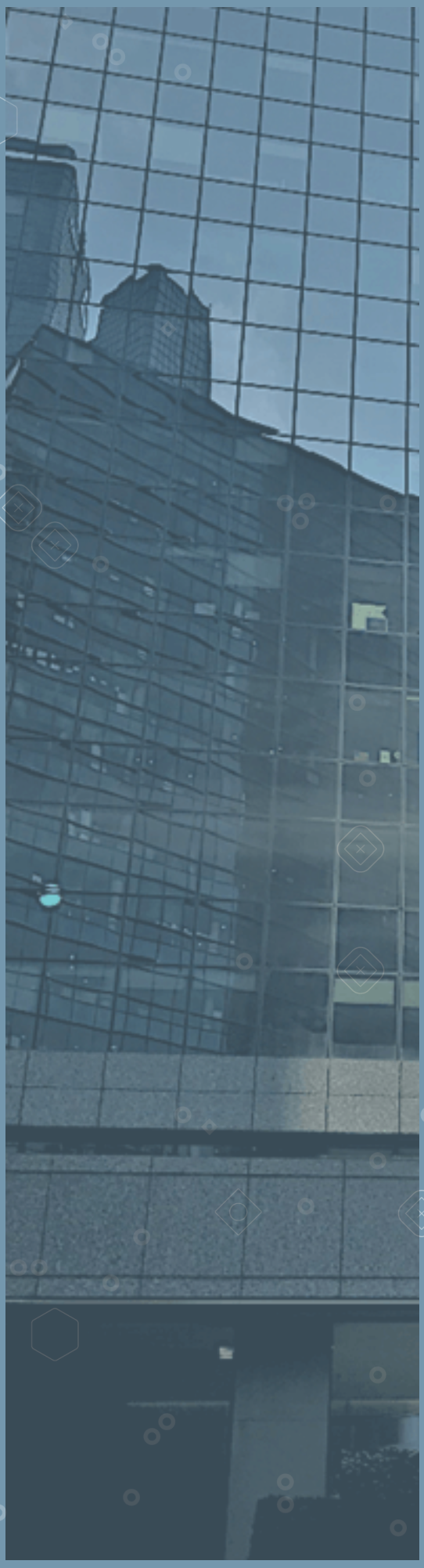
European Banking Authority



EBA REPORT RESULTS FROM THE 2025 MARKET RISK BENCHMARKING EXERCISE – PART 2 - FRTB ASA

EBA/REP/2026/14 June 2026

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Abbreviations

ASA	alternative standardised approach
CA	competent authority
CDS	credit default swap
CO	Commodities
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
CS	credit spread
CS01	credit spread value of 1 basis point changes
CTP	correlation trading portfolio
CV	coefficient of variation
EBA	European Banking Authority
DRC	default risk charge
EQ	Equity
EU	European Union
FRTB	fundamental review of the trading book
FX	Foreign exchange
HPE	hypothetical portfolio exercise
IMA	internal model approach
IMV	initial market valuation
IQD	interquartile dispersion
IR	Interest rates
IRC	incremental risk charge
IT	information technology
ITS	implementing technical standards
MR	market risk
OFR	Own Funds Requirements
Q&A	question and answer
RRAO	Residual risk add-on
RTS	regulatory technical standards
SVaR	stressed value at risk
SBM	sensitivities based method
VaR	value at risk

1. Executive Summary

1. The 2025 benchmarking exercise is the fourth year of the SBM sensitivities and Own Funds Requirements (OFR) data collection. It is also the second year that EBA collects ASA DRC and RRAO data. Therefore, as in 2024, given the volume of information to be shared and the importance of the ASA methodology within the FRTB implementation, a separate market risk benchmarking report is provided to expand the findings of the IMA benchmarking report.

2. The FRTB ASA data collection has proven highly valuable for assessing and understanding differences at a very granular level. However, due to the inherent complexity of representing sensitivities, a concise summary of the sensitivities data collection is not available. For this reason, this report focuses primarily on the analysis of the SBM OFR and provides illustrative examples of how sensitivities have been reported at the portfolio level.

3. Section 2.1 shows that the SBM OFR data submitted by the banks were quite complete. As in the past exercises, the SBM OFR dispersion is generally low for the majorities of the portfolios considered. This result is expected since standardised measures are supposed to be quite consistent (almost identical theoretically, apart from minor differences that may result from differences in market data and valuation approaches). On the other hand, there are portfolios where the IQD[1] is significant for the SBM measures (see Figure 3). For those portfolios, the implementation of SBM may be challenging for some banks or there may be degrees of freedom in the regulatory methodology.

4. In any case, the Table 1 below shows that the average IQD of the SBM OFR is decreasing: 8% in 2025, 11% on average in 2024, vs. 13% in 2023 and 16% in 2022, as a result of improvements in both the data submission and SBM implementation.

[1] IQD is defined as the absolute value of the ratio of the interquartile range, i.e. the difference between the third and first quartile, divided by the sum of these quartiles. In principle, the higher the IQD is, the higher the dispersion in the data.

Table 1: Average Interquartile dispersion by Asset Classes – SBM OFR

Average Interquartile dispersion by asset class - SBM OFR

	Interquartile range 2025 exercise	*Interquartile range 2024 exercise*	*Interquartile range 2023 exercise*	*Interquartile range 2022 exercise*
Equity	13%	12%	13%	17%
IR	9%	8%	8%	11%
FX	2%	2%	5%	2%
Commodity	4%	20%	20%	26%
Credit spreads	10%	14%	18%	22%

5. Finally, the level of detail in the SBM OFR submission allows the supervisors to clearly define which are the most frequently submitted asset class and risk class components of the OFR (see Figure 4, Figure 5 and Figure 7), and this allows them to identify areas of potential problems in the application of the standardised methodology.

6. Section 2.3 provides a more detailed representation of the different risk component of the SBM OFR. From there it is clear that as expected the IR component is the most consistently provided, and same level of inconsistency in the data submission is present for the (non-ACPR) CS and FX components.

7. Section 2.4 provides a decomposition of SBM OFR dispersion by Risk Class and Risk Component, showing how most of the dispersion is due to the delta component of the SBM methodology.

8. Section 2.5 presents examples of sensitivities for selected portfolios across different asset classes. Based on these sensitivities, Section 2.6 highlights three issues: FX sensitivity submissions, bucketing, and the aggregation formula. The FX component is the main driver of variability in the benchmarking OFR, stemming from an inconsistent interpretation of a benchmarking requirement rather than an implementation issue related to the FRTB ASA itself. To mitigate this, the IQD was recalculated excluding the FX component, as shown in Figure 3 and Table 2, demonstrating an even more consistent aggregated statistic than that reported in Table 1. Conversely, the bucketing issue is not systemic but typically arises from specific outlier submissions.

9. The last issue, the aggregation formula, is examined in section 2.7. The 2025 exercise marks the second year that the validation instruments/portfolio for the SBM methodology were introduced by the new Annex 10 of the benchmarking ITS. Unfortunately, even if the number of banks reporting on this requirement of Annex is increased substantially with respect to the 2024, still approximately only the 25% of the subjects in scope complied with these requirements. The results, showing IQDs equal to zero for most portfolios, indicate a generally positive outcome.

However, some institutions deviate from the majority, and these differences are not captured by the IQD because they fall at the distribution's extremes. Moreover, the apparent positive result is influenced by the small number of banks that participated, meaning no broad conclusions can be drawn about the overall application of the aggregation formula across the EU.

10. Chapter 2, close with a detailed analysis of two portfolio selected for their significant dispersion. Portfolio 5510 shows as just manipulating the underlying of an instrument in the portfolio, it is possible to substantially manipulate the OFR. Same conclusion applies to portfolio 4401, where a correct computation of the sensitivities, but a suspicious bucketing attribution influences substantially the OFR. While theoretical portfolios, this should be considered also for actual supervision practice where control of correct underlying instruments attribution and correct bucketing assignment are of paramount importance for supervisors.

11. The report continued in Chapter 3 and 4, with the two remaining parts of the FRTB ASA data collection: DRC and RRAO. These components seem to be computed in a sufficiently consistent manner, but due to the inconsistency in the data submission (i.e. some banks reported the same data, others did not, for the same portfolios), with the inevitable increase the dispersion of the total ASA OFR.

12. The report closes with assessment from the Competent Authorities on the ASA benchmarking exercise and the conclusion of the report.

2. FRTB-ASA - Sensitivities-Based Method (SBM)

13. Since the ITS 2022, the benchmarking exercise introduced the sensitivities-based method (SBM) component of the alternative standardised approach (ASA)/FRTB SA to the EBA Benchmarking exercise.

14. The ITS 2022 required banks to submit granular sensitivity data and aggregated OFR computed using SBM. The submission requirements remained the same for the 2023 exercise. In the 2024 exercise, the data collection was extended to the DRC and RRAO components of the ASA methodology. The same framework was applied to the 2025 data collection.

15. The high granularity of data submissions for the sensitivities has greatly enhanced the analysis conducted by CAs, providing valuable insights into banks' ASA implementations. While this level of detail currently presents challenges for concise graphical representation within the report, the focus is placed on more aggregated data to deliver clear visual summaries. Nonetheless, the report highlights key observations from the granular data, which are expected to offer further benefits at the sensitivities level.

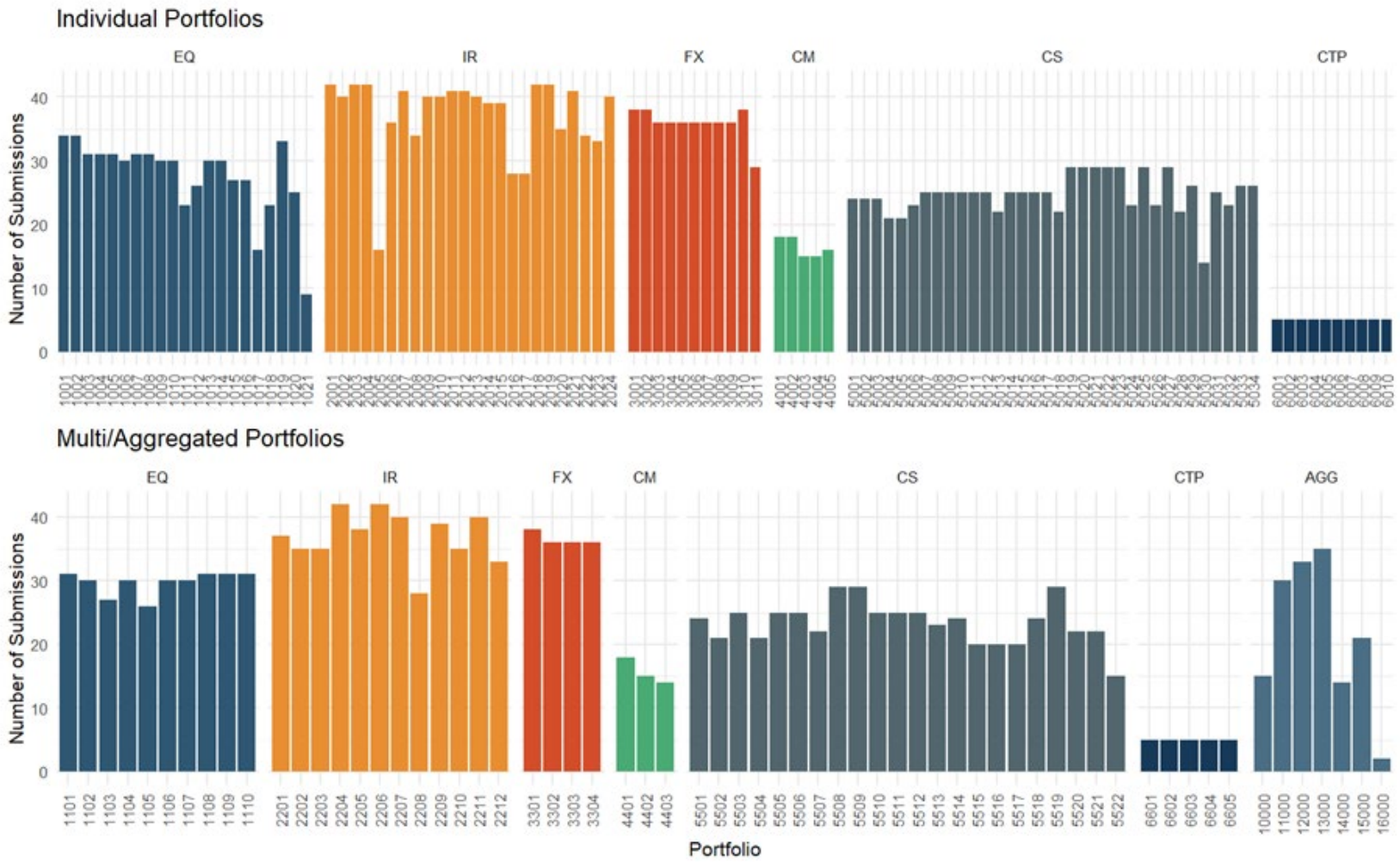
2.1 Assessment of completeness of SBM OFR submissions

16. Overall, the submission rate for new SBM OFR data is considered broadly adequate and fairly high. Figure 1 shows the total number of SBM OFR submissions per portfolio. Overall, it can be concluded that, for each portfolio, SBM OFR figures were reported whenever the traditional risk measures (e.g., VaR or SVaR) were also reported.

17. IR and FX tend to have highest number of submissions (>30), followed by EQ (>20) and finally CS (>15) and CM (>10), CTP has low submissions. The submission numbers are similar between single and multi-instrument portfolios.

18. Very few banks drive the discrepancy between the number of submissions for IMA and SBM. This is also confirmed in Figure 33, which presents the differences in the numbers of submissions between the SBM OFR and the IMA OFR by portfolio. Almost all institutions that have submitted data for IMA, have also submitted figures for SBM. However, there are also institutions that have submitted SBM OFRs but no IMA figures for certain portfolios. Figure 1 shows the number of SBM submissions for each portfolio.

Figure 1: SBM OFR total submissions by portfolio



2.2 SBM Variation within Portfolios

19. As for the other risk measures, dispersion is a very important factor to consider and monitor in the benchmarking process for OFR-SBM. Averaged statistics of dispersion can be seen in Table 1, while detailed figures for SBM OFR, such as benchmarking of the sample, quantiles of the distribution and IQD figures by portfolios, are reported in Table 7.

20. The aggregated result of Table 1, can be split by single and multiple assets portfolios, a new specification of the 2025 benchmarking exercise, as reported in Table 2. In the same table it is possible to clearly see the impact of the benchmarking-related issue of the FX-risk component, as described in the executive summary, on the dispersion of the OFR.

Table 2: Average Interquartile dispersion by Asset Classes, Single and Multi-Assets instruments, filtered and unfiltered by FX component – SBM OFR

asset_class	IQD_Sin	IQD_Mul	IQD (FX filtering)_Single	IQD (FX filtering)_Multi
EQ	0.17	0.06	0.13	0.06
IR	0.10	0.12	0.03	0.03
FX	0.04	0.03	0.04	0.03
CM	0.05	0.24	0.03	0.24
CS	0.06	0.19	0.03	0.08
CTP	0.15	0.63	0.15	0.63
AGG	NA	0.10	NA	0.10

21. Figure 2 illustrates the variation of SBM-OFR by portfolios, where outliers are highlighted by applying the EBA market risk outlier definition[2] (median +/- two times truncated standard deviation).

[2] EBA Outliers are defined as values outside the interval [ex − 2 · TSD, ex + 2 · TSD]. Where "ex" is the median of portfolio-OFRs., and TSD (truncated standard deviation) is the standard deviation of the portfolio-OFRs between the 5-th and the 95-th percentile.

22. Of course, other definitions of outliers are possible. For instance, the industry applies a simpler outlier definition[3] in its benchmarking exercise (see Figure 34). Alternatively, the Median Absolute Deviation, i.e., MAD[4] concept could be applied (see Figure 35) or the traditional boxplot outlier definition[5] (see Figure 36).

23. To achieve a harmonious appearance, all portfolio-OFRs are standardised by the respective portfolio median, and the ordinate is log-2-transformed. In addition, the standardised OFR are top-coded at 1,600%. In Figure 2, Figure 34 and Figure 35, the cyan bars represent the standardised Interquartile Range of the respective portfolio, i.e. the distance between the ratio of the respective portfolio's first quartile to its median and the ratio of the third quartile to the portfolio's median. In all figures only portfolios are included for which at least 10 OFR observations are available.

[3] (50%-150% outlier definition) - Industry outliers are defined as values outside the interval [0.5 · ex, 1.5 · ex], where ex is the median of portfolio-OFRs.

[4] Median Absolute Deviation (MAD) defines outliers as values outside the interval [ex − 2 ·MAD, ex + 2 ·MAD], where MAD is the Median Absolute Deviation, i.e., MAD = median(|xi − ex|), where xi are the OFR observations of the respective portfolio and ex is their median.

[5] Outliers are defined as values outside the interval [Q25 − 1.5 · IQR, Q75 + 1.5 · IQR]. IQR is the Interquartile Range, i.e., IQR = Q75 − Q25.

Figure 2: SBM OFR variation within portfolios (EBA outliers' definition)

24. Figure 2 shows that for about half of the portfolios the reported OFR values are concentrated around the respective median. However, there are also several portfolios where a large dispersion is apparent, often in the form of clusters of observations.

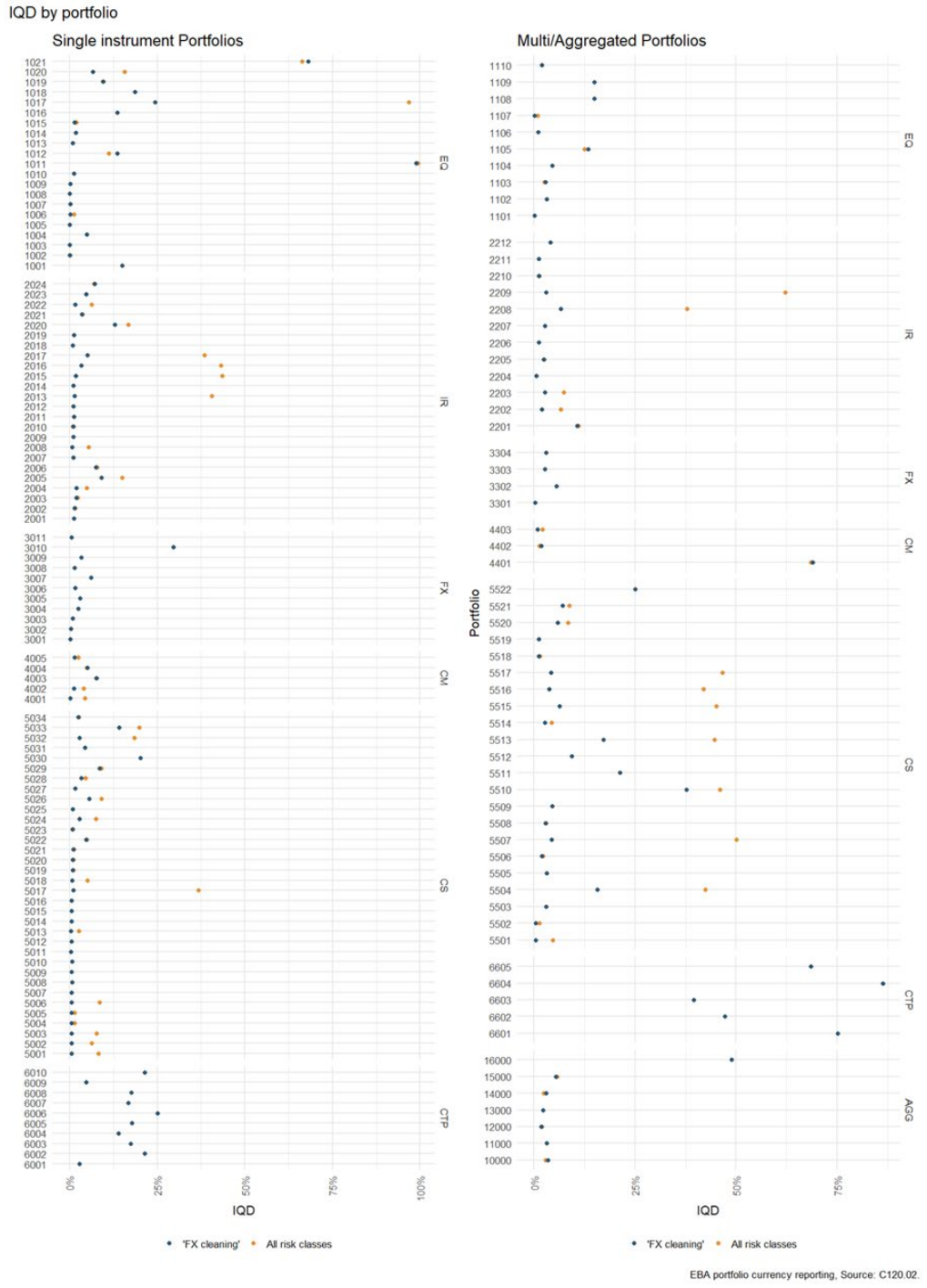
25. Figure 37, Figure 38, Figure 39, Figure 40, and Figure 41 illustrate the variations of SBM OFR components attributable to different risk classes, where each risk class portfolio with less than 5 observations have been excluded in the representation. Apparently, large dispersion is persistent even on the more granular risk-class level.

26. Figure 42[6] and Figure 43 compares the IQDs of SBM OFR and the VaR by portfolio. As anticipated with a standardised approach, the IQDs of VaR are higher compared to those of SBM OFR for numerous portfolios.

27. Figure 3 presents the IQD ratio for each portfolio included in the exercise, computed both across all OFR Risk Classes and after excluding the FX asset class. The impact of the FX risk data component is discussed in greater detail in Sections 2.5 and 2.6. In summary, heterogeneity in banks' reporting practices related to FX risk leads to an artificial inflation of the IQD for certain portfolios. Consequently, excluding the FX component provides a more accurate representation of the underlying portfolio dispersion observed in the exercise. This filtering approach allows for the identification of portfolios where dispersion is predominantly driven by non-FX risk factors, thereby earmarking them as priority candidates for a more granular analysis of dispersion drivers.

[6] This comparison can be seen more clearly, when split by asset classes, as shown in Figure 42 - Figure 46.

Figure 3: SBM OFR variation within portfolios: Interquartile Dispersion (IQD)



2.3 Comparison of SBM OFR by portfolio across risk class/component

28. Aside from the dispersion of the portfolio OFR, as presented in the previous section, the collected data allows the EBA and the supervisors to analyse the actual composition of the OFR, splitting each instrument and portfolio by the risk class and components (Delta, Curvature, Vega). In this context, it should be noted that under the SBM, total OFR are calculated as the simple sum of OFR across the relevant risk classes and components.

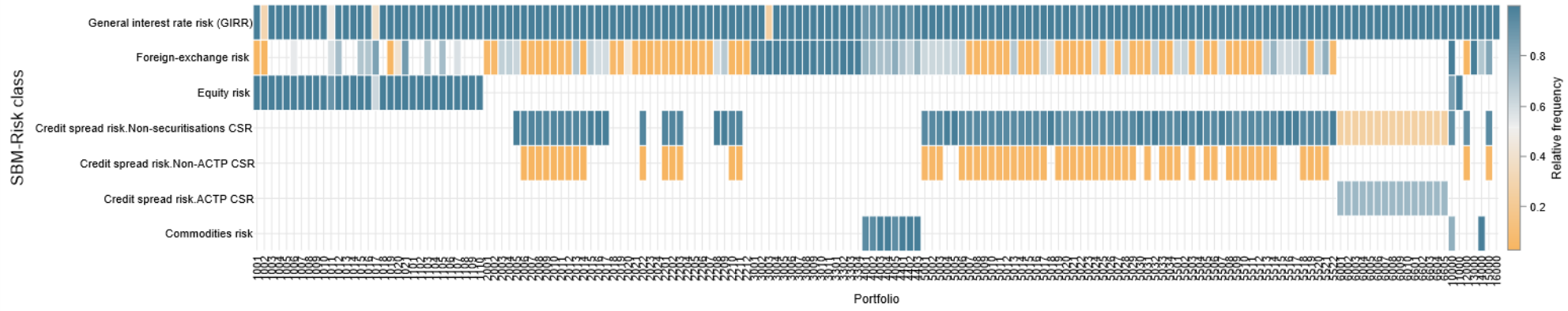
29. Looking at single portfolios, it appears that the reported risk classes are to some degree heterogeneous across submissions, and this possibly reflects different interpretations of the ASA rules for modelling of these instruments.

30. This is shown in Figure 4, where the frequency of SBM submission by risk classes relative to the total number of submissions per portfolio is shown. The plot shows the relative frequency of banks who reported a non-zero figure in each risk class for the given portfolio with respect to the total number of submissions.

31. Most banks reported values in the same risk category in line with the expectation according to the asset class of the portfolio (e.g., for EQ portfolios, EQ risk expected). Nonetheless, for some EQ portfolios, not all banks submitted an EQ risk component. Interest rate risk is present across all portfolios with many banks submitting OFR relating to interest rate risk for all portfolios.

32. The plot in Figure 4 does not necessarily allow one to conclude whether deviating submissions are wrong but identifies portfolios where bank-specific investigations are meaningful.

Figure 4: Frequency of SBM risk classes relative to the total number of submissions per portfolio

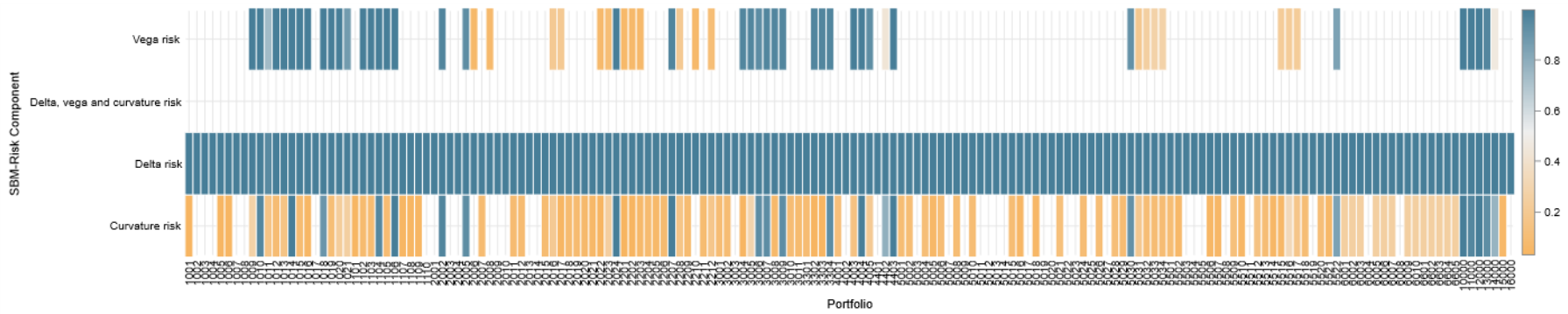


33. The frequency analysis was also carried out on ASA component level, i.e. Delta, Vega and Curvature. Figure 5 presents the frequency of SBM risk components relative to total number of submissions per portfolio.

34. Naturally, the majority of banks reported values within the same risk component. Additionally, delta risk was reported by all banks across nearly all portfolios, but differences are recognisable with respect to the other risk components.

35. The chart in Figure 5 does not immediately allow for the conclusion of whether deviating submissions are wrong but indicates portfolios where bank specific investigations are meaningful. Justified deviations may result from the use of methodological alternatives available to banks after supervisory approval (e.g., the inclusion of linear instruments in Curvature calculation).

Figure 5: Frequency of SBM risk component relative to the total number of submissions per portfolio



36. An overlap of these two previous analyses can be seen in Figure 49, where the frequency of SBM risk component within SBM risk classes relative to the total number of submissions per portfolio is represented.

37. Within interest rate asset class, delta risk is reported for nearly all portfolios, while only in some cases additionally Vega and Curvature risk are reported. From this analysis we can see that within the EQ asst class, some banks reported risk components for interest rate risk.

38. Most banks reported values in the same risk category in line with expectations (e.g., for EQ Portfolios, Delta-EQ risk is expected).

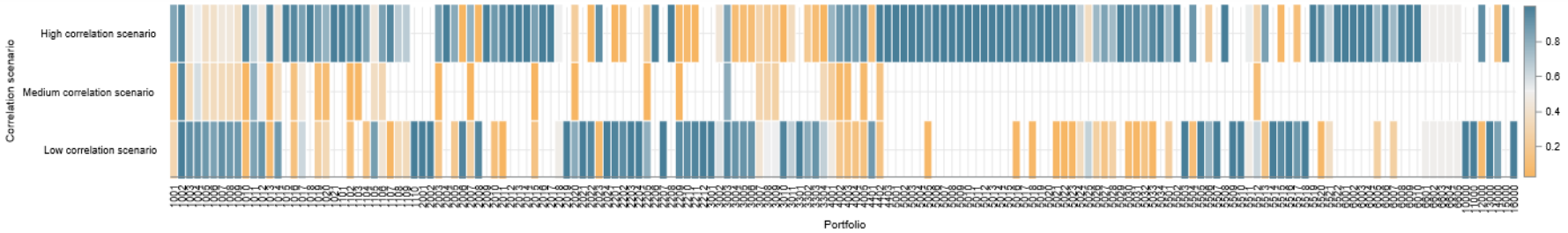
39. Additional FX components for some portfolios (2001 and 2005-2009, EUR IR) as mentioned above fall within Delta risk.

40. The data submitted allow the EBA and the supervisor to understand, for each portfolio, which scenario is the one that maximises the SBM-OFR, and hence is the relevant scenario to determine the OFR. The conclusions drawn from the data is, that the relevant scenario varies across the banks.

41. This is represented in Figure 6. For most portfolios, the high or low correlation scenario leads to the highest OFR. Very rarely the medium correlation scenario yields the highest OFR. For none of the portfolios the same scenario is chosen across all banks. Due to the simplicity of the calculation, it can be expected that the implementation of the correlation scenario logic is not a driver of variability. Instead, the fact that differing correlation scenarios are observed for the same portfolio may result from differences in the portfolio's interpretation, the risk classes and components considered, or the regulatory buckets that risk factors that have been allocated.

42. Nonetheless, as shown in the Figure 50 – where the median OFR per correlation scenario is represented - only in some portfolios there is a significant difference in OFR with respect to scenario. Therefore, the impact of correlation scenarios is limited for submitted median OFR in most cases. It should be noted that the impact of the correlation scenario follows the design of the EBA hypothetical portfolio and is not indicative of impacts that can be observed for real trading portfolios.

Figure 6: Relative frequency of OFR relevant scenario



2.4 Decomposition of SBM OFR Dispersion by Risk Class and Risk Component

43. This section presents a simplified attribution analysis of the observed dispersion in SBM OFR. The objective is to identify which combinations of risk classes (such as interest rate, credit spread, equity, commodity, and foreign exchange) and risk types (delta, vega, curvature) contribute most significantly to differences in OFR outcomes across institutions.

44. For each institution, the total OFR is decomposed into its constituent risk class and risk type components. Dispersion across institutions is measured using the IQD. To attribute the overall IQD (refer to Figure 3) to individual risk class and risk type pairs, the analysis computes the difference between the seventy-fifth and twenty-fifth percentiles for each component and risk type pair, and expresses each pair's contribution as a share of the total interquartile difference.

Figure 7: Relative Contribution of Risk Class and Component to SBM Dispersion (Multi-Instrument Portfolio)

45. The figure (Figure 7) shows that, across portfolios, the delta component is typically the largest contributor to overall dispersion. For most portfolios, the risk class driving variability matches the asset class—equity risk in equity portfolios, commodity risk in commodity portfolios. Notable exceptions are interest rate and credit spread portfolios, where both general interest

rate risk and credit spread risk for non-securitisation exposures contribute significantly. While vega and curvature components add to dispersion in portfolios with options, their impact is generally smaller and relevant only in portfolios designed to test these risk types.

46. This approach enables supervisors to pinpoint the risk class and risk type combinations that are the primary drivers of variability in own funds requirements across banks. For those combinations with particularly high contributions to dispersion, further investigation can be undertaken by examining the underlying sensitivities (refer to section 2.5, 2.6 and 2.8).

47. It should be noted that the attribution analysis is subject to certain limitations. The summation of percentiles across risk class component pairs serves as a proxy and may not exactly match the percentile of the total sum.

2.5 Sensitivities of SBM OFR by portfolio across risk class/component

48. Even if only an aggregated representation of the sensitivities submitted is not provided, it is nonetheless possible to make a series of observations on the same specific portfolios, which could be considered sufficiently general, and provide some useful guidance for banks and competent authorities.

49. The 2025 exercise provides the submission of two sets of sensitivities, one at the IMV submission, and one at Risk measures submissions. The observations provided here reflects the sensitivities provided by the banks at Risk Measures submission reference date, which are generally of better quality (more homogenous results) than the sensitivities observed at the IMV references dates; this means that on average, the control and resubmission of the data during the exercise was beneficial for the better understanding and representation of the data.

50. In the following, a series of observations, for low dispersion portfolios and high dispersion portfolios will be provided, separately by assets classes, with particular attention to high IQD OFR portfolios. It should be recalled that the aggregated representations of all sensitivities were reported by EBA to the competent authorities, which should pay great attention to them, especially in the cases where the bank report sensitivities very divergent from the benchmark observed.

2.5.1 Equity portfolios sensitivities submission

51. In the following, we will provide some observation for the sensitivities provided for portfolio 1010 and 1014.

52. Portfolio 1107 – is composed of three futures (instruments 106 – 107 – 108). IQD of this portfolio is extremely low (1% - ASA OFR).

53. In Figure 8 we can see that the sensitivities provided are quite homogenous. Equity delta spot sensitivities and Equity delta repo are between 0% and 8% IQD. IR sensitivities are also fairly aligned. Significant dispersion is reported for FX delta, but with limited impact on the overall dispersion for SBM OFR in this portfolio.

54. On the contrary, for portfolio 1019 (Figure 9), the dispersion in SBM OFR is slightly higher (7% IQD). The portfolio is composed solely of an option on EURO STOXX 50 (instrument 119).

55. It should be noted that on average the Equity delta sensitivity is convergent, especially for banks that decided to opt to represent the index with a single index sensitivity in bucket 12 (3% IQD); the banks that look through the index on the single constituents, provided generally more dispersed results. The different approach concerning the index implies some level of dispersion in OFR.

