EBA REPORT RESULTS FROM THE 2025 MARKET RISK BENCHMARKING EXERCISE – PART 1 - IMA

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Abbreviations

APR	all price risk
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
EQ	equity
ES	expected shortfall
EU	European Union
FRTB	fundamental review of the trading book
FX	foreign exchange
HPE	hypothetical portfolio exercise
HS	historical simulation
IMV	initial market valuation
IQD	interquartile dispersion
IR	interest rates
IRC	incremental risk charge
IT	information technology
ITS	implementing technical standards
LGD	loss given default
MC	Monte Carlo
MR	market risk
MRWA	market-risk-weighted asset
OFR	Own Funds Requirements
P&L	profit and loss
PD	probability of default
Q&A	question and answer
RTS	regulatory technical standards
RWA	risk-weighted asset
sVaR	stressed value at risk
SBM	Sensitivities Based Method
VaR	value at risk

1. Executive summary

1. This report presents the results of the 2025 supervisory benchmarking exercise pursuant to Article 78 of the Capital Requirements Directive (CRD) and the related regulatory and implementing technical standards (RTS and ITS) that define the scope, procedures and portfolios for benchmarking internal models for market risk (MR).

2. The report summarises the conclusions drawn from a hypothetical portfolio exercise (HPE) conducted by the EBA during 2025. The primary objective of the exercise is to assess the level of variability observed in risk-weighted assets (RWA) for market risk produced by banks' internal models.

3. The exercise was performed on a sample of 43 European banks from 13 jurisdictions. The relevant institutions submitted data for 105 instruments recombined into 168 market portfolios across all major asset classes, i.e., equity (EQ), interest rates (IR), foreign exchange (FX), commodities (CO) and credit spreads (CS), as well as five correlation trading instruments recombined into four portfolios (CTPs), for a total of 82 benchmark portfolios. Thus, the exercise covers the entire population of EU banks with internal models for MR at the highest level of consolidation.

4. As summarised in this report, the analytical part of the exercise delivered by the EBA provided the competent authorities (CAs) with a list of outliers to be examined in detail. The banks with the most significant number of outliers were also highlighted to their CAs, which addressed the issues reported bilaterally with their banks. CAs and the EBA also collected feedback on improving forthcoming benchmarking exercises where possible.

5. Finally, considering the benchmarking exercise's results, CAs were asked to provide the EBA with responses to a questionnaire on the actions they plan to take regarding each participating bank's internal model.

1.1 Main findings of the benchmarking analysis

6. The report measures variability in terms of the interquartile dispersion (IQD)[1] and the coefficient of variation (CV)[2] observed within each benchmark portfolio. The IQD is more robust than the CV when the sample is drawn from an unknown, fat-tailed distribution. As far as the market-risk-weighted asset (MRWA) variability, the IQD metric suggests a level of dispersion for all the risk measures provided by banks that need to be monitored.

7. The main observations indicate that the 2025 results show a decrease in the dispersion of the Initial Market Valuation (IMV) compared with the 2024 exercise across all asset classes (see Table 2). Equity, Interest Rate and Credit Spread continue to display relatively low dispersion levels (2%, 3% and 1% respectively), compared with 4%, 4% and 5% in 2024 and 2%, 2% and 3% in 2023.

8. A notable improvement is observed in the FX asset class, where the average IQD dropped significantly to 3% (from 19% in 2024, 8% in 2023 and 3% in 2022). This reduction is mainly due to a clarification regarding the booking of FX forwards, which enhanced the consistency of FX submissions.

9. Commodities (CO) remain an asset class with substantially high dispersion (14% in 2025, compared with 16% in 2024, 14% in 2023 and 24% in 2022). This is largely driven by two instruments (401 and 402) out of a very small sample of five CO instruments, combined with the limited number of submissions, both of which have a negative effect on the average IQD for this asset class.

10. The number of instruments with dispersion above 10% remains limited. Based on this year's results, we can conclude that the quality of submitted data has improved. Given that high-quality data is essential for the benchmarking exercise, banks should continue to devote particular attention to the accuracy of their submissions. It should also be noted that further improvements in data quality would require several rounds of iteration with submitters—an approach that is not feasible within the tight timeline of the exercise. The EBA continues to prioritise the enhancement and clarification of instrument specifications.

11. Dispersions have been reviewed in detail, and most have been satisfactorily justified by banks and competent authorities. A small number of outlier observations remain unexplained and are expected to be addressed as part of ongoing supervisory activities. Supervisors are expected to monitor and further investigate these cases (see Chapter 5 of this report).

[1] IQD is defined as the absolute value of the ratio of the interquartile range (Q3 – Q1) divided by the sum of the quartiles (Q3 + Q1). The higher the IQD is, the higher the dispersion in the data.

[2] CV is computed as the ratio of the standard deviation to the mean.

12. From a risk factor perspective, FX portfolios exhibit a lower level of dispersion than the other asset classes. In general, variability is comparable to the previous exercise (see Table 5: Interquartile dispersion for IMV, risk metrics and SBM OFR by risk factor).

13. For the single risk measures, the overall variability of the value at risk (VaR) remains lower than that observed for the stressed VaR (sVaR), at 14% and 27% respectively. This compares with 14% and 21% in 2024, 16% and 21% in 2023, 21% and 28% in 2022, 27% and 31% in 2021, and 18% and 29% in 2020.

14. More complex measures, such as the incremental risk charge (IRC), continue to show higher dispersion, reaching 43% in this year's exercise (compared with 44% in 2023, 42% in 2023, 45% in 2022, 43% in 2021 and 49% in 2020).

15. The variability of risk measures, particularly the VaR, is broadly in line with that observed in the previous exercise. Overall, this year's results place the exercise among those with the lowest levels of dispersion in risk measures since its inception, as illustrated in the table below.

Table 1: Average IQD by asset class – VaR

Average Interquartile dispersion by asset class - VAR

	Interquartile range 2025 exercise	*Interquartile range 2024 exercise*	*Interquartile range 2023 exercise*	*Interquartile range 2022 exercise*	*Interquartile range 2021 exercise*	*Interquartile range 2020 exercise*	*Interquartile range 2019 exercise*	*Interquartile range 2018 exercise*	*Interquartile range 2017 exercise*
Equity	17.6%	15.7%	16.5%	24.8%	24.4%	17.6%	14.1%	22.8%	21.6%
IR	11.7%	14.9%	16.4%	21.2%	19.4%	13.3%	16.2%	9.1%	19.0%
FX	10.9%	8.8%	12.0%	11.0%	26.7%	11.6%	22.1%	16.7%	40.7%
Commodity	15.1%	14.5%	17.0%	18.2%	18.8%	20.0%	23.7%	21.2%	12.8%
Credit spreads	16.6%	16.4%	18.1%	27.8%	37.5%	22.9%	27.8%	25.6%	26.7%
CTP									

16. As in previous exercises, to deepen the analysis of VaR and better understand the drivers of variability, additional VaR metrics were calculated and compared with the banks' reported VaR. In particular:

    a. P&L VaR: an alternative VaR estimate computed by the EBA using the 1-year daily profit-and-loss (P&L) series submitted by banks, applying a historical simulation (HS) approach; and

    b. HS VaR: a comparable VaR measure corresponding to the regulatory VaR reported by those banks that exclusively use a historical simulation (HS) approach.

17. When comparing the variability between the regulatory VaR and the alternative risk measures, the decrease in IQD observed when using a more homogeneous sample (i.e. HS-only banks) is confirmed. Across all risk types, the dispersion for the P&L VaR tends to be lower, except for Commodity, although it remains non-negligible. This indicates that the modelling approach alone does not fully explain the observed variability in VaR results. Additional drivers—such as risks not captured within the model framework or methodological choices, including the use of absolute versus relative returns—also contribute to the dispersion (see Table 5: Interquartile dispersion for IMV, risk metrics and SBM OFR by risk factor).

18. As mentioned above, the dispersion in sVaR figures is generally higher than the dispersion observed for regulatory VaR (see Table 16 and Table 17). The stressed period used was the one applied by the bank for capital purposes, so it was not harmonised in the sample. Different choices for the stressed period are permitted by the Capital Requirements Regulation (CRR), and these choices are considered and questioned as part of the regulatory approval process. While allowing banks to use their own individual stress periods reduces the comparability of the sVaR results across the sample, doing so facilitates the estimation of implied capital needs from the HPE. Nonetheless, banks in the exercise are asked to report the stressed period applied. As a result, the EBA selected a subset of homogeneous time windows applied and ran the benchmark for this subsample. It appears clear that when a homogeneous stress window is applied, the sVaR figures tend to be less dispersed (see Table 26: Stress VaR statistics (2008-2009 stress period only)).

19. Moreover, to carry out these analyses, the EBA conducted a comparison across banks of the ratio between sVaR and VaR for each of the hypothetical portfolios included in the benchmarking exercise (see Table 6: sVaR–VaR ratio by range (number of banks as a percentage of the total)). The ratio generally varies significantly between the portfolios, with values that cannot be explained except by errors. However, on average, the ratio comes in at around 2.12 (see Table 20: sVaR/VaR statistics).

20. As expected, for the larger banks with significant trading activities, the benchmarking portfolios are generally relevant to their actual trading book. For smaller banks, this is less the case, and this is why the EBA included simpler and more plain vanilla instruments starting from the 2019 exercise. The challenge remains to design a benchmarking exercise that can fit banks that have a specialised business model. Overall, the portfolios are, however, reflective of the risk factors experienced by most banks. In the 2025 exercise the VaR dispersion remains stably low (14% , as in 2024, from the 16% of 2023). The aggregate portfolios also feature notably low levels of IQDs (11%).

21. Regarding the IRC, the average variability (as measured by the average IQD for this category of portfolios) is higher than that observed for all other metrics considered in the report (43%). This high variability is slightly lower than in the previous exercise – the IQD was 44% on average in the 2023 exercise (42% in 2023, 45% in 2022, 43% in 2021) (see Table 9: IRC statistics and cluster analysis). The understanding of the IRC dispersion was further analysed by disaggregating various modelling choices (see Table 10, Table 29, Table 30 and Table 31). The number of risk factors and applying market conventions to the source of LGD have a different impact, depending on the asset classes applied. It looks like for the IRC, the modelling choices influence significantly the dispersion, but the effect cannot be generalised, and it looks very time dependent.

22. The analysis also considered the diversification benefits for VaR, sVaR and IRC in the aggregated portfolios (see Table 11: Diversification benefit statistics). As expected, larger aggregated portfolios demonstrated stronger diversification effects than smaller ones. Overall,

the dispersion of diversification benefits is generally lower than the dispersion observed for the corresponding metrics at the individual-portfolio level.

23. Consistent with previous exercises, an assessment was conducted on the variability of the empirical estimates of expected shortfall (ES) at the 97.5% confidence level. The findings show that the dispersion of ES estimates across risk factors is broadly in line with that observed for VaR and P&L VaR (see Table 19).

Dispersion in the capital outcome

24. Alongside the variability analysis, the EBA also conducted the usual assessment regarding possible underestimations of capital requirements (see Table 12: Interquartile dispersion for capital proxy). As the analysis is based on hypothetical portfolios and the capital requirements were defined using a proxy, the results should be interpreted as approximations of potential capital underestimations.[3]

25. The average variability across the sample as measured by the IQD is significant (around 21%), especially for the most complex portfolios in the credit spread asset class. This dispersion very slightly decreases when considering a more homogeneous capital proxy (19% applying three as the multiplier).

Additional analysis of Risk measures

26. As introduced in the previous exercises, the EBA extended the analysis to other drivers of variation (see Section 4.2), such as the level of approval granted by the CAs and the already mentioned stressed period applied in the sVaR calibration[4].

