sub portfolio/split (e.g. in the case where the institution is not investing in a specific type of risk exposures), the benchmark GC (median of the GCs reported from the others banks) for that type of

[20] The percentages do not add up to 100% but to the share of non-defaulted exposures, as the defaulted exposures are not further split.

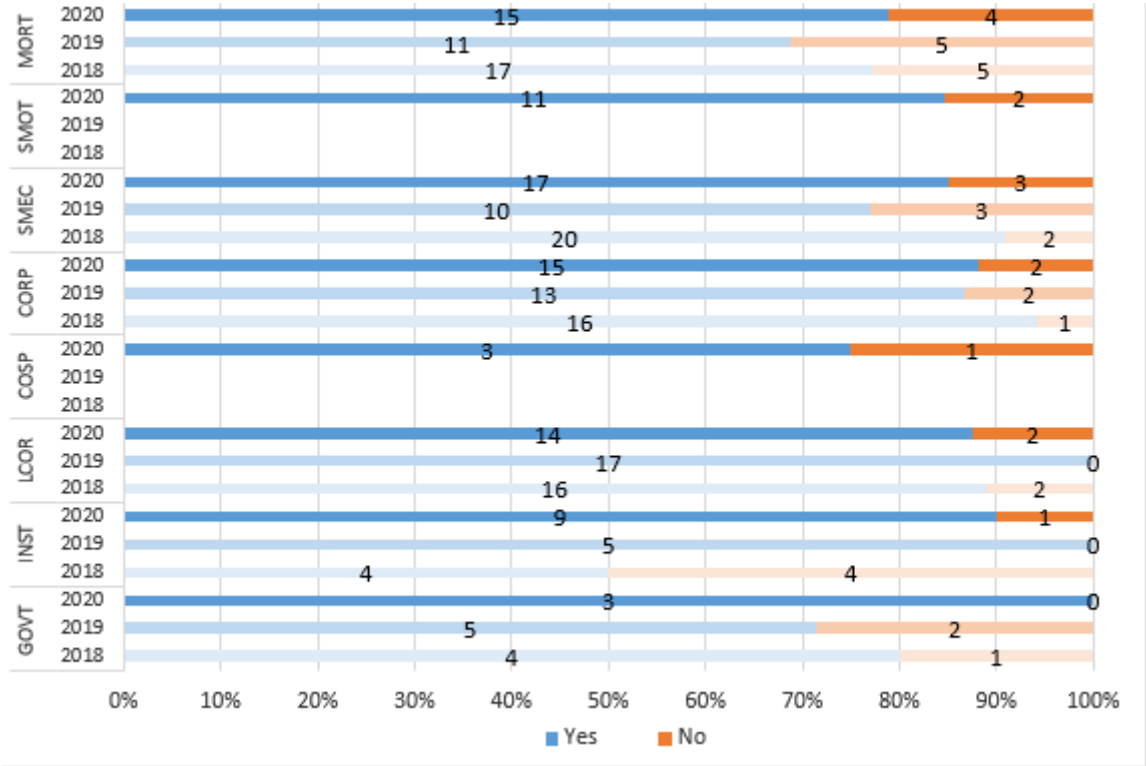
exposure is used to calculate the normalised total global charge. In step 1, the number of missing GC for the default exposures was 11 out of 71. In the normalisation process, a benchmark GC for the defaulted exposures of 601.5% (benchmark-median of the GCs for the defaulted exposures) has been used. In step 2, the missing GCs were 126 (35% of the GCs computed for this split).

4. Qualitative assessment of the variability

4.1 Main findings from CA assessments based on supervisory benchmarks

42. Article 78(4) of the CRD requires CAs to make an assessment where institutions diverge significantly from the majority of their peers or where there is little commonality in approach, leading to a wide variance in results. In these cases, the CAs should investigate the reasons and take corrective action if the institution's approach leads to an underestimation of own funds requirements that is not attributable to differences in the underlying risks. In order to facilitate the transfer of the information gathered in these assessments from the CAs to the EBA, the EBA issued a questionnaire to the CAs, which had to be completed for each institution participating in the SVB exercise. The EBA received the responses for 100 institutions.

Figure 9: Have the CA monitoring activities (ongoing or on-site) of the internal models identified the most relevant possible negative deviations not justified?