Figure 8: Portfolio 1107 – Sensitivities snapshot

							Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	Equity	1107	106	EQ_D_REPO	8	[All]	595	849	675	68	77	10.02%	24	595	607	613	666	721	723	849	303	60	1,271	8%
C 120.01	Equity	1107	106	EQ_D_SPOT	8	[All]	-38,860	-37,142	-37,667	370	59	0.98%	31	-38,312	-38,155	-37,654	-37,527	-37,527	-37,460	-37,205	2,678	-42,884	-32,171	0%
C 120.01	Equity	1107	106	FX_D	GBP	[All]	-38,145	37,744	-6,196	24,681	7,440	398.33%	17	-38,145	-37,684	-31,855	-2,817	929	34,781	37,744	24,681	-52,179	46,545	106%
C 120.01	Equity	1107	106	GIRR_D	GBP	[All]	-1,118	-440	-687	141	75	20.54%	27	-1,005	-822	-720	-689	-603	-583	-545	348	-1,385	7	9%
C 120.01	Equity	1107	107	EQ_D_REPO	8	[All]	3,925	5,440	4,566	275	13	6.03%	24	3,993	4,545	4,570	4,581	4,595	4,600	4,639	1,019	2,543	6,620	0%
C 120.01	Equity	1107	107	EQ_D_SPOT	8	[All]	-239,595	-237,014	-238,771	599	95	0.25%	31	-239,565	-239,556	-238,956	-238,898	-238,765	-238,031	-237,645	1,032	-240,963	-236,833	0%
C 120.01	Equity	1107	107	GIRR_D	EUR	[All]	-7,290	-3,285	-4,529	681	59	15.03%	28	-4,685	-4,643	-4,615	-4,574	-4,478	-3,862	-3,522	1,907	-8,388	-760	2%
C 120.01	Equity	1107	108	EQ_D_REPO	8	[All]	2,604	3,546	3,029	180	8	5.94%	23	2,627	2,825	3,032	3,040	3,048	3,124	3,347	690	1,659	4,420	0%
C 120.01	Equity	1107	108	EQ_D_SPOT	8	[All]	-158,983	-157,974	-158,502	267	40	0.17%	31	-158,964	-158,956	-158,556	-158,518	-158,464	-158,063	-158,009	331	-159,180	-157,855	0%
C 120.01	Equity	1107	108	GIRR_D	EUR	[All]	-3,100	-2,180	-2,940	220	41	7.49%	28	-3,081	-3,081	-3,061	-3,020	-2,982	-2,576	-2,562	453	-3,926	-2,115	1%

Figure 9: Portfolio 1019 – Sensitivities snapshot

							Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	Equity	1019	119	EQ_CD	12	[All]	-479,486	-323,141	-395,413	42,951	34,403	10.86%	15	-479,486	-439,327	-430,532	-389,971	-361,760	-353,320	-323,141	95,655	-581,282	-198,661	9%
C 120.01	Equity	1019	119	EQ_CD	2	[All]	-9,577	-3,699	-6,098	2,656	833	43.55%	6	-9,577	-9,577	-8,315	-6,424	-4,369	-3,699	-3,699	8,998	-24,419	11,572	31%
C 120.01	Equity	1019	119	EQ_CD	5	[All]	-78,953	25,967	-28,383	23,858	7,727	84.06%	17	-78,953	-63,337	-33,830	-25,880	-19,243	-8,842	25,967	54,818	-135,517	83,757	27%
C 120.01	Equity	1019	119	EQ_CD	6	[All]	-67,805	37,118	-31,503	25,125	13,575	79.75%	17	-67,805	-61,250	-49,165	-33,641	-23,603	-5,244	37,118	46,228	-126,097	58,815	35%
C 120.01	Equity	1019	119	EQ_CD	7	[All]	-61,375	16,870	-22,870	20,508	8,888	89.67%	17	-61,375	-50,709	-31,964	-18,693	-13,407	-3,576	16,870	32,811	-84,315	46,929	41%
C 120.01	Equity	1019	119	EQ_CD	8	[All]	-257,961	-24,772	-152,778	63,927	38,926	41.84%	17	-257,961	-243,112	-180,997	-156,898	-109,169	-64,158	-24,772	139,933	-436,765	122,969	25%
C 120.01	Equity	1019	119	EQ_CU	10	[All]							3											
C 120.01	Equity	1019	119	EQ_CU	12	[All]	-366,745	-205,047	-288,440	45,759	47,463	15.86%	15	-366,745	-328,538	-327,030	-274,743	-261,450	-230,013	-205,047	272,515	-819,773	270,287	11%
C 120.01	Equity	1019	119	EQ_CU	2	[All]	-4,527	-26	-2,350	2,185	1,471	92.95%	6	-4,527	-4,527	-4,108	-3,582	-34	-26	-26	9,237	-22,057	14,893	98%
C 120.01	Equity	1019	119	EQ_CU	5	[All]	-208,995	40,027	-22,009	53,117	10,917	241.35%	18	-208,995	-34,059	-26,325	-20,799	0	25,388	40,027	112,593	-245,984	204,386	100%
C 120.01	Equity	1019	119	EQ_CU	6	[All]	-173,299	35,772	-29,809	43,813	18,267	146.98%	18	-173,299	-58,005	-36,398	-26,218	-2,803	4,124	35,772	105,701	-237,621	185,184	86%
C 120.01	Equity	1019	119	EQ_CU	7	[All]	-92,595	16,323	-22,859	30,259	9,788	132.37%	18	-92,595	-76,957	-28,744	-14,439	-8,788	16,227	16,323	52,706	-119,851	90,974	53%
C 120.01	Equity	1019	119	EQ_CU	8	[All]	-480,027	165,152	-106,276	133,042	43,452	125.18%	18	-480,027	-168,255	-149,825	-98,914	-72,218	116,346	165,152	318,334	-735,582	537,754	35%
C 120.01	Equity	1019	119	EQ_D_REPO	12	[All]	-173,136	68,599	-41,443	61,734	1,796	148.96%	14	-173,136	-81,596	-56,648	-53,558	-53,057	53,200	68,599	61,734	-177,026	69,911	3%
C 120.01	Equity	1019	119	EQ_D_REPO	2	[All]	-1,521	-750	-971	317	129	32.64%	5	-1,521	-1,521	-921	-895	-766	-750	-750	317	-1,529	-261	9%
C 120.01	Equity	1019	119	EQ_D_REPO	5	[All]	-27,768	-10,627	-16,525	4,713	1,441	28.52%	11	-27,768	-24,060	-17,054	-15,285	-14,171	-11,715	-10,627	6,732	-28,748	-1,822	9%
C 120.01	Equity	1019	119	EQ_D_REPO	6	[All]	-18,958	-3,666	-10,674	4,223	1,694	39.56%	11	-18,958	-16,186	-12,490	-11,137	-8,345	-4,668	-3,666	5,161	-21,458	-816	20%
C 120.01	Equity	1019	119	EQ_D_REPO	7	[All]	-10,832	44	-5,745	3,039	1,128	52.90%	11	-10,832	-10,192	-7,170	-5,299	-4,316	-2,127	44	4,034	-13,367	2,769	25%
C 120.01	Equity	1019	119	EQ_D_REPO	8	[All]	-34,800	-13,083	-21,542	5,859	2,437	27.20%	11	-34,800	-30,783	-21,895	-20,661	-18,058	-15,316	-13,083	8,599	-37,859	-3,463	10%
C 120.01	Equity	1019	119	EQ_D_SPOT	10	[All]							3											
C 120.01	Equity	1019	119	EQ_D_SPOT	12	[All]	2,746,867	3,572,491	3,114,010	295,295	335,560	9.48%	15	2,746,867	2,763,560	2,790,214	3,155,205	3,297,222	3,529,646	3,572,491	332,581	2,490,042	3,820,368	8%
C 120.01	Equity	1019	119	EQ_D_SPOT	2	[All]	46,864	55,076	49,917	4,027	226	8.07%	6	46,864	46,864	47,062	50,291	53,491	55,076	55,076	8,253	33,785	66,797	6%
C 120.01	Equity	1019	119	EQ_D_SPOT	5	[All]	663,878	1,127,121	877,010	123,041	62,954	14.03%	19	663,878	737,840	796,397	853,299	920,254	1,095,541	1,127,121	178,989	495,321	1,211,277	7%
C 120.01	Equity	1019	119	EQ_D_SPOT	6	[All]	263,481	848,960	611,990	148,851	83,496	24.32%	19	263,481	354,177	579,850	602,498	706,626	830,646	848,960	214,091	174,316	1,030,680	10%
C 120.01	Equity	1019	119	EQ_D_SPOT	7	[All]	223,329	786,330	351,687	183,355	36,568	52.14%	19	223,329	224,869	228,253	263,905	391,649	778,621	786,330	288,070	-312,234	840,044	26%
C 120.01	Equity	1019	119	EQ_D_SPOT	8	[All]	930,569	1,426,834	1,152,642	136,314	72,551	11.83%	19	930,569	936,262	1,083,465	1,141,646	1,234,876	1,408,021	1,426,834	194,939	751,767	1,531,525	7%
C 120.01	Equity	1019	119	EQ_V	12	[All]	42,550	54,000	49,851	2,908	1,515	5.83%	23	42,599	45,437	49,099	50,269	51,992	52,376	53,220	4,022	42,224	58,314	3%
C 120.01	Equity	1019	119	EQ_V	5	[All]	11,169	23,021	15,539	4,378	1,612	28.18%	7	11,169	11,169	13,114	14,086	18,420	23,021	23,021	348,023	-681,960	710,132	17%
C 120.01	Equity	1019	119	EQ_V	6	[All]	8,953	18,716	12,087	3,790	2,024	31.36%	7	8,953	8,953	9,138	12,663	13,575	18,716	18,716	16,612	-20,561	45,887	20%
C 120.01	Equity	1019	119	EQ_V	7	[All]	3,386	5,225	4,238	863	792	20.36%	7	3,386	3,386	3,420	4,816	5,003	5,225	5,225	248,192	-491,568	501,200	19%
C 120.01	Equity	1019	119	EQ_V	8	[All]	16,435	35,399	21,660	7,083	1,360	32.70%	7	16,435	16,435	17,979	18,954	23,010	35,399	35,399	345,747	-672,540	710,448	12%
C 120.01	Equity	1019	119	GIRR_CD	EUR	[All]	-3	2	-1	2	1	201.30%	7	-3	-3	-3	-2	2	2	2	2	-7	2	352%
C 120.01	Equity	1019	119	GIRR_CU	EUR	[All]	-3	2	-1	2	0	122.09%	7	-3	-3	-2	-2	-1	2	2	2	-6	2	59%
C 120.01	Equity	1019	119	GIRR_D	EUR	[All]	38,062	62,642	52,068	4,908	1,457	9.43%	32	43,368	43,968	51,044	52,711	53,483	56,258	61,552	9,917	32,876	72,546	2%

2.5.2 IR portfolios sensitivities submission

56. In the following, we will provide some observation for the sensitivities provided for portfolio 2013 and 2205.

57. Portfolio 2205 – is composed of 2 IRS (instruments 201 –219). IQD of this portfolio is extremely low (2% - SBM OFR).

58. From the figures (Figure 10) we can see (only for instrument 201 and 219) that the most relevant interest rate delta sensitivities are homogeneous (1%) for instruments 201 and for instrument 219). The rest of the dispersion comes from the presence of curvature components, which are considered only by a minority of the banks (4).

59. On the contrary, for portfolio 2013 (Figure 11), the SBM OFR is substantially higher (41% IQD). The portfolio is composed solely of an UK Gov Bond (instrument 213).

60. It should be noticed that on average the IR delta sensitivity is fairly convergent (1% IQD); but the credit spread component exhibits minor problem of bucketing, since a minority banks' submissions diverge from bucket 2 (in 2024 thus issue was more significant, which meant that in 2025 the banks aligned in their bucketing choice). The FX component was not also considered by 13 out of 41 providers of the data of this portfolio. The difference in the treatment the FX component, and the different bucketing choice are the cause of the OFR dispersion.

Figure 10: Portfolio 2205 – Sensitivities snapshot

							Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	Interest Rate	2205	201	GIRR_D	EUR	[All]	-39,015,000	-37,547,473	-38,403,497	408,053	393,842	1.06%	42	-38,943,875	-38,904,218	-38,840,240	-38,457,133	-38,052,640	-37,981,861	-37,835,074	1,059,343	-40,575,819	-36,338,447	1%
C 120.01	Interest Rate	2205	219	GIRR_D	EUR	[All]	42,656,396	43,849,000	43,188,171	435,495	329,537	1.01%	42	42,680,499	42,726,747	42,789,351	43,032,126	43,692,163	43,742,740	43,836,046	427,398	42,177,331	43,886,921	1%

Figure 11: Portfolio 2013 – Sensitivities snapshot (All main component on top, just CSR NON SEC Delta Debt on the bottom)

							Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	Interest Rate	2013	213	CSR_NON_SEC_D_DEBT	2	[All]	-7,206,436	-5,891,502	-6,123,671	233,524	104,736	3.81%	38	-6,450,400	-6,246,509	-6,155,582	-6,124,358	-6,004,142	-5,895,472	-5,894,037	581,344	-7,287,046	-4,961,670	1%
C 120.01	Interest Rate	2013	213	FX_D	GBP	[All]	141,074	1,387,306	981,665	215,448	537	21.95%	28	570,910	1,002,378	1,004,304	1,004,397	1,006,424	1,014,425	1,203,787	458,730	86,936	1,921,858	0%
C 120.01	Interest Rate	2013	213	GIRR_D	GBP	[All]	-6,160,954	-5,889,690	-6,003,081	97,617	57,156	1.63%	41	-6,160,483	-6,144,838	-6,098,546	-5,956,040	-5,921,106	-5,895,021	-5,894,037	108,759	-6,173,559	-5,738,522	1%

							Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	Interest Rate	2013	213	CSR_NON_SEC_D_DEBT	1	[All]							2											
C 120.01	Interest Rate	2013	213	CSR_NON_SEC_D_DEBT	2	[All]	-7,206,436	-5,891,502	-6,123,671	233,524	104,736	3.81%	38	-6,450,400	-6,246,509	-6,155,582	-6,124,358	-6,004,142	-5,895,472	-5,894,037	581,344	-7,287,046	-4,961,670	1%
C 120.01	Interest Rate	2013	213	CSR_NON_SEC_D_DEBT	3	[All]							1											

2.5.3 FX portfolios sensitivities submission

61. The FX asset class has a remarkably high level of consistency, with an average IQD for the asset class at 2%. Nonetheless, in the following, we will provide some observation for the sensitivities provided for portfolio 3003.

62. Portfolio 3303 – is composed of three Call option on EUR/USD (instruments 304 – 305 - 306). The IQD of this portfolio is close to the IQD of the asset class (3% - SBM OFR).

63. From Figure 12 we can see (for instrument 306 - ATM call - for simplicity) that the most relevant sensitivities, FX rate delta (0% IQD USD, 1% EUR), FX volatilities (IQD 8%), and USD and EUR IR delta are homogeneous (1% of IQD). It is noticeable how the submissions of these different SBM components for this instrument are much more consistent with respect the 2024 exercise.

Figure 12: Portfolio 3303 – Sensitivities snapshot (Exercise 2025 on top, 2024 on the bottom)

							Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	FX	3303	306	FX_CD	EUR	[All]	145,563	156,508	152,041	4,695	2,254	3.09%	5	145,563	145,563	148,781	152,000	155,301	156,508	156,508	59,876	32,247	271,753	2%
C 120.01	FX	3303	306	FX_CD	USD	[All]	16,335	33,475	25,277	4,530	3,845	17.92%	28	19,474	20,157	21,658	25,149	29,041	31,046	31,302	53,724	-82,299	132,598	15%
C 120.01	FX	3303	306	FX_CU	EUR	[All]	18,226	20,427	19,111	936	387	4.90%	5	18,226	18,226	18,508	19,000	19,713	20,427	20,427	33,279	-47,558	85,558	3%
C 120.01	FX	3303	306	FX_CU	USD	[All]	96,878	146,738	117,628	10,238	3,614	8.70%	29	106,866	107,498	112,113	115,625	119,131	133,058	136,481	16,998	81,629	149,620	3%
C 120.01	FX	3303	306	FX_D	EUR	[All]	-9,639,030	-9,251,000	-9,518,410	179,663	24,414	1.89%	5	-9,639,030	-9,639,030	-9,616,219	-9,590,203	-9,420,602	-9,251,000	-9,251,000	3,769,123	-17,128,450	-2,051,957	1%
C 120.01	FX	3303	306	FX_D	USD	[All]	8,396,119	9,405,733	8,509,799	190,152	31,322	2.23%	32	8,405,838	8,408,245	8,426,480	8,461,419	8,493,470	8,662,803	8,804,241	1,550,571	5,360,277	11,562,560	0%
C 120.01	FX	3303	306	FX_V	EUR_USD	[All]	-50,877	-33,654	-43,905	4,652	3,428	10.60%	24	-50,328	-50,328	-47,503	-44,506	-40,061	-38,816	-38,180	6,077	-56,660	-32,351	8%
C 120.01	FX	3303	306	GIRR_CD	EUR	[All]	-84	967	545	465	239	85.21%	5	-84	-84	202	488	889	967	967	57,577	-114,665	115,641	63%
C 120.01	FX	3303	306	GIRR_CD	USD	[All]	-396	497	-15	337	211	2192.78%	5	-396	-396	-223	-11	56	497	497	337	-686	664	167%
C 120.01	FX	3303	306	GIRR_CU	EUR	[All]	519	959	742	169	99	22.81%	6	519	519	648	697	836	959	959	12,056	-23,415	24,809	13%
C 120.01	FX	3303	306	GIRR_CU	USD	[All]	-414	94	-135	206	167	152.00%	6	-414	-414	-264	-149	70	94	94	206	-561	262	172%
C 120.01	FX	3303	306	GIRR_D	EUR	[All]	5,959,700	6,318,204	6,094,973	78,918	26,386	1.29%	35	5,967,302	5,994,602	6,062,096	6,070,261	6,124,076	6,194,439	6,260,664	2,201,093	1,668,075	10,472,447	1%
C 120.01	FX	3303	306	GIRR_D	USD	[All]	-5,619,245	-5,134,245	-5,338,685	90,206	48,400	1.69%	35	-5,514,888	-5,397,899	-5,387,856	-5,308,002	-5,286,219	-5,261,139	-5,170,923	1,566,368	-8,440,738	-2,175,266	1%
C 120.01	FX	3303	306	GIRR_D_CRO_EUR	USD	[All]	-6,084,000	5,170,923	-3,734,317	4,373,919	191,977	117.13%	7	-6,084,000	-6,084,000	-5,619,245	-5,285,388	-5,235,292	5,170,923	5,170,923	5,283,608	-15,852,605	5,281,829	4%
C 120.01	FX	3303	306	GIRR_D_CRO_USD	EUR	[All]	5,355,486	6,247,238	5,793,993	346,826	159,407	5.99%	19	5,355,486	5,392,883	5,407,613	6,025,235	6,070,105	6,155,109	6,247,238	358,685	5,307,864	6,742,605	6%

							Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	FX	3003	306	FX_CD	EUR	[All]	249,771	1,224,374	761,523	317,690	112,277	41.72%	6	249,771	249,771	652,782	782,438	877,336	1,224,374	1,224,374	317,690	147,058	1,417,818	15%
C 120.01	FX	3003	306	FX_CD	USD	[All]	-641,343	827,300	399,948	334,751	136,434	83.70%	29	-479,160	192,000	380,789	464,025	600,460	703,792	708,721	637,894	-811,762	1,739,813	22%
C 120.01	FX	3003	306	FX_CU	EUR	[All]	148,737	566,756	324,190	163,410	108,910	50.41%	6	148,737	148,737	207,036	261,491	382,474	566,756	566,756	895,408	-1,529,326	2,052,308	30%
C 120.01	FX	3003	306	FX_CU	USD	[All]	253,253	1,167,317	790,318	240,031	164,440	30.37%	30	385,738	508,323	667,959	723,222	1,036,376	1,142,157	1,144,461	547,619	-372,015	1,818,459	22%
C 120.01	FX	3003	306	FX_D	EUR	[All]	-21,617,640	11,460,065	-10,155,256	12,696,088	7,418,597	125.02%	6	-21,617,640	-21,617,640	-20,906,896	-13,843,671	-2,179,724	11,460,065	11,460,065	12,696,088	-39,235,846	11,548,504	81%
C 120.01	FX	3003	306	FX_D	USD	[All]	6,583,212	19,916,399	14,908,174	3,731,424	1,326,883	25.03%	33	6,595,502	11,978,495	12,944,813	13,225,170	18,795,084	19,817,174	19,886,409	5,174,554	2,876,063	23,574,278	18%
C 120.01	FX	3003	306	FX_V	EUR_USD	[All]	-570,674	-181,562	-419,769	117,922	35,850	28.09%	28	-568,085	-560,668	-549,580	-390,921	-357,645	-209,169	-189,391	108,746	-608,413	-173,429	21%
C 120.01	FX	3003	306	GIRR_CD	EUR	[All]	2,201	7,123	5,208	1,930	1,202	37.05%	6	2,201	2,201	4,501	5,211	6,294	7,123	7,123	353,295	-701,379	711,801	17%
C 120.01	FX	3003	306	GIRR_CD	USD	[All]	3,437	5,676	4,823	853	364	17.68%	6	3,437	3,437	4,742	4,845	5,312	5,676	5,676	2,083	680	9,010	6%
C 120.01	FX	3003	306	GIRR_CU	EUR	[All]	4,227	7,143	5,678	1,304	1,127	22.97%	7	4,227	4,227	4,453	4,854	6,708	7,143	7,143	210,338	-415,823	425,530	20%
C 120.01	FX	3003	306	GIRR_CU	USD	[All]	-10	5,152	3,240	1,721	1,060	53.13%	7	-10	-10	2,275	3,334	4,556	5,152	5,152	1,721	-108	6,777	33%
C 120.01	FX	3003	306	GIRR_D	EUR	[All]	418,400	13,301,767	8,799,109	4,104,721	957,568	46.65%	37	428,136	522,734	8,382,157	8,815,181	12,934,162	13,249,701	13,290,231	4,286,978	241,224	17,389,138	21%
C 120.01	FX	3003	306	GIRR_D	USD	[All]	-12,641,784	-3,954,405	-9,665,466	2,233,963	336,989	23.11%	34	-12,635,469	-12,532,275	-12,387,608	-8,442,405	-8,318,800	-8,113,302	-7,513,913	2,783,532	-14,009,469	-2,875,340	20%
C 120.01	FX	3003	306	GIRR_D_CRO_USD	EUR	[All]	3,953,992	13,460,689	10,480,247	2,657,772	3,268,474	25.36%	19	3,953,992	8,329,156	8,746,715	8,966,134	13,210,529	13,309,049	13,460,689	2,657,772	3,650,589	14,281,678	20%

2.5.4 Commodities portfolios sensitivities submission

64. In the following, we will provide some observation for the sensitivities provided for portfolio 4401. Portfolio 4401 – is composed of two call options on gold (instruments 401- 402). The IQD of this portfolio is the relatively high in the asset class (7% - SBM OFR – it was 57% in 2024) compared to the average of the commodity asset class.

65. From the Figure 13 we can see that main component “Commodity delta” are very consistent for both instruments in the portfolio (0% IQD). This is quite a significant improvement compared to the previous exercise. Nonetheless, some significant inconsistencies remain in the bucketing of those sensitivities. This can be seen in section 2.8 with an in-depth analysis of this portfolio.

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Figure 13: Portfolio 4401 – Sensitivities snapshot (Exercise 2025 on top, 2024 on the bottom)

							Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	Commodities	4401	401	CM_D	7	[All]	11,829,276	12,019,261	11,964,585	55,824	20,243	0.47%	18	11,829,276	11,838,275	11,961,737	11,976,853	11,997,960	12,014,922	12,019,261	138,066	11,700,722	12,252,985	0%
C 120.01	Commodities	4401	401	FX_D	USD	[All]	-1,103,340	2,242,436	1,752,603	1,074,923	53,297	61.33%	12	-1,103,340	-1,103,340	2,032,808	2,056,054	2,125,898	2,242,436	2,242,436	5,344,458	-8,632,863	12,744,971	2%
C 120.01	Commodities	4401	401	GIRR_D	EUR	[All]	-631	-37	-385	251	112	65.08%	5	-631	-631	-548	-465	-222	-37	-37	110,069	-220,603	219,673	42%
C 120.01	Commodities	4401	401	GIRR_D	USD	[All]	-320,413	1,334,695	410,740	760,278	261,616	185.10%	16	-320,413	-320,338	-275,594	-58,760	1,210,358	1,313,267	1,334,695	760,278	-1,579,316	1,461,797	159%
C 120.01	Commodities	4401	401	GIRR_D_CRO_USD	EUR	[All]	246,545	281,910	260,429	15,433	7,024	5.93%	5	246,545	246,545	249,605	252,666	271,252	281,910	281,910	117,220	18,227	487,105	4%
C 120.01	Commodities	4401	402	CM_D	7	[All]	-12,022,702	-11,944,862	-11,989,209	25,796	19,436	0.22%	18	-12,022,702	-12,018,837	-12,010,065	-11,985,523	-11,967,557	-11,946,835	-11,944,862	64,451	-12,114,426	-11,856,621	0%
C 120.01	Commodities	4401	402	FX_D	USD	[All]	-2,283,467	1,103,040	-1,747,909	1,076,292	153,753	61.58%	12	-2,283,467	-2,283,467	-2,129,840	-2,012,049	-1,936,593	1,103,040	1,103,040	5,337,821	-12,687,691	8,663,593	5%
C 120.01	Commodities	4401	402	GIRR_D	USD	[All]	-6,381,632	1,482,544	-2,071,385	3,828,085	872,991	184.81%	16	-6,381,632	-6,314,688	-6,262,829	587,672	1,335,848	1,438,782	1,482,544	3,828,085	-7,068,498	8,243,841	154%
C 120.01	Commodities	4401	402	GIRR_D_CRO_USD	EUR	[All]	-1,358,505	-1,287,956	-1,323,762	28,849	18,043	2.18%	5	-1,358,505	-1,358,505	-1,342,337	-1,322,418	-1,305,187	-1,287,956	-1,287,956	592,477	-2,507,372	-137,465	1%

							Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	Commodities	4001	401	CM_D	7	[All]	14,115,722	28,279,143	24,700,556	5,310,742	529,424	21.50%	16	14,115,722	14,118,181	21,181,650	27,360,332	28,101,425	28,225,714	28,279,143	9,477,330	8,405,672	46,314,991	14%
C 120.01	Commodities	4001	401	FX_D	USD	[All]	-14,118,176	1,181,683	-847,422	4,440,455	470,064	524.00%	12	-14,118,176	-815,682	-83,876	346,196	932,887	940,430	1,181,683	8,464,104	-16,582,012	17,274,404	120%
C 120.01	Commodities	4001	401	GIRR_D	EUR	[All]	-18,421	263	-4,603	9,214	239	200.20%	5	-18,421	-18,421	-9,318	-215	113	263	263	45,056	-90,327	89,896	102%
C 120.01	Commodities	4001	401	GIRR_D	USD	[All]	-144,284	3,836,839	1,777,686	1,602,752	1,274,085	90.16%	16	-144,284	-132,872	-77,869	2,244,200	3,237,286	3,585,822	3,836,839	1,602,752	-961,303	5,449,704	105%
C 120.01	Commodities	4001	402	CM_D	7	[All]	-21,211,642	-7,036,448	-16,263,566	6,168,722	601,213	37.93%	16	-21,211,642	-21,172,622	-21,076,980	-20,334,289	-7,059,863	-7,053,342	-7,036,448	7,215,406	-34,765,100	-5,903,477	50%
C 120.01	Commodities	4001	402	FX_D	USD	[All]	-767,986	7,053,340	355,214	2,263,746	446,733	637.29%	12	-767,986	-688,234	-671,806	-216,373	49,664	635,419	7,053,340	5,917,138	-12,050,648	11,617,903	116%
C 120.01	Commodities	4001	402	GIRR_D	EUR	[All]	167	66,880	19,824	31,683	5,082	159.82%	5	167	167	1,042	10,332	38,606	66,880	66,880	170,024	-329,717	350,381	95%
C 120.01	Commodities	4001	402	GIRR_D	USD	[All]	-12,849,576	448,758	-5,955,345	5,654,565	6,313,204	94.95%	16	-12,849,576	-12,764,925	-12,285,051	-6,274,541	276,980	435,068	448,758	5,654,565	-17,583,671	5,034,589	105%

2.5.5 Credit spread portfolios sensitivities submission

66. In the following, we will provide some observation for the sensitivities provide for portfolio 5516.

67. Portfolio 5516– is composed of a long Brazilian Gov Bond and a long CDS position (instruments 216- 505). The IQD of this portfolio is the highest in the asset class (42% - SBM OFR) compared to the average of the CS asset class.

68. From Figure 14 we can see that for the bond (instrument 216), the most relevant sensitivities are consistently reported. The IR delta sensitivity is consistently reported (IQD 3%), as well as the credit spread delta sensitivity (3% IQD). The FX delta component is represented in also very consistent (1% of IQD) but provided only by 12 institutions, compared to the 20 on CS delta.

69. Similar, for instrument 505 (CDS) the main sensitivity (CS delta) is well represented with a 0% IQD, while the IR sensitivity (4% IQD) and FX delta sensitivity (10% IQD) exhibit a higher IQD. But as for the instruments 216, only 13 institutions considered the FX sensitivity of the CDS with a USD denominated underlying, further indicating an inconsistent interpretation of FX risk in the exercise.

70. These substantial differences in the treatment of the FX risk explain the higher level of dispersion of OFR for this portfolio.

Figure 14: Portfolio 5516 – Sensitivities snapshot (Exercise 2025 on top, 2024 on the bottom)

							Other stats						Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	Credit Spread	5516	216	CSR_NON_SEC_CD	11	[All]	-1,269	1,072	-34	1,080	1,074	3201.08%	6	-1,269	-1,269	-849	438	1,072	1,072	1,072	12,167	-23,895	24,771	858%
C 120.01	Interest Rate	5516	216	CSR_NON_SEC_CD	11	[All]	-1,269	1,072	-34	1,080	1,074	3201.08%	6	-1,269	-1,269	-849	438	1,072	1,072	1,072	12,167	-23,895	24,771	858%
C 120.01	Credit Spread	5516	216	CSR_NON_SEC_CU	11	[All]	-46,398	-1,004	-16,177	23,409	109	144.70%	6	-46,398	-46,398	-46,398	-1,121	-1,021	-1,004	-1,004	23,409	-47,940	45,697	96%
C 120.01	Interest Rate	5516	216	CSR_NON_SEC_CU	11	[All]	-46,398	-1,004	-16,177	23,409	109	144.70%	6	-46,398	-46,398	-46,398	-1,121	-1,021	-1,004	-1,004	23,409	-47,940	45,697	96%
C 120.01	Credit Spread	5516	216	CSR_NON_SEC_D_DEBT	11	[All]	-2,516,473	-2,189,004	-2,391,894	94,898	74,252	3.97%	20	-2,516,473	-2,500,288	-2,453,649	-2,400,479	-2,331,012	-2,219,014	-2,189,004	118,867	-2,638,212	-2,162,745	3%
C 120.01	Interest Rate	5516	216	CSR_NON_SEC_D_DEBT	11	[All]	-2,516,473	-2,189,004	-2,391,894	94,898	74,252	3.97%	20	-2,516,473	-2,500,288	-2,453,649	-2,400,479	-2,331,012	-2,219,014	-2,189,004	118,867	-2,638,212	-2,162,745	3%
C 120.01	Credit Spread	5516	216	CSR_NON_SEC_V	11	[All]	-321	-248	-292	31	11	10.54%	5	-321	-321	-310	-299	-274	-248	-248	444	-1,186	588	6%
C 120.01	Interest Rate	5516	216	CSR_NON_SEC_V	11	[All]	-321	-248	-292	31	11	10.54%	5	-321	-321	-310	-299	-274	-248	-248	444	-1,186	588	6%
C 120.01	Credit Spread	5516	216	FX_D	USD	[All]	991,761	1,015,344	1,007,313	9,222	2,072	0.92%	12	991,761	992,931	996,702	1,011,134	1,013,627	1,014,748	1,015,344	383,431	244,271	1,777,996	1%
C 120.01	Interest Rate	5516	216	FX_D	USD	[All]	991,761	1,015,344	1,007,313	9,222	2,072	0.92%	12	991,761	992,931	996,702	1,011,134	1,013,627	1,014,748	1,015,344	383,431	244,271	1,777,996	1%
C 120.01	Credit Spread	5516	216	GIRR_CD	USD	[All]	-605	1,714	29	856	253	2995.14%	7	-605	-605	-503	-132	2	1,714	1,714	1,623	-3,378	3,114	101%
C 120.01	Interest Rate	5516	216	GIRR_CD	USD	[All]	-605	1,714	29	856	253	2995.14%	7	-605	-605	-503	-132	2	1,714	1,714	1,623	-3,378	3,114	101%
C 120.01	Credit Spread	5516	216	GIRR_CU	USD	[All]	-583	-87	-411	185	111	45.12%	7	-583	-583	-577	-483	-355	-87	-87	1,263	-3,008	2,043	24%
C 120.01	Interest Rate	5516	216	GIRR_CU	USD	[All]	-583	-87	-411	185	111	45.12%	7	-583	-583	-577	-483	-355	-87	-87	1,263	-3,008	2,043	24%
C 120.01	Credit Spread	5516	216	GIRR_D	USD	[All]	-2,505,665	-2,121,069	-2,340,511	105,970	77,803	4.53%	21	-2,505,665	-2,462,268	-2,433,296	-2,331,070	-2,280,592	-2,189,003	-2,121,069	118,357	-2,567,783	-2,094,357	3%
C 120.01	Interest Rate	5516	216	GIRR_D	USD	[All]	-2,505,665	-2,121,069	-2,340,511	105,970	77,803	4.53%	21	-2,505,665	-2,462,268	-2,433,296	-2,331,070	-2,280,592	-2,189,003	-2,121,069	118,357	-2,567,783	-2,094,357	3%
C 120.01	Credit Spread	5516	216	GIRR_V	USD	[All]	-1,511	-1,180	-1,317	139	54	10.56%	5	-1,511	-1,511	-1,399	-1,288	-1,234	-1,180	-1,180	493	-2,274	-303	6%
C 120.01	Interest Rate	5516	216	GIRR_V	USD	[All]	-1,511	-1,180	-1,317	139	54	10.56%	5	-1,511	-1,511	-1,399	-1,288	-1,234	-1,180	-1,180	493	-2,274	-303	6%
C 120.01	Credit Spread	5516	505	CSR_NON_SEC_D_CDS	11	[All]	3,942,851	4,050,021	4,026,771	30,563	7,954	0.76%	21	3,942,851	3,954,852	4,028,074	4,032,391	4,044,959	4,050,021	4,050,021	128,890	3,774,612	4,290,171	0%
C 120.01	Credit Spread	5516	505	FX_D	USD	[All]	-22,746	18,796	7,402	14,071	1,249	190.09%	13	-22,746	-22,042	11,203	12,497	13,692	14,976	18,796	18,824	-25,151	50,144	10%
C 120.01	Credit Spread	5516	505	GIRR_D	USD	[All]	-62,940	-27,753	-37,231	8,001	2,013	21.49%	21	-62,940	-46,735	-38,475	-37,042	-33,239	-32,013	-27,753	15,147	-67,337	-6,748	7%

							Other stats						Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	Credit Spread	5017	216	CSR_NON_SEC_CD	11	[All]	-10,603	105,518	13,637	51,380	2,052	376.78%	6	-10,603	-10,603	-10,603	-9,577	-7,578	105,518	105,518	593,665	-1,196,906	1,177,753	17%
C 120.01	Credit Spread	5017	216	CSR_NON_SEC_CU	11	[All]	-18,919	7,570	-9,306	9,727	5,480	104.53%	7	-18,919	-18,919	-18,919	-8,046	-7,958	7,570	7,570	315,523	-639,093	623,000	41%
C 120.01	Credit Spread	5017	216	CSR_NON_SEC_D_DEBT	11	[All]	-11,672,016	-7,998,558	-10,506,896	762,238	220,173	7.25%	24	-11,672,016	-11,089,207	-10,908,000	-10,510,889	-10,180,883	-9,679,143	-7,998,558	2,804,810	-16,120,508	-4,901,269	3%
C 120.01	Credit Spread	5017	216	FX_D	USD	[All]	976,092	3,052,291	2,512,074	864,829	13,522	34.43%	18	976,092	992,237	2,940,121	2,945,480	2,960,400	2,973,552	3,052,291	1,356,966	231,548	5,659,412	0%
C 120.01	Credit Spread	5017	216	GIRR_CD	USD	[All]	-7,961	-2,690	-3,891	2,024	459	52.03%	7	-7,961	-7,961	-3,643	-3,165	-2,722	-2,690	-2,690	3,421	-10,006	3,677	14%
C 120.01	Credit Spread	5017	216	GIRR_CU	USD	[All]	-3,464	1,961	-1,842	1,875	952	101.76%	8	-3,464	-3,464	-3,142	-2,190	-925	1,961	1,961	2,569	-7,329	2,949	55%
C 120.01	Credit Spread	5017	216	GIRR_D	USD	[All]	-11,194,024	-6,868,160	-10,202,909	806,511	167,742	7.90%	29	-10,744,971	-10,637,881	-10,537,424	-10,253,748	-10,226,163	-9,885,645	-9,712,006	2,884,564	-16,022,875	-4,484,620	1%
C 120.01	Credit Spread	5017	216	GIRR_V	USD	[All]	-4,828	-2,512	-3,783	954	466	25.23%	5	-4,828	-4,828	-4,362	-3,896	-3,204	-2,512	-2,512	5,591	-15,079	7,286	15%
C 120.01	Credit Spread	5017	505	CSR_NON_SEC_D_CDS	11	[All]	11,890,776	13,015,259	12,869,963	244,095	19,991	1.90%	21	11,890,776	12,741,745	12,893,393	12,931,423	12,955,601	12,977,511	13,015,259	814,763	11,301,897	14,560,948	0%
C 120.01	Credit Spread	5017	505	FX_D	USD	[All]	-32,419	49,828	36,053	25,067	1,188	69.53%	15	-32,419	-4,761	45,707	45,919	47,131	47,219	49,828	48,128	-50,338	142,175	2%
C 120.01	Credit Spread	5017	505	GIRR_D	USD	[All]	-244,831	-97,469	-138,825	45,533	3,417	32.80%	23	-244,831	-240,006	-129,064	-122,155	-118,503	-115,029	-97,469	61,492	-245,140	829	4%

2.6 Issues on SBM OFR data submission to be considered by supervisors

71. In the previous section some inconsistencies on the sensitivities data submission were highlighted. In this section we highlight some issues where competent authorities should pay great attention in order to foster a harmonized practice in the ASA implementation.