27. The subsample analysis based on the level of approval delivered interesting results. A priori, it was expected that having banks with different levels of approval would have increased the dispersion of the results of the risk measures. In line with this assumption, the IQD results seem to fluctuate among the subsamples of different approval levels. This is because more homogeneous subsamples tend to produce slightly smaller dispersions, but this positive effect is counterbalanced by the smaller number of firms in the sample. Basically, the benchmark provided and the 25th and 75th quantiles of the distribution tend to be less dispersed with respect to the whole set of banks. This implies that the different level of approval does indeed

[3] The proxy for implied capital requirements was defined as the sum of VaR and sVaR across all portfolios. For comparability, this proxy was calculated under three settings. First, VaR and sVaR were scaled using each bank's total multiplication factor. Second, they were recalculated using only the regulatory minimum factor of three, thereby excluding any institution-specific add-ons set by competent authorities. Finally, a subset of banks applying the same stress period was analysed to assess capital dispersion. This metric allows for a direct comparison across banks and facilitates an evaluation of variability in their capital outcomes.

[4] The size and business model analyses could be consulted in the 2020-2024 BM Market Risk reports.

have an impact on the dispersion of the benchmarking results (see Table 7: Asset class comparison for VaR in terms of level of approval).

28. Finally, as already mentioned above, and in line with previous findings, sVaR figures are less dispersed when the benchmark is computed for a homogeneous subsample of firms that applied a similar time period for the stress window used for calibrating the sVaR (see Table 8: Asset class comparison for sVaR in terms of the time window applied).

29. As introduced in the 2020 Report, PV statistics are reported (see Table 27). The PVs reported generally have quite low IQDs, and they were useful in distinguishing true outliers and outliers due to mispricing of the portfolios.

SBM and ASA OFR analysis

30. The 2025 benchmarking exercise marks the fourth year of collecting SBM sensitivities and OFR data, and the second year of gathering DRC and RRAO information, as well as applying the ASA Validation portfolios. Over time, the volume of data related specifically to the FRTB-ASA methodology has steadily increased. As a result, in 2025 this component of the exercise is now presented in a standalone report.

1.2 CAs' assessments based on supervisory benchmarks

31. CAs shared the outcomes of their assessments at the bank level with the EBA (see Figure 14: CAs' own assessments of the levels of MR own funds requirements).

32. Overall, CAs' assessment of the over- and underestimation of RWA was positive in the sense that CAs were aware of and able to explain the causes of almost all deviations. Although most of the causes were identified and actions put in place in order to reduce the unwanted variability of the RWA, the effectiveness of these actions can be evaluated only by CAs via constant monitoring of the benchmarking results.

33. The CAs are expected to pay the utmost attention to the minority of cases in which the over- and underestimations were unexplained, to closely monitor these institutions and to put in place additional efforts to reduce these gaps in future exercises.

1.3 Past exercises and future expected changes

34. The 2019 exercise represented a significant change from the 2016-2018 exercises in terms of the simplification of the portfolios. This simplification had a positive effect in obtaining less dispersed results than with the previous portfolios. Furthermore, it improved the significant data quality issues relating to some portfolios while focusing on the model risk elements.

35. In the 2020 exercise, the data submitted further improved in quality thanks to the clarification of the legal text description of some instruments and to the further practice that the banks have gained in conducting the present exercise. This had a positive effect in terms of dispersion

in the data provided. Improvements in terms of less dispersed results have also stemmed from the change in the methodology to detect outliers for the risk measures.

36. In the 2021 exercise, the data quality of the submissions was acceptable. That said, the variabilities of the risk measures (VaR, PL VaR and ES) were substantially higher than in the previous year. This seems to be linked to the increased volatility of the markets in 2021 due to the Covid outbreak, as captured by the market model, which generally provided higher figures for the risk measures. These higher figures, in absolute terms, seem to exacerbate the differences in modelling outputs, producing higher IQD metrics. As a result, this higher dispersion does not seem to be the outcome of a decrease in the quality of the market model.

37. For the 2022 exercise, the set of instruments remained mainly similar to the previous exercise, so the EBA reports a similar level in terms of the data quality of the submissions, aside from the mistake in the EQ instruction. The analysis that the EBA ran for the 2022 exercise was the first in which banks reported sensitivities and OFR figures relating to the sensitivities-based method of the alternative standardised approach (ASA) introduced with the FRTB. The SBM submission was of good quality overall, especially considering the tendency to improve with time.

38. For the 2023 exercise, the data collection was expanded to include new instruments and portfolios, particularly those recently adopted by the industry. This extension was accompanied by a streamlining of the instrument references in Annex V. The results showed that overall dispersion decreased significantly following adjustments to the instructions, although some newly introduced instruments exhibited considerable dispersion, mainly due to their novelty. As the overall structure of the exercise remained largely unchanged, the EBA and CAs concentrated their efforts on analysing the submitted SBM data. The review confirmed an improvement in the quality of sensitivity submissions compared with the previous exercise, and even during the exercise itself, thanks to numerous resubmissions and close supervisory scrutiny. While no major issues were identified in the SBM data, minor inconsistencies were observed at individual bank and instrument level, indicating that full compliance with SBM requirements can still be strengthened.

39. In 2024, the EBA expanded the SBM data collection to include the remaining ASA components (DRC and RRAO), allowing for a more comprehensive view of the standardised approach. It also introduced a set of validation tools for the SBM framework—already used by part of the industry—which are expected to significantly strengthen compliance with the SBM requirements.

40. For 2025, the exercise was initially expected to be redesigned in line with the AIMA–FRTB implementation. However, before finalising the 2025 ITS, the European Commission indicated its intention to postpone the FRTB rollout. Consequently, it was decided to maintain the 2024 data collection format (in both scope and content). The announcement of the FRTB delay also led to an adjustment of the Market Risk exercise timeline: instead of the usual September–

March window, the schedule was shifted to January–June to give banks additional time to adjust to the postponement and to prepare for the exercise.

41. For the 2026 exercise, the forthcoming implementation of the FRTB shifts the focus of the exercise toward the ASA component. As most banks currently under IMA are expected to move their OFR calculation to ASA, the CA opted to prioritise this area. To reduce the resource burden for both banks and the CA, the IMA data collection will therefore not be conducted for 2026.

42. At the time of drafting this report, the 2027 exercise is still in the planning phase, with the ITS currently being prepared ahead of consultation. The new benchmarking ITS will introduce templates for the FRTB Alternative Internal Model Approach—initially expected for 2025—as well as extend the ASA data collection to all banks applying the methodology, subject to a proportionality threshold of EUR 500 million.

43. Over the medium term, the EBA intends to review the design of instruments and portfolios used in the exercise, seeking a balance between maintaining simplicity—to ensure clarity of interpretation—and enriching the range of instruments monitored. The implementation of the AIMA and ASA frameworks will play a significant role in shaping the future structure of the exercise.

2. Introduction of the 2025 market risk benchmarking exercise

44. Based on the EBA benchmarking ITS, the MR benchmarking exercise is carried out in three main steps. First, the EBA defines the hypothetical instruments and portfolios—identical for all banks—to ensure a homogeneous and comparable outcome across the sample. Second, banks are asked to submit the data accordingly. Third, and finally, the EBA processes and analyses the data, providing feedback to CAs. Throughout the process, the EBA supports the work of CAs by providing benchmarking tools to assess banks' results and detect anomalies in their submissions.

2.1 Definition of the market risk hypothetical portfolios

45. The MR portfolios have been defined as hypothetical portfolios composed of both non-CTPs and CTPs, as set out in Annex V of the benchmarking ITS. The exercise includes 105 instruments recombined into 168 portfolios (105 single instrument portfolios, 56 multi-instrument and 7 aggregated), capitalised under the VaR, sVaR and IRC models, comprising mainly plain vanilla and some complex financial products in all major asset classes: EQ (21 instruments, combined into 21 single instruments, 10 multi-instruments portfolios), IR (24 instruments combined into 24 single instruments, 12 multi-instruments portfolios), FX (11 instruments combined into 11 single instruments, 4 multi-instruments portfolios), CO (five instruments combined into five single instruments portfolios and three multi-instruments portfolios) and CS (34 combined into 34 single instruments, 22 multi-instruments portfolios). The EBA also designed aggregated portfolios, obtained by combining individual ones, to consider diversification effects. Each aggregated portfolio has a particular composition: the first (portfolio 10000) encompasses all asset classes; the second (portfolio 11000) is made up of only EQ portfolios; the third (portfolio 12000) is made up of only IR portfolios; the fourth (portfolio 13000) is made up of only FX portfolios; the fifth (portfolio 14000) is made up of only CO portfolios; and the sixth (portfolio 15000) is made up of only CS portfolios.

46. In addition, the set of portfolios includes ten instruments and 16 portfolios (10 single instruments, 5 multi-instruments and one aggregated) used for correlation trading activities, capitalised under the VaR, sVaR, and APR models. These portfolios contain positions in index tranches referencing the iTraxx Europe index on-the-run series. Each index tranche is hedged with the iTraxx Europe index on-the-run 5-year series to achieve a zero-credit spread value of 1 basis point (CS01) as of the initial valuation date (spread-hedged). No further re-hedging is required.

47. A more detailed explanation of the portfolios can be found in the benchmarking ITS on the EBA website.[5]

2.2 Data collection process

48. The data for the supervisory benchmarking exercise were submitted by banks to their respective CAs using the supervisory reporting infrastructure. Banks submitted the specified templates provided in the ITS, where applicable.

2.2.1 IMV

49. The reference date for IMV was 6 February 2025, 5.30 p.m. CET. Banks entered all positions on 30 January 2025 ('reset or booking date'), and, once positions had been entered, each instrument aged for the duration of the exercise. Furthermore, banks did not take any action to manage the instruments in any way during the entire exercise period.

50. The IMV figure to be reported by the banks for each hypothetical instrument was defined as the mark-to-market of the instrument on the booking date plus the profit and loss from the booking until the valuation date and time. Therefore, it was the mark-to-market of the instrument on 6 February 2025, 5:30 p.m. CET.

2.2.2 Risk measures

51. Pursuant to the common instructions provided, banks were required to calculate the risks of the positions without considering the funding costs associated with the portfolios (i.e., no assumptions were permitted regarding the means of funding the portfolios). Moreover, banks were required to exclude, as far as possible, counterparty credit risk when valuing the risks of the portfolios.

52. Banks were required to calculate the regulatory 10-day 99% VaR on a daily basis. sVaR and IRC could be calculated on a weekly basis. In such cases, sVaR and IRC had to be based on end-of-day prices for each Friday in the time window of the exercise. For the 16 CTPs (6001-6010, 6601-6605 and 16000), APR was also requested.

53. For each portfolio, banks were asked to provide results in the base currency, as indicated in Annex V of the benchmarking ITS. The choice of base currency for each trade was made to avoid polluting results with cross-dependencies on risk factors.

[5] ITS package for benchmarking exercises | European Banking Authority (europa.eu). Please also refer to Commission Implementing Regulation EU 2016/2070 of 14 September 2016 and Commission Implementing Regulation 2019/439 of 15 February 2019, laying down ITS in accordance with Article 78(2) of Directive 2013/36/EU (http://data.europa.eu/eli/reg_impl/2025/379/oj).

54. All collected data underwent a preliminary analysis to spot possible misinterpretations of the common instructions set out in the ITS/RTS on benchmarking and outliers, as defined hereafter.

2.3 Participating banks

55. A total of 43 banks representing 13 EU countries participated in the exercise (see Table 13 in the annex). All EU banks with MR internal models approved by CAs were asked to submit data at all levels where own funds requirements are calculated. The EBA collected the results only at the highest level of consolidation.

56. CAs are responsible for conducting similar benchmarking investigations at the 'solo' level within their respective jurisdictions for eligible banks.

2.4 Data quality

57. The data collection process aims to ensure the reliability and validity of the information obtained. In this context, it is evident that an unintended source of variability—such as misunderstandings regarding the portfolios and the specific instruments they include—could compromise the results.

58. IMV results reached the EBA in February/March 2025, after which the EBA carried out a preliminary IMV analysis and provided CAs with a tool to help them spot likely anomalies or misunderstandings regarding the interpretation of each portfolio. This was done to enhance the quality of all risk measures so that they would be provided in accordance with a correct interpretation of the portfolios. This step was conducted before the computation of the risk measures by the banks. Where the price of an instrument fell outside a certain range,[6] more investigation had to be undertaken by the CA, which could – if necessary – ask the banks in its jurisdiction for a repricing and subsequent resubmission. The same process was carried out for the risk measure submission.