43. Overall, the results are in line with the observations of the 2019 SVB:

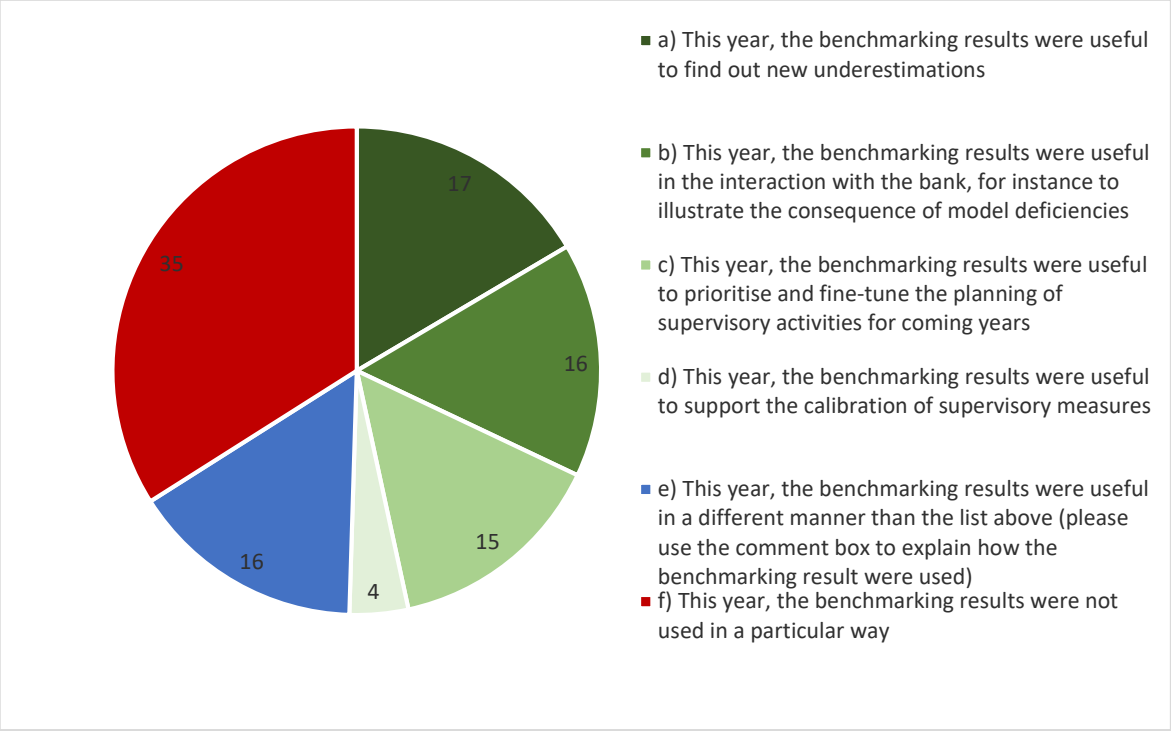
a. Supervisors generally deem the institutions' level of RWAs to be adequate, the adequacy of RWA levels cannot be assessed from the SVB results only.

b. Deficiencies spotted by supervisors are spread evenly between LDPs and HDPs, and rather relate to the calibration of risk parameters (although other reasons are observed as well). The latter is expected, since considerable regulatory effort has been put in place to clarify the rules related to the risk quantification.

c. The number of unjustified negative deviations from the benchmarks (i.e. underestimation of own funds requirements) is decreasing over time, as is the proportion of previously unidentified negative deviations (Figure 9). This shows that CAs are increasingly picking up on more and more issues and gaining in efficiency.

44. Supervisors have been asked in addition on the use of the benchmarking results for any supervisory action planned. One third of the respondents (Figure 10) confirmed that the benchmarking results of the 2020 exercise are not being used in a particular way.

Figure 10: Are any actions planned by the CA following the SVB results?



45. This observation may be due to various reasons. First of all, due to the IRB roadmap implementation, and also the ECB TRIM project, nearly all banks need to change their IRB models materially. Thus, it was not necessary to take actions on the IRB models currently under revision. Also, the Covid-19 crisis may have had an impact on its use, as the data used for the 2020 exercise may not be representative of the current state of internal models anymore. Finally, in cases where the supervisor did not find any significant deficiencies, it would also not result in any further use of the benchmarking results.

EUROPEAN BANKING AUTHORITY

Tour Europlaza, 20 avenue André Prothin CS 30154
92927 Paris La Défense CEDEX, FRANCE

Tel. +33 1 86 52 70 00

E-mail: info@eba.europa.eu

https://eba.europa.eu