72. Competent authorities should consider the following issues when reviewing the ASA submission at the level of single bank participating.

- FX component in non-FX asset classes instruments/portfolios.
- Bucketing
- Aggregation formula
- SBM, DRC and RRAO provisions applied.

2.6.1 FX component in non-FX asset classes instruments/portfolios.

73. As shown in section 2.2, many portfolios with high dispersion contain FX risks in the Banks submissions, which was not considered by a plurality of subjects in the exercise.

74. Specific examples are also reported in section 2.5.2 (portfolio 2013) and section 2.5.5 (portfolio 5516).

75. It is understood that this inconsistent reporting of the FX component is triggered by different application of instruction "kk[7]" of Annex 2.

76. Let us examine for example CS portfolios (e.g. 5515 – 5517 – USD instruments to be reported in USD). We can ask if the CS component should be reported or not. The instruction "kk" is there in order to provide "clean" result (i.e. excluding the FX component on what is not FX asset class). Nonetheless, some banks consider these positions as having intrinsically an FX component. Banks that report in accordance with the instructions exclude the FX component in these cases, yet this is not done in many cases.

[7] Kk "The risk measures of the portfolios shall be calculated in the same currency of the portfolio currency, not including any FX Risk, also related to the reporting currency of the institutions. The FX Risk shall be considered only when intrinsically included in the instruments. Where both reporting and portfolio currency results are reported as part of the exercise, for the ASA figures, results calculated in the reporting currency of the institution shall be translated into the EBA portfolio currency by spot conversion using the ECB spot exchange rate associated with the date of the calculation. The translation into the EBA portfolio currency does not imply a change in the FX risk factors."

77. Banks, that do not comply with the instruction, have potentially some systems that compute the FX sensitivities when booking the instruments, and then banks have some complications in disentangling the FX sensitivities submission from the rest of the sensitivities provided.

78. Figure 15 show the IQD of the CS portfolios 5515-5517, Figure 16 shows the IQD of only the delta CS risk component. The CS delta reflects the most significant component of the OFR, once the FX component is excluded for those banks that report it. The conclusion is that the dispersion of the CS component is much lower when considered in isolation. While the exclusion was intended to enhance comparability, the heterogeneous implementation among the participants led to an artificial increase in the dispersion.

79. Past consultation on this matter, received the feedback from the stakeholders that the requirement should stay, so that comparability is prioritized. Nonetheless, the facts show an increase in the analysis to draw reliable conclusions for those portfolios.

80. In summary, based on the above analysis, and evidence in sections 2.2, 2.5.2 and 2.5.5, it appears that the divergent interpretation of the 'kk' instruction artificially inflates the dispersion for some of the non-FX portfolios. This effect would not be present in a real-world implementation of the ASA, where banks can be expected to correctly account for FX translation risk.

Figure 15: Subset of CS portfolios, main stats and IQDs

		Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
	Port. ID	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.[3]	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc[1]	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
Credit Spread	*5515*	56,387	166,292	96,158	48,061	7,358	50%	18	56,387	58,769	61,785	67,355	157,565	166,240	166,292	51,580	-35,806	170,516	44%
	5516	68,072	190,130	106,976	51,504	3,336	48%	17	68,072	68,370	74,536	77,589	181,409	183,539	190,130	58,572	-39,555	194,732	42%
	5517	95,560	336,275	189,160	103,052	9,657	55%	18	95,560	110,022	119,682	127,253	326,013	334,887	336,275	111,399	-95,544	350,051	46%

Figure 16: Subset of CS portfolios, main stats and IQDs – Delta Risk CSR components

							Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.01	Credit Spread	5515	217	CSR_NON_SEC_D_DEBT	2	[All]	-6,689,002	-5,737,617	-6,131,680	251,505	103,103	4.10%	21	-6,689,002	-6,448,147	-6,200,655	-6,168,319	-5,862,164	-5,793,477	-5,737,617	299,005	-6,766,328	-5,570,309	3%
C 120.01	Credit Spread	5516	216	CSR_NON_SEC_D_DEBT	11	[All]	-2,516,473	-2,189,004	-2,391,894	94,898	74,252	3.97%	20	-2,516,473	-2,500,288	-2,453,649	-2,400,479	-2,331,012	-2,219,014	-2,189,004	118,867	-2,638,212	-2,162,745	3%
C 120.01	Credit Spread	5517	216	CSR_NON_SEC_D_DEBT	11	[All]	-2,516,473	-2,189,004	-2,391,894	94,898	74,252	3.97%	20	-2,516,473	-2,500,288	-2,453,649	-2,400,479	-2,331,012	-2,219,014	-2,189,004	118,867	-2,638,212	-2,162,745	3%
C 120.01	Credit Spread	5517	217	CSR_NON_SEC_D_DEBT	2	[All]	-6,689,002	-5,737,617	-6,131,680	251,505	103,103	4.10%	21	-6,689,002	-6,448,147	-6,200,655	-6,168,319	-5,862,164	-5,793,477	-5,737,617	299,005	-6,766,328	-5,570,309	3%

2.6.2 Bucketing.

81. Another reason for dispersion in OFR reported by banks is their bucketing choices of their sensitivities.

82. In some cases, it could cause substantial dispersion, as examined in detail in section 2.8 (sub b – portfolio 4401).

83. In another example, bucketing misalignment restricted to a minority of banks, as shown in Figure 11, where a minority of banks picked buckets 1 or 3, instead of 2, for portfolio 2213. In this specific case the single observation is normally marked as outlier to the bank.

84. A similar example, in Figure 17, the portfolio 1009, with the equity option 102 (Bayer), it is clear that the great majority of banks assigned the instrument (equity_delta) to bucket 5 (Consumer goods - 0.30% rw), but still a non-trivial number of banks assigned it bucket 7 (Basic material - - 0.40% rw). This specific case was also reported in 2024, and we can see that there is a marginal improvement in terms of less banks that reported the incorrect bucketing selections.

Figure 17: Portfolios 1009 – instrument 102 – example of bucketing issue (Exercise 2025 on top, 2024 on the bottom)

							Other stats						
Table	Group	Portfolio	Instrument	RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.
C 120.01	Equity	1009	109	EQ_D_SPOT	5	[All]	264,613	275,003	272,820	2,419	856	0.89%	29
C 120.01	Equity	1009	109	EQ_D_SPOT	7	[All]							2

			Other stats						
RiskFactor	Bucket	Additional Identifier	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.
EQ_D_REPO	5	[All]							4
EQ_D_SPOT	5	[All]	644,600	1,299,238	993,740	257,584	322,300	25.92%	27
EQ_D_SPOT	7	[All]	968,700	1,291,768	1,097,634	175,868	750	16.02%	5
FX_D	EUR	[All]							2
GIRR_D	EUR	[All]	-14,295	-3,588	-10,093	3,792	3,537	37.57%	7
GIRR_D	USD	[All]							1
GIRR_D_CRO_USD	EUR	[All]							1

85. Here below an extract from Table 8 – Article 325ap – CRR

5		Advanced economy	Consumer goods and services, transportation and storage, administrative and support service activities, healthcare, utilities	30 %	0,30 %
6			Telecommunications, industrials	35 %	0,35 %
7			Basic materials, energy, agriculture, manufacturing, mining and quarrying	40 %	0,40 %

- Aggregation formula

86. Assuming a correct/consistent computation of sensitivities and bucket assignment, being the ASA computed as a closed set of aggregation formulas, the OFR should be consistent. Nonetheless, even when the uncertainty regarding the value of the sensitivities and the bucketing removed, the suspicion that some inconsistencies on the aggregation formulas occur. On this regard, please see also the following Section 2.7.

2.6.3 SBM, DRC and RRAO provisions applied.

87. Setting aside dispersion due to in consistent computation of sensitivities, bucketing and aggregation formula, it is noticeable that not all the banks in the exercise applied the same provision of the whole ASA framework.

88. For example, portfolio 1018 (instrument 118 – autocallable equity option) was reported by 20 banks in terms of SBM component, by 18 banks in terms of DRC component, by 19 banks in terms of RRAO component. This is an improvement, with respect the 2024 exercise[8], in terms of consistency of the submissions. Nonetheless, this different implementation persists for a number of instruments. In this regard, please see also the Chapter 3 and 4.

[8] In 2024, portfolio 1007 (instrument 118 – autocallable equity option) was reported by 21 banks in terms of SBM component, by 18 banks in terms of DRC component, by 15 banks in terms of RRAO component.

2.7 ASA SBM Validation portfolios

89. In the 2025 exercise EBA collected data concerning the aggregation formula of the SBM validation. This was implemented via the list of instruments and portfolios defined in the Annex X of the Benchmarking ITS. The instruments are different compared to the instruments in Annex V of the benchmarking ITS, since the validation instruments already provide sensitivities and buckets for banks, and it is required to provide the SBM OFR requirements based on those data.

90. These portfolios are based on an industry practice to run this control before the actual data collection of SBM data and are meant to control the correct implementation of the aggregation formula of the SBM methodology.

91. It should be noted that, this is the second data collection of this kind for the EBA Benchmarking exercise, and it was extended to all asset classes component of the SBM methodology[9]. This implies that now there are a total of 387 portfolios to be represented. Clearly this is quite challenging from a representative point of view. Therefore, a snapshot of the GIRR portfolios will be presented below as representative of the Validation results.

92. From the data received, it appears that only a small number of banks (10 institutions, representing 25% of the sample) submitted the SBM Validation portfolios. This issue had already been highlighted in the previous exercise as a shortcoming in the application of the requirements set out in the benchmarking ITS. While there has been some improvement in this iteration, progress remains limited. It is anticipated that submissions will increase in future rounds, especially with the introduction of a dedicated template designed to raise banks' awareness of this component of the exercise.

The results of the data collection, for the GIRR portfolio (just the High correlation scenario) are examined in the figures below (Figure 18,

[9] In 2024, it was restricted only to the GIRR component.

Figure 19, Figure 20).

93. It appears from the data collected, that Delta Risk is consistently implemented in most of the cases – some inconsistencies are still noticeable in portfolios 54 and 56. This marks an improvement with respect to the 2024 submissions.

94. The Vega Risk component exhibit some dispersion in portfolio 40 and 41, while for the curvature dispersion is typically marginal.

95. The rest of the IQDs for the rest of the assets class are shown in Figure 51 to Figure 54 in the Appendix of this Report. Similar conclusions with respect of the GIRR, i.e. IQDs is generally zero (as it would be expected).

96. It should be emphasised that these results—specifically, the fact that the vast majority of IQDs for these portfolios are equal to zero—represent a positive outcome. Nevertheless, it should also be acknowledged that certain institutions are not aligned with the majority. Such deviations are not captured by the IQD, as these institutions lie at the extremities of the distribution.

97. Finally, it should be noted that this positive outcome is largely driven by the limited number of institutions participating in this component of the exercise. Consequently, no general conclusion can be drawn regarding the consistent application of the aggregation formula across the EU, as the result reflects only the practices of those banks that submitted data.

Figure 18: SBM Validation – Delta Risk – GIRR – High corr

						Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Risk Class	Component	Corr. Scenario	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.02	G	G000	General interest rate risk (GIRR)	Delta risk	High correlation scenario	361	361	361	0	0	0.00%	10	361	361	361	361	361	361	361	98,696	-197,032	197,753	0%
C 120.02	G	G001	General interest rate risk (GIRR)	Delta risk	High correlation scenario	240	240	240	0	0	0.00%	10	240	240	240	240	240	240	240	65,798	-131,355	131,835	0%
C 120.02	G	G002	General interest rate risk (GIRR)	Delta risk	High correlation scenario	180	180	180	0	0	0.00%	10	180	180	180	180	180	180	180	49,348	-98,516	98,877	0%
C 120.02	G	G003	General interest rate risk (GIRR)	Delta risk	High correlation scenario	735	735	735	0	0	0.00%	10	735	735	735	735	735	735	735	201,263	-401,791	403,261	0%
C 120.02	G	G004	General interest rate risk (GIRR)	Delta risk	High correlation scenario	92	92	92	0	0	0.00%	10	92	92	92	92	92	92	92	25,158	-50,224	50,408	0%
C 120.02	G	G005	General interest rate risk (GIRR)	Delta risk	High correlation scenario	721	721	721	0	0	0.00%	10	721	721	721	721	721	721	721	197,393	-394,064	395,506	0%
C 120.02	G	G006	General interest rate risk (GIRR)	Delta risk	High correlation scenario	700	700	700	0	0	0.00%	10	700	700	700	700	700	700	700	191,587	-382,474	383,874	0%
C 120.02	G	G007	General interest rate risk (GIRR)	Delta risk	High correlation scenario	16	16	16	0	0	0.01%	10	16	16	16	16	16	16	16	4,257	-8,499	8,531	0%
C 120.02	G	G008	General interest rate risk (GIRR)	Delta risk	High correlation scenario	233	233	233	0	0	0.00%	10	233	233	233	233	233	233	233	63,862	-127,491	127,958	0%
C 120.02	G	G009	General interest rate risk (GIRR)	Delta risk	High correlation scenario	1,556	1,556	1,556	0	0	0.00%	10	1,556	1,556	1,556	1,556	1,556	1,556	1,556	425,749	-849,942	853,053	0%
C 120.02	G	G010	General interest rate risk (GIRR)	Delta risk	High correlation scenario	389	389	389	0	0	0.00%	10	389	389	389	389	389	389	389	106,437	-212,485	213,263	0%
C 120.02	G	G011	General interest rate risk (GIRR)	Delta risk	High correlation scenario	0	800	529	213	0	40.26%	10	0	0	566	566	566	800	800	154,829	-309,093	310,225	0%
C 120.02	G	G012	General interest rate risk (GIRR)	Delta risk	High correlation scenario	735	1,040	803	134	0	16.73%	10	735	735	735	735	735	1,040	1,040	201,242	-401,748	403,219	0%
C 120.02	G	G013	General interest rate risk (GIRR)	Delta risk	High correlation scenario	510	510	510	0	0	0.00%	10	510	510	510	510	510	510	510	139,578	-278,645	279,665	0%
C 120.02	G	G014	General interest rate risk (GIRR)	Delta risk	High correlation scenario	765	765	765	0	0	0.00%	10	765	765	765	765	765	765	765	209,366	-417,968	419,498	0%
C 120.02	G	G015	General interest rate risk (GIRR)	Delta risk	High correlation scenario	160	160	160	0	0	0.00%	10	160	160	160	160	160	160	160	43,789	-87,418	87,738	0%
C 120.02	G	G016	General interest rate risk (GIRR)	Delta risk	High correlation scenario	65	65	65	0	0	0.00%	10	65	65	65	65	65	65	65	17,789	-35,514	35,644	0%
C 120.02	G	G017	General interest rate risk (GIRR)	Delta risk	High correlation scenario	1,200	1,200	1,200	0	0	0.00%	10	1,200	1,200	1,200	1,200	1,200	1,200	1,200	328,418	-655,636	658,036	0%
C 120.02	G	G018	General interest rate risk (GIRR)	Delta risk	High correlation scenario	55	55	55	0	0	0.00%	10	55	55	55	55	55	55	55	15,052	-30,050	30,160	0%
C 120.02	G	G019	General interest rate risk (GIRR)	Delta risk	High correlation scenario	275	275	275	0	0	0.00%	10	275	275	275	275	275	275	275	75,262	-150,250	150,800	0%
C 120.02	G	G020	General interest rate risk (GIRR)	Delta risk	High correlation scenario	770	770	770	0	0	0.00%	10	770	770	770	770	770	770	770	210,735	-420,700	422,240	0%
C 120.02	G	G021	General interest rate risk (GIRR)	Delta risk	High correlation scenario	990	990	990	0	0	0.00%	10	990	990	990	990	990	990	990	270,945	-540,900	542,880	0%
C 120.02	G	G022	General interest rate risk (GIRR)	Delta risk	High correlation scenario	165	165	165	0	0	0.00%	10	165	165	165	165	165	165	165	45,157	-90,150	90,480	0%
C 120.02	G	G023	General interest rate risk (GIRR)	Delta risk	High correlation scenario	0	1,520	1,351	507	0	37.50%	10	0	0	1,520	1,520	1,520	1,520	1,520	416,050	-830,579	833,619	0%
C 120.02	G	G024	General interest rate risk (GIRR)	Delta risk	High correlation scenario	168	179	169	4	0	2.07%	10	168	168	168	168	168	179	179	45,978	-91,788	92,124	0%
C 120.02	G	G025	General interest rate risk (GIRR)	Delta risk	High correlation scenario	601	601	601	0	0	0.00%	10	601	601	601	601	601	601	601	164,494	-328,387	329,589	0%
C 120.02	G	G026	General interest rate risk (GIRR)	Delta risk	High correlation scenario	1,015	1,015	1,015	0	0	0.00%	10	1,015	1,015	1,015	1,015	1,015	1,015	1,015	277,833	-554,650	556,681	0%
C 120.02	G	G027	General interest rate risk (GIRR)	Delta risk	High correlation scenario	120	120	120	0	0	0.00%	10	120	120	120	120	120	120	120	32,899	-65,677	65,918	0%
C 120.02	G	G028	General interest rate risk (GIRR)	Delta risk	High correlation scenario	657	657	657	0	0	0.00%	10	657	657	657	657	657	657	657	179,795	-358,933	360,247	0%
C 120.02	G	G029	General interest rate risk (GIRR)	Delta risk	High correlation scenario	876	1,015	897	47	0	5.22%	10	876	876	876	876	876	1,015	1,015	239,800	-478,723	480,475	0%
C 120.02	G	G030	General interest rate risk (GIRR)	Delta risk	High correlation scenario	1,144	1,453	1,205	123	0	10.22%	10	1,144	1,144	1,144	1,144	1,144	1,453	1,453	313,052	-624,960	627,248	0%
C 120.02	G	G031	General interest rate risk (GIRR)	Delta risk	High correlation scenario	0	0	0	0	0		9	0	0	0	0	0	0	0	0	0	0	
C 120.02	G	G032	General interest rate risk (GIRR)	Delta risk	High correlation scenario	885	1,370	1,271	199	0	15.65%	10	885	885	1,370	1,370	1,370	1,370	1,370	375,069	-748,767	751,508	0%
C 120.02	G	G033	General interest rate risk (GIRR)	Delta risk	High correlation scenario	746	4,298	2,374	892	0	37.56%	10	746	746	2,332	2,332	2,332	4,298	4,298	638,196	-1,274,059	1,278,723	0%
C 120.02	G	G034	General interest rate risk (GIRR)	Delta risk	High correlation scenario	1,048	4,925	1,642	1,323	0	80.57%	10	1,048	1,048	1,048	1,049	1,050	4,925	4,925	286,580	-572,111	574,208	0%
C 120.02	G	G054	General interest rate risk (GIRR)	Delta risk	High correlation scenario	1,048	4,925	2,315	1,749	3	75.56%	8	1,048	1,048	1,048	1,783	4,573	4,925	4,925	320,169	-638,555	642,121	63%
C 120.02	G	G055	General interest rate risk (GIRR)	Delta risk	High correlation scenario	1,867	2,640	2,039	341	0	16.73%	10	1,867	1,867	1,867	1,867	1,867	2,640	2,640	510,844	-1,019,822	1,023,555	0%
C 120.02	G	G056	General interest rate risk (GIRR)	Delta risk	High correlation scenario	2	3	3	0	0	8.09%	10	2	2	3	3	3	3	3	794	-1,586	1,591	5%

Figure 19: SBM Validation – Vega Risk - High corr (2025 above, 2024 below)

						Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Risk Class	Component	Corr. Scenario	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.02	G	G035	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	700	622	233	0	37.50%	10	0	0	700	700	700	700	700	191,602	-382,504	383,904	0%
C 120.02	G	G036	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	600	533	200	0	37.50%	10	0	0	600	600	600	600	600	164,230	-327,860	329,060	0%
C 120.02	G	G037	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	800	711	267	0	37.50%	10	0	0	800	800	800	800	800	218,974	-437,147	438,747	0%
C 120.02	G	G038	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	1,100	978	367	0	37.50%	10	0	0	1,100	1,100	1,100	1,100	1,100	301,089	-601,077	603,277	0%
C 120.02	G	G039	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	3,320	2,951	1,107	0	37.50%	10	0	0	3,320	3,320	3,320	3,320	3,320	908,841	-1,814,362	1,821,003	0%
C 120.02	G	G040	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	664	498	259	0	51.98%	10	0	0	250	664	664	664	664	181,846	-363,028	364,357	45%
C 120.02	G	G041	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	707	530	327	0	61.72%	9	0	0	354	707	707	707	707	204,049	-407,392	408,806	33%
C 120.02	G	G042	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	500	444	167	0	37.50%	10	0	0	500	500	500	500	500	136,858	-273,217	274,217	0%
C 120.02	G	G043	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	3,417	3,037	1,139	0	37.50%	10	0	0	3,417	3,417	3,417	3,417	3,417	935,274	-1,867,132	1,873,965	0%
C 120.02	G	G044	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	423	376	141	0	37.50%	10	0	0	423	423	423	423	423	115,724	-231,026	231,871	0%
C 120.02	G	G045	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	3,543	3,145	1,179	0	37.50%	10	0	0	3,525	3,543	3,543	3,543	3,543	969,757	-1,935,971	1,943,057	0%
C 120.02	G	G054	General interest rate risk (GIRR)	Vega risk	High correlation scenario	0	4,573	3,181	1,455	0	45.73%	8	0	0	3,525	3,543	3,543	4,573	4,573	1,015,684	-2,027,825	2,034,911	0%

						Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Risk Class	Component	Corr. Scenario	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.02	G	35	General interest rate risk (GIRR)	Vega risk	High correlation scenario	700	700	700	0	0	0.00%	6	700	700	700	700	700	700	700	60	581	819	0%
C 120.02	G	36	General interest rate risk (GIRR)	Vega risk	High correlation scenario	600	600	600	0	0	0.00%	6	600	600	600	600	600	600	600	51	498	702	0%
C 120.02	G	37	General interest rate risk (GIRR)	Vega risk	High correlation scenario	800	800	800	0	0	0.00%	6	800	800	800	800	800	800	800	63	674	926	0%
C 120.02	G	38	General interest rate risk (GIRR)	Vega risk	High correlation scenario	1,100	1,100	1,100	0	0	0.00%	6	1,100	1,100	1,100	1,100	1,100	1,100	1,100	162	777	1,423	0%
C 120.02	G	39	General interest rate risk (GIRR)	Vega risk	High correlation scenario	3,320	3,350	3,326	13	0	0.40%	6	3,320	3,320	3,320	3,320	3,320	3,350	3,350	74	3,172	3,469	0%
C 120.02	G	40	General interest rate risk (GIRR)	Vega risk	High correlation scenario	664	664	664	0	0	0.00%	5	664	664	664	664	664	664	664	185	294	1,035	0%
C 120.02	G	41	General interest rate risk (GIRR)	Vega risk	High correlation scenario							3											
C 120.02	G	42	General interest rate risk (GIRR)	Vega risk	High correlation scenario	500	500	500	0	0	0.00%	6	500	500	500	500	500	500	500	19	462	538	0%
C 120.02	G	43	General interest rate risk (GIRR)	Vega risk	High correlation scenario	3,417	3,446	3,423	13	0	0.38%	6	3,417	3,417	3,417	3,417	3,417	3,446	3,446	36	3,345	3,489	0%
C 120.02	G	44	General interest rate risk (GIRR)	Vega risk	High correlation scenario	423	423	423	0	0	0.00%	6	423	423	423	423	423	423	423	12	398	448	0%
C 120.02	G	45	General interest rate risk (GIRR)	Vega risk	High correlation scenario	3,543	3,550	3,545	3	0	0.10%	5	3,543	3,543	3,543	3,543	3,546	3,550	3,550	189	3,165	3,921	0%
C 120.02	G	54	General interest rate risk (GIRR)	Vega risk	High correlation scenario							4											

Figure 20: SBM Validation – Curvature Risk - High corr (2025 above, 2024 below)

						Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Risk Class	Component	Corr. Scenario	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.02	G	G046	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	92,233	93,179	92,548	473	0	0.51%	10	92,233	92,233	92,233	92,233	93,179	93,179	93,179	25,242,402	-50,392,571	50,577,037	1%
C 120.02	G	G047	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	450	1,270	632	362	0	57.19%	10	450	450	450	450	450	1,270	1,270	123,100	-245,749	246,649	0%
C 120.02	G	G048	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	73,766	74,531	74,021	382	0	0.52%	10	73,766	73,766	73,766	73,766	74,531	74,531	74,531	20,188,389	-40,303,012	40,450,544	1%
C 120.02	G	G049	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	0	0	0	0	0		10	0	0	0	0	0	0	0	1,564	-3,127	3,127	
C 120.02	G	G050	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	450	93,583	82,429	30,747	0	37.30%	10	450	450	92,375	92,375	92,375	93,583	93,583	25,284,420	-50,476,466	50,661,215	0%
C 120.02	G	G051	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	0	0	0	0	0		10	0	0	0	0	0	0	0	5,993	-11,985	11,985	
C 120.02	G	G052	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	0	11,950	1,494	4,225	0	282.84%	10	0	0	0	0	0	11,950	11,950	6,225	-12,450	12,450	
C 120.02	G	G053	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	0	80,701	66,301	25,112	0	37.88%	10	0	0	72,552	72,552	72,552	80,701	80,701	19,858,035	-39,643,518	39,788,621	0%

						Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Risk Class	Component	Corr. Scenario	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.02	G	46	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	92,233	93,179	92,784	440	240	0.47%	6	92,233	92,233	92,233	92,939	93,179	93,179	93,179	440	92,059	93,818	1%
C 120.02	G	47	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	450	1,270	827	370	310	44.80%	6	450	450	450	760	1,270	1,270	1,270	370	19	1,501	48%
C 120.02	G	48	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	73,766	74,531	74,076	360	165	0.49%	6	73,766	73,766	73,766	73,931	74,531	74,531	74,531	360	73,211	74,651	1%
C 120.02	G	49	General interest rate risk (GIRR)	Curvature risk	High correlation scenario							4											
C 120.02	G	50	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	92,375	93,583	93,046	550	404	0.59%	6	92,375	92,375	92,375	93,179	93,583	93,583	93,583	550	92,078	94,280	1%
C 120.02	G	51	General interest rate risk (GIRR)	Curvature risk	High correlation scenario							4											
C 120.02	G	52	General interest rate risk (GIRR)	Curvature risk	High correlation scenario							4											
C 120.02	G	53	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	72,552	80,701	77,772	4,053	638	5.21%	6	72,552	72,552	72,552	80,062	80,701	80,701	80,701	4,053	71,956	88,169	5%
C 120.02	G	54	General interest rate risk (GIRR)	Curvature risk	High correlation scenario	80,062	80,701	80,382	369	319	0.46%	5	80,062	80,062	80,062	80,062	80,701	80,701	80,701	3,516	73,030	87,095	0%

2.8 Detailed Review of Portfolios with Significant SBM OFR Dispersion

- Portfolio 5510

98. Portfolio 5510 contains two EUR-denominated instruments referencing Telefonica: a EUR 1,000,000 long position in a CDS on Telefonica (ticker TEF SM) maturing in December of year T+2, and a EUR 1,000,000 long position in Telefonica notes (ISIN XS1681521081) maturing on 12 January 2028.

99. The observed variability in own funds requirements (OFR) across institutions for this portfolio is primarily driven by delta credit spread risk for non-securitisation positions (DELTA CSR_NON_SEC), which explains the difference between the first and third quartile of the OFR distribution (Figure 21). Reported sensitivities, including the bucketing and the split between debt and CDS exposures, are generally consistent across institutions, with only minor deviations in bucket choices and maturity allocations (Figure 22).

Figure 21: Composition of SBM OFR - Portfolio 5510

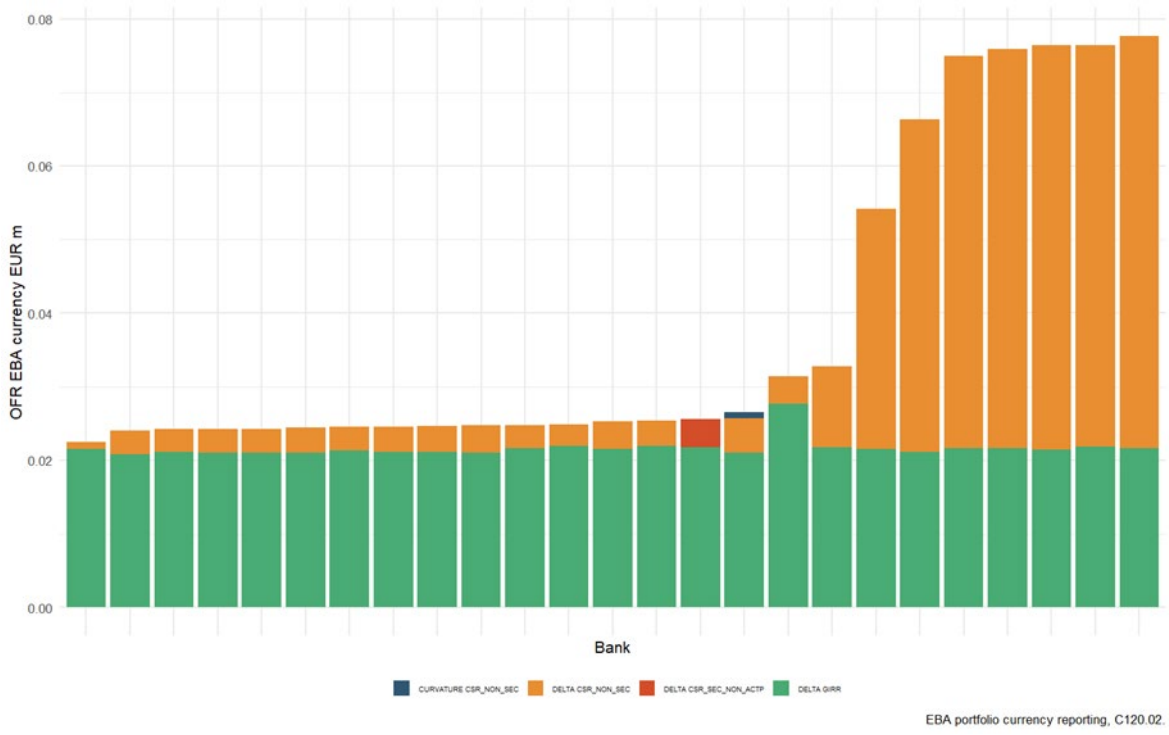


Figure 22: Sensitivities - Portfolio 5510

100. The main factor explaining the differences in OFR outcomes is the approach taken to issuer mapping for the bond and CDS positions. Some institutions report different issuers for the CDS (Telefonica SA) and the bond (Telefonica Emisiones SA), while others report the same issuer (Telefonica SA) for both instruments. The latter approach results in a higher correlation and greater diversification benefit, leading to significantly lower OFR.

101. Booking instructions clearly indicate that the bond should be mapped to Telefonica Emisiones SA (as identified by the ISIN), and the CDS to Telefonica SA (as identified by the ticker). The lower OFR observed in some cases appears to result from substituting Telefonica Emisiones SA with Telefonica SA for the bond position. EBA Q&A 2024_7230 specifies that the issuer for CSR should be the legal entity issuing the instrument or the legal entity the instrument refers to. CAs should as part of the review of the benchmarking results check that supervised banks implement the risk factor definition in accordance with 325m CRR.

- Portfolio 4401

102. Portfolio 4401 consists of two London Gold Forward contracts, each with a notional amount of 3,500 troy ounces. The first position is a long 6-month forward (long Gold, short USD), while the second is a short 12-month forward (short Gold, long USD).

103. The observed variability in SBM OFR across institutions for this portfolio is primarily driven by the commodity delta risk (DELTA CM), which explains the difference between the first and third quartile of the OFR distribution (see Figure 21). All institutions consistently allocate the sensitivities to bucket 7 (see Figure 22). The main factor explaining the differences in OFR outcomes is the allocation of sensitivities to risk factors of different maturities. Institutions with

lower OFR allocate nearly the entire sensitivity to the CM_D_00.00 risk factor, resulting in perfect netting between the long and short positions. This approach leads to a significant reduction in OFR and suggests a possible interpretation or implementation issue in the application of risk factor mapping rules.