59. The issue experienced in the previous exercises linked to the aggregated portfolio figures no longer seems to be a major issue. It is worth noting that some banks reported the IMVs and risk measures for the aggregated portfolios without including all the relevant components.[7]

[6] The range means the interval between the first and third quartiles. These quartiles were considered and subsequently updated when resubmissions were received.

[7] Some banks reported values for aggregated portfolios, considering only those components for which they had permission to use an internal model. This is clearly not a data quality issue, and it is correct that banks report results only where they have permission to do so for regulatory purposes. The reason was that the 2018 (and previous) ITS required

This specification was further clarified in the ITS 2022, so the possibility that some individual portfolios could have been submitted even when some specific instruments were missing cannot be ruled out. On the other hand, the data submission seems compatible with the correct interpretation of the rule, at least for many submitters.

60. It should be recalled that the 2025 exercise marks the fourth instance in which the EBA is collecting information on the sensitivities related to the SBM and the OFR from banks participating in the benchmarking exercise. Providing a complete representation of the collected sensitivities remains challenging due to the highly granular nature of the data. Nonetheless, some issues were identified (see the ASA Report for further details). Overall, the quality of the submitted sensitivities was deemed appropriate.

61. The 2025 exercise also marks the second year in which the validation instruments and portfolios for the SBM methodology were introduced through the new Annex 10 of the benchmarking ITS. As in the initial data collection in 2024, only a small number of banks raised concerns regarding this new set of requirements. This is particularly concerning, as it indicates that some banks are disregarding the ITS instructions in a key component of the exercise. Competent Authorities are therefore encouraged to highlight this issue to their supervised banks in order to improve compliance in future exercises.

62. In the data analysis, no major errors were identified in the reporting of any asset class. While a comprehensive list of errors in the submitted data is beyond the scope of this report, the most common and easily avoidable mistakes are worth highlighting.

63. Equity assets, interest rates, and credit spreads: Overall, submissions were of very good quality. Only a handful of instruments showed an IQD slightly above 10%, mostly due to their very low market value, which typically has a negative impact on the IQD.

- FX: This asset class generally shows low IQD values, with a few notable exceptions in instruments 301 and 302 (forward contracts, with 5% and 13% IQDs). In these cases, the dispersion is not massive, and some inconsistent interpretations of the instructions could be the cause. Fortunately, this type of error does not negatively impact the risk measures reported in the exercise. The instructions were amended in 2025 to provide greater clarity during the booking phase, resulting in a noticeable improvement compared to 2024—although some discrepancies in the IMVs remain.

banks to report the value of aggregated portfolios even if not all individual portfolios are modelled for the benchmarking exercise. As a result, the submissions were not comparable with those valued in full. This issue was addressed in the 2019 exercise, and since then banks have reported the results for the aggregated portfolios only if the results of all components have been submitted. The structure of the 2019-2020 exercise, i.e. a plurality of instruments that are recombined into a single and multi-instruments portfolios, which are themselves the components of the aggregated portfolios, produced a similar error, i.e. the absence of some instrument components within some of the individual portfolios. Nonetheless, banks should not provide any (aggregated or individual) portfolios where any instrument is missing in order not to distort the risk measures analysis.

- Commodity: Instruments 401–403 exhibited relatively high IQDs. The instructions were refined in 2025, leading to an improvement in the IQDs for this asset class. However, some clustering in the IMVs remains noticeable.

64. Although these mistakes were identified through data analysis by the EBA and Competent Authorities—and subsequently corrected via resubmissions or data cleansing by the banks—undetected errors may still be present in the dataset analysed. Such errors could potentially influence and distort the results.

65. Nonetheless, data quality in the 2025 exercise has generally been quite good. Ensuring high-quality data remains a fundamental step in the benchmarking process. However, reporting errors may still occur in future exercises, and the process continues to offer opportunities for both regulators and participating banks to learn and improve.

3. Market risk benchmarking framework

66. The benchmarking exercise aims to assess the variability in banks' MR models and to identify the drivers that account for it. Variability in banks' models can come from three types of drivers.

67. First, variability can stem from banks' modelling choices that are explicitly envisaged in the regulation[8]. Therefore, given the wide range of approaches that each institution using internal models can choose to implement, some degree of variability is expected.

68. Second, there are other modelling choices that are not explicitly envisaged in the regulations, which may cause variability. Examples include differences in simulation engines; differences in pricing model assumptions; the modelling of returns, volatility, correlations and other indirect parameter estimates; additional risk factors considered in the models; different approaches to P&L computation and attribution; and a stochastic framework for the simulated shocks.

69. A further source of potential variability arises from supervisory practices. In particular, the application of regulatory add-ons—such as VaR and sVaR multipliers or additional capital charges (e.g. to address risk-not-in-VaR issues, IT or organisational weaknesses, independent valuation concerns or other identified flaws)—can materially influence capital requirements. Similarly, supervisory decisions to restrict diversification benefits, for instance by prohibiting a single consolidated calculation and instead requiring capital aggregation at sub-consolidated or subsidiary level, can also significantly increase capital variability. These supervisory actions are generally introduced to correct known model weaknesses or to incorporate an additional layer of prudence, and therefore typically lead to higher capital requirements. However, they can also amplify differences in market own-funds requirements across banks, particularly between jurisdictions. Although the impact of these measures can be substantial, a benchmarking portfolio exercise is not suitable for evaluating certain supervisory actions. In particular, constraints on diversification and direct capital add-ons cannot be meaningfully assessed, as their effects are entirely dependent on the actual portfolio. Assessing these impacts would require a far more realistic hypothetical portfolio with thousands of instruments and partial model approvals. Nonetheless, some supervisory interventions can be

[8] For example, when modelling VaR institutions can choose to use a lookback period longer than the minimum (i.e., the previous year), use a weighting scheme for the data series, calculate the 10-day VaR directly or, alternatively, obtain a 1-day VaR and rescale it using the square root of time approximation. Likewise, when modelling IRC, banks can choose from several sources of the probability of default (PD) and have a certain degree of freedom when choosing the transition matrices applied, or when deciding on the liquidity horizon applied to a particular instrument. It should be highlighted that all these possibilities are, in principle, acceptable under the current regulatory framework (the CRR), provided that they have been agreed on with the CA during the approval process.

analysed, and the effects of regulatory add-ons on VaR and sVaR multipliers will be examined as part of this assessment.

70. Possible additional drivers of variation include:

- misunderstandings regarding the positions or risk factors involved that could not be resolved during the preliminary assessment;
- non-uniform market conventions and practices adopted in the hypothetical portfolio booking;
- incompletely implemented models (e.g., because a pricing module is being tested, or an additional risk factor is being taken into consideration);
- missing risk factors not incorporated into the model;
- differences in calibration or data series used in the modelling simulation;
- additional risk factors incorporated into the model;
- alternative model assumptions applied; and
- differences attributable to the methodology used (i.e. Monte Carlo (MC) versus HS or parametric).

3.1 Outlier analysis

71. After the data quality assurance process, the EBA performed an 'extreme value' analysis with the aim of excluding from the computation of the benchmarks those values for which the IMV and risk measures (RMs: VaR, SVaR, P&L VaR and ES) were found to lie outside a certain tolerance range due to misinterpretation of the trade or mistyping of bookings by the banks.

72. The presence of clear outliers in the data used to assess variability is deemed inappropriate, since these data points are likely to weigh heavily on the results, distorting the actual level of variability observed.

73. Extreme IMVs and RMs are defined as values outside the range of two truncated standard deviations[9] from the median. Since some results exhibited empirical distributions that had

[9] The truncated standard deviation is computed by excluding the values below the 5th and above the 95th percentile of the data series.

fatter tails than expected, outliers were defined as values differing by twice the truncated standard deviation or more from the median[10].

74. The dispersion across the contributions is summarised by the IQD coefficient, which is more robust than the coefficient of variation (CV) for data derived from fat-tailed distributions. The higher the IQD, the more dispersed the data. IQD is defined as:

$$IQD = abs[(Q_{75th} - Q_{25th})/(Q_{75th} + Q_{25th})],$$

where Q_{75th} and Q_{25th} denote the 75th and 25th percentiles, respectively.

75. Another metric used in the variability studies is the CV, which is defined as the ratio between the standard deviation[11] and the mean (in absolute values):

$$CV = abs[StD/Mean].$$

76. The analysis reports both metrics because they jointly allow detection of the highest peaks of variability.

[10] If a bank's IMV or RM is identified as an extreme value for a given instrument, that observation is excluded from the computation of the final benchmark statistics. Empirical evidence shows that excluding RMs solely on the basis of IMV submissions—as was done in previous exercises—resulted in some extreme RM values being incorrectly retained in the benchmark, while some valid observations were removed. Updating this methodology did not affect the core benchmarking outcome, such as the median result, and only marginally reduced the overall dispersion of the portfolio. The main improvement concerns the communication of significant outliers to CAs, enabling more targeted follow-up with banks. First introduced in the 2020 market risk benchmarking exercise, this approach has enhanced the overall quality and consistency of the benchmark data for these metrics.

[11] The standard deviation was considered to gain a sense of the entire variability and a harmonised approach across the HPE. Obviously, a truncated standard deviation may appear more consistent for some highly dispersed trades.

Table 2: IMV statistics and extreme values

EU Statistics for IMV by instrument

		Main statistics								Percentiles			
	Instr. ID	Min	Max	Ave.	STDev	STDev_trunc[1]	MAD (median absolute deviation)	Coefficient of variation (STDev/Mean)	Num obs.[2]	25th	50th	75th	IQD
Equity	101	5,291,544	5,319,000	5,310,895	7,848	11,916	5,462	0%	30	5,309,070	5,310,823	5,319,000	0%
	102	212,000	212,800	212,211	155	307	17	0%	28	212,137	212,200	212,200	0%
	103	-215,059	-211,937	-213,575	693	1,017	206	0%	27	-213,736	-213,489	-213,305	0%
	104	-126,848	-122,038	-124,114	1,159	1,259	600	1%	28	-124,362	-124,362	-123,401	0%
	105	-3,089,526	-3,059,527	-3,079,851	7,551	11,263	2,963	0%	27	-3,084,597	-3,081,399	-3,075,220	0%
	106	-31,286	-30,237	-30,730	202	451	28	1%	26	-30,759	-30,732	-30,687	0%
	107	-184,727	-181,341	-183,043	667	1,664	115	0%	27	-183,282	-183,203	-183,047	0%
	108	-143,978	-138,773	-141,380	1,129	1,626	356	1%	28	-141,705	-141,572	-141,125	0%
	109	17,035	18,468	17,781	289	521	119	2%	25	17,675	17,746	17,910	1%
	110	-29,989	-28,113	-28,975	383	584	180	1%	26	-29,162	-28,949	-28,802	1%
	111	3,625	4,675	4,132	275	337	180	7%	22	3,951	4,125	4,314	4%
	112	6,649	8,154	7,340	421	448	234	6%	23	7,061	7,296	7,545	3%
	113	20,280	21,887	21,080	342	494	137	2%	26	20,961	21,086	21,230	1%
	114	-10,864	-9,786	-10,416	209	435	110	2%	25	-10,521	-10,476	-10,283	1%
	115	1,157	1,850	1,489	196	211	126	13%	25	1,354	1,509	1,603	8%
	116	1,983	2,489	2,252	150	189	105	7%	23	2,166	2,271	2,388	5%
	117	-778,908,333	-773,511,486	-776,441,314	1,155,258	1,698,173	352,581	0%	25	-777,000,000	-776,652,581	-776,000,000	0%
	118	998,740	1,022,097	1,011,210	6,315	7,366	2,854	1%	20	1,008,339	1,012,469	1,014,333	0%
	119	173,443	208,100	191,184	7,517	9,868	2,651	4%	28	187,160	191,060	193,714	2%
	120	127,848	170,797	149,096	9,422	11,261	4,792	6%	23	141,743	149,688	154,000	4%
	121	257,716	399,461	305,578	50,219	88,002	2,058	16%	9	287,522	288,642	291,071	1%
Interest Rate	201	61,329	73,898	67,273	3,231	3,531	2,717	5%	37	64,432	67,378	69,555	4%
	202	-240,765	-191,385	-230,060	8,261	21,660	1,975	4%	35	-234,372	-230,682	-229,346	1%
	203	816	1,909	1,316	239	282	102	18%	36	1,158	1,369	1,425	10%
	204	19,580	26,082	22,972	1,812	2,196	1,491	8%	35	21,378	23,105	24,540	7%
	205	950,947	1,103,882	1,026,446	43,665	43,665	30,726	4%	16	996,022	1,030,656	1,055,791	3%
	206	1,170,934	1,227,168	1,179,175	8,725	48,287	375	1%	33	1,177,553	1,177,938	1,178,340	0%
	207	-892,305	-891,520	-891,942	198	205	161	0%	37	-892,090	-891,922	-891,806	0%
	208	1,264,000	1,272,581	1,269,691	2,181	64,467	376	0%	31	1,269,222	1,270,554	1,270,938	0%
	209	1,014,475	1,015,872	1,015,494	263	1,730	118	0%	34	1,015,436	1,015,518	1,015,672	0%
	210	979,274	980,768	980,326	290	2,872	145	0%	34	980,178	980,344	980,518	0%
	211	-941,226	-939,918	-940,838	257	3,306	143	0%	35	-941,021	-940,810	-940,700	0%
	212	-1,189,000	-1,185,563	-1,187,988	565	1,738	236	0%	35	-1,188,315	-1,187,930	-1,187,842	0%
	213	1,004,530	1,011,833	1,008,564	1,652	2,036	1,102	0%	34	1,007,260	1,008,575	1,009,639	0%
	214	997,930	1,001,873	1,000,997	608	4,017	164	0%	34	1,000,805	1,001,075	1,001,282	0%
	215	-830,787	-826,789	-828,589	704	1,261	166	0%	35	-828,905	-828,672	-828,556	0%
	216	977,740	984,639	981,520	1,556	2,943	633	0%	26	980,765	981,626	982,144	0%
	217	918,521	924,126	921,236	1,502	4,112	331	0%	22	920,812	921,066	921,437	0%
	218	-153,999	-126,390	-141,659	6,864	7,620	3,793	5%	37	-147,426	-140,845	-137,915	3%
	219	-75,903	-63,498	-70,673	3,127	3,484	2,368	4%	37	-73,153	-70,347	-68,604	3%
	220	-9,784	-5,297	-8,430	1,086	1,535	622	13%	32	-9,201	-8,256	-8,006	7%
	221	836	3,590	2,299	628	869	311	27%	34	2,000	2,114	2,624	13%
	222	1,178,654	1,181,572	1,180,800	693	52,329	271	0%	31	1,180,449	1,181,008	1,181,245	0%
	223	-36,312	-21,512	-28,252	4,176	4,296	3,765	15%	31	-31,754	-27,956	-24,316	13%
	224	-52,377	-41,454	-44,794	2,073	31,207	500	5%	37	-45,027	-44,349	-43,902	1%
FX	301	-75,648	-46,157	-56,755	5,931	26,621	2,639	10%	33	-59,137	-56,138	-53,870	5%
	302	58,493	116,861	90,793	15,560	38,436	12,110	17%	32	77,524	88,678	99,685	13%
	303	9,629,098	9,660,916	9,646,270	6,764	26,900	6,509	0%	33	9,640,813	9,645,062	9,652,510	0%
	304	49,240	52,957	50,784	922	1,182	498	2%	31	49,770	50,961	51,265	1%
	305	1,164,076	1,195,113	1,179,012	5,520	11,523	1,981	1%	32	1,176,766	1,180,141	1,181,073	0%
	306	-409,846	-386,936	-398,049	4,716	5,784	1,606	1%	33	-399,152	-398,307	-395,308	0%
	307	-42,437	-36,521	-39,167	1,468	2,157	868	4%	32	-39,907	-39,284	-38,240	2%
	308	1,373,831	1,431,389	1,403,165	14,911	17,854	7,509	1%	32	1,397,351	1,404,964	1,411,920	1%
	309	-989,081	-961,118	-976,605	9,509	10,803	8,607	1%	34	-986,467	-977,162	-968,950	1%
	310	-20,396	-14,843	-19,041	1,085	7,087	427	6%	29	-19,563	-19,000	-18,784	2%
	311	169,647	253,780	204,343	22,309	167,803	11,890	11%	24	189,845	191,601	212,753	6%
Commodities	401	32,635	227,958	150,045	57,113	103,654	43,457	38%	13	109,800	172,974	192,431	27%
	402	-215,168	-32,164	-145,479	55,186	101,592	37,911	38%	13	-190,780	-167,532	-113,156	26%
	403	114,111	195,058	152,810	25,698	31,108	17,257	17%	13	136,381	152,059	172,951	12%
	404	-154,016	-95,757	-130,028	14,996	26,108	9,319	12%	13	-139,840	-130,886	-125,425	5%
	405	1,137,832	1,245,269	1,192,681	25,266	69,325	9,002	2%	12	1,181,871	1,189,043	1,206,416	1%
Credit Spread	501	-33,864	-33,416	-33,691	108	178	52	0%	20	-33,754	-33,698	-33,644	0%
	502	-21,038	-20,219	-20,701	155	257	71	1%	22	-20,792	-20,700	-20,657	0%
	503	30,763	31,096	30,932	77	148	39	0%	21	30,881	30,950	30,965	0%
	504	9,376	9,838	9,687	124	210	20	1%	18	9,695	9,711	9,730	0%
	505	29,705	30,193	29,926	134	134	82	0%	19	29,826	29,928	30,010	0%
	506	-35,933	-35,120	-35,647	164	444	56	1%	20	-35,731	-35,651	-35,620	0%
	507	19,440	20,161	19,679	181	338	42	1%	21	19,597	19,636	19,678	0%
	508	-19,973	-19,173	-19,614	169	265	97	1%	23	-19,761	-19,546	-19,517	1%
	509	21,093	21,434	21,223	65	270	28	0%	21	21,191	21,207	21,238	0%
	510	-19,627	-19,276	-19,421	89	170	28	1%	21	-19,457	-19,396	-19,376	0%
	511	23,580	24,293	23,917	130	214	52	1%	21	23,878	23,899	23,963	0%
	512	24,130	24,833	24,470	136	198	52	1%	22	24,421	24,450	24,575	0%
	513	29,010	29,870	29,475	227	285	32	1%	18	29,329	29,542	29,572	0%
	514	37,876	38,829	38,506	214	354	42	1%	21	38,507	38,560	38,590	0%
	515	-35,505	-35,104	-35,257	99	218	64	0%	21	-35,309	-35,236	-35,216	0%
	516	4,197	4,437	4,285	57	149	27	1%	20	4,249	4,281	4,302	1%
	517	1,058,880	1,064,875	1,062,366	1,302	4,526	473	0%	23	1,061,890	1,062,500	1,062,850	0%
	518	61,328	62,346	61,798	283	283	229	1%	20	61,570	61,806	62,008	0%
	519	974,980	977,182	976,068	556	583	273	0%	26	975,694	976,112	976,363	0%
	520	927,526	930,352	928,916	662	1,001	325	0%	26	928,484	929,034	929,358	0%
	521	-932,708	-929,013	-930,704	829	1,035	374	0%	26	-930,917	-930,814	-930,309	0%
	522	871,920	884,013	878,140	3,839	6,173	3,635	0%	26	875,125	877,050	881,779	0%
	523	1,162,958	1,165,778	1,164,504	694	11,840	403	0%	25	1,164,358	1,164,460	1,164,996	0%
	524	-82,892	-74,679	-79,427	2,514	2,927	1,306	3%	20	-81,192	-80,089	-77,418	2%
	525	728,966	731,136	729,905	507	1,455	289	0%	27	729,650	729,828	730,216	0%
	526	-107,671	-98,185	-103,103	3,191	3,098	2,100	3%	22	-104,984	-103,140	-100,798	2%
	527	721,326	723,787	722,507	654	3,244	399	0%	25	722,137	722,408	722,834	0%
	528	-86,700	-72,182	-76,776	3,785	5,786	893	5%	18	-76,864	-76,393	-75,100	1%
	529	-238,284	-224,348	-232,228	4,138	5,719	2,791	2%	25	-236,755	-231,032	-229,793	1%
	530	-38,866	-20,631	-28,784	5,512	5,512	4,231	19%	14	-33,062	-28,027	-24,030	16%
	531	1,018,123	1,020,936	1,019,918	735	6,291	413	0%	23	1,019,514	1,019,986	1,020,410	0%
	532	970,766	976,698	974,227	1,589	5,050	643	0%	21	973,867	974,326	975,101	0%
	533	900,949	903,556	902,256	669	719	485	0%	24	901,841	902,216	902,804	0%
	534	975,578	977,389	976,685	473	3,419	267	0%	23	976,405	976,665	976,992	0%
CTP	601								4				
	602								4				
	603								4				
	604								4				
	605								4				
	606								4				
	607								4				
	608								4				
	609								4				
	610								4				

[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

Table 3: Average IMVs' interquartile dispersion by asset class

Average Interquartile dispersion by asset class - IMV

	Interquartile range 20245exercise	*Interquartile range 2024 exercise*	*Interquartile range 2023 exercise*	*Interquartile range 2022 exercise*	*Interquartile range 2021 exercise*	*Interquartile range 2020 exercise*	*Interquartile range 2019 exercise*	*Interquartile range 2018 exercise*
Equity	2%	4%	2%	21%	2%	1%	2%	2%
IR	3%	4%	2%	16%	19%	2%	3%	8%
FX	3%	19%	8%	3%	4%	16%	15%	6%
Commodity	14%	16%	14%	24%	4%	10%	6%	8%
Credit spreads	1%	5%	3%	1%	1%	1%	3%	6%
CTP						5%	8%	103%

77. Table 2 and Table 3 show the results at the level of each individual instrument and aggregated by risk type.

78. As shown, unlike in 2024, the FX asset class now exhibits a level of dispersion in line with the other asset classes (3%). Some minor inconsistencies remain for instrument 302 (13% IQD) and instrument 311 (all FX forwards). In the IR asset class, instruments 221 and 203 also display IQDs of 13%. As with FX, this represents a significant improvement compared with the 2024 booking practices and indicates that the instructions are now clearer, even though a small number of banks still diverge in their implementation.

79. The commodity instruments 401 and 402 also display moderately high IQDs (27% and 26%). This is likely driven by differences in market practice related to these products, as the instruments themselves have not changed compared with the previous exercise. Therefore, the deterioration in IMV submissions cannot be explained by modifications to the instrument specifications, and is more plausibly linked to heterogeneous booking or valuation practices across banks.

80. Overall, the IQDs of the IMVs by asset class for the instruments in the 2025 exercise show a substantial improvement compared with previous exercises across all asset classes. This indicates that the specific clarifications and amendments introduced in the ITS 2025 were appropriate and effective.

81. A comparison of the 2025 instruments with those used in 2024, based solely on the IQD, indicates that the overall quality of data submissions is quite good relative to the previous exercise.

82. From an aggregated risk-type perspective, as in the past, commodity instruments show the highest dispersion.

83. A cluster analysis (see Table 4 and Figure 1, Figure 2, Figure 16) was performed to strengthen and deepen the aforementioned descriptive insights. It shows the dispersion of the IMVs by

instrument and helps in identifying clusters in the instruments' pricing that could explain the scattering of IMVs for some trades. The results of this analysis suggest that the clusters are observable only for instrument 310.