Figure 23: Composition of SBM OFR - Portfolio 4401

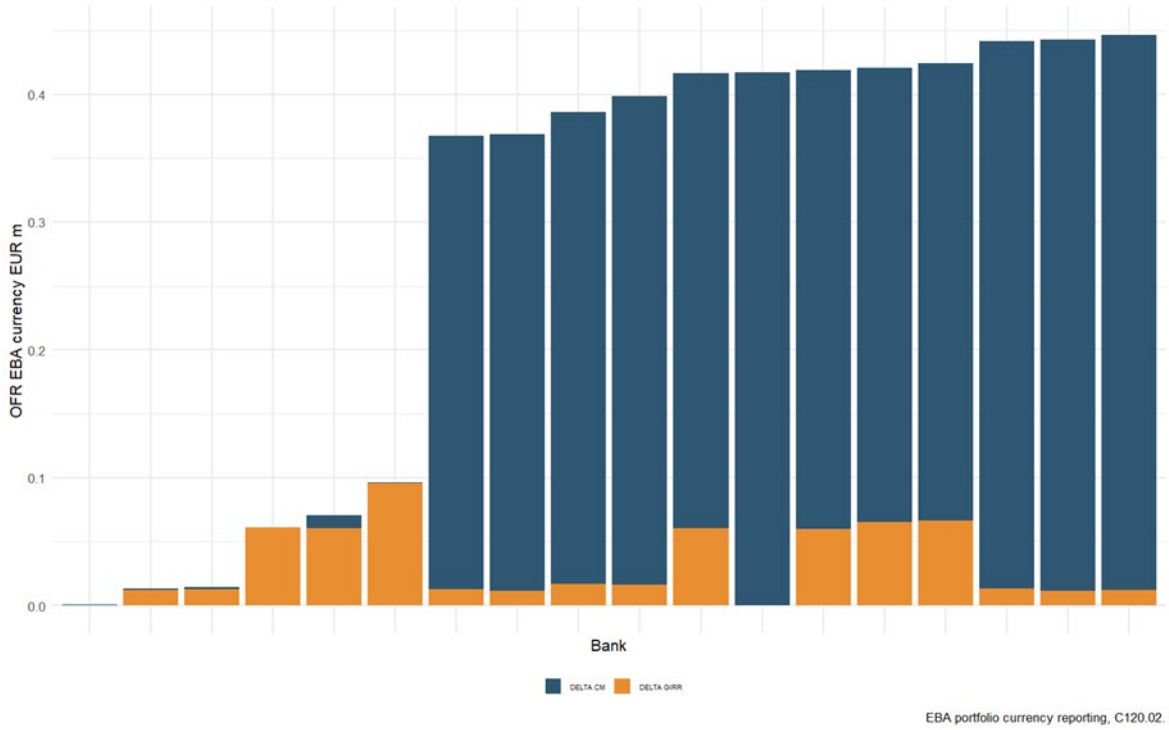
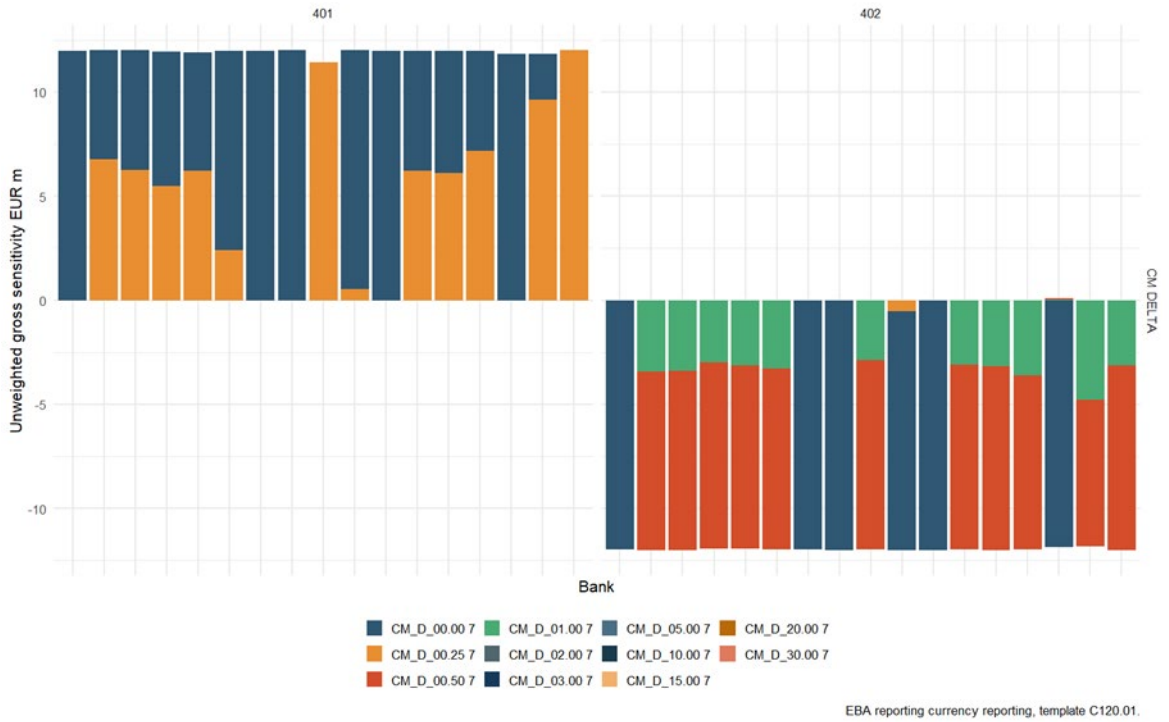


Figure 24: Sensitivities - Portfolio 4401



3. FRTB-ASA - Default Risk Charge (DRC)

104. In the 2025 exercise, as in2024, EBA collected also data on the two-remaining components of the ASA OFR: the default risk charge (DRC) and the residual risk add on (RRAO).

105. The aggregated data for the DRC can be seen in Table 3, where we see that only 59/138 portfolios are in scope of the DRC component. This is expected, as the charge is computed only on instruments subject to default risk which includes equities and bonds, and so no observations are present in the commodity and FX asset class. Less expected is the relatively small number of observations (18) reported for those instruments, which is much lower compared to the average numbers of observations for those instruments for the SBM component (23). This implies that a substantial number of banks did not report the DRC component for these portfolios.

106. The positive observation concerning the DRC submission is the relatively low dispersion (9% IQD on average) across all asset classes. More specifically, the IR instruments subject to DRC exhibit only a 5% IQD, whereas the IQD is higher for EQ and CS (22% and 6%), and some portfolios with substantial IQD are present (e.g., 1018-1020, 5017, 5507).

Table 3: EU Statistics for ASA - DRC OFR

EU Statistics for DRC OFR

		Main statistics								Percentiles			
	Port. ID	Min	Max	Ave	STDev	STDev_trunc[1]	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.[3]	25th	50th (Median)	75th	Interquantile range
Equity	1001	40,944	80,387	53,023	9,890	64,268	2,758	19%	22	48,394	53,332	54,030	6%
	1002	3,770	10,305	4,316	1,154	3,272	11	27%	29	4,108	4,122	4,122	0%
	1003												
	1004												
	1005												
	1006												
	1007												
	1008												
	1009	824	866	846	9	13	1	1%	25	844	845	852	0%
	1010												
	1011	0	0	0	0	0	0	126%	13	0	0	0	
	1012												
	1013	1,582	1,836	1,751	59	99	28	3%	25	1,723	1,761	1,793	2%
	1014												
	1015	86	115	98	7	9	2	7%	22	95	97	99	2%
	1016												
	1017												
	1018	287	60,589	9,934	15,329	46,836	2,058	154%	18	2,795	6,214	6,409	39%
	1019	439	27,740	11,749	8,872	13,363	5,696	76%	26	2,072	16,384	17,904	79%
	1020	1,053	67,162	26,675	22,910	22,708	23,174	86%	20	3,334	36,375	46,138	87%
	1021								2				
	1101												
	1102												
	1103												
	1104												
	1105												
	1106	524	4,082	3,512	623	2,552	10	18%	26	3,589	3,600	3,608	0%
	1107												
	1108	1,756	76,781	46,403	13,919	53,844	3,664	30%	23	43,730	46,395	50,054	7%
	1109	2,238	75,631	45,242	13,651	53,716	3,653	30%	23	42,544	45,210	48,867	7%
	1110	1,669	7,878	3,256	968	2,475	10	30%	27	3,127	3,149	3,154	0%
Interest Rate	2001												
	2002												
	2003												
	2004												
	2005	4,362	36,899	21,395	8,244	43,378	2,446	39%	14	20,198	23,618	25,090	11%
	2006								4				
	2007												
	2008	57,808	62,198	59,283	2,188	6,970	109	4%	6	57,826	57,932	62,013	3%
	2009	45,665	46,180	46,067	168	5,002	41	0%	8	46,073	46,115	46,160	0%
	2010	21,758	44,516	30,592	11,170	14,185	1,227	37%	8	22,207	24,194	43,814	33%
	2011												
	2012												
	2013	3,753	3,880	3,783	29	383	3	1%	19	3,772	3,774	3,785	0%
	2014	22,263	22,834	22,493	260	2,423	111	1%	8	22,269	22,438	22,778	1%
	2015												
	2016	112,609	116,449	114,436	607	1,254	140	1%	24	114,219	114,453	114,587	0%
	2017	39,746	42,279	41,375	475	1,773	85	1%	25	41,329	41,482	41,508	0%
	2018												
	2019												
	2020												
	2021												
	2022	53,189	57,229	54,726	1,904	6,776	343	4%	6	53,474	53,725	57,116	3%
	2023												
	2024												
	2201								4				
	2202	57,826	66,845	60,473	3,784	7,585	549	6%	6	57,919	58,911	63,402	5%
	2203	65,628	191,467	132,652	35,884	35,884	13,070	27%	8	123,703	126,109	152,250	10%
	2204												
	2205												
	2206												
	2207												
	2208	150,671	159,398	155,032	1,774	2,856	531	1%	26	153,831	155,950	156,077	1%
	2209												
	2210	92,702	175,163	148,163	26,864	37,386	4,199	18%	7	148,079	151,064	170,507	7%
	2211	45,665	46,180	46,067	168	5,002	41	0%	8	46,073	46,115	46,160	0%
	2212												
FX	3001												
	3002												
	3003												
	3004												
	3005												
	3006												
	3007												
	3008												
	3009												
	3010												
	3011												
	3301												
	3302												
	3303												
	3304												

Commodities	4001												
	4002												
	4003												
	4004												
	4005												
	4401												
	4402												
	4403												
Credit Spread	5001												
	5002												
	5003	23,077	23,463	23,363	94	11,133	10	0%	14	23,359	23,392	23,392	0%
	5004												
	5005												
	5006												
	5007	45,691	46,018	45,848	90	3,198	58	0%	22	45,776	45,832	45,945	0%
	5008												
	5009	23,083	23,235	23,165	40	1,596	11	0%	22	23,143	23,151	23,204	0%
	5010												
	5011	46,198	46,494	46,365	86	86	38	0%	22	46,317	46,330	46,454	0%
	5012	23,026	23,175	23,107	40	11,020	21	0%	16	23,080	23,146	23,146	0%
	5013	23,028	23,417	23,310	90	688	24	0%	20	23,282	23,331	23,355	0%
	5014	23,465	23,586	23,532	39	39	15	0%	22	23,504	23,511	23,577	0%
	5015												
	5016												
	5017	117,794	239,758	173,802	60,609	60,759	2,251	35%	24	119,421	120,098	238,138	33%
	5018												
	5019	44,060	44,266	44,161	53	69	34	0%	24	44,126	44,155	44,202	0%
	5020	40,914	41,840	41,662	199	3,025	64	1%	24	41,635	41,721	41,764	0%
	5021												
	5022	2,800	16,742	4,647	4,119	6,891	23	89%	21	3,131	3,162	3,169	1%
	5023								4				
	5024												
	5025								4				
	5026												
	5027								4				
	5028												
	5029												
	5030	30,994	85,720	68,153	19,444	73,891	7,713	29%	12	51,825	79,505	83,768	24%
	5031	22,546	30,091	29,261	2,291	8,776	25	8%	20	29,959	29,996	30,022	0%
	5032	41,854	44,706	42,712	603	3,344	219	1%	20	42,390	42,656	42,840	1%
	5033	40,248	40,650	40,455	98	254	79	0%	21	40,384	40,456	40,507	0%
	5034	43,484	43,675	43,572	48	55	31	0%	21	43,542	43,576	43,602	0%
	5501	65	15,606	1,627	4,362	10,528	1	268%	15	68	69	70	1%
	5502												
	5503												
	5504	429	464	447	9	10,765	6	2%	13	444	453	453	1%
	5505	116	136	125	5	6	2	4%	22	123	125	127	2%
	5506	44,665	75,162	62,176	10,315	9,808	11,367	17%	23	51,808	63,691	74,930	18%
	5507	16,767	37,219	24,857	9,101	9,480	1,112	37%	18	17,721	18,797	35,069	33%
	5508	87,944	105,091	93,323	7,037	9,235	172	8%	24	88,924	89,058	101,990	7%
	5509	43	320	110	61	23,955	17	55%	18	67	105	120	28%
	5510	21,579	21,722	21,644	41	974	13	0%	9	21,627	21,633	21,671	0%
	5511								4				
	5512	0	0	0	0	0	0	51%	6	0	0	0	
	5513	18,598	23,463	22,026	1,416	10,713	1,197	6%	14	21,431	23,336	23,378	4%
	5514								4				
	5515												
	5516	3,772	4,936	4,343	333	722	197	8%	18	4,105	4,169	4,593	6%
	5517	2,716	3,700	3,147	262	581	146	8%	17	2,986	3,033	3,285	5%
	5518								4				
	5519								4				
	5520												
	5521												
	5522												
CTP	6001								4				
	6002												
	6003												
	6004								4				
	6005	10,257	776,483	307,141	283,099	283,099	43,219	92%	5	220,106	242,819	286,038	13%
	6006												
	6007												
	6008								4				
	6009								4				
	6010												
	6601								4				
	6602								3				
	6603	77	776,483	265,082	298,793	298,793	77,998	113%	5	125,373	203,371	220,106	27%
	6604								4				
	6605								4				
ALL-IN no-CTP	10000	89,444	326,046	203,664	62,687	76,004	27,174	31%	15	167,567	195,001	233,824	17%
Equity Cumulative	11000	34,844	113,214	49,834	16,613	50,696	3,965	33%	22	42,740	47,875	50,451	8%
IR Cumulative	12000	65,628	191,467	129,214	37,309	37,309	4,277	29%	7	121,641	125,918	147,782	10%
FX Cumulative	13000												
Commodity Cumulative	14000												
CS Cumulative	15000	110,609	154,603	136,744	11,844	13,428	3,416	9%	19	131,431	133,596	145,922	5%
CTP Cumulative	16000												

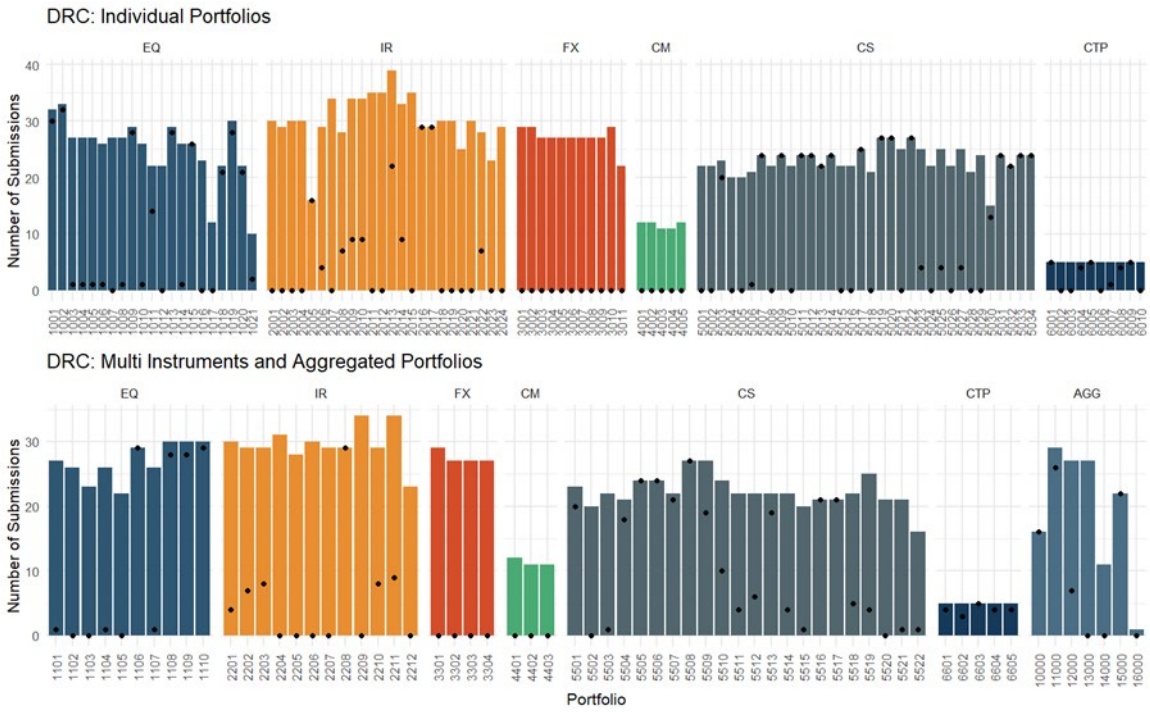
[1] *STDev trunc* is the standard deviation computed excluding values below the *5th* and above the *95th* percentile

[2] Refers to the number of banks included in the computation of the statistics

*** For the aggregated portfolios (60 to 66), banks that reported at least a missing portfolio IMV among the ones composing the aggregate are not included in the computation of the benchmarks for that particular aggregate portfolio.*

107. The submissions of the DRC OFR for each portfolio are considered broadly high and in line with the expectations. Notably, the CTP portfolios are also in the dispersion of DRC recognisable due to the limited number of submissions (see Figure 25).

Figure 25: DRC OFR total submissions by portfolio



108. From Figure 26 can be seen, that the dispersion for the DRC varies for different instruments and portfolios. The figures show the IQD for both, the multi-instrument portfolios and the single instruments.

109. The CTP portfolios show a high IQD dispersion, shown as bar, due to the limited number of submissions. Most DRC figures delivered is, as expected, in the CSR-related portfolios.

Figure 26: DRC OFR variation within portfolios: Interquartile Dispersion (IQD)

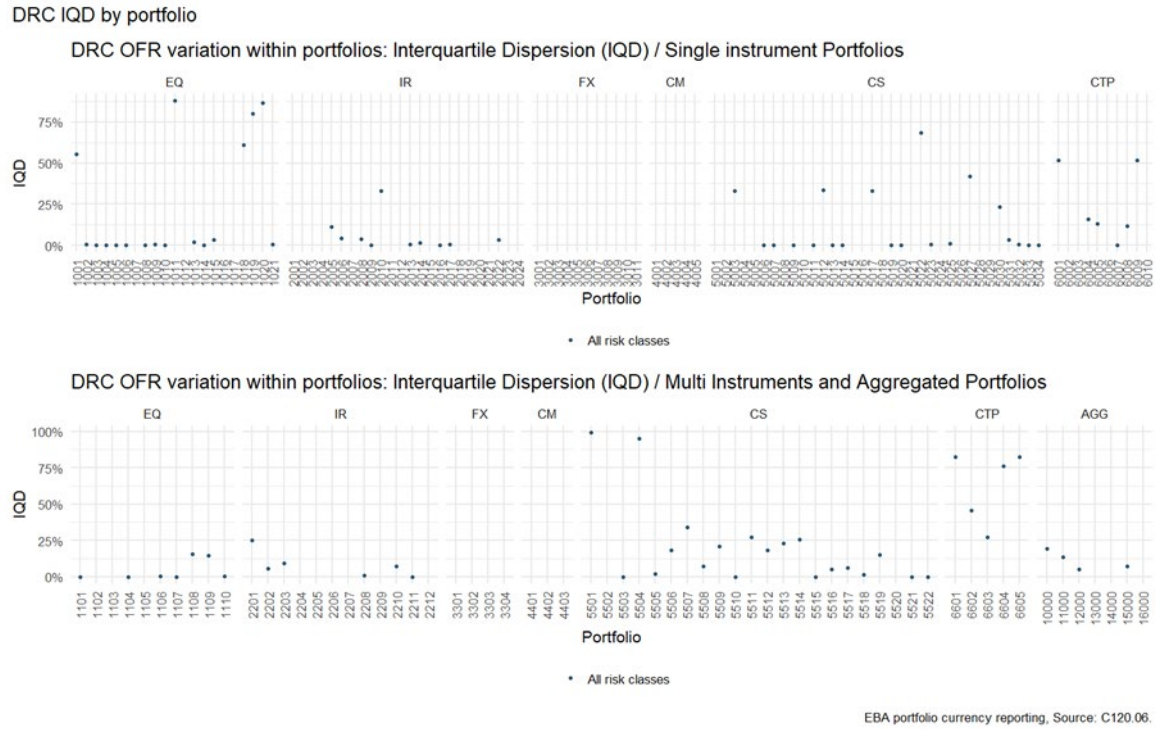
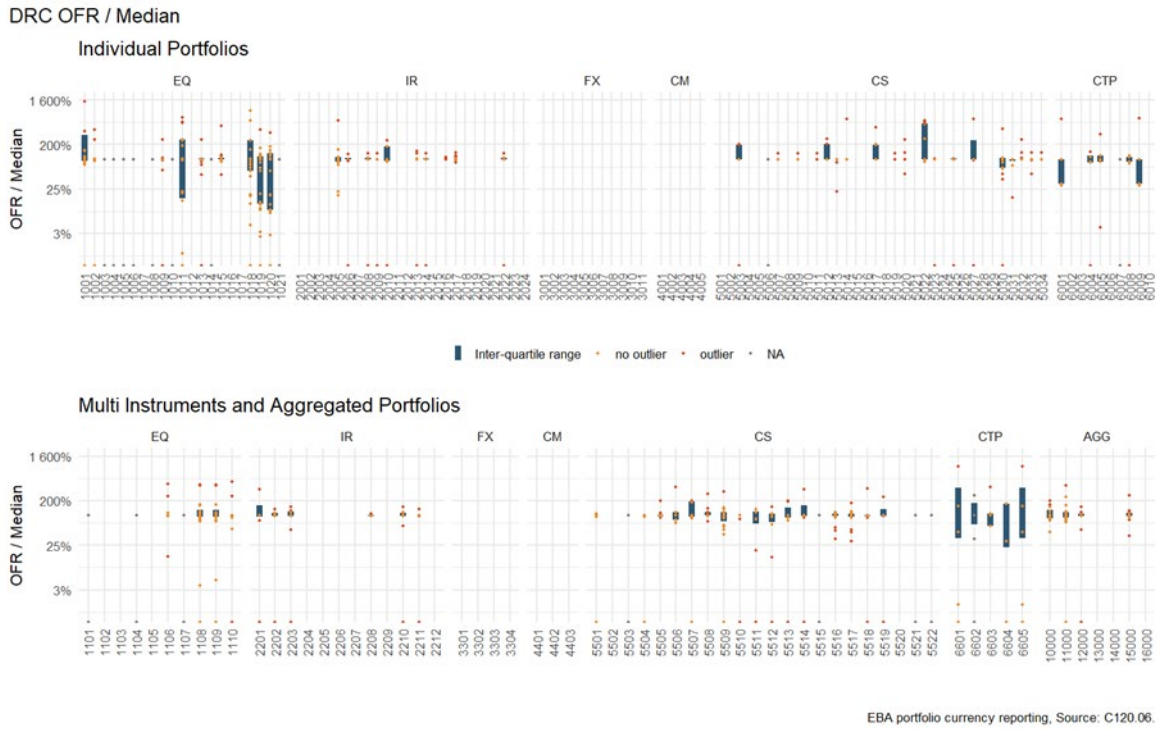


Figure 27: DRC OFR / Median



110. Among the multi-instrument portfolios, some stand out as attracting increased analytical and supervisory interest, such as 5510 and 5509. Both portfolios contain long and short

positions. In portfolio 5510 in nearly the same issuer, such as Telefonica and their respective SPV. While 5509 include positions in the same issuer but with different maturities.

111. Portfolio 5501 also shows significant dispersion, consisting of debt instruments from European Union issuers. In some cases, such as those with zero EUR DRC OFR, this may be due to the incorrect application of the 0% risk weight according to Article 325y(2) CRR, since these instruments are USD-denominated. In other cases, the dispersion may result from different offsetting methods, as the portfolio includes both long and short exposures, but to different underlying issuers—long positions in Portugal and Italy, and short positions in Spain.

112. The single instrument portfolios are generally higher dispersed compared to the multi-instrument portfolios. Some cases have very dominant dispersion. Notably 1018, 1019 and 1020 reflect equity options.

113. Additionally, portfolio 2202 has been analysed, although it is not shown in the figure because its IQD is zero. This is mainly because most positions do not provide DRC OFR, as the issuers are EU governments and the instruments are denominated in EUR. In some cases, however, institutions did report DRC OFR. A closer examination revealed that exposures to "Italy" were not correctly assigned a 0% risk weight, resulting in DRC OFR being reported. This issue does not reflect a general failure to apply the 0% risk weight, as exposures to "Germany" were treated correctly. In the construction of EBA portfolio 2202, this represents a more conservative approach. However, it should be noted that any deviation from the correct application of the 0% risk weight can lead to an overstatement of short exposures in the hedge benefit ratio and may result in an unjustified reduction of DRC in certain portfolio configurations.

114. Based on these observations, we can conclude that when considered that component seems to be computed in a sufficiently consistent manner, in same cases, but due to the inconsistency in the data submission (i.e. some banks reported same data other did not, for the same portfolios), this would inevitably increase the dispersion of the total ASA OFR.

115. Additional analysis in the forthcoming exercises is expected as it could be beneficial to fully understand the reasons behind the higher dispersion of some portfolios.

4. FRTB-ASA - Residual Risk Add-On (RRAO)

116. For the last component of the ASA, the RRAO, as expected, due to the mostly vanilla nature of the instruments represented in the benchmarking portfolios, very few data were available for the RRAO, as shown in Table 4. This is due to the construction of RRAO, which only has to be reported for exotic instruments, or instruments bearing residual risks.

117. The only portfolio with a considerable number of observations reported is portfolio 1018, containing instrument 118 – autocallable equity option. It is interesting to note that only 19 banks reported the RRAO figure for this portfolio, out of 20 that reported the SBM component (and 18 the DRC component). For this portfolio, the RRAO component submitted is very consistent (0% IQD), with only one bank diverging from the benchmark.

118. It is also interesting to note that a few banks reported RRAO for the portfolios 5031 to 5034 – respectively with instruments 531 to 534 – which are callable bonds – and the few banks that reported the figures did so in a quite consistent manner.

Table 4: EU Statistics for ASA – RRAO OFR

EU Statistics for RRAO OFR

		Main statistics								Percentiles			
	Port. ID	Min	Max	Ave	STDev	STDev_trunc[1]	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.[3]	25th	50th (Median)	75th	Interquantile range
Equity	1001												
	1002												
	1003												
	1004												
	1005												
	1006												
	1007												
	1008												
	1009								4				
	1010								3				
	1011								3				
	1012								3				
	1013								4				
	1014								3				
	1015								4				
	1016								3				
	1017												
	1018	1,000	1,001	1,000	0	1	0	0%	19	1,000	1,000	1,000	0%
	1019												
	1020								2				
	1021	18,085	19,120	18,461	390	390	99	2%	5	18,300	18,399	18,400	0%
	1101												
	1102								3				
	1103								3				
	1104								3				
	1105								3				
	1106								4				
	1107												
	1108												
	1109												
	1110												
Interest Rate	2001												
	2002												
	2003												
	2004												
	2005												
	2006												
	2007												
	2008												
	2009												
	2010												
	2011												
	2012												
	2013												
	2014												
	2015												
	2016	869	1,968	1,167	451	3,630	3	39%	5	997	1,000	1,000	0%
	2017	869	1,968	1,167	451	3,630	3	39%	5	997	1,000	1,000	0%
	2018												
	2019												
	2020												
	2021												
	2022												
	2023												
	2024												
	2201												
	2202												
	2203												
	2204												
	2205												
	2206												
	2207												
	2208	1,737	3,936	2,333	903	7,260	5	39%	5	1,995	2,000	2,000	0%
	2209												
	2210												
	2211												
	2212												
FX	3001												
	3002												
	3003												
	3004												
	3005												
	3006												
	3007												
	3008												
	3009												
	3010												
	3011												
	3301												
	3302												
	3303												
	3304												

	4001												
	4002												
	4003								2				
Commodities	4004								2				
	4005												
	4401												
	4402								2				
	4403								2				
	5001												
	5002												
	5003												
	5004												
	5005												
	5006												
	5007												
	5008												
	5009												
	5010												
	5011												
	5012												
	5013												
	5014												
	5015												
	5016												
	5017												
	5018												
	5019												
	5020												
	5021												
	5022												
	5023												
	5024												
	5025												
	5026												
	5027												
Credit Spread	5028												
	5029												
	5030												
	5031	1,000	1,000	1,000	0	1,513	0	0%	6	1,000	1,000	1,000	0%
	5032	869	10,004	2,107	3,191	13,808	1	152%	8	991	1,000	1,000	0%
	5033	1,000	10,012	2,287	3,406	13,865	0	149%	7	1,000	1,000	1,000	0%
	5034	1,000	10,012	2,287	3,406	14,939	0	149%	7	1,000	1,000	1,000	0%
	5501												
	5502												
	5503												
	5504												
	5505												
	5506												
	5507												
	5508												
	5509												
	5510												
	5511												
	5512												
	5513												
	5514												
	5515	869	1,968	1,167	451	3,630	3	39%	5	997	1,000	1,000	0%
	5516	869	1,968	1,167	451	3,630	3	39%	5	997	1,000	1,000	0%
	5517	1,737	3,936	2,333	903	7,260	5	39%	5	1,995	2,000	2,000	0%
	5518												
	5519												
	5520												
	5521												
	5522												
	6001								2				
	6002												
	6003								2				
	6004												
	6005								2				
	6006												
	6007								2				
CTP	6008												
	6009								3				
	6010												
	6601												
	6602												
	6603												
	6604												
	6605								2				
ALL-IN no-CTP	10000								2				
Equity Cumulative	11000								4				
IR Cumulative	12000												
FX Cumulative	13000												
Commodity Cumulative	14000								2				
CS Cumulative	15000												
CTP Cumulative	16000												

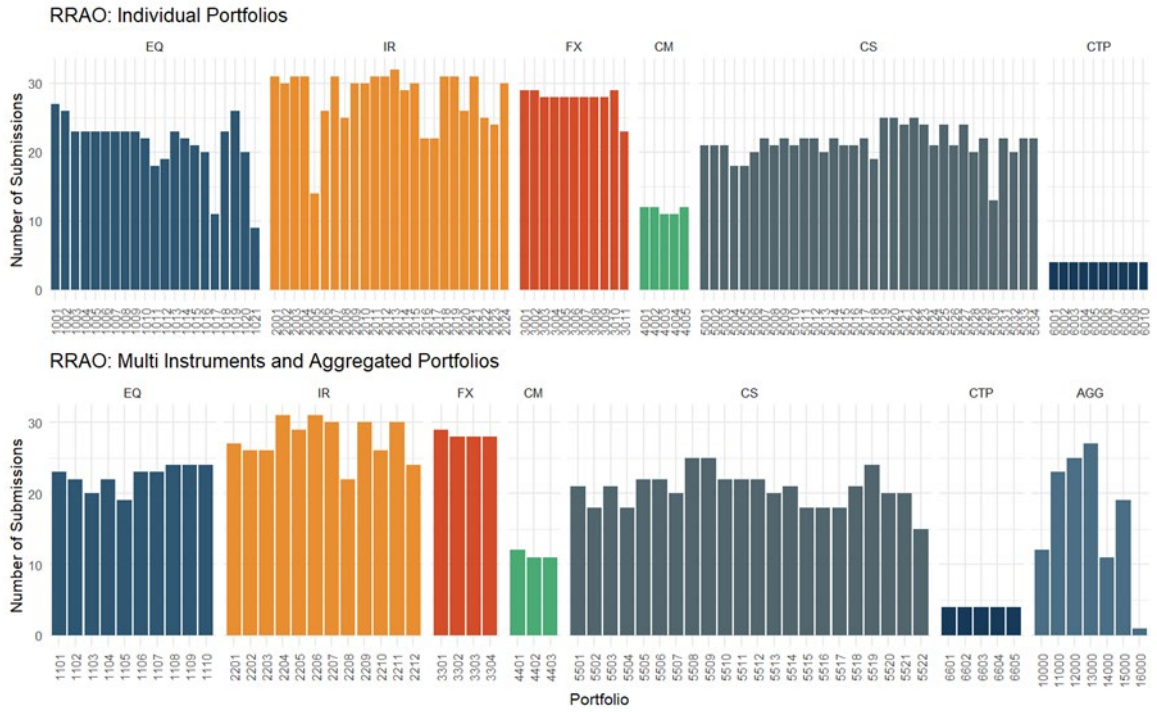
[1] *STDev trunc* is the standard deviation computed excluding values below the *5th* and above the *95th* percentile

[2] Refers to the number of banks included in the computation of the statistics

*** For the aggregated portfolios (60 to 66), banks that reported at least a missing portfolio IMV among the ones composing the aggregate are not included in the computation of the benchmarks for that particular aggregate portfolio.*

119. For the third component of the ASA; the RRAO, the banks also submitted a fairly high amount, on RRAO figures.

Figure 28: RRAO OFR total submissions by portfolio



120. The number of submissions, however, do not reflect that all banks provided OFR figures for the component, since it only contributes to OFR, when the portfolio composition contains instruments with exotic underlying or other residual risks. Where banks do not identify one of these RRAO relevant instrument, a zero is reported accordingly.

Figure 29: RRAO OFR / Median by portfolio

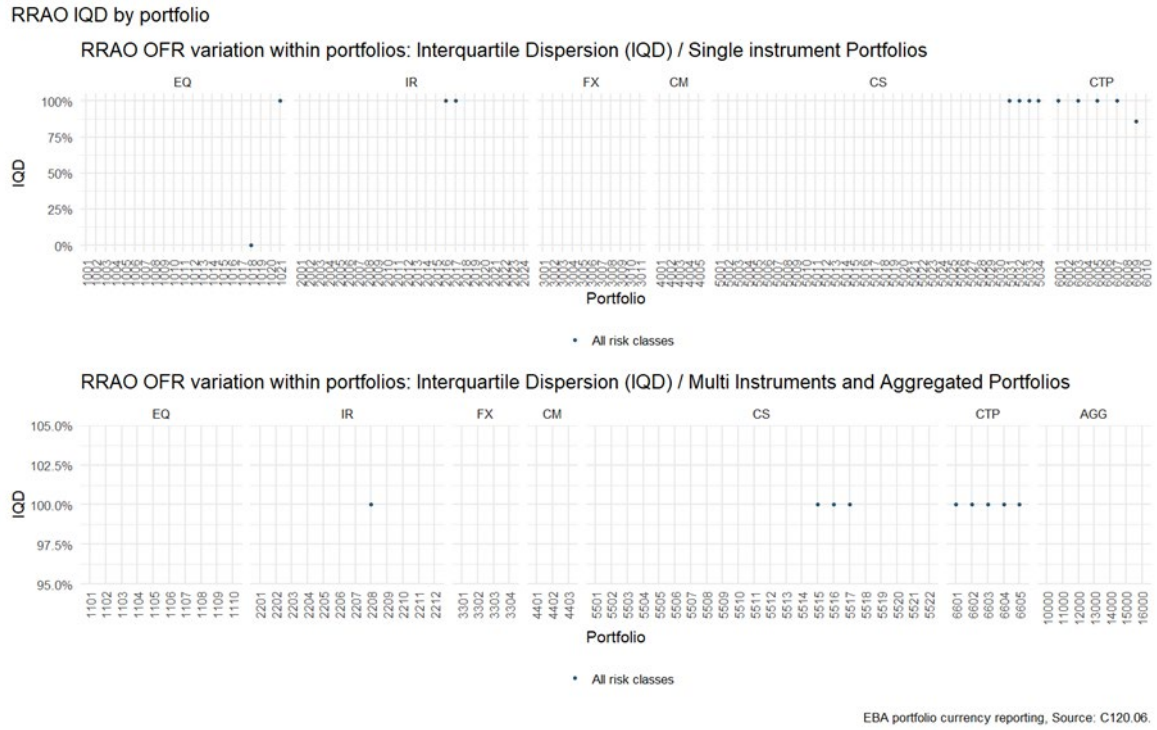
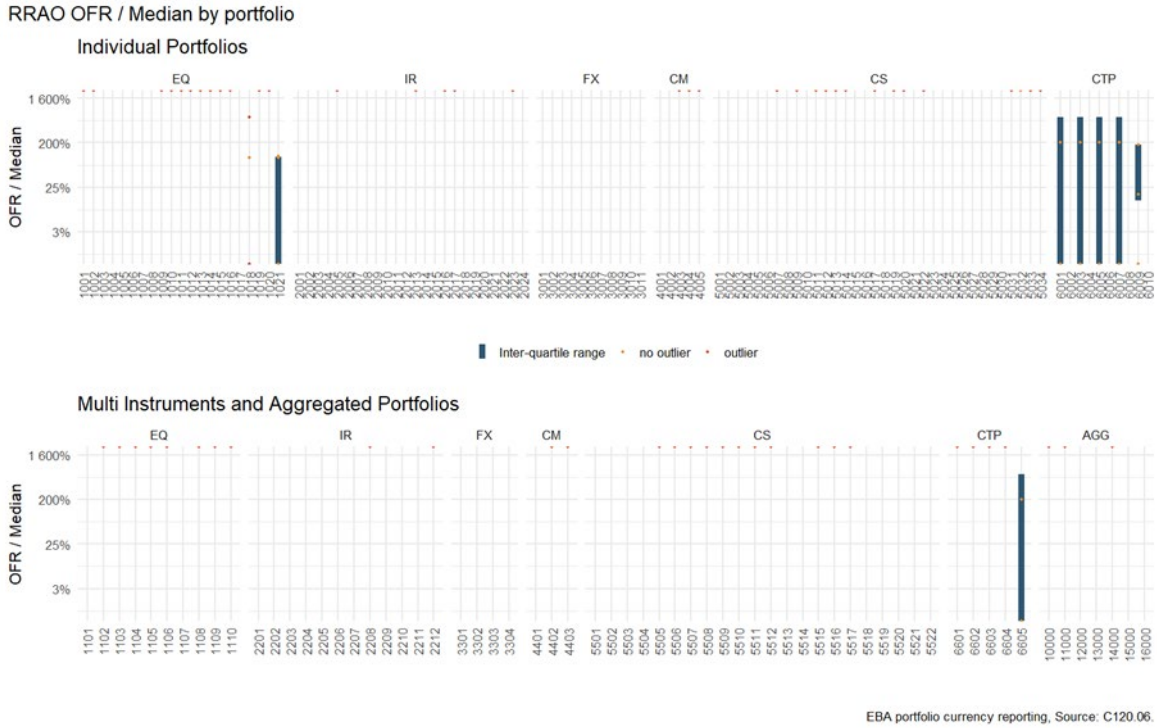


Figure 30: RRAO OFR variation within portfolios: Interquartile Dispersion (IQD)



121. Regarding the dispersion within RRAO portfolio the conclusion can be drawn, that the IQD reflects either 1 or 0, while only for few portfolios, in both bases single and multi-instrument portfolios, the RRAO figures are reported. In fact, only portfolio 1018 as single instrument portfolio seems to form a unity of respondents for the RRAO calculation. Comparing to IQD in DRC and SBM, the occurrence of flat 1 IQDs can be explained, that the RRAO charge can be understood as binary, since the notional, which is given in the exercise, is just multiplied with a risk weight. The determination of the notional is hence unambiguous in this exercise. It should be noted that the determination of notional can be not straight forward in practice, hence this exercise reflects only the ability of banks to correctly identify RRAO relevant instruments.