Table 4: IMV cluster analysis – number of banks by range

2025 IMV cluster analysis by instrument: number of banks by range

(X = ratio with the median)

100 *Range containing more than 15% of the total obs for that particular portfolio*

	Instr. ID	300% < X	300% ≥ X >200%	200% ≥ X >150%	150% ≥ X >100%	100% ≥ X >50%	50% ≥ X >0	0 ≥ X >-100%	-100% ≥ X > -200%	Num obs.
Equity	101				17	17				34
	102				9	25				34
	103				15	16				31
	104				8	23				31
	105				15	16				31
	106				8	22				30
	107				15	15				30
	108				16	15				31
	109				15	15				30
	110				15	15				30
	111				13	13				26
	112				12	14				26
	113				15	15				30
	114				15	15				30
	115				13	14				27
	116				13	14				27
	117				14	15				29
	118				11	12				23
	119				16	17				33
	120				13	13				26
	121				5	4	1			10
Interest Rate	201				21	20	1		1	43
	202				20	20				40
	203	1			20	20				41
	204				21	20	1			42
	205				8	8				16
	206				18	18				36
	207				20	21				41
	208				17	17				34
	209				20	20				40
	210				20	20				40
	211				19	22				41
	212				20	21				41
	213			1	19	20				40
	214				19	20				39
	215				19	20				39
	216				14	14				28
	217				14	14				28
	218				21	20	1			42
	219				21	20	1			42
	220				18	17	1			36
	221		1	5	14	15	2	3		40
	222				17	17				34
	223				16	16		1		33
	224	3			17	20				40
FX	301				18	15		3	1	37
	302				18	14		4	1	37
	303				18	19				37
	304				18	18				36
	305				18	18				36
	306				18	18				36
	307				18	18				36
	308				18	18				36
	309				18	18				36
	310				18	11	7	1		37
	311				14	10			4	28
Commodities	401		1		6	6	1			14
	402		1		6	5	2			14
	403				7	7				14
	404			1	6	7				14
	405				6	7				13
Credit Spread	501				12	12				24
	502				12	12				24
	503				12	12				24
	504				10	11				21
	505				10	11				21
	506				11	11	1			23
	507				11	14				25
	508				12	13				25
	509				12	13				25
	510				11	14				25
	511				12	13				25
	512				12	13				25
	513				11	11				22
	514				12	13				25
	515				12	13				25
	516				11	14				25
	517				12	13				25
	518				11	11				22
	519				14	15				29
	520				14	15				29
	521				14	15				29
	522				14	15				29
	523				14	15				29
	524				11	11		1		23
	525				14	15				29
	526				11	11	1			23
	527				14	15				29
	528				11	11				22
	529				14	14				28
	530				7	7				14
	531				12	14				26
	532				11	12				23
	533				13	13				26
	534				13	13				26
CTP	601									0
	602									0
	603									0
	604									0
	605									0
	606									0
	607									0
	608									0
	609									0
	610									0

84. Despite repeated recommendations, some minor misalignments in IMV submissions persist, mainly due to the reporting of the clean price (i.e. excluding accrued interest) instead of the dirty price (i.e. including accrued interest), which is the intended basis for mark-to-market valuation. This issue has been observed particularly in bond instruments, such as instruments 517–527. While this problem was more frequent in earlier exercises, it is evident that a number of banks still do not fully follow the instructions. Nonetheless, this mistake does not materially affect the provision of risk measures.

- The EBA further recommends that banks make more systematic use of the Q&A tool, submitting questions prior to the start of the exercise to avoid future misinterpretations. Banks are also encouraged to share, via the Q&A tool, their best practices and market-standard conventions when additional specifications of hypothetical trades are required.

85. Evidence from a large majority of banks indicates that IMVs are generated directly from front-office systems. This is recognised as best practice, as it ensures optimal alignment with actual market-trading activities.

86. Figure 1 and Figure 2 report the clusters found in the IMV results for a sample of low IQD instruments (0% IQD or close to zero) and high IQD (the highest in the asset class) instruments. All the instruments' IMV distributions are available in the annex in Figure 16.

87. The concentration index—defined as the percentage of values falling between 50% and 150% of the median, as shown in Table 4—indicates that, overall, 95% of observations lie within this range. This outcome confirming a stable and satisfactory level of submission quality.

Figure 1: IMV scatter plots – low-IQD instruments

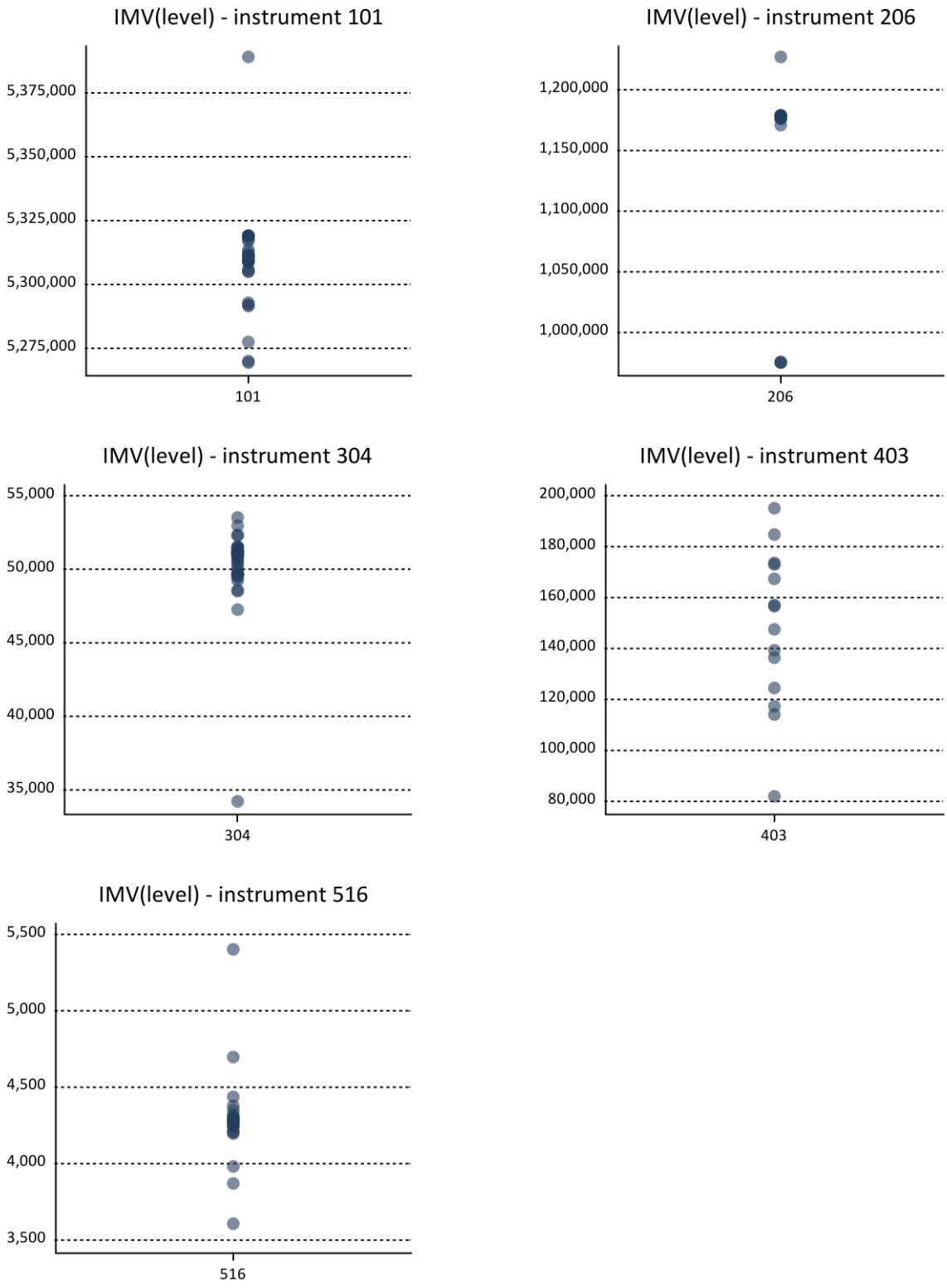
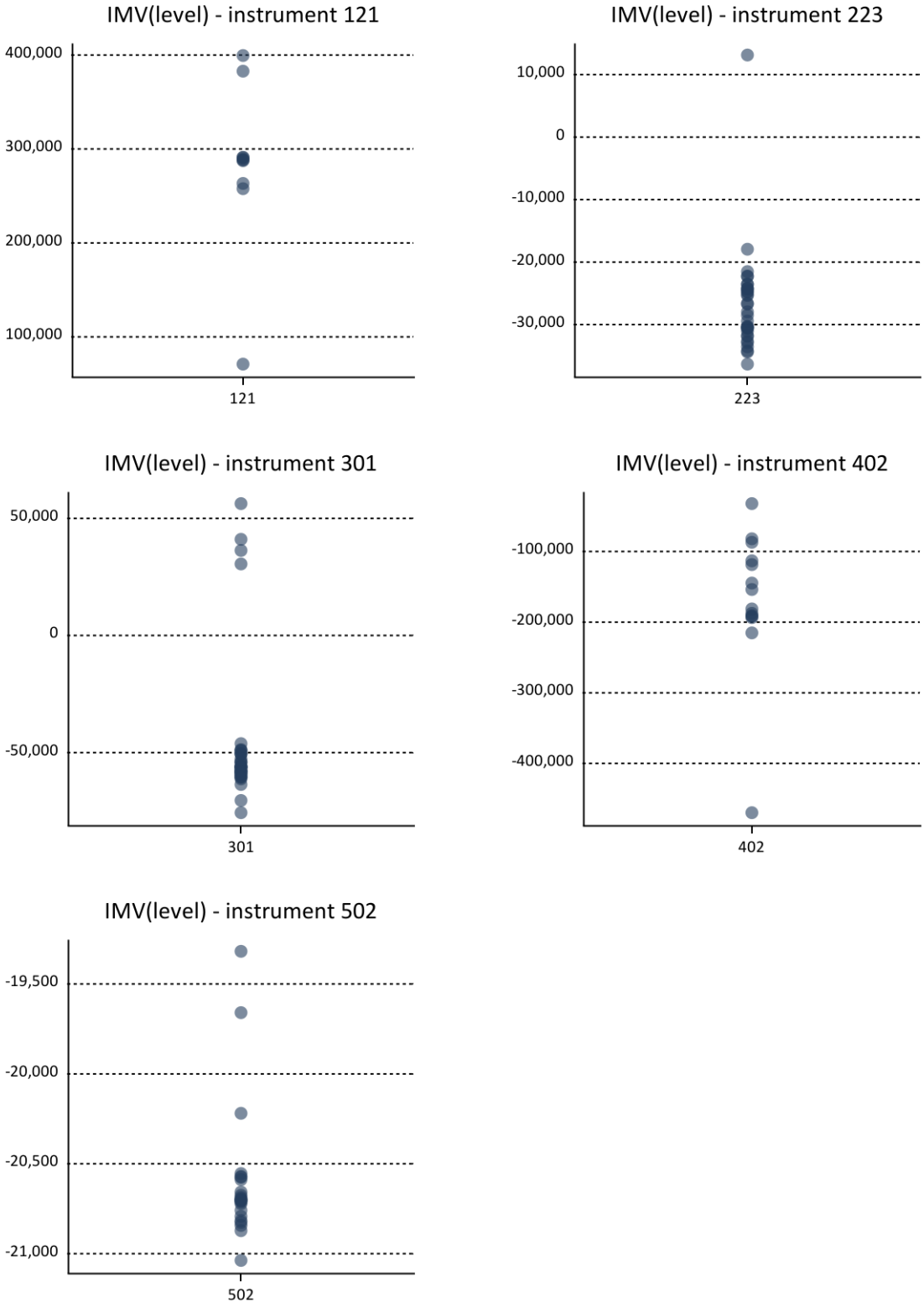


Figure 2: IMV scatter plots – high-IQD instruments



3.2 Risk and stressed measures assessment

88. For VaR and sVaR, variability was assessed using the values reported by banks over the two-week period from 2 June to 13 June 2025. Depending on their model setups, banks submitted either weekly or daily observations, and the final risk measures per portfolio were obtained by averaging the submissions over this period.

89. In addition, the EBA analysed a P&L-based VaR measure computed using the P&L vectors provided by banks under a historical simulation (HS) approach. Banks subject to this assessment submitted a one-year series of 1-day P&L figures for each individual and aggregated portfolio, which were used to derive the P&L VaR.

90. Additional validation checks were performed on the available P&L vectors, including comparisons between 1-day and 10-day P&L figures (both overlapped and non-overlapped), where applicable. Time series that did not correspond to the correct time window were discarded, as were P&L vectors submitted by banks that do not use an HS model. A final consistency check for HS banks consisted of computing the ratio between the P&L VaR and the regulatory VaR reported by banks—a ratio expected to be close to 1.[12]

91. The P&L VaR assessment is feasible only for banks using an HS approach and providing at least 185 days of observations. Consequently, banks applying Monte Carlo, parametric, or other non-HS methodologies were excluded from this part of the analysis (see also Section 2.4, Data quality issues).

92. The P&L VaR was computed as the absolute value of the empirical first percentile of the P&L vector rescaled to 10 days by applying the square root of time approximation, without applying any data-weighting scheme:[13]

$$VaR_{99\%}^{10day} = \sqrt{10} * VaR_{99\%}^{1day}$$

93. The P&L vector is used to assess both the degree of P&L correlation across banks and the volatility reflected in each bank's series. This analysis provides valuable insights into the extent of market consensus on the underlying risk factors, in terms of both market dynamics and volatility levels. As with most analyses presented here, its robustness and consistency depend on banks modelling a sufficient number of data points and portfolios.

[12] It should be noted that this expectation depends on the lookback period for VaR.

[13] Some banks apply data weightings at a risk factor level, and these will be present in the P&L vectors. This is an implicit source of variability that cannot be controlled.

94. The IRC analysis cannot be deepened in this way for VaR because of the higher level of confidence (99.9%) and longer capital horizon (1 year) applied in these metrics. Nevertheless, a variability analysis was performed. In the paragraph concerning IRC, particular emphasis is reserved for missing, zero or unrealistically low results, which suggest that key underlying risk factors are not efficiently captured by the IRC internal model.

95. It is apparent that more complex risk measures, such as IRC, are computed at a less frequent pace (i.e., a weekly basis instead of a daily basis).

96. For APR, only a small number of contributions were submitted because of the scarcity of approved internal models on CTPs and because most institutions consider the CTP business to be declining significantly as a result of the recent financial crisis. Therefore, the sample is quite limited.

97. The ES, as an alternative risk metric to VaR, has been estimated from the daily P&L series by averaging the P&L observations below the 2.5th percentile converted by the square root of time approximation and taking the absolute value:

$$ES_{97.5\%}^{10day} = \sqrt{10} * ES_{97.5\%}^{1day} = \sqrt{10}\ \frac{1}{n}\ \sum_{i=1}^{n} P\&L_{t_i}$$

where *n* = number of days describing the 2.5th quantile rounded to the highest decimal.

98. For the aggregated portfolios, diversification effects were checked with regard to the VaR, sVaR and IRC metrics, regardless of whether they were provided or estimated.

99. For the most inclusive portfolios—namely the aggregate portfolios—implied capital charges were also computed and their variability analysed. Where possible, the idiosyncratic drivers of variability and the impact of regulatory add-ons (such as multipliers) were examined.

100. It should be noted that, although these supervisory measures can have significant effects on capital levels, an HPE is not an appropriate tool for assessing such differences. This is particularly true for diversification benefits, as their impact is entirely portfolio-dependent. Further details are provided in the following subsection, Limitations.

101. To enhance the comprehensiveness of the analysis, CAs were also invited to complete a questionnaire on their main takeaways from the benchmarking exercise and the actions they intend to take to address potential weaknesses in banks' market risk models (see Section 5 of this report). Through this interview process, the EBA was able to discuss directly a number of issues raised by CAs when challenging models during ongoing supervisory assessments.

3.2.1 Limitations

102. The design of the benchmarking portfolio exercise, as set out in the ITS, aims to ensure the quality of the data used in the EBA's analysis and, more importantly, to help identify banks and portfolios requiring specific supervisory attention. Nevertheless, any conclusions regarding total capital levels derived from hypothetical data should be interpreted with caution. The

hypothetical portfolios differ substantially from real portfolios in both size and structure, and the data cannot capture all supervisory actions taken in practice.

103. From a methodological standpoint, the variability observed in the sVaR metric may stem either from differences in modelling approaches or from the different data periods used for sVaR calculation. Further variability arises because banks use distinct stress periods, as no common benchmarking stress period exists. To enable more detailed analysis of this aspect, additional information on the stressed VaR time window has been collected since the 2019–2020 benchmarking exercise by expanding the corresponding template in Annex VI of the ITS (see subsection 4.2.5, Common stress period considered).

104. Another limitation addressed in this analysis concerns the need to produce a separate assessment for institutions with partial model approval (e.g. general risk only). Segregating these institutions allows the results for portfolios with specific risk to be isolated, thereby filtering out additional, unwarranted dispersion in VaR figures. The benchmark analysis therefore distinguishes between banks with full approval for equity and IR and those with partial approval, in order to remove the variability introduced by the latter.

105. Banks with partial model approval provided insights into how they approached the benchmarking exercise. The differences they reported relative to the EBA's benchmark are almost entirely explained when taking into account their internal risk measures, which—although not approved for capital purposes—offer more complete risk-factor coverage.

106. In summary, the reporting of partial-use approval results should be maintained for the purposes of the exercise. However, such results should be treated as a separate sample to ensure that any bias they may introduce into the broader analysis can be properly identified and accounted for.

4. Overview of the results obtained

4.1 Analysis of VaR and sVaR metrics

107. The dataset used to perform the assessment of risk measures for the 2025 exercise was determined based on the actual dispersion of the risk measures analysed[14].

108. To check if submissions (by portfolio) were at least approximately symmetrically distributed around the mean and/or the median, the EBA checked for any significant differences between the mean and median values for the truncated sample. Table 15 in the annex reports the banks' VaR results in relation to the median, aggregated into six buckets, to enable the detection of unexpected clusters.

109. As Table 16 show, the variability of the VaR is on average 15% in IQD (it was 15% in 2024, 17% in 2023 and 23% in 2022) which remain comparable to the previous exercise, where basically all asset classes report similar level of the IQDs. The Table 15 analysis also identifies clusters[15] for portfolios 1011, 1016, 1017, 1021 (EQ), portfolio 2005, 2024 and 2209 (IR), 4003 and 4401 (CO) and 5013, 5017, 5028, 5517 and 5522 (credit spread). The equity portfolios suffer for the postponement of the timeline of the exercise, with the expiry of the options close to VaR submission date. IR and CO portfolio are the one with slightly higher dispersion in the booking of the instruments, and the credit portfolios could be impacted by different level of approval in the component of these instruments.

110. As in the previous exercise, the VaR values for CTPs (portfolios 6001 to 6605) are not reported because of insufficient numbers of these data submission to guarantee the significance of the statistics provided and the anonymity of the submissions.

Interquartile dispersion

111. Figure 3 and Table 5 summarise the variability of the results, measured via the IQD and coefficient of variation, for the IMV as well as all three VaR measures (i.e. VaR, VaR for HS banks only and VaR calculated from the 1-year P&L series submitted by HS banks). IQD and CV

[14] The outcome of the IMV extreme value analysis was used as an early indication of the potential problems to be reported to banks by their CAs. As explained in Section 3.1, banks' data were taken into account only for portfolios for which the RM is between the benchmark (50th percentile) +/- two times the truncated standard deviation in the portfolio analysed. The rest was classified as an outlier. As shown in Figure 27, we can see that this methodology, contrary to what was used until the 2019 exercise, does not exclude RMs that are clearly consistent with the benchmark.

[15] The cluster analysis presented above is superior to a simple outlier analysis that flags submissions more than a designated number of standard deviations from the mean, as this method cannot easily be used for clustered or strongly asymmetric portfolios.

for IMV, PV, VaR and stress VaR, divided by risk factors, are reported at the bottom of Figure 3. Table 5 also includes the VaR results for MC simulation banks and the expected shortfall.

112. In terms of risks across different assets classes, the IQDs for VaR for all asset classes are decreased, and they are all well below 20%. The asset class with the lower level of IQD is FX, with just 11% (it was 9% in 2024). The asset class with the highest IQD is the EQ (18%, it was 16% in 2024, it was 17% in 2023, 25% in 2022 and 2021) and CO (17%). Overall, the IQD is the same (14%) as in the previous exercises (in 2021 exercise there was an average dispersion of the VaR of 25%, whereas this decreased to 21% in the 2022 exercise, and 16% in 2023), and it is now lower of the 17% before Covid pandemic in 2020. This decrease in the IQD of the VaR is likely to have stemmed from a stable decrease in the market volatility, but also to a good refinement of the instructions and submission of the data.

113. As expected, the IQD for sVaR is higher than for VaR (see the bottom panels of Figure 3), with an average IQD of 27% (21% in 2024, 22% in 2023, 28% in 2022, 29% in 2021 and 25% in 2020). The CS asset class features a higher dispersion (36%, it was 29% in 2024 and 2023, and 35% in 2022; in 2020 and in 2021 it was 34%). Higher sVaR dispersion is likely to be due to the differences between banks in their choice of the 1-year stress period used, which is chosen based on each participating bank's actual portfolio. It might therefore be the case that the sVaR is not calculated with respect to the 1-year period that maximises VaR for the given hypothetical portfolio.

Figure 3: Interquartile dispersion and coefficient of variation for IMV and risk metrics by portfolio

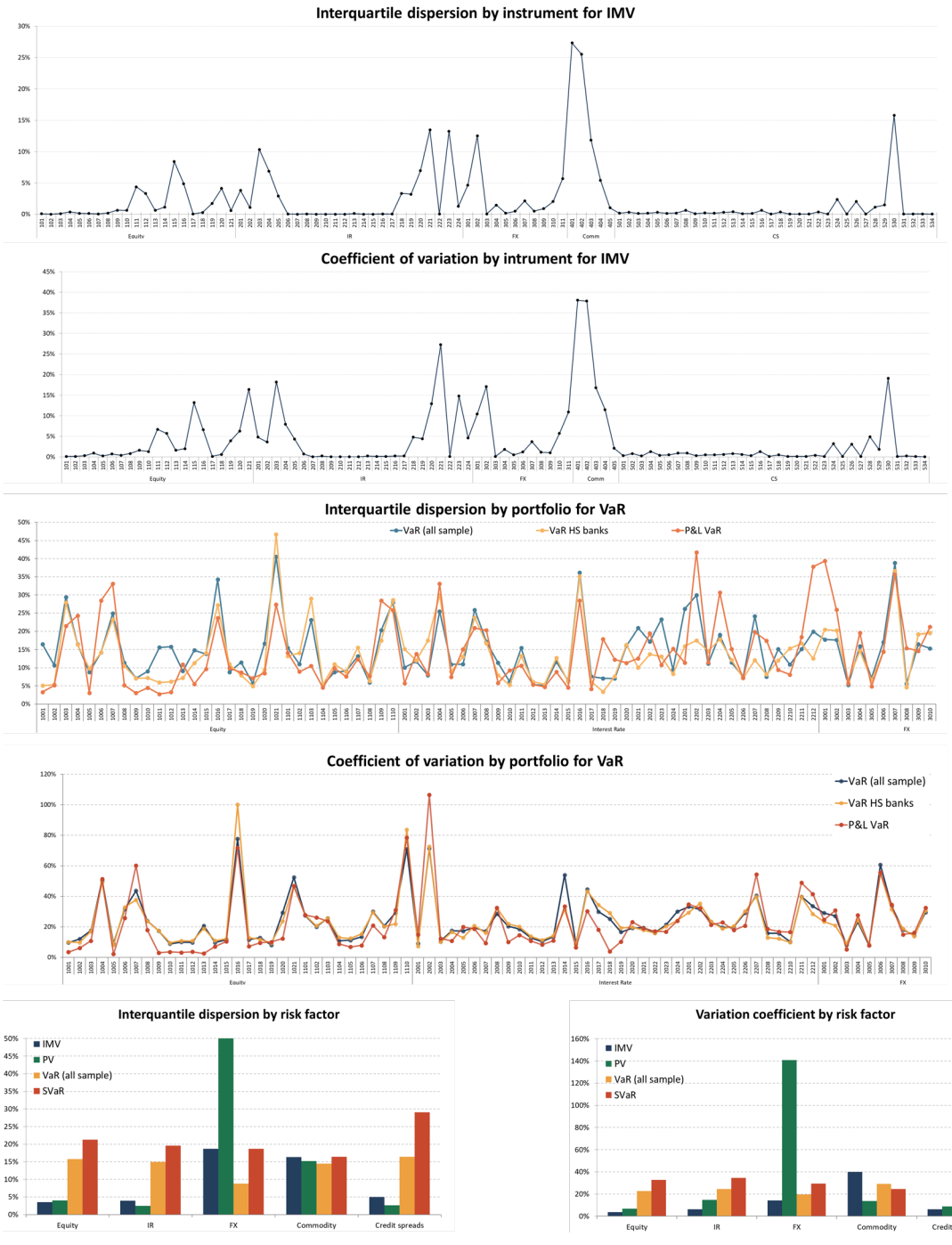


Table 5: Interquartile dispersion for IMV, risk metrics and SBM OFR by risk factor