122. As shown in Figure 29, the majority of portfolios do not show any IQD. However, it can be observed here, that indeed some banks reported RRAO figures. However, these banks have been only very single cases, and not enough to become statistically recognised by the IQD. Examples are portfolios like 1001 (Long ESTXX50 Future), 1002 (Long Bayer shares), 1009 (Long Call Bayer Options), 4402 (combination of two vanilla commodity options).

123. As a conclusion, for the RRAO, some inconsistencies were observed, even when the IQD is zero. On the other hand, it needs to be recalled that the current design of the benchmarking portfolios may be not appropriate to gather strong conclusions concerning the RRAO, given the vanilla nature of great majority of the instruments.

5. Competent Authorities assessment on ASA implementation

124. For participating institutions, the CAs provided individual assessments of any potential underestimation of the capital requirement as required by Article 78(4) of the CRD and Articles 9 and 10 of the draft RTS on supervisory benchmarking. This chapter highlights some key information derived from these assessments.

125. The EBA designed a questionnaire about this assessment, which asked CAs to provide detailed information concerning the level of priority, based on both judgemental and qualitative/quantitative examination results, the overall assessment concerning the MR capital requirements of the Alternative Standardised Approach and, finally, the CAs' ongoing monitoring activities.

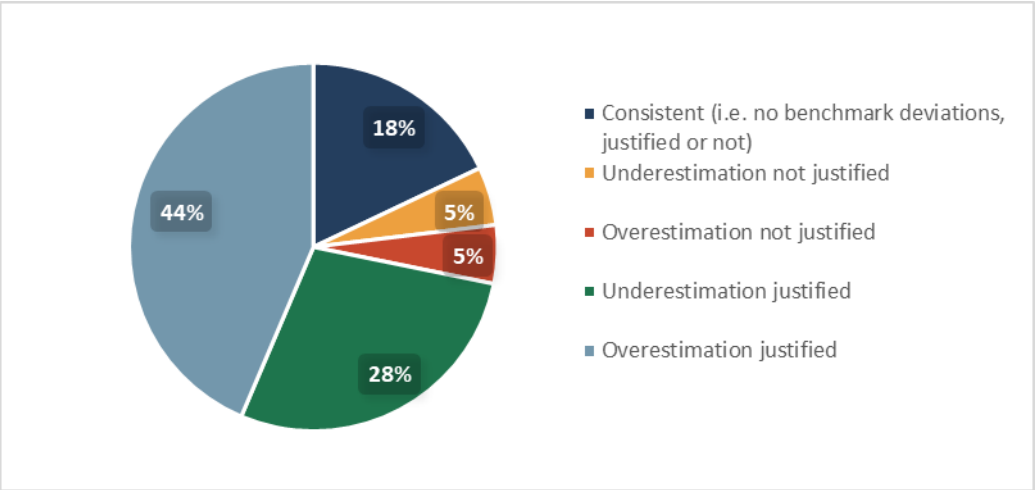
126. A total of 39 questionnaires from 12 Member States, provided by the CAs, have been considered in this assessment of the MR benchmarking exercise.

127. Regarding the level of priority of the assessments, 7 banks were reported to be a high priority for intervention by CAs. The CAs gave high priority due to relevance of the ASA expected to have giving the switch from IMA in 2027.

128. Figure 16 reports on the CAs' own overall assessments of the levels of own funds requirements. When it comes to benchmark deviations, justified or not, 32 banks were reported by CAs as under or overestimating MR own funds requirements, of which 28 provided justifications for this. Obviously, 'not justified' implies that further and targeted CA investigation is required. Finally, 7 banks had consistent results (i.e., no benchmark deviations).

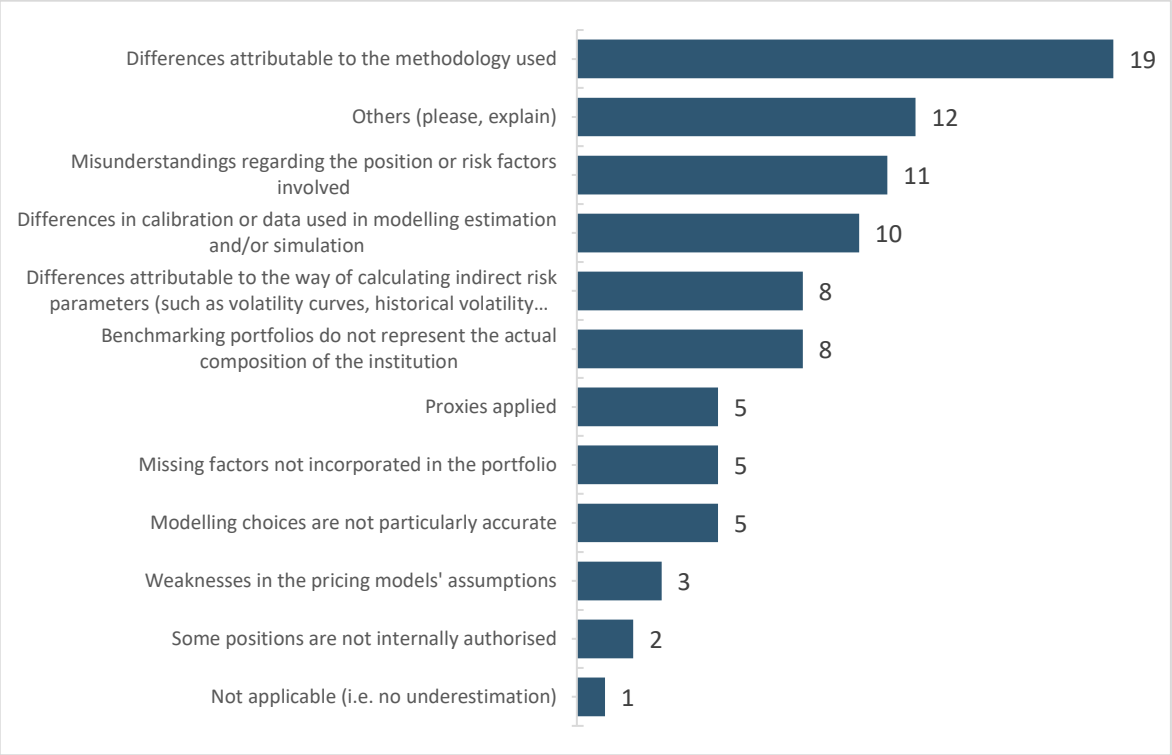
129. CAs' assessments acknowledge two cases out of 39 of unjustified underestimation and two of 39 of overestimation of ASA capital requirements that require further in-depth analysis. Obviously, CAs – and the joint supervisory teams, where applicable – pay close attention to the potential cases of underestimation and overestimation, both across the portfolio and across the risk categories. 1 out of 4 of these cases were classified as high priority by their supervisors.

Figure 31: CAs' own assessments of the levels of MR ASA own funds requirements (BM exercise 2025)



130. The main (see Figure 32: CAs' reported reasons for over-underestimation of MR own funds requirements (BM exercise 2025)) factors and reasons that may explain possible underestimations are as follows: Differences attributable to the methodology used (19/89); Others (of which many reported "Use of 0% risk weight as stipulated in Article 325y(2) in line with other banks.", as explanation) (12/89); Misunderstandings regarding the position or risk factors involved (11/89); and Differences in calibration or data used in modelling estimation and/or simulation (10/89). These explanations, and very often a combination of these explanations, were offered by a large majority of the applicable respondents.

Figure 32: CAs' reported reasons for over-underestimation of MR own funds requirements (BM exercise 2025)



131. On both the underestimating without justification the bank were not able to provide any additional information to their competent authorities to explain the underestimation, and in one case the competent authority will follow up with the bank, monitoring and further evaluating the potential issues.

132. Overall, CAs planned or reported action in respect of 6 banks, such as:

a) FRTB thematic review;

b) Follow-up questioning of the discrepancies in sone ASA component;

c) review of the remediation progress of the identified gaps, clarifications requested regarding potential gaps in implementation;

d) closely monitor and assess the implementation of the action plan already undergone and expectations from the strengthening of the market risk management standards;

e) continue to monitor the data quality and pricing model modules in the annual validation.

6. Conclusion

133. The 2025 exercise is the second that EBA provides a separate report for the FRTB ASA on the market risk benchmarking exercise. The reasons for separating ASA and IMA are that the ASA data collection was enriched with the latest component of the ASA methodology (DRC and RRAO), but also with the validation portfolios data collection, so that just the shared volume of new information justifies a separate reporting of the matter. The FRTB ASA benchmarking will be even more critical in the future, where the benchmarking exercise will be extended to banks that apply the ASA methodology independently by the current requirement of having been granted permission to adopt internal models for market risk's own funds requirements.

134. A surely positive aspect of the ASA data collection is that the OFR computed with this methodology is already significantly more consistent than the IMA methodology. This result is not surprising given the standardised nature of the methodology, but it reassures us of the consistency in the implementation of the method.

135. A good degree of consistency is observed not only in the level of SBM OFR but also in the specific sensitivities provided. Some of the issues noted in 2024 were solved, at bank level, and the overall level of dispersion seems acceptable. Average dispersion is even lower, once the FX contribution (that artificially increases the misalignment) is removed. This allows the better identification of portfolios where the misalignment is more significant and has reasons that are beyond the simple FX component. Specific portfolios were analysed in detail, revealing issues (underlying attributions and bucketing), that are not just relevant to the exercise, but have actual implication on the day-to-day application of the ASA methodology. The bucketing aspect, which could be both in terms of time bucket or business is assigned, is clearly a driver of dispersion more significant than the simple sensitivity computation.

136. The aggregation formula indicates a good level of consistency for the (few) banks submitter. Misalignments are quite limited among the computation for the own funds returns for the validation portfolios in each asset class. Yet some discrepancy is detectable at firm level, and overall, the low number of submissions does not allow to make more general conclusions.

137. For the DRC, overall average low dispersion, with some peaks of high dispersion. A deeper analysis show that there is still quite an inconsistency in the submissions, even the ones with very low IQD, that could be linked both to unclarity of the position but also inconsistent application of the DRC requirements.

138. To a fewer extent the RRAO as well, some inconsistencies were observed, even when the IQD is extremely low. On the other hand, the current design of the benchmarking portfolios may be not appropriate to gather strong conclusions concerning the RRAO, given the vanilla nature of great majority of the instruments.

139. The CAs' assessment of the ASA implementation is generally positive, as the observed overestimates and underestimates in OFR are, in most cases, adequately explained either by the CA or by the bank during the exercise. CAs are also generally following up with their banks in

many cases, regardless of whether full explanations for the divergences from the benchmarks were provided in the submissions.

7. Annex 1 – Additional tables

Table 5: Banks participating in the 2025 EBA MR benchmarking exercise

Country	Bank name
AT	Erste Group Bank AG
AT	Raiffeisen Bank International AG
BE	Belfius Bank
BE	KBC Groupe
DE	COMMERZBANK Aktiengesellschaft
DE	Citigroup Global Markets Europe AG
DE	DEUTSCHE BANK AKTIENGESELLSCHAFT
DE	DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main
DE	DekaBank Deutsche Girozentrale
DE	Goldman Sachs Bank Europe SE
DE	Landesbank Baden-Württemberg
DE	Landesbank Hessen-Thüringen Girozentrale
DE	Morgan Stanley Europe Holding SE
DE	Nomura Financial Products Europe GmbH
DE	Norddeutsche Landesbank - Girozentrale -
DK	Danske Bank A/S
DK	Nykredit Realkredit A/S
ES	Banco Bilbao Vizcaya Argentaria, S.A.
ES	Banco Santander, S.A.
ES	CaixaBank, S.A.
FI	Nordea Bank Abp
FR	BNP Paribas
FR	BofA Securities Europe SA
FR	Groupe BPCE
FR	Groupe Crédit Agricole
FR	HSBC Continental Europe
FR	Société générale S.A.
GR	Alpha Bank S.A.
GR	Eurobank Ergasias Services and Holdings S.A.
GR	National Bank of Greece, S.A.
IE	Barclays Bank Ireland plc
IE	Citibank Europe plc
IT	BANCO BPM SOCIETA' PER AZIONI
IT	Intesa Sanpaolo S.p.A.
IT	UNICREDIT, SOCIETA' PER AZIONI
NL	ABN AMRO Bank N.V.
NL	Coöperatieve Rabobank U.A.
NL	ING Groep N.V.
NL	NIBC Bank N.V.
NL	RBS Holdings N.V.
PT	Banco Comercial Português, SA
SE	Skandinaviska Enskilda Banken - gruppen
SE	Swedbank - Grupp

Country	AT	BE	DE	DK	ES	FI	FR	GR	IE	IT	NL	PT	SE
N.banks	*2*	*2*	*11*	*2*	*3*	*1*	*6*	*3*	*2*	*3*	*5*	*1*	*2*

Table 6: Instruments/portfolios underlying the HPE

For a detailed description of the portfolios, please refer to the EBA website:

https://www.eba.europa.eu/activities/single-rulebook/regulatory-activities/supervisory-benchmarking-exercises/its-package-benchmarking-exercises

Adopted as consolidated text: Commission Implementing Regulation (EU) 2016/2070 of 14 September 2016 laying down implementing technical standards for templates, definitions and IT-solutions to be used by institutions when reporting to the European Banking Authority and to competent authorities in accordance with Article 78(2) of Directive 2013/36/EU of the European Parliament and of the Council (Text with EEA relevance)Text with EEA relevance

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02016R2070-20250401

Table 7: EU Statistics for ASA - SBM OFR

EU Statistics for SBM OFR

		Main statistics								Percentiles			
	Port. ID	Min	Max	Ave	STDev	STDev_trunc[1]	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.[2]	25th	50th (Median)	75th	Interquantile range
Equity	1001	791,470	1,119,393	938,513	137,512	137,512	104,747	15%	32	794,934	1,003,702	1,069,272	15%
	1002	75,441	89,000	82,456	1,793	6,888	35	2%	30	82,405	82,440	82,476	0%
	1003	75,622	83,489	82,293	1,330	5,119	26	2%	28	82,455	82,528	82,540	0%
	1004	25,436	29,717	25,726	873	3,303	44	3%	24	25,464	25,527	25,563	0%
	1005	1,699,845	1,719,336	1,709,830	3,785	9,244	476	0%	28	1,709,095	1,709,484	1,711,998	0%
	1006	3,280	19,652	16,236	2,906	14,455	199	18%	27	15,976	16,080	16,371	1%
	1007	118,306	119,857	119,319	406	715	72	0%	27	119,101	119,484	119,508	0%
	1008	78,900	79,816	79,270	184	349	31	0%	28	79,167	79,283	79,304	0%
	1009	72,263	83,076	81,908	1,961	5,529	130	2%	27	82,057	82,367	82,460	0%
	1010	88,536	106,896	100,369	3,500	8,756	922	4%	25	99,919	101,323	101,604	1%
	1011	0	736	150	242	383	20	162%	21	1	40	178	99%
	1012	15,172	26,260	20,564	2,682	3,133	1,695	13%	22	19,152	20,841	22,542	8%
	1013	73,893	90,046	84,494	2,660	6,704	743	3%	26	83,922	84,869	85,407	1%
	1014	109,658	129,962	125,806	4,026	12,082	1,701	3%	25	124,883	125,963	128,574	1%
	1015	23,881	26,439	24,972	695	814	401	3%	23	24,422	24,930	25,189	2%
	1016	1,592	3,798	2,863	601	764	372	21%	22	2,526	2,843	3,270	13%
	1017	308,423	220,042,468	94,550,889	78,561,718	135,213,330	66,358,945	83%	14	3,042,828	113,713,027	139,379,249	96%
	1018	79,884	193,530	138,109	32,551	42,908	28,125	24%	20	115,694	137,350	167,586	18%
	1019	406,436	754,481	569,577	79,654	91,223	49,051	14%	30	522,848	581,988	605,958	7%
	1020	570,000	975,862	793,383	132,841	157,621	104,586	17%	22	688,569	775,287	895,158	13%
	1021	5	3,646,281	1,532,047	1,348,293	1,348,293	930,961	88%	10	392,982	1,101,318	2,518,206	73%
	1101	1,722,585	1,742,488	1,733,236	4,178	8,997	584	0%	28	1,731,922	1,732,427	1,735,764	0%
	1102	8,812	12,634	10,519	889	1,675	314	8%	27	10,088	10,418	10,916	4%
	1103	22,997	26,187	24,361	973	951	576	4%	25	23,672	24,328	24,777	2%
	1104	34,182	45,440	41,297	3,115	4,586	1,751	8%	26	39,774	42,496	43,649	5%
	1105	14,715	26,259	20,914	3,008	3,361	1,976	14%	22	19,152	21,435	22,869	9%
	1106	46,867	66,184	49,534	3,577	11,340	301	7%	26	48,467	48,670	49,286	1%
	1107	165,162	177,721	171,774	2,451	10,904	393	1%	27	170,785	171,094	174,214	1%
	1108	36,901	1,088,536	899,869	210,646	531,550	49,736	23%	29	770,902	1,023,667	1,036,253	15%
	1109	35,723	1,072,313	889,718	208,513	533,176	50,448	23%	29	762,848	1,013,116	1,025,849	15%
	1110	75,041	85,808	82,208	2,084	5,500	89	3%	28	81,609	81,630	82,249	0%
Interest Rate	2001	303,878	324,000	312,144	4,719	8,171	3,026	2%	36	308,761	312,369	316,423	1%
	2002	450,621	572,000	500,497	19,527	42,484	5,802	4%	36	494,561	497,257	506,201	1%
	2003	31,648	35,538	33,579	1,108	1,046	771	3%	39	32,823	33,683	34,410	2%
	2004	150,489	178,906	165,245	8,612	8,367	6,258	5%	38	157,369	163,000	173,124	5%
	2005	372,474	660,363	498,897	82,476	185,345	49,009	17%	15	442,777	525,778	549,498	11%
	2006	126,768	171,539	146,159	9,358	16,818	1,029	6%	28	143,798	144,908	146,064	1%
	2007	57,545	61,000	58,947	949	949	577	2%	36	58,019	59,115	59,316	1%
	2008	129,884	162,673	141,169	7,285	12,592	839	5%	27	138,126	140,170	140,472	1%
	2009	38,240	45,155	43,947	1,394	5,221	478	3%	37	43,759	44,373	44,679	1%
	2010	59,522	61,772	60,674	680	1,322	442	1%	36	60,048	60,862	61,238	1%
	2011	65,728	69,683	67,188	1,081	1,155	900	2%	35	66,015	67,399	67,752	1%
	2012	72,882	77,162	74,480	1,221	1,355	957	2%	35	73,454	74,550	75,001	1%
	2013	4,440	184,483	118,194	55,162	52,485	3,998	47%	39	76,109	79,989	181,646	41%
	2014	48,393	50,359	49,329	537	822	541	1%	35	48,805	49,296	49,877	1%
	2015	48,638	147,138	89,922	43,005	44,382	3,458	48%	37	57,018	59,299	144,449	43%
	2016	59,170	179,044	108,972	52,683	54,737	6,049	48%	26	68,521	72,206	172,927	43%
	2017	70,691	183,470	119,255	48,566	50,431	9,097	41%	27	77,312	86,202	175,898	39%
	2018	653,678	681,000	663,162	7,337	16,244	6,536	1%	37	658,678	661,460	670,512	1%
	2019	336,730	348,241	342,254	4,140	6,138	1,981	1%	35	339,306	341,131	347,491	1%
	2020	411,384	645,574	543,731	50,322	102,457	7,070	9%	25	537,863	547,073	547,505	1%
	2021	40,669	48,148	43,089	1,887	2,686	870	4%	35	41,772	42,883	44,262	3%
	2022	88,021	129,206	100,016	10,493	17,231	1,243	11%	30	95,157	96,345	97,922	1%
	2023	443,836	633,081	498,761	34,637	71,797	14,242	7%	27	479,413	494,754	502,531	2%
	2024	159,401	307,522	264,043	26,363	52,618	10,906	10%	35	252,987	260,924	281,986	5%
	2201	97,350	158,331	125,081	13,648	18,447	2,407	11%	31	121,291	122,714	128,218	3%
	2202	226,743	309,730	249,068	17,930	34,864	2,164	7%	27	242,615	246,479	248,355	1%
	2203	205,071	313,105	253,863	20,893	31,665	2,462	8%	29	250,191	254,593	256,253	1%
	2204	364,928	398,000	383,288	6,841	10,937	2,255	2%	35	382,433	384,751	387,007	1%
	2205	33,778	37,544	35,353	1,022	1,779	481	3%	32	34,713	35,180	35,928	2%
	2206	990,160	1,037,035	1,004,582	12,662	21,795	5,276	1%	37	994,047	999,539	1,017,278	1%
	2207	452,153	594,268	485,677	26,421	60,914	8,588	5%	34	471,205	476,895	492,954	2%
	2208	80,938	219,400	138,384	56,156	61,407	10,251	41%	25	95,428	105,895	206,858	37%
	2209	18,712	115,500	57,777	42,073	43,807	3,137	73%	36	26,212	28,695	112,808	62%
	2210	199,390	249,379	228,726	9,014	30,318	2,937	4%	30	226,040	229,613	231,143	1%
	2211	313,289	346,215	330,374	6,025	9,019	2,923	2%	34	327,366	329,477	335,171	1%
	2212	459,947	620,123	506,071	30,263	60,499	10,369	6%	27	491,522	504,122	512,933	2%
FX	3001	912,816	942,118	931,079	5,211	27,712	1,983	1%	32	929,474	931,482	933,507	0%
	3002	1,239,223	1,315,244	1,263,882	11,519	26,498	3,111	1%	31	1,260,185	1,262,985	1,265,883	0%
	3003	917,209	937,153	924,911	7,059	31,510	2,502	1%	29	919,076	921,352	932,608	1%
	3004	872,468	1,015,000	931,018	34,974	77,448	22,026	4%	31	903,530	929,401	947,912	2%
	3005	837,998	1,047,169	938,069	48,813	68,723	15,164	5%	30	910,698	926,418	944,882	2%
	3006	1,005,002	1,307,784	1,157,405	65,033	86,580	17,832	6%	31	1,129,407	1,139,193	1,169,376	2%
	3007	398,702	733,000	542,835	84,256	122,161	33,030	16%	32	498,835	528,765	563,082	6%
	3008	1,097,761	1,273,171	1,228,518	30,556	69,397	14,550	3%	31	1,216,502	1,232,562	1,247,016	1%
	3009	1,207,907	1,774,541	1,458,954	104,390	232,908	39,541	7%	31	1,403,430	1,429,675	1,483,629	3%
	3010	13,566	1,001,969	299,228	167,211	393,488	4,092	56%	31	245,134	250,069	254,235	2%
	3011	1,005,499	1,072,813	1,028,733	18,244	28,663	1,034	2%	24	1,021,014	1,022,422	1,024,447	0%
	3301	1,147,995	1,195,065	1,180,100	9,174	195,566	2,007	1%	35	1,179,706	1,180,825	1,185,307	0%
	3302	285,292	992,969	582,048	120,566	215,714	22,990	21%	31	542,125	570,331	598,391	5%
	3303	672,429	975,626	837,126	66,484	79,512	21,156	8%	32	803,317	821,655	845,267	3%
	3304	1,262,312	1,648,000	1,561,331	83,441	164,220	23,252	5%	31	1,563,610	1,584,289	1,612,520	2%

Commodities	*4001*	2,393,854	3,473,475	2,649,514	334,887	673,501	90,139	13%	16	2,412,869	2,596,010	2,637,585	4%
	4002	2,402,273	3,565,690	2,693,160	343,756	689,567	57,533	13%	16	2,475,875	2,629,406	2,661,581	4%
	4003	334,946	736,375	559,605	106,121	124,510	43,548	19%	14	519,918	570,371	607,014	8%
	4004	693,833	903,184	777,502	61,270	366,628	43,699	8%	14	739,598	799,030	818,877	5%
	4005	3,819,969	5,187,271	4,222,120	420,848	1,376,274	92,599	10%	13	4,039,404	4,090,381	4,182,981	2%
	4401	61,132	446,260	346,119	141,431	173,498	27,273	41%	15	367,556	403,418	425,471	7%
	4402	691,582	818,227	753,277	29,834	417,782	5,790	4%	14	737,952	760,156	765,449	2%
	4403	2,863,881	4,044,879	3,220,272	364,607	467,957	57,504	11%	13	3,044,886	3,130,961	3,161,846	2%
Credit Spread	*5001*	20,905	25,723	23,337	1,897	1,865	1,825	8%	23	21,390	23,865	25,186	8%
	5002	20,804	24,092	22,609	1,298	1,339	370	6%	21	21,079	23,354	23,713	6%
	5003	21,112	25,366	23,128	1,782	1,782	1,753	8%	22	21,282	23,348	24,832	8%
	5004	19,647	20,978	20,222	330	483	195	2%	18	19,929	20,294	20,416	1%
	5005	76,535	82,756	79,649	1,468	1,646	998	2%	18	78,547	79,794	80,589	1%
	5006	21,100	28,303	23,923	2,197	1,986	1,841	9%	23	21,565	24,703	25,662	9%
	5007	83,584	90,393	85,080	1,574	7,402	396	2%	23	84,136	84,490	85,196	1%
	5008	48,266	50,662	48,960	637	1,140	155	1%	20	48,624	48,791	49,112	0%
	5009	211,675	226,898	214,736	3,505	18,526	1,036	2%	23	212,680	213,499	215,010	1%
	5010	120,969	126,277	122,716	1,467	3,863	382	1%	20	121,915	122,303	123,146	1%
	5011	84,927	91,091	86,426	1,645	10,542	409	2%	22	85,394	85,693	86,363	1%
	5012	126,622	135,974	128,705	2,263	17,040	683	2%	22	127,311	127,858	128,760	1%
	5013	56,761	67,884	63,875	2,463	7,102	2,138	4%	19	62,502	63,021	65,730	3%
	5014	129,329	137,816	131,455	2,359	17,438	510	2%	21	130,343	130,547	131,281	0%
	5015	129,028	148,889	131,703	4,386	11,635	630	3%	22	129,584	130,105	130,918	1%
	5016	121,870	127,496	123,108	1,274	3,589	558	1%	20	122,259	122,932	123,402	0%
	5017	80,656	210,988	146,552	55,842	55,293	22,859	38%	25	96,555	121,933	207,967	37%
	5018	71,917	84,528	77,900	4,168	3,982	2,430	5%	21	73,878	79,337	81,687	5%
	5019	44,149	100,172	70,003	9,006	25,011	627	13%	26	69,939	70,528	71,191	1%
	5020	41,731	150,226	111,738	18,070	39,191	1,231	16%	25	113,135	114,449	115,109	1%
	5021	103,107	214,192	155,723	16,856	46,878	1,381	11%	24	153,314	154,665	156,337	1%
	5022	145,670	334,718	232,043	41,730	52,055	13,157	18%	25	220,359	239,370	241,830	5%
	5023	130,727	136,752	134,466	1,567	3,358	890	1%	25	133,590	134,881	135,377	1%
	5024	63,692	82,118	70,006	5,539	7,314	4,397	8%	20	64,136	71,388	74,076	7%
	5025	122,840	128,762	126,364	1,549	3,712	918	1%	24	125,484	126,717	127,481	1%
	5026	68,074	112,294	90,197	10,165	14,392	8,112	11%	20	82,358	92,560	97,844	9%
	5027	151,680	167,941	160,589	3,664	10,940	1,838	2%	24	157,961	161,175	162,613	1%
	5028	85,625	114,708	94,563	8,196	10,913	3,781	9%	19	88,755	94,267	96,472	4%
	5029	533,954	709,754	628,618	55,566	55,566	39,993	9%	24	582,431	611,700	686,806	8%
	5030	154,032	683,713	452,757	155,412	177,484	104,819	34%	14	357,390	460,146	575,647	23%
	5031	5,003	421,000	235,176	94,595	109,879	6,361	40%	23	210,325	212,419	219,749	2%
	5032	159,768	353,626	272,609	57,811	70,125	17,317	21%	20	232,240	245,373	333,788	18%
	5033	40,476	143,681	97,016	22,208	27,538	1,986	23%	23	88,136	92,149	93,570	3%
	5034	43,590	84,402	71,976	8,927	20,169	1,768	12%	24	68,943	74,795	75,617	5%
	5501	30,524	34,189	32,477	1,436	1,651	1,306	4%	21	30,953	32,758	33,911	5%
	5502	91,122	98,018	94,514	2,052	2,207	971	2%	19	93,073	93,810	96,428	2%
	5503	54,602	62,183	57,215	2,351	6,498	1,365	4%	20	55,207	57,139	57,224	2%
	5504	1,475	5,004	3,681	1,330	1,440	591	36%	18	2,324	4,299	4,864	35%
	5505	137,875	156,633	144,321	5,851	19,707	3,589	4%	20	139,177	144,056	144,807	2%
	5506	190,529	251,072	223,169	13,595	23,542	6,111	6%	22	217,521	223,808	229,744	3%
	5507	53,349	181,052	94,265	54,412	61,119	4,658	58%	20	56,736	60,042	167,560	49%
	5508	239,217	483,004	353,439	53,296	77,339	13,948	15%	26	334,791	351,150	355,656	3%
	5509	52,036	134,318	89,035	13,369	31,493	3,554	15%	25	84,204	87,759	90,233	3%
	5510	21,618	77,623	39,497	22,362	26,285	1,396	57%	23	24,428	25,610	66,296	46%
	5511	126,896	316,949	204,312	52,578	55,797	47,040	26%	22	154,006	216,987	237,424	21%
	5512	155,611	218,013	179,406	16,988	25,837	7,012	10%	21	158,711	183,559	190,322	9%
	5513	254	3,314	746	666	1,999	282	89%	20	329	803	902	47%
	5514	33,576	43,759	38,985	2,212	3,343	1,585	6%	21	37,703	39,459	39,993	3%
	5515	56,387	166,292	96,158	48,061	51,580	7,358	50%	18	61,785	67,355	157,565	44%
	5516	68,072	190,130	106,976	51,504	58,572	3,336	48%	17	74,536	77,589	181,409	42%
	5517	95,560	336,275	189,160	103,052	111,399	9,657	55%	18	119,682	127,253	326,013	46%
	5518	321,936	342,222	329,395	6,306	8,155	4,670	2%	22	323,858	328,673	333,727	2%
	5519	373,298	395,120	386,212	6,194	14,650	3,778	2%	24	382,136	387,512	390,126	1%
	5520	173,482	247,039	208,782	19,958	23,259	19,108	10%	20	188,995	210,521	222,403	8%
	5521	265,897	358,845	292,380	25,585	46,478	12,932	9%	20	272,969	290,596	297,107	4%
	5522	97,623	725,237	472,208	189,623	239,995	162,752	40%	16	334,066	461,969	652,462	32%
CTP	*6001*	1,787,876	6,072,514	3,728,029	1,527,962	1,527,962	163,011	41%	5	3,511,263	3,552,740	3,715,751	3%
	6002	1,725,447	6,998,875	3,914,608	1,984,497	1,984,497	855,923	51%	5	2,819,855	3,675,778	4,353,084	21%
	6003	1,787,876	6,072,514	3,837,834	1,600,306	1,600,306	1,079,802	42%	5	3,226,451	3,511,263	4,591,065	17%
	6004	1,725,447	6,998,875	3,789,729	1,969,597	1,969,597	855,923	52%	5	2,819,855	3,675,778	3,728,691	14%
	6005								4				
	6006	319,591	990,654	619,558	266,367	266,367	216,874	43%	5	468,797	536,466	782,284	25%
	6007	334,192	1,126,505	643,972	299,157	299,157	108,205	47%	5	485,068	593,274	680,822	17%
	6008	319,591	990,654	597,124	253,655	253,655	133,646	43%	5	468,797	536,466	670,112	18%
	6009	1,829,805	6,072,514	3,814,099	1,510,227	1,510,227	183,892	40%	5	3,552,780	3,715,751	3,899,643	5%
	6010	1,771,518	6,998,875	4,016,342	1,968,199	1,968,199	1,317,091	49%	5	2,819,855	4,136,946	4,354,514	21%
	6601								4				
	6602								4				
	6603								4				
	6604								4				
	6605								4				
ALL-IN no-CTP	*10000*	4,287,800	6,020,200	5,173,756	377,798	900,717	137,963	7%	14	5,102,455	5,161,183	5,314,820	2%
Equity Cumulative	*11000*	1,569,678	1,709,701	1,613,951	49,984	479,286	10,998	3%	27	1,573,540	1,583,436	1,673,786	3%
IR Cumulative	*12000*	1,242,702	1,417,137	1,290,961	42,835	119,849	17,577	3%	27	1,266,491	1,274,602	1,299,649	1%
FX Cumulative	*13000*	1,597,872	1,863,857	1,754,137	56,474	116,656	28,784	3%	31	1,734,452	1,753,384	1,793,358	2%
Commodity Cumulative	*14000*	675,030	943,641	848,110	69,058	352,412	22,159	8%	13	843,678	866,120	884,077	2%
CS Cumulative	*15000*	567,443	833,826	700,898	71,562	77,849	37,643	10%	20	661,665	708,663	739,614	6%
CTP Cumulative	*16000*												

[1] *STDev trunc* is the standard deviation computed excluding values below the *5th* and above the *95th* percentile

[2] Refers to the number of banks included in the computation of the statistics

*** For the aggregated portfolios (60 to 66), banks that reported at least a missing portfolio IMV among the ones composing the aggregate are not included in the computation of the benchmarks for that particular aggregate portfolio.*

Figure 33: Difference in total number of submissions

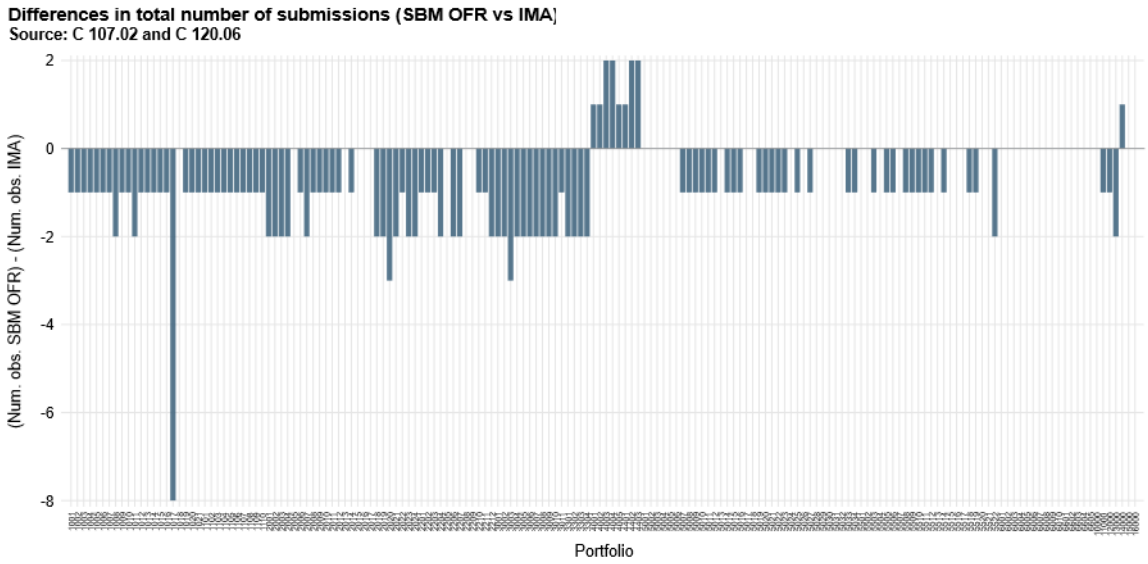
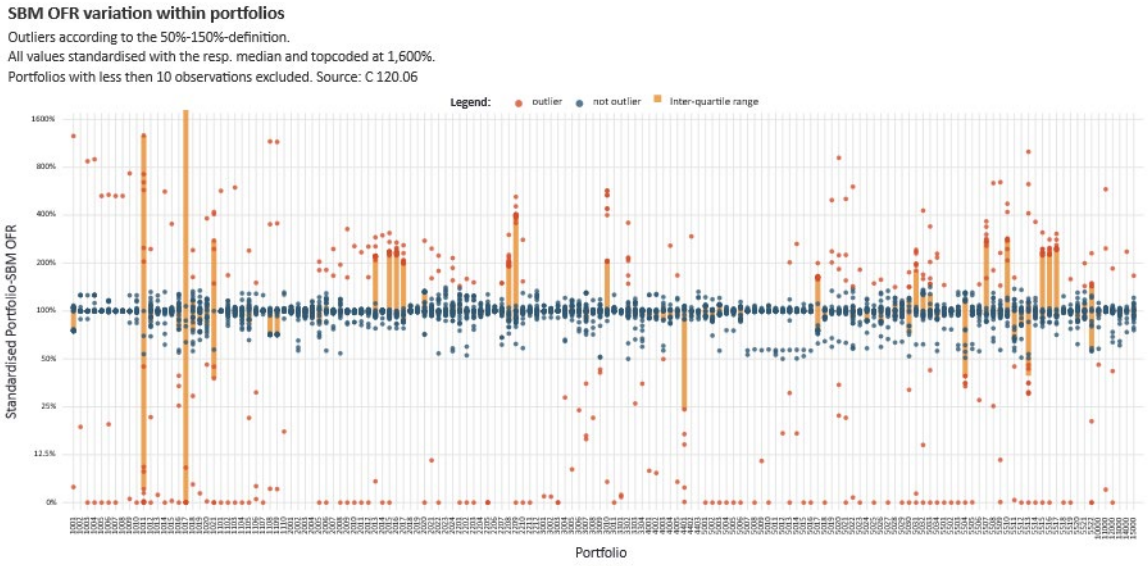


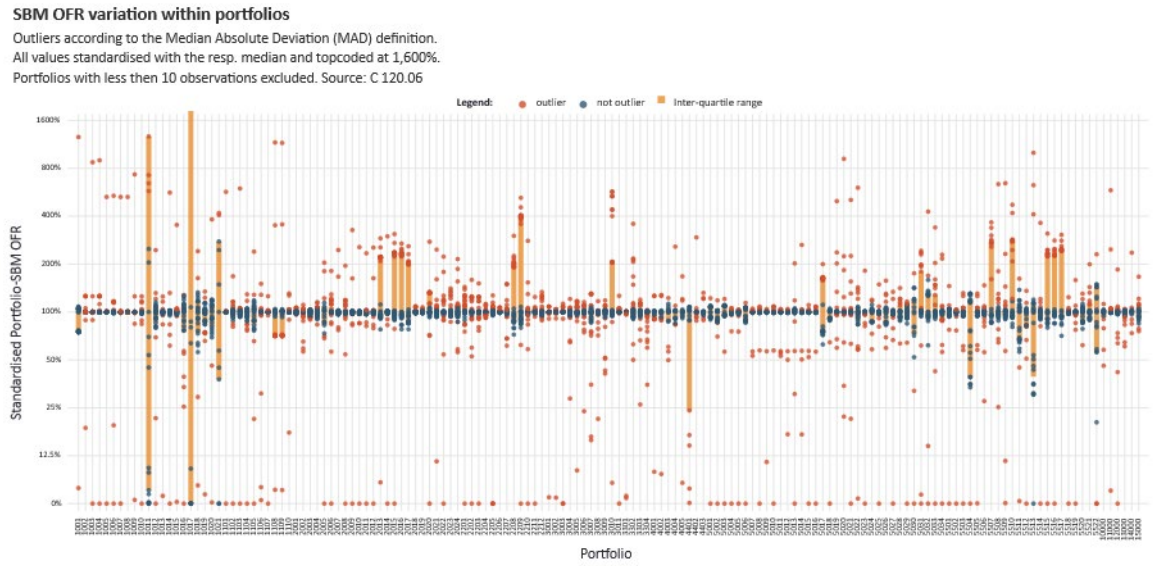
Figure 34: BM OFR variation within portfolios: 50%-150%-outliers



50%-150% outlier definition

- Outliers are defined as values outside the interval [0.5 · ex, 1.5 · ex].
- ex is the median of portfolio-OFRs.

Figure 35: SBM OFR variation within portfolios: MAD-outliers

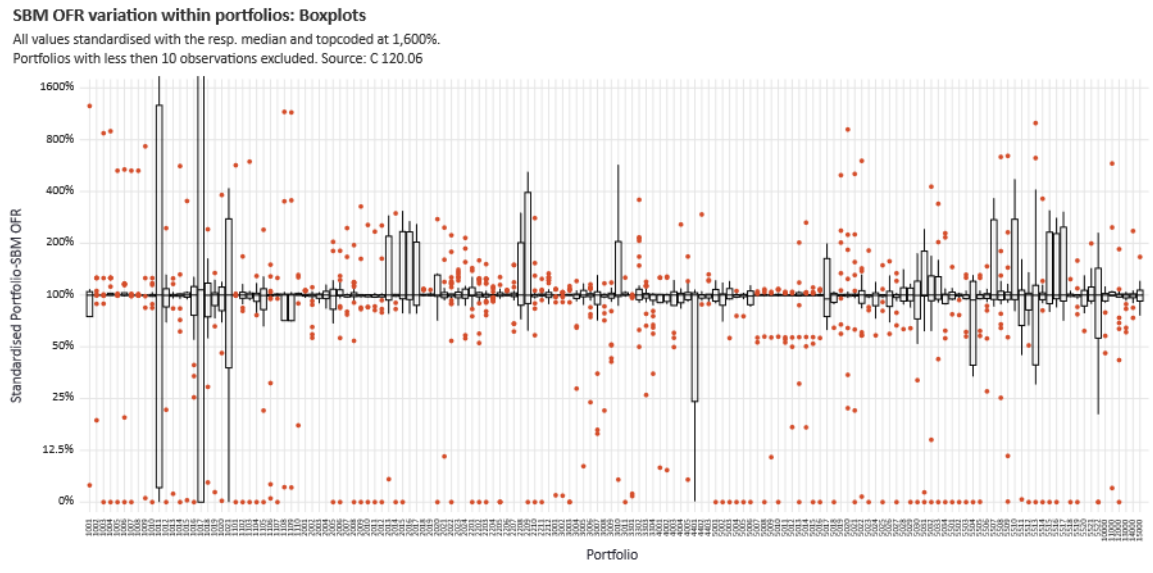


Median Absolute Deviation (MAD) outlier definition

• Outliers are defined as values outside the interval [ex − 2 ·MAD, ex + 2 ·MAD].

• MAD is the Median Absolute Deviation, i.e., MAD = median (|xi − ex|), where xi are the OFR observations of the respective portfolio and ex is their median.

Figure 36: SBM OFR variation within portfolios: Boxplots



Boxplots with 1.5 IQR outlier definition

- Outliers are defined as values outside the interval [Q25 − 1.5 · IQR, Q75 + 1.5 · IQR].
- IQR is the Interquartile Range, i.e., IQR = Q75 − Q25.

Figure 37: SBM OFR variation within EQ portfolio (EBA outliers' definition)

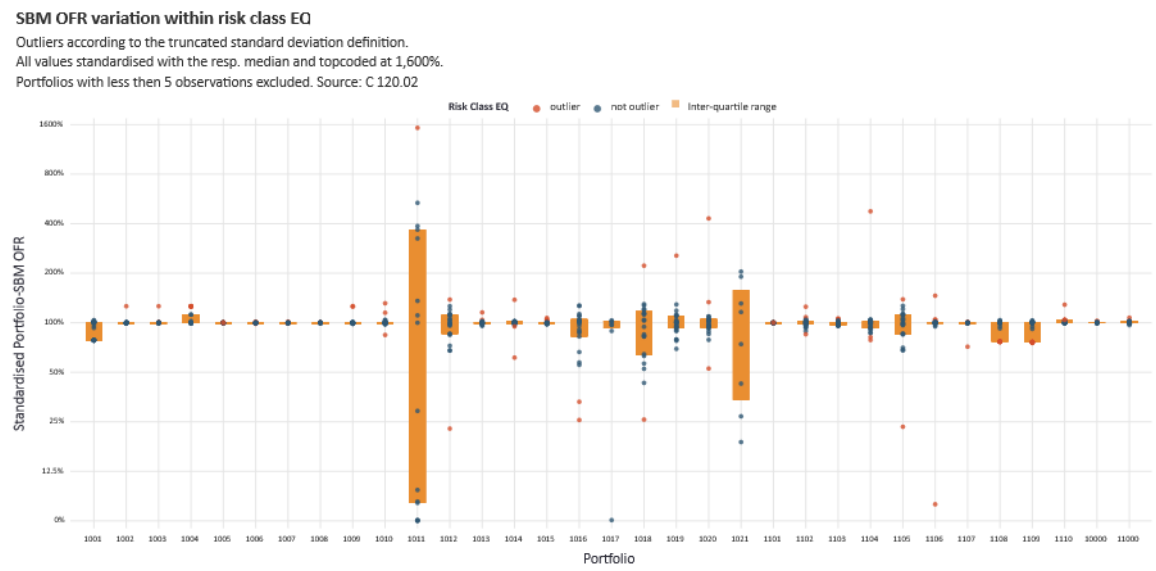


Figure 38: SBM OFR variation within FX portfolio (EBA outliers' definition)

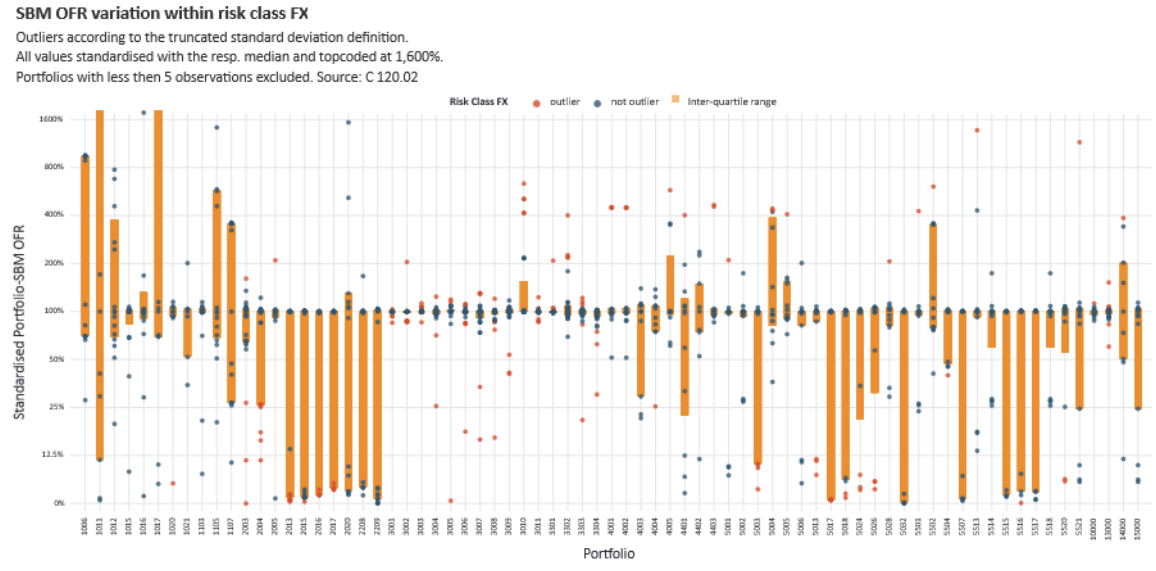


Figure 39: SBM OFR variation within GIRR portfolio (EBA outliers' definition)

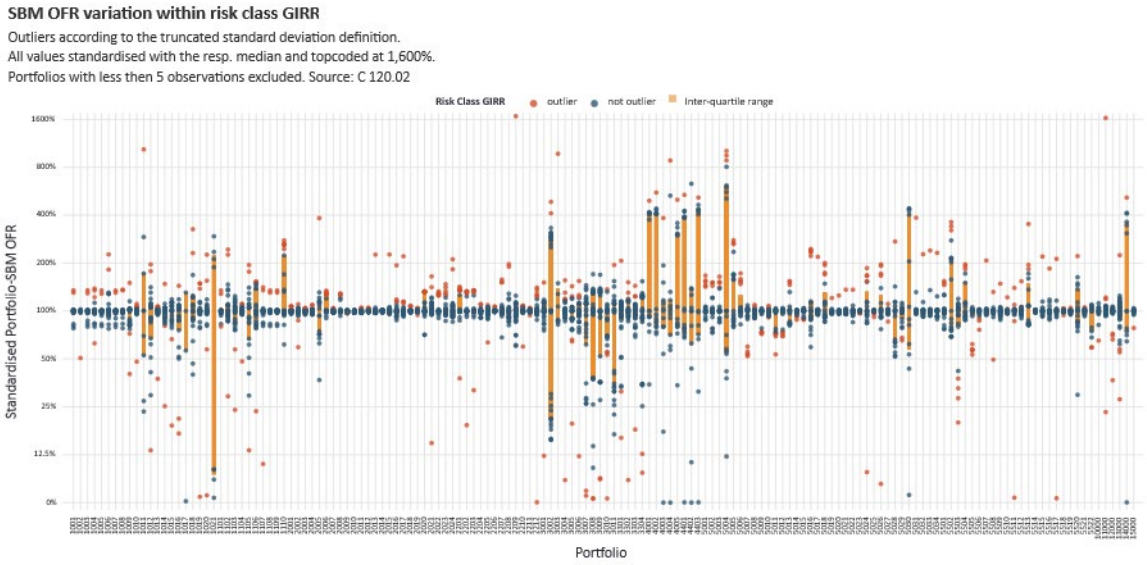


Figure 40: SBM OFR variation within CS portfolio (EBA outliers' definition)

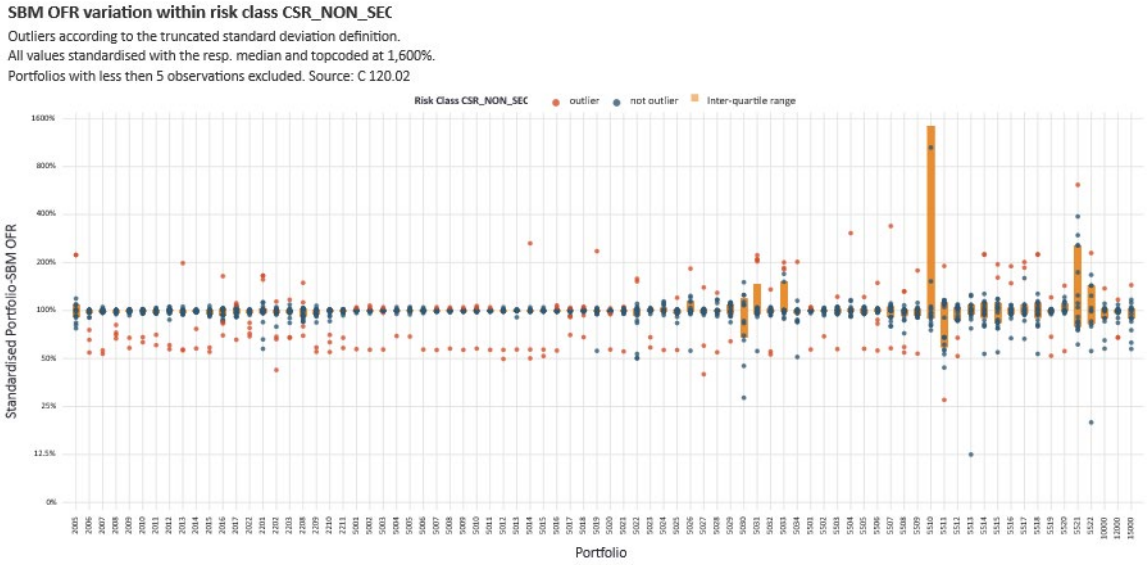


Figure 41: SBM OFR variation within CO portfolio (EBA outliers' definition)

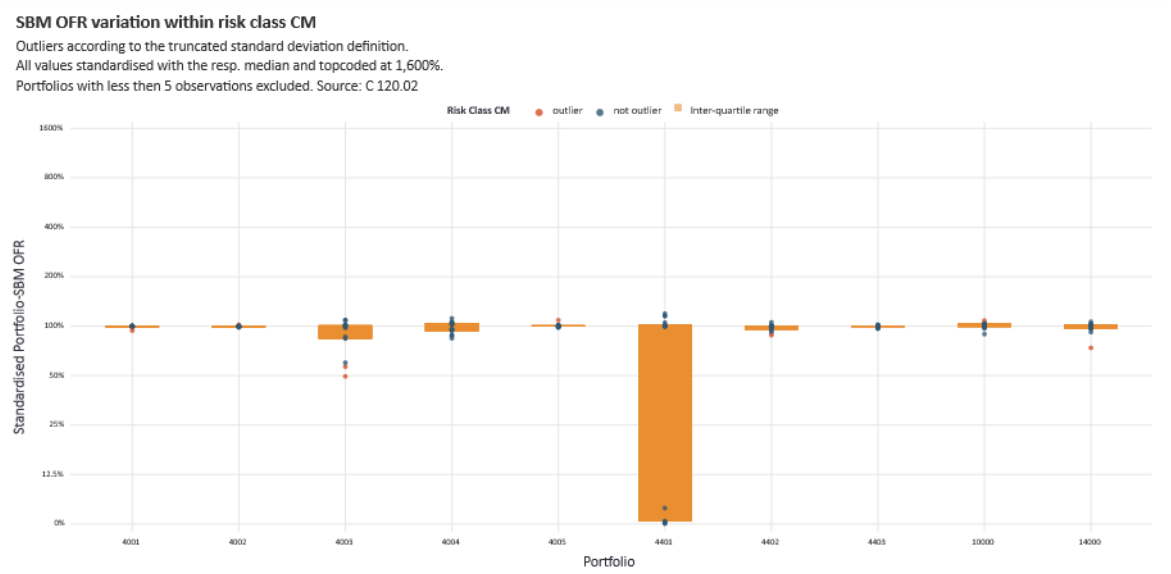


Figure 42: SBM OFR VaR and SVaR variation within portfolios: Interquartile Dispersion (IQD)

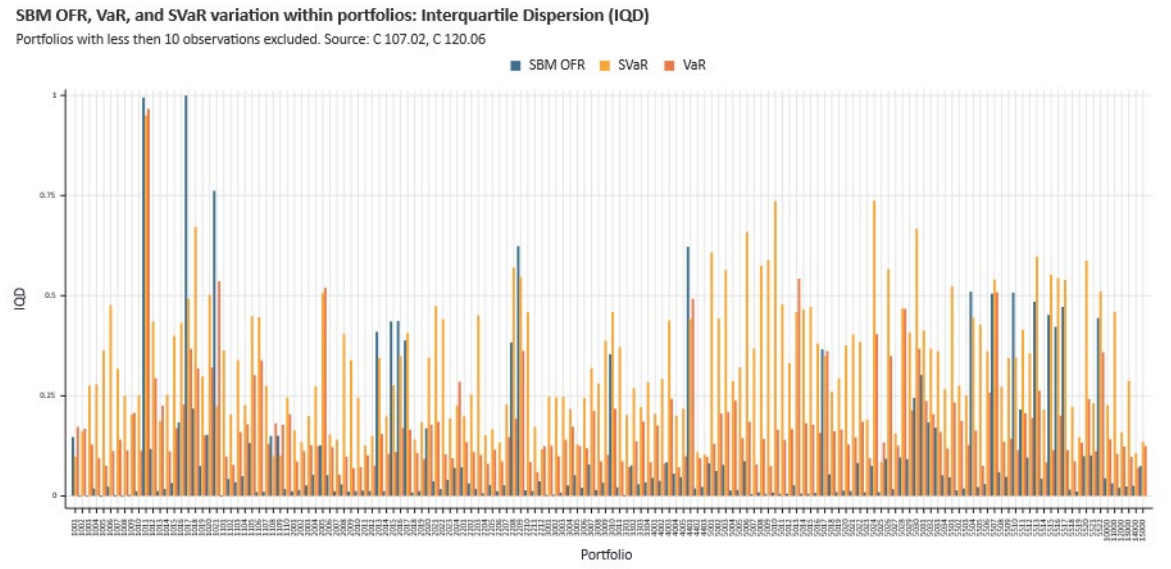


Figure 43: IQD-Ratio of SBM-OFR to VaR

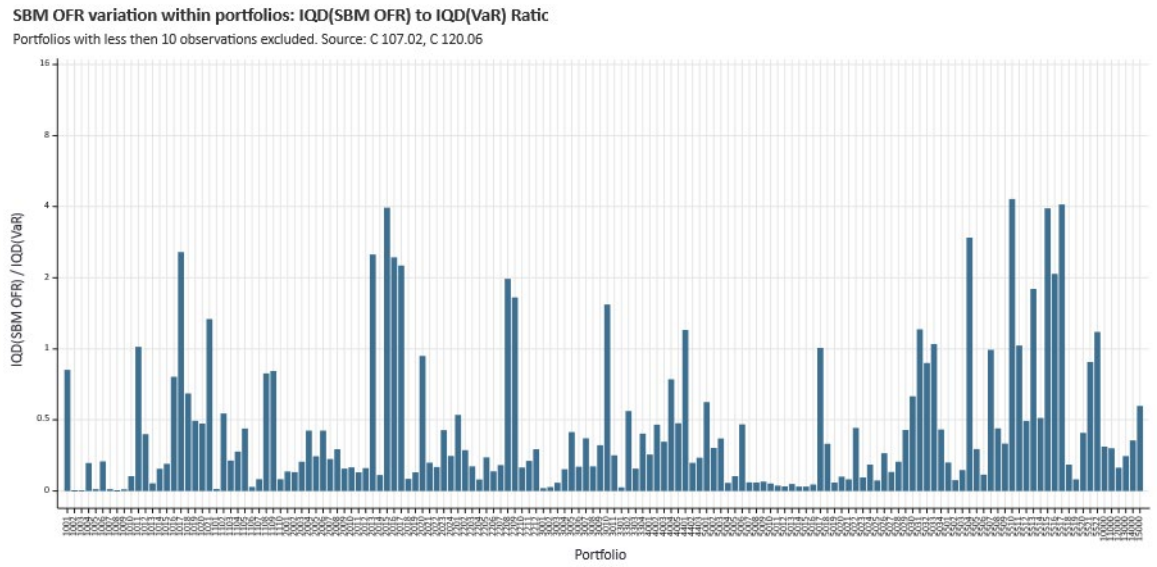


Figure 44: SBM OFR VaR and SVaR variation within EQ portfolios: Interquartile Dispersion (IQD)

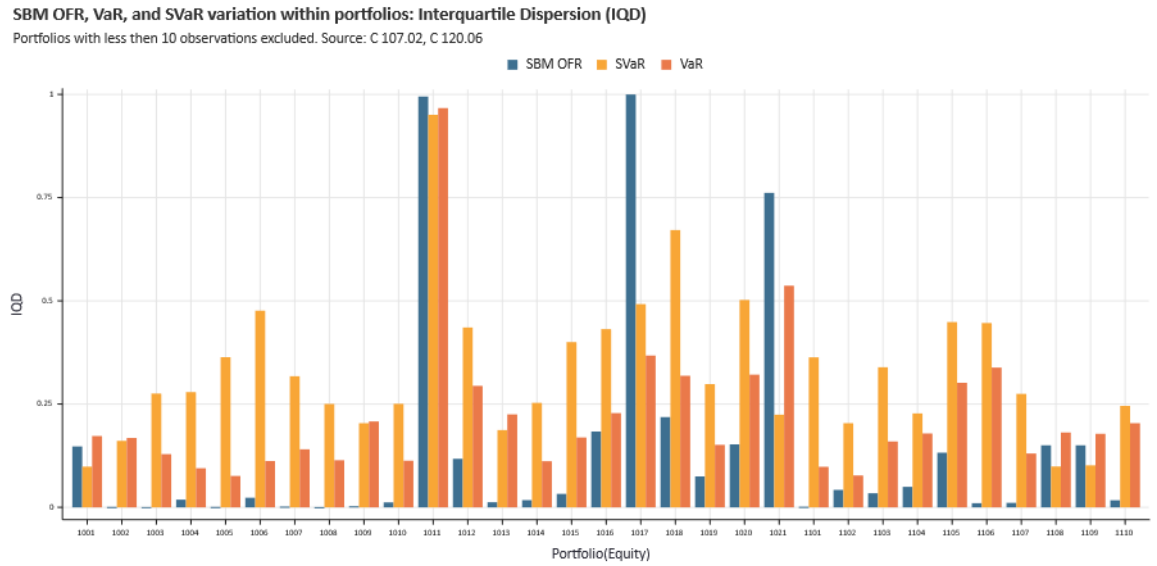


Figure 45: SBM OFR VaR and SVaR variation within IR portfolios: Interquartile Dispersion (IQD)

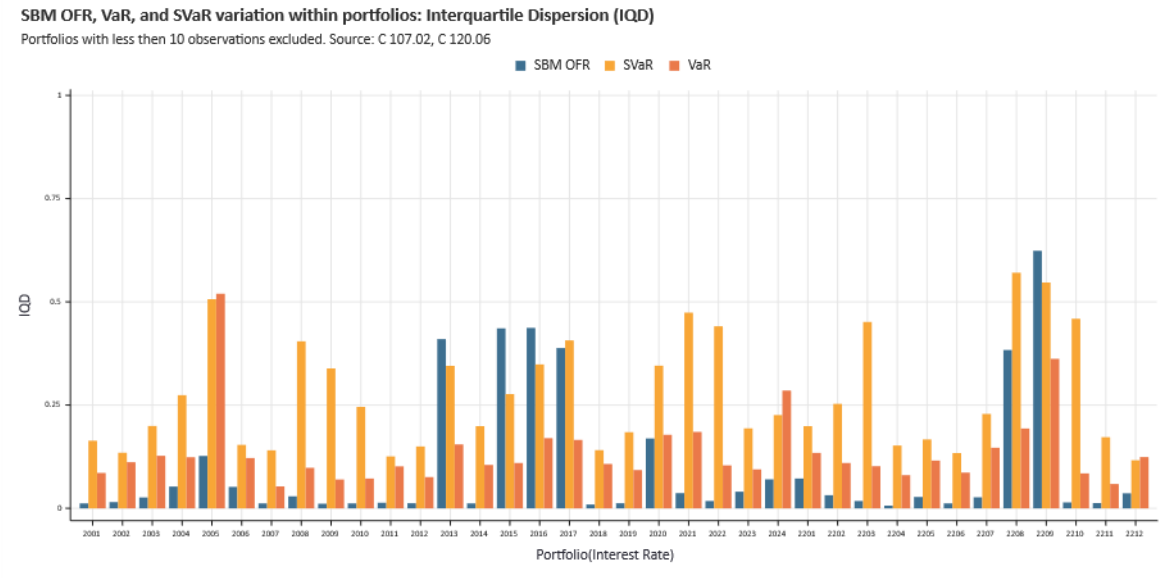


Figure 46: SBM OFR VaR and SVaR variation within FX portfolios: Interquartile Dispersion (IQD)

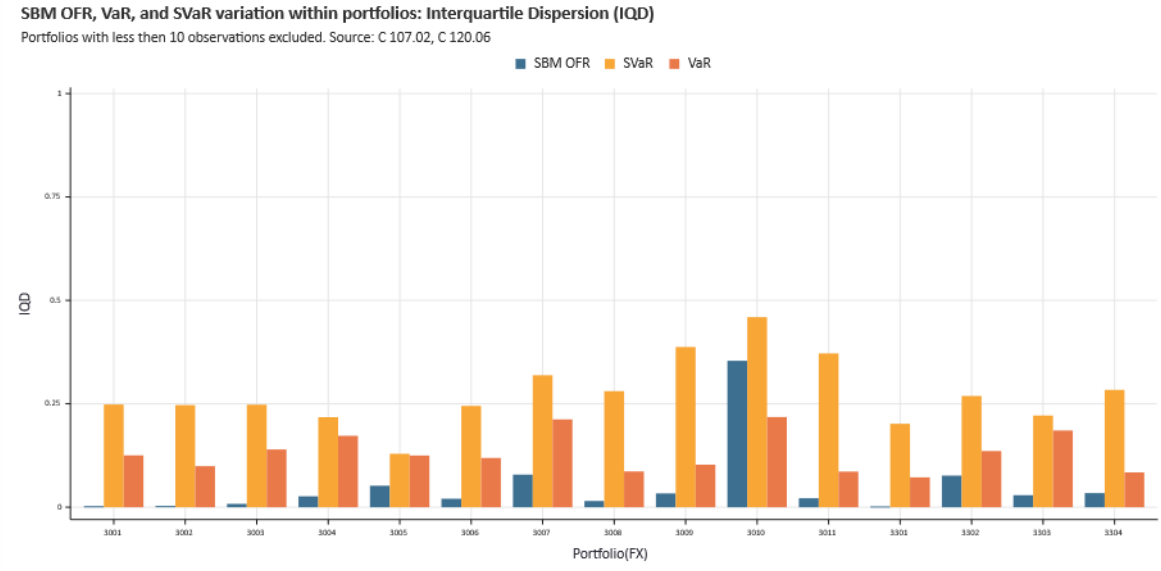


Figure 47: SBM OFR VaR and SVaR variation within CO portfolios: Interquartile Dispersion (IQD)

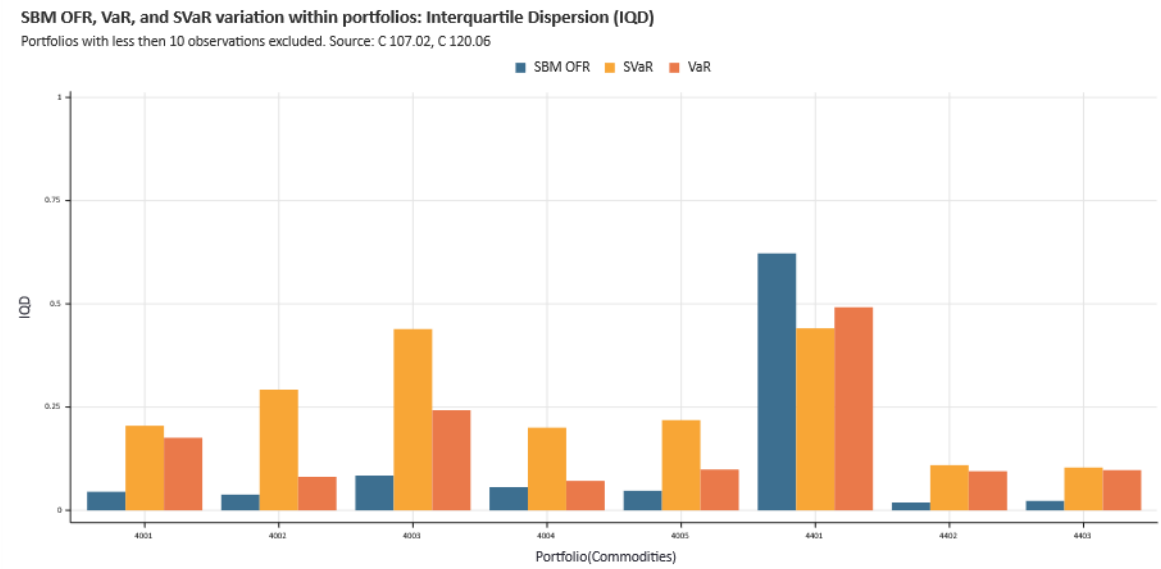


Figure 48: SBM OFR VaR and SVaR variation within CS portfolios: Interquartile Dispersion (IQD)

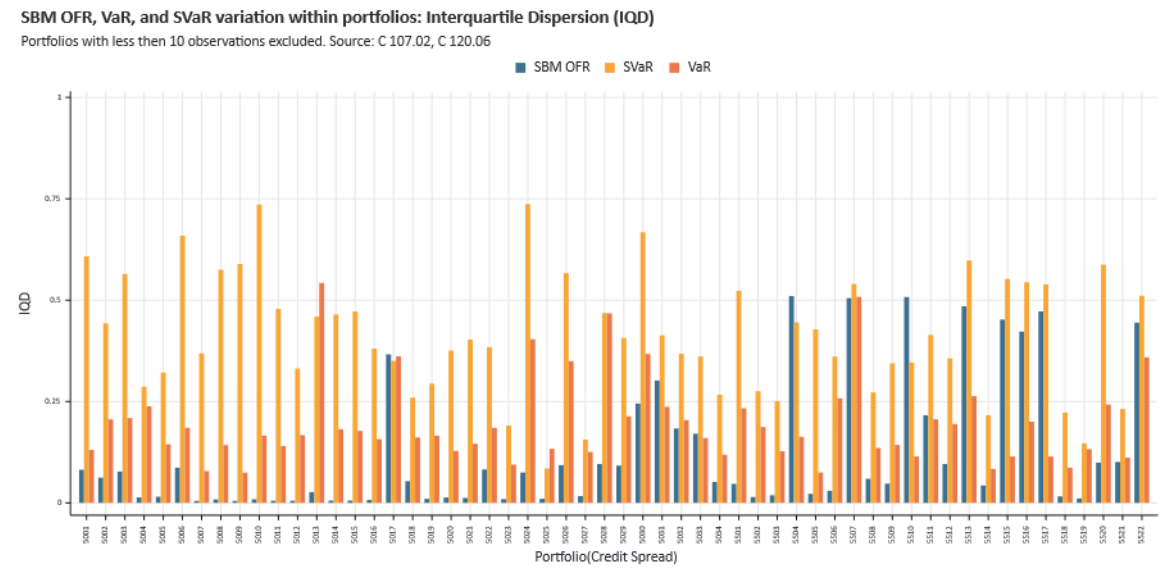


Figure 49: Frequency of SBM risk component within SBM risk classes relative to total number of submissions per portfolio