Average Interquartile dispersion by risk factor

	IMV	VaR (all sample)	SVaR	P&L VaR	VaR HS banks	VaR MC banks	Exp shortfall	ASA OFR
Equity	2%	18%	32%	16%	15%	13%	15%	13%
IR	3%	12%	21%	11%	11%	9%	9%	9%
FX	3%	11%	26%	10%	12%	9%	5%	2%
Commodity	14%	15%	21%	40%	17%	4%	39%	4%
Credit spr.	1%	17%	36%	14%	15%	12%	13%	10%

114. Table 5 confirms that when a homogeneous subset of banks is considered (i.e., HS or MC banks), the VaR results show less dispersion than the total sample (average 14% vs. 9%). Regarding the P&L VaR, the dispersion is also 13% (on average among different asset classes, excluding CO) is slightly lower with respect to the all-sample VaR for the majority of the asset classes (not for CO – because of a low number and low level of consistency in the P&L data provided). This is consistent with the assumption that fewer differences in the methodology would imply less dispersion among the risk measures.

115. When comparing variability for HS VaR and MC VaR, also this year's result tells us that the MC VaR values are less dispersed than those of the HS VaR, as it was in the past exercise. Nonetheless, the analysis needs to take account of the fact that the sample of MC banks is quite small compared with that of HS banks (i.e., 9 MC banks versus 29 HS banks). As far as parametric banks are concerned, a similar analysis is not informative as the total number of parametric banks is very small (i.e., two banks in the sample – the remaining three apply a combination of methods, and one failed to report).

116. The ratio between sVaR and VaR was also analysed across the sample (see Table 20 in the annex). Some banks have ratios below 1 for many portfolios, while other banks have extremely high ratios for some portfolios. While it is generally expected that the sVaR is greater than the VaR, the clear disparity between these values is usually a natural indication that something is wrong with the data submitted, and the EBA and CAs must pay attention to these observations.

117. Table 6 shows the distribution of the sVaR–VaR ratio classified into three buckets (i.e., below 1, between 1 and 3, and above 3) for each portfolio. It is worth noting that a significant number of portfolios for EQ, and IR have a significant proportion of ratios below 1.

Table 6: sVaR–VaR ratio by range (number of banks as a percentage of the total)

	Port. ID	X > 3	1 < X ≤ 3	X ≤ 1
Equity	1001	0.0%	95.8%	4.2%
	1002	0.0%	78.6%	21.4%
	1003	3.4%	89.7%	6.9%
	1004	15.4%	76.9%	7.7%
	1005	62.5%	37.5%	0.0%
	1006	53.8%	42.3%	3.8%
	1007	36.0%	64.0%	0.0%
	1008	76.9%	23.1%	0.0%
	1009	0.0%	78.3%	21.7%
	1010	4.0%	92.0%	4.0%
	1011	0.0%	77.8%	22.2%
	1012	0.0%	86.4%	13.6%
	1013	0.0%	41.7%	58.3%
	1014	4.0%	96.0%	0.0%
	1015	52.4%	47.6%	0.0%
	1016	18.2%	81.8%	0.0%
	1017	0.0%	83.3%	16.7%
	1018	27.3%	68.2%	4.5%
	1019	0.0%	93.1%	6.9%
	1020	0.0%	89.5%	10.5%
	1021	11.1%	44.4%	44.4%
	1101	75.0%	25.0%	0.0%
	1102	4.3%	82.6%	13.0%
	1103	22.7%	77.3%	0.0%
	1104	0.0%	87.0%	13.0%
	1105	0.0%	85.0%	15.0%
	1106	0.0%	85.7%	14.3%
	1107	56.5%	43.5%	0.0%
	1108	0.0%	96.0%	4.0%
	1109	0.0%	96.2%	3.8%
	1110	0.0%	37.5%	62.5%
Interest Rate	2001	8.3%	83.3%	8.3%
	2002	0.0%	86.1%	13.9%
	2003	0.0%	83.3%	16.7%
	2004	10.3%	76.9%	12.8%
	2005	28.6%	64.3%	7.1%
	2006	0.0%	96.6%	3.4%
	2007	0.0%	94.4%	5.6%
	2008	23.3%	70.0%	6.7%
	2009	25.0%	69.4%	5.6%
	2010	20.0%	80.0%	0.0%
	2011	2.9%	91.4%	5.7%
	2012	0.0%	100.0%	0.0%
	2013	8.3%	77.8%	13.9%
	2014	27.0%	73.0%	0.0%
	2015	5.9%	79.4%	14.7%
	2016	7.4%	81.5%	11.1%
	2017	29.2%	62.5%	8.3%
	2018	0.0%	97.1%	2.9%
	2019	0.0%	81.6%	18.4%
	2020	80.6%	19.4%	0.0%
	2021	74.4%	20.5%	5.1%
	2022	20.0%	73.3%	6.7%
	2023	10.3%	89.7%	0.0%
	2024	5.0%	87.5%	7.5%
	2201	33.3%	66.7%	0.0%
	2202	19.2%	73.1%	7.7%
	2203	33.3%	63.3%	3.3%
	2204	5.6%	94.4%	0.0%
	2205	5.7%	85.7%	8.6%
	2206	0.0%	94.4%	5.6%
	2207	16.2%	75.7%	8.1%
	2208	42.3%	53.8%	3.8%
	2209	23.5%	67.6%	8.8%
	2210	20.6%	73.5%	5.9%
	2211	0.0%	95.0%	5.0%
	2212	15.2%	75.8%	9.1%
FX	3001	0.0%	86.1%	13.9%
	3002	43.2%	56.8%	0.0%
	3003	0.0%	85.3%	14.7%
	3004	0.0%	91.4%	8.6%
	3005	5.7%	94.3%	0.0%
	3006	3.0%	78.8%	18.2%
	3007	21.2%	75.8%	3.0%
	3008	3.1%	93.8%	3.1%
	3009	45.5%	54.5%	0.0%
	3010	32.3%	61.3%	6.5%
	3011	0.0%	100.0%	0.0%
	3301	11.8%	82.4%	5.9%
	3302	0.0%	100.0%	0.0%
	3303	0.0%	89.3%	10.7%
	3304	6.3%	93.8%	0.0%
Commodities	4001	0.0%	84.6%	15.4%
	4002	0.0%	91.7%	8.3%
	4003	0.0%	83.3%	16.7%
	4004	10.0%	90.0%	0.0%
	4005	0.0%	83.3%	16.7%
	4401	21.4%	50.0%	28.6%
	4402	9.1%	81.8%	9.1%
	4403	0.0%	100.0%	0.0%
Credit Spread	5001	45.0%	55.0%	0.0%
	5002	36.8%	63.2%	0.0%
	5003	52.9%	47.1%	0.0%
	5004	42.1%	52.6%	5.3%
	5005	36.8%	63.2%	0.0%
	5006	38.9%	61.1%	0.0%
	5007	42.1%	52.6%	5.3%
	5008	33.3%	66.7%	0.0%
	5009	66.7%	33.3%	0.0%
	5010	57.1%	42.9%	0.0%
	5011	30.0%	65.0%	5.0%
	5012	20.8%	66.7%	12.5%
	5013	50.0%	44.4%	5.6%
	5014	27.3%	54.5%	18.2%
	5015	40.0%	45.0%	15.0%
	5016	45.5%	54.5%	0.0%
	5017	12.5%	62.5%	25.0%
	5018	22.2%	72.2%	5.6%
	5019	33.3%	58.3%	8.3%
	5020	25.9%	63.0%	11.1%
	5021	12.0%	80.0%	8.0%
	5022	11.5%	80.8%	7.7%
	5023	4.0%	88.0%	8.0%
	5024	52.6%	47.4%	0.0%
	5025	0.0%	84.6%	15.4%
	5026	50.0%	45.0%	5.0%
	5027	3.8%	92.3%	3.8%
	5028	55.0%	40.0%	5.0%
	5029	22.7%	72.7%	4.5%
	5030	38.5%	46.2%	15.4%
	5031	30.4%	69.6%	0.0%
	5032	23.8%	52.4%	23.8%
	5033	25.0%	58.3%	16.7%
	5034	23.8%	71.4%	4.8%
	5501	50.0%	50.0%	0.0%
	5502	46.7%	53.3%	0.0%
	5503	23.8%	66.7%	9.5%
	5504	36.8%	57.9%	5.3%
	5505	60.0%	40.0%	0.0%
	5506	65.4%	34.6%	0.0%
	5507	34.8%	47.8%	17.4%
	5508	23.3%	70.0%	6.7%
	5509	23.3%	73.3%	3.3%
	5510	34.6%	53.8%	11.5%
	5511	19.2%	73.1%	7.7%
	5512	38.5%	61.5%	0.0%
	5513	58.3%	41.7%	0.0%
	5514	19.2%	76.9%	3.8%
	5515	33.3%	57.1%	9.5%
	5516	33.3%	61.9%	4.8%
	5517	23.8%	71.4%	4.8%
	5518	0.0%	84.6%	15.4%
	5519	6.7%	86.7%	6.7%
	5520	50.0%	50.0%	0.0%
	5521	9.1%	86.4%	4.5%
	5522	40.0%	53.3%	6.7%
CTP	6001	0.0%	100.0%	0.0%
	6002	0.0%	100.0%	0.0%
	6003	0.0%	100.0%	0.0%
	6004	0.0%	100.0%	0.0%
	6005	0.0%	100.0%	0.0%
	6006	0.0%	100.0%	0.0%
	6007	0.0%	100.0%	0.0%
	6008	0.0%	100.0%	0.0%
	6009	0.0%	100.0%	0.0%
	6010	0.0%	100.0%	0.0%
	6601	66.7%	0.0%	33.3%
	6602	66.7%	0.0%	33.3%
	6603	66.7%	33.3%	0.0%
	6604	33.3%	66.7%	0.0%
	6605	66.7%	0.0%	33.3%
ALL-IN no-CTP	10000	6.3%	87.5%	6.3%
Equity Cumulative	11000	26.7%	60.0%	13.3%
IR Cumulative	12000	2.9%	94.1%	2.9%
FX Cumulative	13000	5.6%	94.4%	0.0%
Commodity Cumulative	14000	7.7%	84.6%	7.7%
CS Cumulative	15000	13.6%	72.7%	13.6%
CTP Cumulative	16000	0.0%	100.0%	0.0%

4.2 A closer look at the VaR and sVaR results

118. Figure 4 and Figure 5 give an overview of the VaR and sVaR results for portfolios 1001 to 6605, i.e. they do not include the aggregated portfolios, where fewer observations were available for the reasons explained above (see Section 2.4).

119. Broken down by portfolio, the figures show the average VaR and sVaR over the 10-day submission period for each bank, normalised by the median[16] of the given portfolio.[17]

120. Comparing Figure 4 and Figure 5, it shows the dispersion for sVaR than for VaR (sVaR 27% IQD versus 14% VaR IQD on average). Differences in dispersion between VaR and sVaR seem steady but are more marked for the CS portfolios, in which sVaR shows a higher level of dispersion than in the other asset classes (36%).