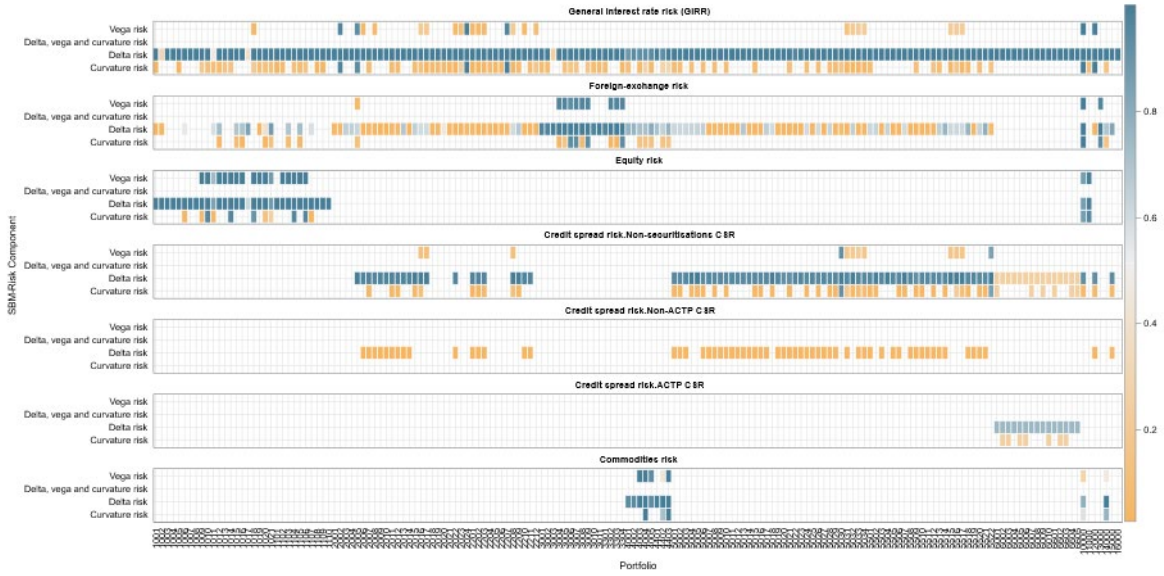


Figure 50: Median OFR per correlation scenario

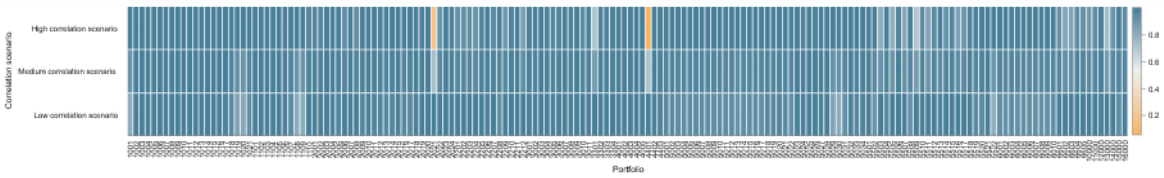


Figure 51: SBM Validation – Equity – Delta, Vega and Curvature Risk - High corr

						Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Risk Class	Component	Corr. Scenario	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation STDev/Ave	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C120.02	E	E001	Equity risk	Delta risk	High correlation scenario	0	19,250	16,844	6,808	0	40.41%	9	0	0	19,250	19,250	19,250	19,250	19,250	5,954,157	-11,080,863	11,127,583	0%
C120.02	E	E002	Equity risk	Delta risk	High correlation scenario	0	39,600	34,650	14,001	0	40.41%	9	0	0	39,600	39,600	39,600	39,600	39,600	11,425,694	-22,811,787	22,890,987	0%
C120.02	E	E003	Equity risk	Delta risk	High correlation scenario	0	765	669	270	0	40.41%	9	0	0	765	765	765	765	765	220,734	-440,668	442,202	0%
C120.02	E	E004	Equity risk	Delta risk	High correlation scenario	0	605	529	214	0	40.41%	9	0	0	605	605	605	605	605	174,559	-348,513	349,723	0%
C120.02	E	E005	Equity risk	Delta risk	High correlation scenario	0	7,500	6,563	2,652	0	40.41%	9	0	0	7,500	7,500	7,500	7,500	7,500	2,163,957	-4,320,414	4,335,414	0%
C120.02	E	E006	Equity risk	Delta risk	High correlation scenario	0	9,000	7,031	2,868	0	40.79%	9	0	0	7,875	7,875	7,875	9,000	9,000	2,272,108	-4,536,341	4,552,091	0%
C120.02	E	E007	Equity risk	Delta risk	High correlation scenario	0	6,150	4,459	1,852	0	41.54%	9	0	0	4,920	4,920	4,920	6,150	6,150	1,419,505	-2,834,089	2,841,029	0%
C120.02	E	E008	Equity risk	Delta risk	High correlation scenario	0	315	208	90	0	43.15%	9	0	0	225	225	225	315	315	64,915	-129,605	130,055	0%
C120.02	E	E009	Equity risk	Delta risk	High correlation scenario	0	100	84	35	0	42.13%	9	0	0	86	100	100	100	100	28,953	-57,886	57,886	8%
C120.02	E	E010	Equity risk	Delta risk	High correlation scenario	0	50	44	18	0	40.41%	9	0	0	50	50	50	50	50	14,426	-28,803	28,903	0%
C120.02	E	E011	Equity risk	Delta risk	High correlation scenario	0	13,720	12,005	4,851	0	40.41%	9	0	0	13,720	13,720	13,720	13,720	13,720	3,958,598	-7,903,478	7,930,918	0%
C120.02	E	E012	Equity risk	Delta risk	High correlation scenario	0	770	220	236	0	104.37%	9	0	0	165	165	165	770	776	47,582	-95,000	95,330	0%
C120.02	E	E013	Equity risk	Delta risk	High correlation scenario	0	1,365	536	376	0	70.08%	9	0	0	488	488	488	1,365	1,365	140,621	-280,754	281,724	0%
C120.02	E	E014	Equity risk	Delta risk	High correlation scenario	0	275	241	97	0	40.41%	9	0	0	275	275	275	275	275	7,942,445	-15,884,615	15,885,165	0%
C120.02	E	E015	Equity risk	Delta risk	High correlation scenario	0	450	394	159	0	40.41%	9	0	0	450	450	450	450	450	12,996,726	-25,993,006	25,993,906	0%
C120.02	E	E016	Equity risk	Delta risk	High correlation scenario	0	26	20	8	0	41.31%	9	0	0	22	22	22	26	26	623,845	-1,247,664	1,247,707	0%
C120.02	E	E017	Equity risk	Delta risk	High correlation scenario	0	83	72	29	0	40.41%	9	0	0	83	83	83	83	83	2,382,733	-4,765,384	4,765,549	0%
C120.02	E	E018	Equity risk	Delta risk	High correlation scenario	0	270	236	95	0	40.41%	9	0	0	270	270	270	270	270	7,796,037	-15,596,803	15,596,343	0%
C120.02	E	E019	Equity risk	Delta risk	High correlation scenario	0	474	267	126	0	48.01%	9	0	0	277	277	277	474	474	7,986,768	-15,971,241	15,971,784	0%
C120.02	E	E020	Equity risk	Delta risk	High correlation scenario	0	171	114	49	0	42.84%	9	0	0	124	124	124	171	171	3,581,319	-7,162,513	7,162,761	0%
C120.02	E	E021	Equity risk	Delta risk	High correlation scenario	0	50	41	18	0	43.82%	9	0	0	40	50	50	50	50	1,444,002	-2,888,113	2,888,213	11%
C120.02	E	E022	Equity risk	Delta risk	High correlation scenario	0	100	84	35	0	42.13%	9	0	0	86	100	100	100	100	2,880,945	-5,761,785	5,761,885	8%
C120.02	E	E023	Equity risk	Delta risk	High correlation scenario	0	425	372	159	0	40.41%	9	0	0	425	425	425	425	425	12,274,687	-24,548,950	24,549,800	0%
C120.02	E	E024	Equity risk	Delta risk	High correlation scenario	0	336	294	119	0	40.41%	9	0	0	336	336	336	336	336	9,704,223	-19,408,111	19,408,783	0%
C120.02	E	E025	Equity risk	Delta risk	High correlation scenario	0	595	170	177	0	104.37%	9	0	0	128	128	128	595	595	3,682,387	-7,364,646	7,364,901	0%
C120.02	E	E026	Equity risk	Delta risk	High correlation scenario	0	875	344	241	0	70.08%	9	0	0	313	313	313	875	875	9,025,482	-18,050,652	18,051,277	0%
C120.02	E	E027	Equity risk	Delta risk	High correlation scenario	0	10,175	8,903	3,597	0	40.41%	9	0	0	10,175	10,175	10,175	10,175	10,175	2,935,768	-5,861,362	5,881,712	0%
C120.02	E	E028	Equity risk	Delta risk	High correlation scenario	0	18,975	16,603	6,709	0	40.41%	9	0	0	18,975	18,975	18,975	18,975	18,975	2,377,231	-4,735,488	4,773,438	0%
C120.02	E	E029	Equity risk	Delta risk	High correlation scenario	0	20,302	17,764	7,178	0	40.41%	9	0	0	20,302	20,302	20,302	20,302	20,302	5,857,581	-11,694,861	11,735,464	0%
C120.02	E	E030	Equity risk	Delta risk	High correlation scenario	0	19,291	16,880	6,821	0	40.41%	9	0	0	19,291	19,291	19,291	19,291	19,291	9,060,500	-18,101,709	18,140,291	0%
C120.02	E	E031	Equity risk	Delta risk	High correlation scenario	0	7,770	6,799	2,747	0	40.41%	9	0	0	7,770	7,770	7,770	7,770	7,770	9,961,993	-19,916,215	19,931,755	0%
C120.02	E	E032	Equity risk	Delta risk	High correlation scenario	0	8,626	7,539	3,046	0	40.41%	9	0	0	8,590	8,626	8,626	8,626	8,626	2,488,926	-4,969,226	4,986,479	0%
C120.02	E	E033	Equity risk	Delta risk	High correlation scenario	0	7,558	6,611	2,671	0	40.41%	9	0	0	7,558	7,558	7,558	7,558	7,558	6,222,774	-12,437,989	12,453,105	0%
C120.02	E	E034	Equity risk	Delta risk	High correlation scenario	0	200	168	71	0	42.13%	9	0	0	171	200	200	200	200	2,909,823	-5,819,451	5,819,851	8%
C120.02	E	E035	Equity risk	Delta risk	High correlation scenario	0	148	128	52	0	40.66%	9	0	0	141	148	148	148	148	42,717	-85,286	85,582	3%
C120.02	E	E036	Equity risk	Delta risk	High correlation scenario	0	1,066	931	376	0	40.41%	9	0	0	1,064	1,064	1,064	1,066	1,066	30,328,415	-60,655,767	60,657,895	0%
C120.02	E	E037	Equity risk	Delta risk	High correlation scenario	0	475	416	168	0	40.41%	9	0	0	475	475	475	475	475	12,289,114	-24,577,753	24,578,703	0%
C120.02	E	E038	Equity risk	Delta risk	High correlation scenario	0	76	67	27	0	40.41%	9	0	0	76	76	76	76	76	21,938	-43,809	43,952	0%
C120.02	E	E039	Equity risk	Delta risk	High correlation scenario	0	371	325	131	0	40.41%	9	0	0	371	371	371	371	371	10,396,643	-20,798,915	20,799,657	0%
C120.02	E	E040	Equity risk	Delta risk	High correlation scenario	0	14,056	12,299	4,978	0	40.41%	9	0	0	14,056	14,056	14,056	14,056	14,056	13,662,821	-27,311,585	27,339,697	0%
C120.02	E	E041	Equity risk	Delta risk	High correlation scenario	0	1,365	390	407	0	104.37%	9	0	0	260	260	260	1,365	1,365	3,729,968	-7,459,645	7,460,236	0%
C120.02	E	E042	Equity risk	Delta risk	High correlation scenario	0	28,770	7,973	8,648	0	108.47%	9	0	0	5,835	5,835	5,835	28,770	28,770	1,682,621	-3,359,408	3,371,678	0%
C120.02	E	E043	Equity risk	Delta risk	High correlation scenario	0	2,240	880	617	0	70.10%	9	0	0	800	800	800	2,240	2,240	9,165,964	-18,331,128	18,332,728	0%
C120.02	E	E044	Equity risk	Delta risk	High correlation scenario	0	4,445	635	1,680	0	264.58%	9	0	0	0	0	0	4,445	4,445	5,480,814	-10,961,628	10,961,628	
C120.02	E	E045	Equity risk	Delta risk	High correlation scenario	0	43,657	37,988	15,359	0	40.41%	9	0	0	43,375	43,375	43,375	43,657	43,657	12,514,908	-24,986,441	25,073,192	0%
C120.02	E	E046	Equity risk	Delta risk	High correlation scenario	0	23,639	20,684	8,358	0	40.41%	9	0	0	23,639	23,639	23,639	23,639	23,639	6,820,496	-13,617,352	13,664,630	0%
C120.02	E	E047	Equity risk	Delta risk	High correlation scenario	0	2,135	520	663	0	127.48%	9	0	0	338	338	338	2,135	2,135	97,371	-194,405	195,080	0%
C120.02	E	E048	Equity risk	Delta risk	High correlation scenario	0	19,265	16,776	6,779	0	40.41%	9	0	0	19,158	19,158	19,158	19,265	19,265	5,527,513	-11,035,869	11,074,184	0%
C120.02	E	E049	Equity risk	Delta risk	High correlation scenario	0	991	237	316	0	131.04%	9	0	0	126	163	163	991	991	46,918	-93,676	94,002	13%
C120.02	E	E050	Equity risk	Vega risk	High correlation scenario	0	66,458	41,926	18,555	0	44.26%	9	0	0	44,768	44,768	44,936	66,458	66,458	41,462,843	-82,880,018	82,970,454	0%
C120.02	E	E051	Equity risk	Vega risk	High correlation scenario	0	544	476	192	0	40.41%	9	0	0	544	544	544	544	544	157,095	-313,646	314,735	0%
C120.02	E	E052	Equity risk	Vega risk	High correlation scenario	0	389	340	137	0	40.41%	9	0	0	389	389	389	389	389	112,211	-224,033	224,811	0%
C120.02	E	E053	Equity risk	Vega risk	High correlation scenario	0	467	408	165	0	40.41%	9	0	0	467	467	467	467	467	134,653	-268,839	269,773	0%
C120.02	E	E054	Equity risk	Vega risk	High correlation scenario	0	622	544	220	0	40.41%	9	0	0	622	622	622	622	622	179,537	-358,453	359,697	0%
C120.02	E	E055	Equity risk	Vega risk	High correlation scenario	0	778	681	275	0	40.41%	9	0	0	778	778	778	778	778	224,422	-448,066	449,621	0%
C120.02	E	E056	Equity risk	Vega risk	High correlation scenario	0	311	272	110	0	40.41%	9	0	0	311	311	311	311	311	89,769	-179,226	179,849	0%
C120.02	E	E057	Equity risk	Vega risk	High correlation scenario	0	39	34	14	0	40.41%	9	0	0	39	39	39	39	39	11,221	-22,403	22,481	0%
C120.02	E	E058	Equity risk	Vega risk	High correlation scenario	0	233	204	83	0	40.41%	9	0	0	233	233	233	233	233	67,327	-134,420	134,886	0%
C120.02	E	E059	Equity risk	Vega risk	High correlation scenario	0	50	44	18	0	40.41%	9	0	0	50	50	50	50	50	14,426	-28,803	28,903	0%
C120.02	E	E060	Equity risk	Vega risk	High correlation scenario	0	300	263	109	0	40.41%	9	0	0	300	300	300	300	300	86,558	-172,817	173,417	0%
C120.02	E	E061	Equity risk	Vega risk	High correlation scenario	0	1,000	875	354	0	40.41%	9	0	0	1,000	1,000	1,000	1,000	1,000	288,528	-576,055	578,055	0%
C120.02	E	E062	Equity risk	Vega risk	High correlation scenario	0	750	531	222	0	41.67%	9	0	0	583	583	583	750	750	198,308	-336,038	337,202	0%
C120.02	E	E063	Equity risk	Vega risk	High correlation scenario	0	40	28	12	0	41.87%	9	0	0	31	31	31	40	40	8,977	-17,922	17,984	0%
C120.02	E	E064	Equity risk	Vega risk	High correlation scenario	0	467	408	165	0	40.41%	9	0	0	467	467	467	467	467	134,653	-268,839	269,773	0%
C120.02	E	E065	Equity risk	Vega risk	High correlation scenario	0	622	544	220	0	40.41%	9	0	0	622	622	622	622	622	179,537	-358,453	359,697	0%
C120.02	E	E066	Equity risk	Vega risk	High correlation scenario	0	964	844	341	0	40.41%	9	0	0	964	964	964	964	964	278,161	-555,358	557,288	0%
C120.02	E	E067	Equity risk	Vega risk	High correlation scenario	0	1,126	985	398	0	40.41%	9	0	0	1,126	1,126	1,126	1,126	1,126	324,771	-648,417	650,668	0%
C120.02	E	E068	Equity risk	Vega risk	High correlation scenario	0	1,206	1,055	426	0	40.41%	9	0	0	1,206	1,206	1,206	1,206	1,206	347,854	-694,502	696,913	0%
C120.02	E	E069	Equity risk	Vega risk	High correlation scenario	0	1,229	1,068	432	0	40.45%	9	0	0	1,199	1,229	1,229	1,229	1,229	354,578	-707,938	710,388	1%
C120.02	E	E070	Equity risk	Vega risk	High correlation scenario	0	1,408	1,228	496	0	40.42%	9	0	0	1,390	1,408	1,408	1,408	1,408	406,344	-811,280	814,097	1%
C120.02	E	E071	Equity risk	Vega risk	High correlation scenario	0	559	481	194	0	40.41%	9	0	0	559	559	559	559	559	158,690	-316,838	317,956	0%
C120.02	E	E072	Equity risk	Vega risk	High correlation scenario	0	74	64	26	0	40.58%	9	0	0	71	74	74	74	74	21,337	-42,600	42,748	2%
C120.02	E	E073	Equity risk	Vega risk	High correlation scenario	0	1,099	945	385	0	40.69%	9	0	0	1,033	1,099	1,099	1,099	1,099	316,997	-632,895	635,093	3%
C120.02	E	E074	Equity risk	Vega risk	High correlation scenario	0	750	656	265	0	40.41%	9	0	0	750	750	750	750	750	216,396	-432,041	433,541	0%
C120.02	E	E075	Equity risk	Vega risk	High correlation scenario	0	456	394	160	0	40.59%	9	0	0	435	456	456	456	456	131,638	-262,804	263,717	2%
C120.02	E	E076	Equity risk	Vega risk	High correlation scenario	0	1,572	1,348	550	0	40.81%	9	0	0	1,461	1,572	1,572	1,572	1,572	453,501	-905,431	908,574	4%
C120.02	E	E077	Equity risk	Vega risk	High correlation scenario	0	1,700	1,413	608	0	42.98%	9	0	0	1,404	1,700	1,700	1,700	1,700	490,522	-979,343	982,743	10%
C120.02	E	E078	Equity risk	Vega risk	High correlation scenario	0	3,875	616	1,316	0	214.15%	9	0	0	175	175	175	3,875	3,875	50,356	-100,537	100,887	0%
C120.02	E	E079	Equity risk	Vega risk	High correlation scenario	0	1,250	302	389	0	128.77%	9	0	0	194	194	194	1,250	1,258	56,063	-111,931	112,320	0%
C120.02	E	E080	Equity risk	Vega risk	High correlation scenario	0	5,225	830	1,776	0	214.10%	9	0	0	238	238	238	5,225	5,225	67,972	-135,709	136,181	0%
C120.02	E	E081	Equity risk	Vega risk	High correlation scenario	0	1,350	198	466	0	235.30%	9	0	0	36	36	36	1,350	1,350	11,175	-22,311	22,383	0%
C120.02	E	E082	Equity risk	Vega risk	High correlation scenario	0	1,256	1,099	444	0	40.41%	9	0	0	1,256	1,256	1,256	1,256	1,258	362,427	-723,598	726,110	0%
C120.02	E	E083	Equity risk	Vega risk	High correlation scenario	0	887	765	311	0	40.59%	9	0	0	845	887	887	887	887	255,876	-510,864	512,638	2%
C120.02	E	E084	Equity risk	Vega risk	High correlation scenario	0	790	558	234	0	41.91%	9	0	0	613	613	613	796	796	176,752	-352,892	354,117	0%
C120.02	E	E085	Equity risk	Vega risk	High correlation scenario	0	997	864	350	0	40.51%	9	0	0	963	997	997	997	997	287,677	-574,358	576,351	2%
C120.02	E	E086	Equity risk	Vega risk	High correlation scenario	0	1,390	185	457	0	263.75%	9	0	0	15	15	15	1,390	1,390	4,166	-8,316	8,347	0%
C120.02	E	E087	Equity risk	Vega risk	High correlation scenario	0	8,182	3,490	2,226	0	63.78%	9	0	0	3,107	3,382	3,382	8,182	8,182	975,616	-1,947,894	1,954,658	4%
C120.02	E	E088	Equity risk	Curvature risk	High correlation scenario	0	238,910	45,372	78,535	0	173.09%	9	0	0	20,677	20,678	20,678	238,910	238,910	5,957,388	-11,894,094	11,935,448	0%
C120.02	E	E089	Equity risk	Curvature risk	High correlation scenario	0	31,440	22,290	9,336	0	41.86%	9	0	0	24,480	24,480	24,480	31,440	31,440	7,062,867	-14,101,253	14,150,253	0%
C120.02	E	E090	Equity risk	Curvature risk	High correlation scenario	0	6,238	5,416	2,196	0	40.43%	9	0	0	6,060	6,238	6,238	6,238	6,238	1,799,849	-3,593,481	3,605,957	1%
C120.02	E	E091	Equity risk	Curvature risk	High correlation scenario	0	21,605	11,933	5,816	0	48.74%	9	0	0	12,310	12,310	12,310	21,605	21,605	3,551,389	-7,090,469	7,115,089	0%
C120.02	E	E092	Equity risk	Curvature risk	High correlation scenario	0	2,850	1,976	834	0	42.21%	9	0	0	2,160	2,160	2,160	2,850	2,850	623,191	-1,244,222	1,248,542	0%
C120.02	E	E093	Equity risk	Curvature risk	High correlation scenario	0	3,643	2,418	1,041	0	43.04%	9	0	0	2,618	2,618	2,618	3,643	3,643	755,178	-1,507,739	1,512,974	0%
C120.02	E	E094	Equity risk	Curvature risk	High correlation scenario	0	7,800	5,055	2,203	0	43.58%	9	0	0	5,440	5,440	5,440	7,800	7,800	1,569,492	-3,133,544	3,144,424	0%
C120.02	E	E095	Equity risk	Curvature risk	High correlation scenario	0	29,550	18,731	8,266	0	44.13%	9	0	0	20,050	20,050	20,050	29,550	29,550	5,784,584	-11,549,118	11,589,218	0%
C120.02	E	E096	Equity risk	Curvature risk	High correlation scenario	0	216,320	163,210	67,059	0	41.09%	9	0	0	181,560	181,560	181,560	216,320	216,320	52,383,628	-104,585,697	104,948,817	0%
C120.02	E	E097	Equity risk	Curvature risk	High correlation scenario	0	2,900	1,825	809	0	44.32%	9	0	0	1,950	1,950	1,950	2,900	2,900	562,589	-1,123,229	1,127,129	0%
C120.02	E	E098	Equity risk	Curvature risk	High correlation scenario	0	20,052	17,318	7,010	0	40.48%	9	0	0	19,142	20,052	20,052	20,052	20,052	5,785,631	-11,551,211	11,591,315	2%
C120.02	E	E099	Equity risk	Curvature risk	High correlation scenario	0	7,467	6,517	2,633	0	40.41%	9	0	0	7,408	7,467	7,467	7,467	7,467	2,154,346	-4,301,225	4,316,159	0%
C120.02	E	E100	Equity risk	Curvature risk	High correlation scenario	0	11,160	9,735	3,934	0	40.41%	9	0	0	11,040	11,160	11,160	11,160	11,160	3,219,978	-6,428,796	6,451,116	1%
C120.02	E	E101	Equity risk	Curvature risk	High correlation scenario	0	41,192	35,195	14,234	0	40.44%	9	0	0	39,835	39,835	40,513	41,192	41,192	11,493,381	-22,946,934	23,026,604	1%
C120.02	E	E102	Equity risk	Curvature risk	High correlation scenario	0	87,896	51,527	75,284	0	146.65%	9	0	0	31,735	31,735	31,735	237,806	237,806	9,147,882	-18,264,238	18,327,765	0%
C120.02	E	E103	Equity risk	Curvature risk	High correlation scenario	0	6,913	5,840	2,431	0	41.63%	9	0	0	6,078	6,913	6,913	6,913	6,913	1,994,765	-3,982,616	3,996,443	6%
C120.02	E	E104	Equity risk	Curvature risk	High correlation scenario	0	216,061	163,014	66,976	0	41.09%	9	0	0	181,342	181,342	181,342	216,061	216,061	52,320,834	-104,460,326	104,823,011	0%
C120.02	E	E105	Equity risk	Curvature risk	High correlation scenario	0	22,274	18,625	7,965	0	42.44%	9	0	0	18,818	22,274	22,274	22,274	22,274	6,426,838	-12,831,367	12,875,934	8%
C120.02	E	E106	Equity risk	Curvature risk	High correlation scenario	0	30,078	25,465	10,308	0	40.48%	9	0	0	28,713	28,713	29,396	30,078	30,078	8,284,380	-16,540,047	16,597,473	1%
C120.02	E	E107	Equity risk	Curvature risk	High correlation scenario	0	38,850	29,188	12,065	0	41.13%	9	0	0	32,393	32,393	32,538	38,850	38,850	9,346,137	-18,659,881	18,724,668	0%
C120.02	E	E108	Equity risk	Curvature risk	High correlation scenario	0	242,252	62,246	74,247	0	119.28%	9	0	0	42,618	42,618	42,618	242,252	242,252	12,288,556	-24,534,494	24,619,732	0%
C120.02	E	E109	Equity risk	Curvature risk	High correlation scenario	0	0	0	0			9	0	0	0	0	0	0	0	7,507	-15,015	15,015	
C120.02	E	E110	Equity risk	Curvature risk	High correlation scenario	0	242,274	184,437	75,614	0	41.00%	9	0	0	265,537	265,537	265,537	242,274	242,274	59,301,701	-118,387,865	118,808,940	0%
C120.02	E	E111	Equity risk	Curvature risk	High correlation scenario	0	82,598	70,776	28,618	0	40.44%	9	0	0	80,202	80,202	81,409	82,598	82,598	23,140,336	-46,200,458	46,360,962	1%
C120.02	E	E112	Equity risk	Curvature risk	High correlation scenario	0	18,440	15,219	6,165	0	40.51%	9	0	0	17,161	17,248	17,248	18,440	18,440	4,976,342	-9,935,437	9,969,882	0%
C120.02	E	E113	Equity risk	Curvature risk	High correlation scenario	0	82,533	76,323	28,436	0	40.43%	9	0	0	79,872	79,872	80,261	82,533	82,533	23,045,223	-46,010,573	46,170,318	0%
C120.02	E	E114	Equity risk	Curvature risk	High correlation scenario	0	238,656	54,019	75,453	0	139.68%	9	0	0	32,248	32,248	32,248	238,656	238,656	9,296,581	-18,560,763	18,625,252	0%
C120.02	E	E115	Equity risk	Curvature risk	High correlation scenario	0	0	0	0			9	0	0	0	0	0	0	0	106,014	-212,029	212,029	
C120.02	E	E116	Equity risk	Curvature risk	High correlation scenario	0	458,248	246,431	132,248	0	53.66%	9	0	0	228,656	228,656	299,287	458,248	458,248	65,958,280	-131,687,993	132,145,215	13%

Figure 52: SBM Validation – CS – Delta, Vega and Curvature Risk - High corr

							Other stats						Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Risk Class	Component	Corr. Scenario	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquartile range
C 120.02	N		N001 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	100	89	33	0	37.56%	10	0	0	100	100	100	100	100	27,372	-54,643	54,843	0%
C 120.02	N		N002 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	60	60	60	0	0	0.00%	10	60	60	60	60	60	60	60	16,421	-32,782	32,902	0%
C 120.02	N		N003 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	1,250	1,250	1,250	0	0	0.00%	10	1,250	1,250	1,250	1,250	1,250	1,250	1,250	342,102	-682,954	685,454	0%
C 120.02	N		N004 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	120	107	40	0	37.56%	10	0	0	120	120	120	120	120	32,846	-65,572	65,812	0%
C 120.02	N		N005 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	240	213	80	0	37.56%	10	0	0	240	240	240	240	240	65,692	-131,144	131,624	0%
C 120.02	N		N006 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	160	160	160	0	0	0.00%	10	160	160	160	160	160	160	160	43,788	-87,418	87,738	0%
C 120.02	N		N007 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	45	40	15	0	37.56%	10	0	0	45	45	45	45	45	12,317	-24,596	24,686	0%
C 120.02	N		N008 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	125	250	139	42	0	30.00%	10	125	125	125	125	125	250	250	34,206	-68,267	68,537	0%
C 120.02	N		N009 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	135	900	265	269	0	98.08%	10	135	135	135	135	225	900	900	36,907	-73,678	73,948	25%
C 120.02	N		N010 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	40	36	13	0	37.56%	10	0	0	40	40	40	40	40	10,948	-21,857	21,937	0%
C 120.02	N		N011 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	70	280	257	70	0	27.27%	10	70	70	280	280	280	280	280	76,638	-152,997	153,557	0%
C 120.02	N		N012 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	450	1,080	1,010	216	0	20.76%	10	450	450	1,080	1,080	1,080	1,080	1,080	295,596	-590,117	592,277	0%
C 120.02	N		N013 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	700	622	233	0	37.56%	10	0	0	700	700	700	700	700	191,602	-382,504	383,904	0%
C 120.02	N		N014 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	1,700	1,511	567	0	37.56%	10	0	0	1,700	1,700	1,700	1,700	1,700	465,319	-926,938	932,338	0%
C 120.02	N		N015 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	100	275	256	58	0	22.83%	10	100	100	275	275	275	275	275	75,269	-150,262	150,812	0%
C 120.02	N		N016 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	150	133	50	0	37.56%	10	0	0	150	150	150	150	150	41,058	-81,965	82,265	0%
C 120.02	N		N017 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	1,200	1,067	400	0	37.56%	10	0	0	1,200	1,200	1,200	1,200	1,200	328,460	-655,721	658,121	0%
C 120.02	N		N018 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	480	1,600	694	372	0	61.76%	10	480	480	480	480	1,600	1,600	1,600	131,526	-262,177	263,157	0%
C 120.02	N		N019 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	650	650	650	0	0	0.00%	10	650	650	650	650	650	650	650	177,893	-355,136	356,436	0%
C 120.02	N		N020 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	50	44	17	0	37.56%	10	0	0	50	50	50	50	50	13,686	-27,322	27,422	0%
C 120.02	N		N021 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	75	67	25	0	37.56%	10	0	0	75	75	75	75	75	20,529	-40,983	41,133	0%
C 120.02	N		N022 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	193	171	64	0	37.56%	10	0	0	193	193	193	193	193	52,784	-105,375	105,769	0%
C 120.02	N		N023 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	45	40	15	0	37.56%	10	0	0	45	45	45	45	45	12,352	-24,664	24,755	0%
C 120.02	N		N024 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	137	122	46	0	37.56%	10	0	0	137	137	137	137	137	37,580	-75,023	75,297	0%
C 120.02	N		N025 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	115	102	38	0	37.56%	10	0	0	115	115	115	115	115	31,398	-62,682	62,911	0%
C 120.02	N		N026 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	66	59	22	0	37.56%	10	0	0	66	66	66	66	66	18,143	-36,221	36,353	0%
C 120.02	N		N027 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	111	99	37	0	37.56%	10	0	0	111	111	111	111	111	30,474	-60,837	61,059	0%
C 120.02	N		N028 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	1,800	1,600	600	0	37.56%	10	0	0	1,800	1,800	1,800	1,800	1,800	492,690	-983,581	987,181	0%
C 120.02	N		N029 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	308	721	411	191	0	46.58%	9	308	308	308	308	514	721	721	88,675	-177,043	177,659	25%
C 120.02	N		N030 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	367	677	524	94	0	17.97%	10	367	367	490	490	490	677	677	135,460	-270,488	271,466	0%
C 120.02	N		N031 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	563	141	261	0	185.16%	9	0	0	0	0	282	563	563	289	-578	578	100%
C 120.02	N		N032 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	1,048	1,254	1,231	69	0	5.58%	10	1,048	1,048	1,254	1,254	1,254	1,254	1,254	343,198	-685,127	687,631	0%
C 120.02	N		N033 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	801	1,257	1,206	152	0	12.61%	10	801	801	1,257	1,257	1,257	1,257	1,257	344,014	-686,765	689,386	0%
C 120.02	N		N034 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	1,276	1,998	1,918	241	0	12.56%	10	1,276	1,276	1,998	1,998	1,998	1,998	1,998	546,964	-1,091,929	1,095,926	0%
C 120.02	N		N035 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	1,006	1,795	1,613	235	40	14.57%	10	1,006	1,006	1,664	1,704	1,704	1,795	1,795	466,485	-931,265	934,674	1%
C 120.02	N		N036 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	680	1,338	1,265	219	0	17.34%	10	680	680	1,338	1,338	1,338	1,338	1,338	366,335	-731,331	734,006	0%
C 120.02	N		N037 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	312	1,811	1,644	500	0	30.38%	10	312	312	1,811	1,811	1,811	1,811	1,811	495,689	-989,567	991,189	0%
C 120.02	N		N038 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	1,601	1,720	1,642	49	7	2.99%	9	1,601	1,601	1,615	1,615	1,676	1,720	1,720	465,898	-930,002	933,231	2%
C 120.02	N		N039 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	440	2,059	1,679	540	0	28.72%	10	440	440	2,059	2,059	2,059	2,059	2,059	563,476	-1,124,862	1,128,999	0%
C 120.02	N		N040 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	2,036	2,697	2,127	236	4	10.15%	10	2,036	2,036	2,036	2,040	2,111	2,697	2,697	557,326	-1,112,600	1,116,651	2%
C 120.02	N		N041 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	2,227	2,721	2,594	149	81	5.74%	10	2,227	2,227	2,586	2,626	2,667	2,721	2,721	707,613	-1,412,599	1,417,851	2%
C 120.02	N		N042 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	46	635	144	206	0	144.63%	10	46	46	46	46	46	635	635	12,528	-25,009	25,101	0%
C 120.02	N		N043 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	1,340	2,938	2,693	506	22	18.79%	10	1,340	1,340	2,824	2,846	2,847	2,938	2,938	778,877	-1,554,908	1,560,599	0%
C 120.02	N		N044 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	700	622	233	0	37.56%	10	0	0	700	700	700	700	700	191,602	-382,504	383,904	0%
C 120.02	N		N045 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	600	533	200	0	37.56%	10	0	0	600	600	600	600	600	164,230	-327,860	329,060	0%
C 120.02	N		N046 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	800	711	267	0	37.56%	10	0	0	800	800	800	800	800	218,974	-437,147	438,747	0%
C 120.02	N		N047 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	1,361	1,209	454	0	37.56%	10	0	0	1,361	1,361	1,361	1,361	1,361	372,421	-743,481	746,203	0%
C 120.02	N		N048 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	1,572	1,397	524	0	37.56%	10	0	0	1,572	1,572	1,572	1,572	1,572	430,170	-858,768	861,911	0%
C 120.02	N		N049 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	700	622	233	0	37.56%	10	0	0	700	700	700	700	700	191,602	-382,504	383,904	0%
C 120.02	N		N050 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	765	503	221	0	43.87%	10	0	0	500	500	500	765	765	136,840	-273,180	274,180	0%
C 120.02	N		N051 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	634	296	206	0	69.63%	10	0	0	233	233	233	634	634	63,696	-127,160	127,625	0%
C 120.02	N		N052 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	50	44	17	0	37.56%	10	0	0	50	50	50	50	50	13,686	-27,322	27,422	0%
C 120.02	N		N053 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	1,416	1,258	472	0	37.56%	10	0	0	1,416	1,416	1,416	1,416	1,416	387,457	-773,498	776,329	0%
C 120.02	N		N054 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	2,015	1,791	672	0	37.56%	10	0	0	2,015	2,015	2,015	2,015	2,015	551,588	-1,101,161	1,105,191	0%
C 120.02	N		N055 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	1,645	1,462	548	0	37.56%	10	0	0	1,645	1,645	1,645	1,645	1,645	450,179	-898,713	902,003	0%
C 120.02	N		N056 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	1,500	1,231	467	90	37.94%	10	0	0	1,286	1,384	1,384	1,500	1,500	378,887	-756,390	759,158	4%
C 120.02	N		N057 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	1,334	1,186	445	0	37.56%	10	0	0	1,334	1,334	1,334	1,334	1,334	365,126	-728,906	731,574	0%
C 120.02	N		N058 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	1,658	1,474	553	0	37.56%	10	0	0	1,658	1,658	1,658	1,658	1,658	453,766	-905,875	909,190	0%
C 120.02	N		N059 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	1,302	1,067	400	80	39.39%	10	0	0	988	1,262	1,302	1,302	1,302	356,321	-711,380	713,904	14%
C 120.02	N		N060 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	1,509	1,341	503	0	37.56%	10	0	0	1,509	1,509	1,509	1,509	1,509	412,931	-824,362	827,379	0%
C 120.02	N		N061 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	1,423	1,191	462	69	37.97%	10	0	0	1,228	1,354	1,354	1,423	1,423	370,740	-740,125	742,834	5%
C 120.02	N		N062 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	1,243	1,436	1,367	79	21	5.76%	9	1,243	1,243	1,318	1,394	1,415	1,436	1,436	402,147	-802,900	805,687	4%
C 120.02	N		N063 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	18	16	6	0	37.56%	10	0	0	18	18	18	18	18	4,838	-9,666	9,695	0%
C 120.02	N		N064 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	3,381	2,923	1,086	51	37.56%	10	0	0	3,228	3,279	3,363	3,381	3,381	897,459	-1,791,639	1,796,157	1%
C 120.02	N		N065 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	5,543	1,309	1,615	0	123.39%	10	0	0	891	891	891	5,543	5,543	243,698	-486,506	488,287	0%
C 120.02	N		N066 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	500	444	167	0	37.56%	10	0	0	500	500	500	500	500	136,858	-273,217	274,217	0%
C 120.02	N		N067 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	415	362	138	0	37.67%	10	0	0	380	415	415	415	415	113,595	-226,774	227,604	4%
C 120.02	N		N068 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	1,650	564	263	0	46.72%	10	0	0	575	575	575	1,650	1,650	157,371	-314,998	315,318	0%
C 120.02	N		N069 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	150	75	38	0	50.00%	10	0	0	75	75	75	150	150	20,526	-40,977	41,127	0%
C 120.02	N		N070 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	319	259	98	0	37.71%	10	0	0	288	288	288	319	319	78,693	-157,698	157,676	0%
C 120.02	N		N071 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	425	361	136	0	37.82%	10	0	0	400	400	400	425	425	109,485	-218,570	219,376	0%
C 120.02	N		N072 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	938	688	265	0	38.57%	10	0	0	750	750	750	938	938	205,261	-409,812	411,312	0%
C 120.02	N		N073 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	1,213	1,036	388	0	37.56%	10	0	0	1,150	1,150	1,150	1,213	1,213	314,776	-628,998	630,690	0%
C 120.02	N		N074 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	4,650	3,766	1,401	0	37.82%	10	0	0	4,100	4,100	4,100	4,650	4,650	1,122,226	-2,240,346	2,246,546	0%
C 120.02	N		N075 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	388	425	397	17	0	4.37%	9	388	388	388	388	406	425	425	111,765	-223,183	223,958	2%
C 120.02	N		N076 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	27,660	20,900	8,185	0	39.21%	10	0	0	22,130	22,130	22,130	27,660	27,660	6,056,968	-12,091,806	12,136,966	0%
C 120.02	N		N077 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	488	179	117	0	71.36%	10	0	0	160	160	160	488	488	43,763	-87,407	87,727	0%
C 120.02	N		N078 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	23,438	14,033	6,876	0	48.96%	10	0	0	13,238	13,238	13,238	23,438	23,438	3,622,615	-7,231,992	7,258,467	0%
C 120.02	N		N079 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	1,246	1,081	406	0	37.80%	10	0	0	1,126	1,246	1,246	1,246	1,246	341,126	-681,016	683,501	5%
C 120.02	N		N080 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	5,225	5,433	2,047	0	37.67%	10	0	0	5,775	6,225	6,225	6,225	6,225	1,703,926	-3,401,614	3,414,064	4%
C 120.02	N		N081 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	8,752	7,577	2,869	0	37.86%	10	0	0	7,842	8,752	8,752	8,752	8,752	2,395,635	-4,782,517	4,800,021	5%
C 120.02	N		N082 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	3,550	3,144	1,176	0	37.51%	10	0	0	3,500	3,550	3,550	3,550	3,550	971,699	-1,939,847	1,946,947	1%
C 120.02	N		N083 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	1,660	1,469	546	0	37.67%	10	0	0	1,546	1,660	1,660	1,660	1,660	454,376	-907,697	910,417	4%
C 120.02	N		N084 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	32,951	29,175	10,941	0	37.50%	10	0	0	32,778	32,778	32,778	32,951	32,951	8,971,890	-17,911,002	17,976,558	0%
C 120.02	N		N085 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	5,169	1,550	1,419	0	91.56%	10	0	0	1,254	1,254	1,254	5,169	5,169	343,103	-685,121	687,640	0%
C 120.02	N		N086 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	17,504	14,346	5,427	0	37.56%	10	0	0	15,684	15,684	15,684	17,504	17,504	4,292,846	-8,576,014	8,601,362	0%
C 120.02	N		N087 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	17,831	14,225	5,439	219	38.23%	10	0	0	15,321	15,431	15,540	17,831	17,831	4,193,464	-8,371,558	8,402,418	1%
C 120.02	N		N088 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	6,741	7,846	7,149	487	263	6.82%	9	6,741	6,741	7,267	7,556	7,846	7,846	7,846	1,944,647	-3,882,028	3,896,561	6%
C 120.02	N		N089 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	34,321	29,525	11,099	0	37.58%	10	0	0	32,846	32,846	32,846	34,321	34,321	8,990,911	-17,948,974	18,014,676	0%
C 120.02	N		N090 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	0	0	0	0		10	0	0	0	0	0	0	316	-632	632	0%
C 120.02	N		N091 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	3,248	2,757	1,037	0	37.63%	10	0	0	3,053	3,053	3,053	3,248	3,248	835,638	-1,668,222	1,674,328	0%
C 120.02	N		N092 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	28,603	21,748	8,498	0	39.08%	10	0	0	23,667	23,667	23,667	28,603	28,603	6,318,946	-12,614,865	12,660,079	0%
C 120.02	N		N093 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	24,523	15,535	7,106	0	45.74%	10	0	0	15,128	15,128	15,128	24,523	24,523	4,140,258	-8,265,388	8,296,645	0%
C 120.02	N		N094 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	10,890	9,316	3,469	115	37.56%	10	0	0	10,235	10,485	10,485	10,890	10,890	2,670,008	-5,729,531	5,750,502	1%
C 120.02	N		N095 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	26,210	21,367	8,367	0	39.18%	10	0	0	22,648	22,648	22,648	26,210	26,210	6,198,643	-12,374,628	12,419,934	0%
C 120.02	N		N096 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	24,389	15,358	7,073	0	46.05%	10	0	0	14,968	14,968	14,968	24,389	24,389	4,079,958	-8,145,009	8,174,825	0%
C 120.02	N		N097 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	10,251	8,689	3,279	48	37.73%	10	0	0	9,466	9,893	9,893	10,251	10,251	2,708,380	-5,406,865	5,426,654	2%
C 120.02	N		N098 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	38,006	26,842	11,029	0	41.09%	10	0	0	27,594	27,594	27,594	38,006	38,006	7,552,172	-15,076,756	15,131,037	0%
C 120.02	N		N099 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	25,297	31,016	28,906	2,531	352	9.41%	9	25,297	25,297	25,297	26,000	28,522	31,016	31,016	7,297,256	-14,568,500	14,620,501	6%
C 120.02	N		N100 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	27,387	18,540	7,902	743	42.62%	10	0	0	18,423	18,794	19,327	27,387	27,387	5,042,037	-10,065,280	10,102,869	2%
C 120.02	N		N101 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	539	127	205	0	161.16%	10	0	0	0	0	254	539	539	485	-968	968	100%
C 120.02	N		N102 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	5,216	1,579	1,429	0	90.50%	10	0	0	1,285	1,285	1,285	5,216	5,216	351,483	-701,682	704,251	0%
C 120.02	N		N103 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	132,246	60,888	33,457	2,271	54.97%	10	0	0	56,196	58,202	59,944	132,246	132,246	15,576,649	-30,695,096	30,811,500	3%
C 120.02	N		N104 Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	132,246	61,630	38,588	2,676	62.61%	10	0	0	56,196	58,565	69,732	132,246	132,246	10,064,857	-20,071,209	20,186,334	11%
C 120.02	N		N104 Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	1,349	132,246	21,127	49,002	25	231.93%	8	1,349	1,349	2,821	2,846	2,938	132,246	132,246	865,463	-1,728,126	1,733,812	2%
C 120.02	N		N104 Credit spread risk:Non-securitisations CSR	Vega risk	High correlation scenario	0	132,246	21,237	48,966	79	230.57%	8	0	0	3,200	3,276	3,381	132,246	132,246	997,944	-1,992,609	1,999,167	3%
C 120.02	N	N104 CRR2/DA	Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	247	220	62	0	37.56%	10	0	0	247	247	247	247	247	67,757	-135,226	135,721	0%
C 120.02	N	N105 CRR2/DA	Credit spread risk:Non-securitisations CSR	Curvature risk	High correlation scenario	0	500	444	167	0	37.56%	10	0	0	500	500	500	500	500	136,858	-273,217	274,217	0%
C 120.02	N	N106 CRR2/DA	Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	0	105	93	35	0	37.56%	10	0	0	105	105	105	105	105	28,740	-57,376	57,586	0%
C 120.02	N	N107 CRR2/DA	Credit spread risk:Non-securitisations CSR	Delta risk	High correlation scenario	236	1,150	332	387	0	92.31%	10	236	236	236	236	236	1,150	1,150	62,915	-125,694	126,166	0%

Figure 53: SBM Validation – FX – Delta, Vega and Curvature Risk - High corr

						Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Risk Class	Component	Corr. Scenario	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.02	F	F001	Foreign-exchange risk	Delta risk	High correlation scenario	0	849	754	283	0	37.56%	10	0	0	849	849	849	849	849	232,257	-463,665	465,362	0%
C 120.02	F	F002	Foreign-exchange risk	Delta risk	High correlation scenario	0	450	400	150	0	37.50%	10	0	0	450	450	450	450	450	123,173	-245,895	246,795	0%
C 120.02	F	F003	Foreign-exchange risk	Delta risk	High correlation scenario	0	318	283	106	0	37.50%	10	0	0	318	318	318	318	318	87,096	-173,874	174,511	0%
C 120.02	F	F004	Foreign-exchange risk	Delta risk	High correlation scenario	0	591	526	197	0	37.50%	10	0	0	591	591	591	591	591	161,874	-323,158	324,339	0%
C 120.02	F	F005	Foreign-exchange risk	Delta risk	High correlation scenario	0	403	300	115	0	38.38%	10	0	0	329	329	329	403	403	89,947	-179,566	180,223	0%
C 120.02	F	F006	Foreign-exchange risk	Vega risk	High correlation scenario	0	700	622	233	0	37.50%	10	0	0	700	700	700	700	700	191,602	-382,504	383,904	0%
C 120.02	F	F009	Foreign-exchange risk	Vega risk	High correlation scenario	0	600	533	200	0	37.50%	10	0	0	600	600	600	600	600	164,230	-327,860	329,060	0%
C 120.02	F	F010	Foreign-exchange risk	Vega risk	High correlation scenario	0	950	844	317	0	37.56%	10	0	0	950	950	950	950	950	260,031	-519,112	521,012	0%
C 120.02	F	F011	Foreign-exchange risk	Vega risk	High correlation scenario	0	550	489	183	0	37.50%	10	0	0	550	550	550	550	550	150,544	-300,539	301,639	0%
C 120.02	F	F012	Foreign-exchange risk	Vega risk	High correlation scenario	0	1,321	1,175	440	0	37.50%	10	0	0	1,321	1,321	1,321	1,321	1,321	361,765	-722,089	724,732	0%
C 120.02	F	F013	Foreign-exchange risk	Vega risk	High correlation scenario	0	366	325	122	0	37.56%	10	0	0	366	366	366	366	366	100,103	-199,841	200,572	0%
C 120.02	F	F014	Foreign-exchange risk	Vega risk	High correlation scenario	0	854	759	285	0	37.56%	10	0	0	854	854	854	854	854	233,664	-466,473	468,181	0%
C 120.02	F	F015	Foreign-exchange risk	Curvature risk	High correlation scenario	0	80,723	66,870	28,603	0	42.77%	9	0	0	66,799	80,159	80,159	80,723	80,723	23,129,244	-46,178,329	46,338,648	9%
C 120.02	F	F016	Foreign-exchange risk	Curvature risk	High correlation scenario	0	800	530	313	0	59.08%	10	0	0	467	700	700	800	800	191,631	-382,562	383,962	20%
C 120.02	F	F017	Foreign-exchange risk	Curvature risk	High correlation scenario	42,748	64,561	61,131	8,168	0	13.36%	8	42,748	42,748	64,121	64,121	64,561	64,561	64,561	19,621,247	-38,178,372	39,336,616	0%
C 120.02	F	F018	Foreign-exchange risk	Curvature risk	High correlation scenario	0	0	0	0	0		10	0	0	0	0	0	0	0	621	-1,242	1,242	
C 120.02	F	F019	Foreign-exchange risk	Curvature risk	High correlation scenario	0	81,086	68,587	27,213	0	39.68%	10	0	0	80,158	80,477	80,477	81,086	81,086	22,026,760	-43,977,043	44,137,996	0%
C 120.02	F	F020	Foreign-exchange risk	Curvature risk	High correlation scenario	0	0	0	0	0		10	0	0	0	0	0	0	0	1,614	-3,227	3,227	
C 120.02	F	F021	Foreign-exchange risk	Curvature risk	High correlation scenario	0	82,997	67,619	26,928	0	39.82%	10	0	0	78,603	78,683	78,683	82,997	82,997	21,515,734	-42,952,864	43,110,071	0%
C 120.02	F	F022	Foreign-exchange risk	Curvature risk	High correlation scenario	0	128,243	61,385	32,910	289	53.61%	10	0	0	62,860	63,036	63,181	128,243	128,243	17,212,763	-34,362,491	34,488,563	0%
C 120.02	F	F023	Foreign-exchange risk	Curvature risk	High correlation scenario	0	129,425	64,076	37,397	289	58.36%	9	0	0	62,860	63,036	67,255	129,425	129,425	19,343,503	-38,423,968	38,550,043	3%
C 120.02	F	F003	Foreign-exchange risk	Delta risk	High correlation scenario	0	129,425	18,724	48,815	0	260.71%	8	0	0	329	329	329	129,425	129,425	104,345	-208,362	209,019	0%
C 120.02	F	F023	Foreign-exchange risk	Vega risk	High correlation scenario	0	129,425	19,099	48,658	0	254.75%	9	0	0	854	854	854	129,425	129,425	258,716	-516,567	518,274	0%
C 120.02	F	F024	Foreign-exchange risk	Vega risk	High correlation scenario	0	45	23	11	0	50.00%	10	0	0	23	23	23	45	45	6,158	-12,292	12,339	0%
C 120.02	F	F026	Foreign-exchange risk	Delta risk	High correlation scenario	0	150	56	39	0	70.36%	10	0	0	50	50	50	150	150	13,682	-27,315	27,415	0%
C 120.02	F	F025	Foreign-exchange risk	Curvature risk	High correlation scenario	0	700	186	292	0	156.72%	10	0	0	49	49	49	700	700	13,263	-26,477	26,575	0%

Figure 54: SBM Validation – FX – Delta, Vega and Curvature Risk - High corr

						Other stats							Percentiles								Extreme Values range (w.r.t. median)[2]		
Table	Group	Portfolio	Risk Class	Component	Corr. Scenario	Min	Max	Ave	STDev	MAD (median absolute deviation)	Coefficient of variation (STDev/Ave)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	STDev_trunc	-2 STDev_trunc	+2 STDev_trunc	Interquantile range
C 120.02	C	C001	Commodities risk	Delta risk	High correlation scenario	0	1,050	933	350	0	37.50%	10	0	0	1,050	1,050	1,050	1,050	1,050	287,403	-573,756	575,856	0%
C 120.02	C	C002	Commodities risk	Delta risk	High correlation scenario	0	700	622	233	0	37.50%	10	0	0	700	700	700	700	700	191,602	-382,504	383,904	0%
C 120.02	C	C003	Commodities risk	Delta risk	High correlation scenario	0	1,800	1,600	600	0	37.50%	10	0	0	1,800	1,800	1,800	1,800	1,800	328,292	-654,784	658,384	0%
C 120.02	C	C004	Commodities risk	Delta risk	High correlation scenario	0	50,000	44,444	16,667	0	37.50%	10	0	0	50,000	50,000	50,000	50,000	50,000	13,685,947	-27,321,894	27,421,894	0%
C 120.02	C	C005	Commodities risk	Delta risk	High correlation scenario	0	2,200	1,956	733	0	37.50%	10	0	0	2,200	2,200	2,200	2,200	2,200	602,177	-1,202,155	1,206,555	0%
C 120.02	C	C006	Commodities risk	Delta risk	High correlation scenario	0	1,800	1,600	600	0	37.50%	10	0	0	1,800	1,800	1,800	1,800	1,800	492,690	-983,581	987,181	0%
C 120.02	C	C007	Commodities risk	Delta risk	High correlation scenario	0	400	356	133	0	37.50%	10	0	0	400	400	400	400	400	109,487	-218,574	219,374	0%
C 120.02	C	C008	Commodities risk	Delta risk	High correlation scenario	2,625	2,625	2,625	0	0	0.00%	9	2,625	2,625	2,625	2,625	2,625	2,625	2,625	757,275	-1,511,925	1,517,175	0%
C 120.02	C	C009	Commodities risk	Delta risk	High correlation scenario	0	625	556	208	0	37.50%	10	0	0	625	625	625	625	625	171,073	-341,521	342,771	0%
C 120.02	C	C010	Commodities risk	Delta risk	High correlation scenario	0	1,225	1,089	408	0	37.50%	10	0	0	1,225	1,225	1,225	1,225	1,225	335,303	-669,381	671,831	0%
C 120.02	C	C011	Commodities risk	Delta risk	High correlation scenario	0	15,000	13,333	5,000	0	37.50%	10	0	0	15,000	15,000	15,000	15,000	15,000	4,105,754	-8,196,588	8,226,588	0%
C 120.02	C	C012	Commodities risk	Delta risk	High correlation scenario	0	1,950	1,733	650	0	37.50%	10	0	0	1,950	1,950	1,950	1,950	1,950	533,748	-1,065,548	1,069,448	0%
C 120.02	C	C013	Commodities risk	Delta risk	High correlation scenario	0	1,650	1,467	550	0	37.50%	10	0	0	1,650	1,650	1,650	1,650	1,650	451,633	-901,616	904,916	0%
C 120.02	C	C014	Commodities risk	Delta risk	High correlation scenario	0	1,350	1,200	450	0	37.50%	10	0	0	1,350	1,350	1,350	1,350	1,350	369,518	-737,686	740,386	0%
C 120.02	C	C015	Commodities risk	Delta risk	High correlation scenario	0	1,800	1,600	600	0	37.50%	10	0	0	1,800	1,800	1,800	1,800	1,800	492,690	-983,581	987,181	0%
C 120.02	C	C016	Commodities risk	Delta risk	High correlation scenario	0	814	723	271	0	37.50%	10	0	0	814	814	814	814	814	222,781	-444,749	446,377	0%
C 120.02	C	C017	Commodities risk	Delta risk	High correlation scenario	0	88	78	29	0	37.56%	10	0	0	88	88	88	88	88	23,950	-47,813	47,988	0%
C 120.02	C	C018	Commodities risk	Delta risk	High correlation scenario	3,916	3,916	3,916	0	0	0.00%	9	3,916	3,916	3,916	3,916	3,916	3,916	3,916	752,743	-1,501,569	1,509,402	0%
C 120.02	C	C019	Commodities risk	Delta risk	High correlation scenario	0	104,712	93,077	34,904	0	37.50%	10	0	0	104,712	104,712	104,712	104,712	104,712	28,661,382	-57,218,059	57,427,482	0%
C 120.02	C	C020	Commodities risk	Delta risk	High correlation scenario	0	1,694	1,506	565	0	37.50%	10	0	0	1,694	1,694	1,694	1,694	1,694	463,626	-925,559	928,946	0%
C 120.02	C	C021	Commodities risk	Delta risk	High correlation scenario	0	6,042	5,371	2,014	0	37.50%	10	0	0	6,042	6,042	6,042	6,042	6,042	1,653,845	-3,301,648	3,313,732	0%
C 120.02	C	C022	Commodities risk	Delta risk	High correlation scenario	0	785	698	262	0	37.50%	10	0	0	785	785	785	785	785	214,836	-428,888	430,456	0%
C 120.02	C	C023	Commodities risk	Delta risk	High correlation scenario	0	5,419	4,817	1,806	0	37.50%	10	0	0	5,419	5,419	5,419	5,419	5,419	1,483,307	-2,960,695	2,971,532	0%
C 120.02	C	C024	Commodities risk	Delta risk	High correlation scenario	0	645	573	215	0	37.56%	10	0	0	645	645	645	645	645	176,509	-352,373	353,663	0%
C 120.02	C	C025	Commodities risk	Delta risk	High correlation scenario	1,149	1,149	1,149	0	0	0.00%	9	1,149	1,149	1,149	1,149	1,149	1,149	1,149	331,348	-661,548	663,845	0%
C 120.02	C	C026	Commodities risk	Delta risk	High correlation scenario	0	15,998	14,220	5,333	0	37.50%	10	0	0	15,998	15,998	15,998	15,998	15,998	4,378,894	-8,741,776	8,773,786	0%
C 120.02	C	C027	Commodities risk	Delta risk	High correlation scenario	0	0	0	0	0		10	0	0	0	0	0	0	0	0	0	0	
C 120.02	C	C028	Commodities risk	Delta risk	High correlation scenario	0	50,753	44,609	16,732	0	37.51%	10	0	0	49,998	49,998	49,998	50,753	50,753	13,640,709	-27,231,421	27,331,414	0%
C 120.02	C	C029	Commodities risk	Delta risk	High correlation scenario	0	15,037	13,366	5,012	0	37.50%	10	0	0	15,037	15,037	15,037	15,037	15,037	4,115,801	-8,216,565	8,246,639	0%
C 120.02	C	C030	Commodities risk	Delta risk	High correlation scenario	0	88	78	29	0	37.50%	10	0	0	88	88	88	88	88	23,950	-47,813	47,988	0%
C 120.02	C	C031	Commodities risk	Delta risk	High correlation scenario	0	18,420	16,088	6,036	0	37.52%	10	0	0	17,992	17,992	17,992	18,420	18,420	4,875,773	-9,733,554	9,769,538	0%
C 120.02	C	C032	Commodities risk	Vega risk	High correlation scenario	0	350	311	117	0	37.50%	10	0	0	350	350	350	350	350	95,801	-191,252	191,952	0%
C 120.02	C	C033	Commodities risk	Vega risk	High correlation scenario	0	650	578	217	0	37.50%	10	0	0	650	650	650	650	650	177,916	-355,182	356,482	0%
C 120.02	C	C034	Commodities risk	Vega risk	High correlation scenario	0	166	57	44	0	76.79%	10	0	0	50	50	50	166	166	13,662	-27,314	27,414	0%
C 120.02	C	C035	Commodities risk	Vega risk	High correlation scenario	0	1,352	1,201	450	0	37.50%	10	0	0	1,352	1,352	1,352	1,352	1,352	370,015	-738,678	741,382	0%
C 120.02	C	C036	Commodities risk	Vega risk	High correlation scenario	0	36	23	17	0	49.76%	10	0	0	25	25	25	36	36	6,843	-13,668	13,716	0%
C 120.02	C	C037	Commodities risk	Vega risk	High correlation scenario	0	653	580	218	0	37.50%	10	0	0	653	653	653	653	653	178,684	-356,716	358,021	0%
C 120.02	C	C038	Commodities risk	Vega risk	High correlation scenario	0	10,474	9,310	3,491	0	37.50%	10	0	0	10,474	10,474	10,474	10,474	10,474	2,866,698	-5,723,208	5,744,246	0%
C 120.02	C	C039	Commodities risk	Vega risk	High correlation scenario	0	423	376	141	0	37.50%	10	0	0	423	423	423	423	423	115,851	-231,279	232,125	0%
C 120.02	C	C040	Commodities risk	Vega risk	High correlation scenario	0	1,343	1,194	448	0	37.50%	10	0	0	1,343	1,343	1,343	1,343	1,343	367,590	-733,837	736,523	0%
C 120.02	C	C041	Commodities risk	Vega risk	High correlation scenario	0	392	349	131	0	37.56%	10	0	0	392	392	392	392	392	107,368	-214,344	215,129	0%
C 120.02	C	C042	Commodities risk	Vega risk	High correlation scenario	0	1,549	1,376	516	0	37.50%	10	0	0	1,549	1,549	1,549	1,549	1,549	423,851	-846,153	849,250	0%
C 120.02	C	C043	Commodities risk	Vega risk	High correlation scenario	0	258	229	86	0	37.50%	10	0	0	258	258	258	258	258	70,597	-140,936	141,452	0%
C 120.02	C	C044	Commodities risk	Vega risk	High correlation scenario	0	328	292	109	0	37.50%	10	0	0	328	328	328	328	328	89,817	-179,305	179,962	0%
C 120.02	C	C045	Commodities risk	Vega risk	High correlation scenario	0	3,199	2,844	1,066	0	37.50%	10	0	0	3,199	3,199	3,199	3,199	3,199	875,687	-1,748,174	1,754,573	0%
C 120.02	C	C046	Commodities risk	Vega risk	High correlation scenario	0	0	0	0	0		9	0	0	0	0	0	0	0	298	-595	595	0%
C 120.02	C	C047	Commodities risk	Vega risk	High correlation scenario	0	5,207	4,541	1,704	0	37.52%	10	0	0	5,075	5,075	5,075	5,207	5,207	1,389,155	-2,773,234	2,783,585	0%
C 120.02	C	C048	Commodities risk	Vega risk	High correlation scenario	0	3,020	2,685	1,007	0	37.50%	10	0	0	3,020	3,020	3,020	3,020	3,020	826,726	-1,650,406	1,656,451	0%
C 120.02	C	C049	Commodities risk	Vega risk	High correlation scenario	0	890	118	290	0	244.65%	10	0	0	25	25	25	890	890	6,818	-13,611	13,661	0%
C 120.02	C	C050	Commodities risk	Vega risk	High correlation scenario	0	4,018	3,499	1,313	0	37.51%	10	0	0	3,919	3,919	3,939	4,018	4,018	1,072,724	-2,141,532	2,149,568	0%
C 120.02	C	C051	Commodities risk	Curvature risk	High correlation scenario	76,460	112,989	21,663	0	0	168.77%	9	0	0	6,635	6,635	76,460	76,460	76,460	1,813,983	-3,621,331	3,634,601	0%
C 120.02	C	C052	Commodities risk	Curvature risk	High correlation scenario	11,600	7,760	3,106	0	0	40.02%	10	0	0	8,320	8,320	8,320	11,600	11,600	2,277,210	-4,546,106	4,562,746	0%
C 120.02	C	C053	Commodities risk	Curvature risk	High correlation scenario	8,563	7,538	2,836	0	0	37.55%	10	0	0	8,233	8,563	8,563	8,563	8,563	2,343,861	-4,679,160	4,696,286	2%
C 120.02	C	C054	Commodities risk	Curvature risk	High correlation scenario	36,880	26,739	10,351	0	0	38.71%	10	0	0	29,119	29,119	36,880	36,880	36,880	7,967,628	-15,906,145	15,964,365	0%
C 120.02	C	C055	Commodities risk	Curvature risk	High correlation scenario	5,850	3,823	1,546	0	0	40.51%	10	0	0	4,080	4,080	4,080	5,850	5,850	1,116,703	-2,229,326	2,237,486	0%
C 120.02	C	C056	Commodities risk	Curvature risk	High correlation scenario	6,148	3,967	1,618	0	0	40.79%	10	0	0	4,223	4,223	4,223	6,148	6,148	1,155,702	-2,307,182	2,315,627	0%
C 120.02	C	C057	Commodities risk	Curvature risk	High correlation scenario	1,487	1,233	466	0	0	37.79%	10	0	0	1,353	1,353	1,353	1,487	1,487	370,428	-739,467	742,159	0%
C 120.02	C	C058	Commodities risk	Curvature risk	High correlation scenario	14,535	9,731	3,893	0	0	40.01%	10	0	0	10,435	10,435	10,435	14,535	14,535	2,856,693	-5,701,750	5,722,639	0%
C 120.02	C	C059	Commodities risk	Curvature risk	High correlation scenario	19,900	7,422	5,177	0	0	69.75%	10	0	0	6,700	6,700	6,700	19,900	19,900	1,833,445	-3,660,190	3,673,590	0%
C 120.02	C	C060	Commodities risk	Curvature risk	High correlation scenario	1,415	939	377	0	0	40.18%	10	0	0	1,053	1,053	1,415	1,415	1,415	275,073	-548,157	551,147	0%
C 120.02	C	C061	Commodities risk	Curvature risk	High correlation scenario	14,200	12,531	4,703	0	0	37.53%	10	0	0	13,790	14,200	14,200	14,200	14,200	3,886,809	-7,759,419	7,787,819	1%
C 120.02	C	C062	Commodities risk	Curvature risk	High correlation scenario	55,890	48,601	18,239	0	0	37.53%	10	0	0	54,271	54,271	54,271	55,890	55,890	14,854,778	-29,655,286	29,763,826	0%
C 120.02	C	C063	Commodities risk	Curvature risk	High correlation scenario	26,773	79,190	28,075	20,654	0	73.57%	9	26,773	26,773	26,773	26,773	26,773	79,190	79,190	5,990,243	-11,959,713	12,001,256	0%
C 120.02	C	C064	Commodities risk	Curvature risk	High correlation scenario	0	48,500	14,621	13,297	0	90.95%	10	0	0	11,876	11,876	11,876	48,500	48,500	3,247,752	-6,483,640	6,507,386	0%
C 120.02	C	C065	Commodities risk	Curvature risk	High correlation scenario	0	25,480	14,211	6,424	0	45.21%	10	0	0	14,631	14,631	14,631	25,480	25,480	4,004,383	-7,994,135	8,023,397	0%
C 120.02	C	C066	Commodities risk	Curvature risk	High correlation scenario	0	11,697	8,773	5,415	0	61.72%	9	0	0	5,849	11,697	11,697	11,697	11,697	3,575,505	-6,739,313	6,762,706	33%
C 120.02	C	C067	Commodities risk	Curvature risk	High correlation scenario	0	11,730	10,015	3,937	0	39.28%	10	0	0	11,724	11,724	11,724	11,730	11,730	3,208,167	-6,404,615	6,426,026	0%
C 120.02	C	C068	Commodities risk	Curvature risk	High correlation scenario	0	10,747	6,936	2,829	0	40.79%	10	0	0	7,382	7,382	10,747	10,747	10,747	2,020,414	-4,033,447	4,048,211	0%
C 120.02	C	C069	Commodities risk	Curvature risk	High correlation scenario	0	1,172	972	367	0	37.79%	10	0	0	1,067	1,067	1,067	1,172	1,172	292,109	-583,151	585,285	0%
C 120.02	C	C070	Commodities risk	Curvature risk	High correlation scenario	16,388	14,057	5,485	0	0	39.02%	10	0	0	16,388	16,388	16,388	16,388	16,388	4,465,804	-8,955,231	8,988,008	0%
C 120.02	C	C071	Commodities risk	Curvature risk	High correlation scenario	19,805	7,345	5,159	0	0	70.24%	10	0	0	6,615	6,615	6,615	19,805	19,805	1,810,110	-3,613,605	3,626,834	0%
C 120.02	C	C072	Commodities risk	Curvature risk	High correlation scenario	11,137	9,575	3,716	0	0	38.83%	10	0	0	11,137	11,137	11,137	11,137	11,137	3,048,438	-6,085,740	6,108,013	0%
C 120.02	C	C073	Commodities risk	Curvature risk	High correlation scenario	20,897	18,173	6,809	0	0	37.53%	10	0	0	20,268	20,268	20,268	20,897	20,897	5,554,616	-11,088,844	11,129,531	0%
C 120.02	C	C074	Commodities risk	Curvature risk	High correlation scenario	39,920	91,574	46,377	18,262	0	39.38%	9	39,920	39,920	39,920	39,920	91,574	91,574	91,574	11,514,262	-22,988,644	23,068,484	0%
C 120.02	C	C075	Commodities risk	Curvature risk	High correlation scenario	0	0	0	0	0		10	0	0	0	0	0	0	0	0	0	0	
C 120.02	C	C076	Commodities risk	Curvature risk	High correlation scenario	0	91,694	40,571	23,136	0	57.01%	9	0	0	38,564	38,564	40,310	91,694	91,694	10,553,731	-21,068,898	21,146,025	2%
C 120.02	C	C077	Commodities risk	Curvature risk	High correlation scenario	0	40,077	35,287	13,234	0	37.51%	10	0	0	39,572	39,572	39,572	40,077	40,077	10,831,376	-21,623,168	21,702,311	0%
C 120.02	C	C078	Commodities risk	Curvature risk	High correlation scenario	0	168,815	37,104	50,004	0	134.77%	10	0	0	23,589	23,589	23,589	168,815	168,815	6,451,665	-12,879,741	12,926,918	0%
C 120.02	C	C079	Commodities risk	Curvature risk	High correlation scenario	0	0	0	0	0		10	0	0	0	0	0	0	0	2,806	-5,616	5,616	0%
C 120.02	C	C080	Commodities risk	Curvature risk	High correlation scenario	0	187,386	62,673	52,148	4,416	83.21%	10	0	0	45,980	48,188	50,396	187,386	187,386	12,578,747	-25,109,306	25,265,682	5%
C 120.02	C	C081	Commodities risk	Curvature risk	High correlation scenario	0	187,386	68,956	61,547	4,416	87.98%	9	0	0	45,980	48,188	113,976	187,386	187,386	19,342,861	-38,637,535	38,733,911	43%
C 120.02	C	C082	Commodities risk	Delta risk	High correlation scenario	0	17,992	15,422	6,869	0	44.10%	9	0	0	17,992	17,992	17,992	17,992	17,992	5,451,515	-10,885,038	10,921,022	0%
C 120.02	C	C081	Commodities risk	Vega risk	High correlation scenario	0	4,018	3,376	1,489	0	44.11%	9	0	0	3,919	3,919	3,939	4,018	4,018	1,199,386	-2,394,852	2,402,891	0%

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