121. FX and IR are the asset classes with the lowest levels of dispersion for VaR (11% and 12%), as they are for sVaR (26% and 21%).

122. Table 16 and Table 17 in the annex report all the VaR and sVaR statistics along with EU benchmarks for all HPE portfolios.

[16] The portfolio median is the median of the average VaR and sVaR over the submission period.

[17] Note that the figures are restricted to VaR–median and sVaR–median ratios below 450%.

Figure 4: VaR submissions normalised by the median of each portfolio

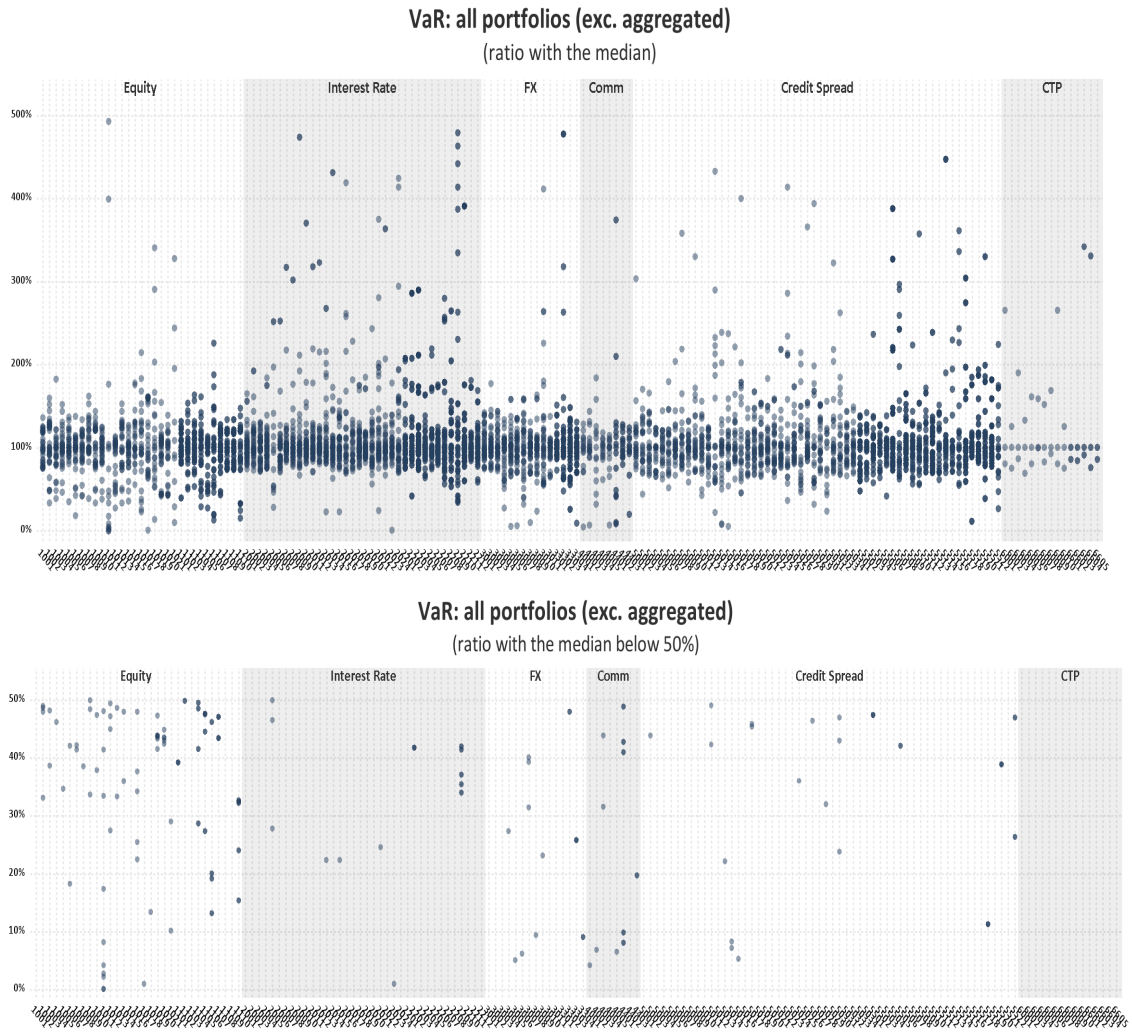
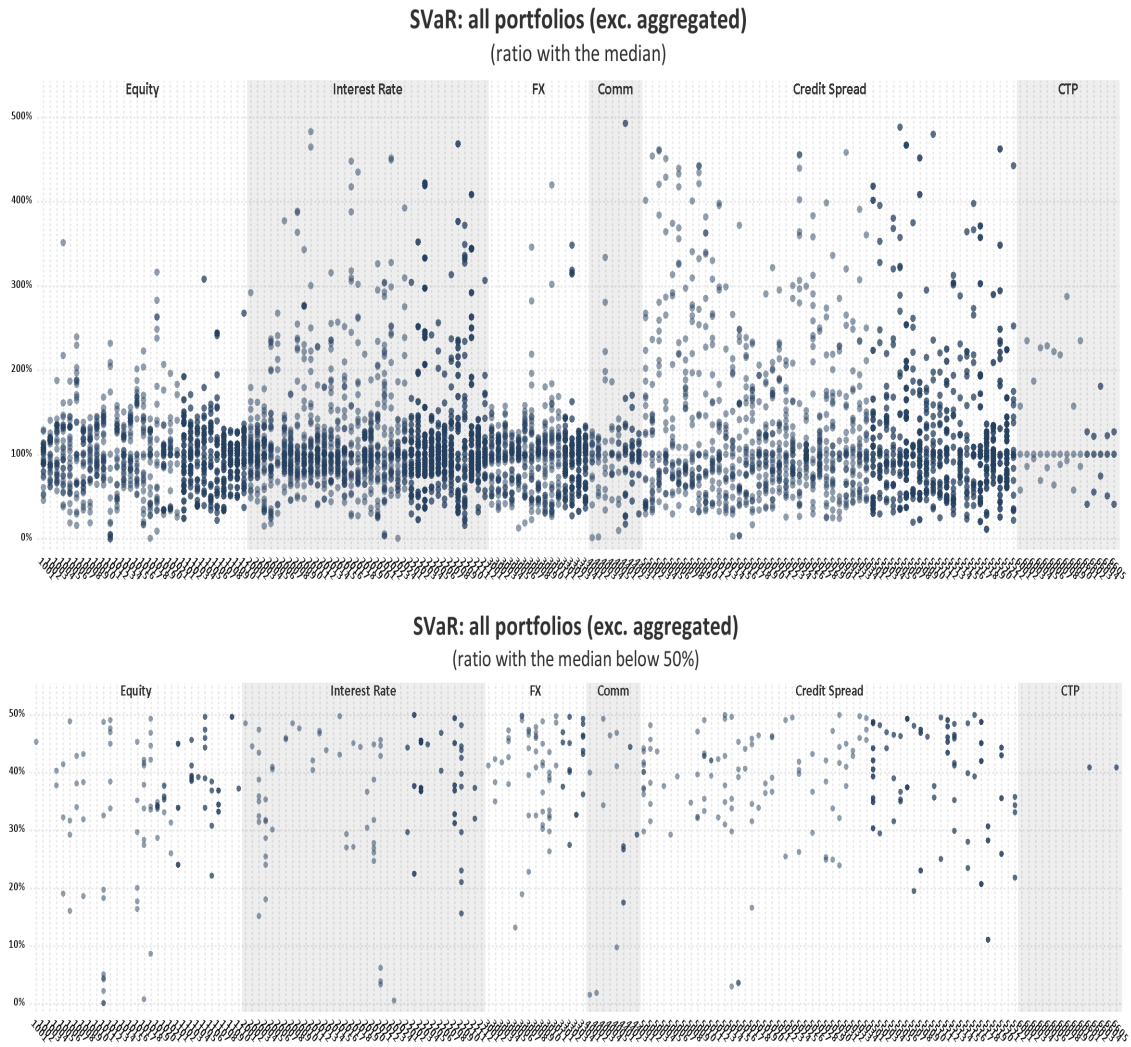


Figure 5: sVaR submissions normalised by the median of each portfolio

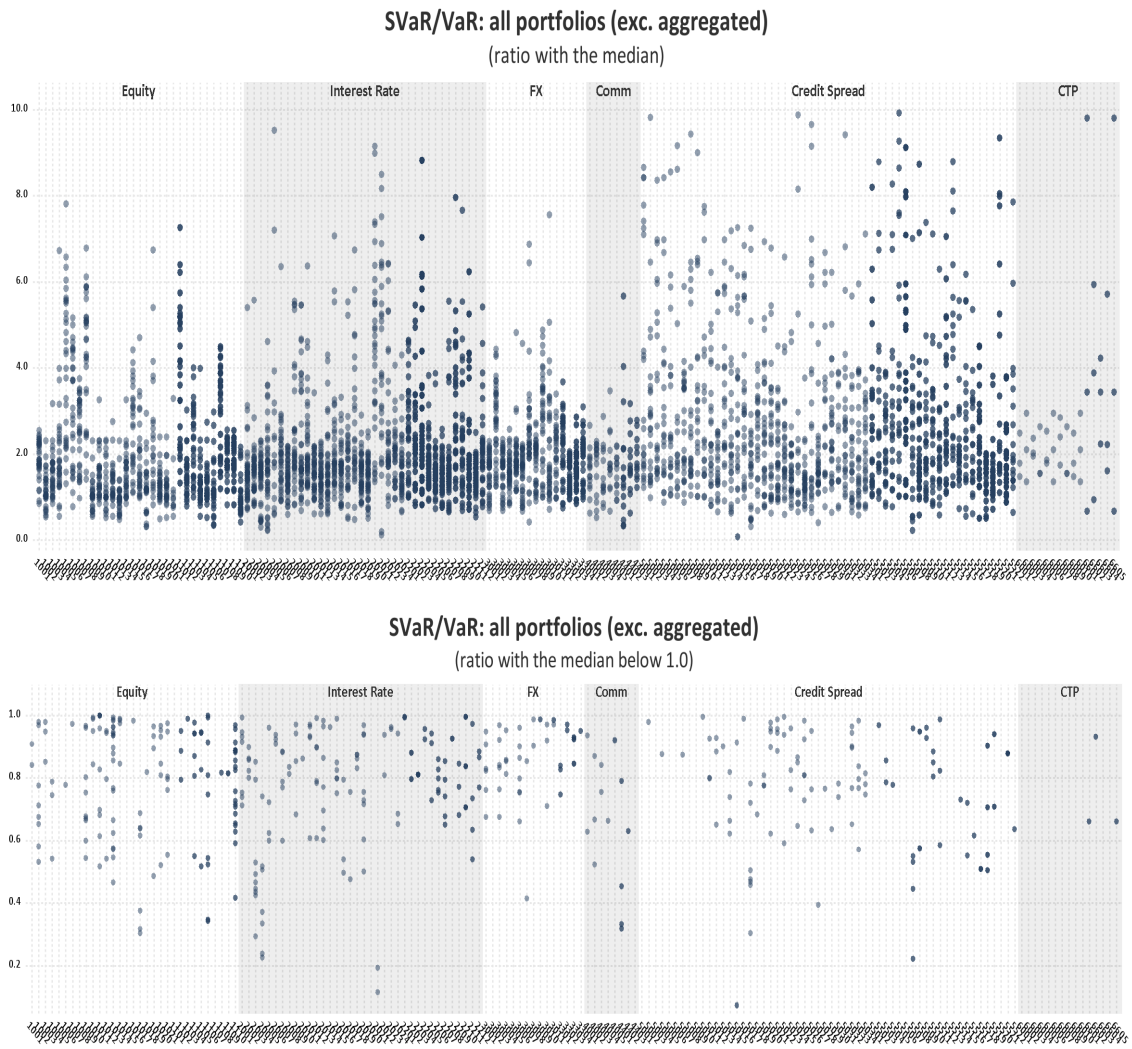


4.2.1 Comparison of sVaR and VaR ratios

123. Banks were assessed in relation to the full sample not only by their VaR and sVaR values, but also by their sVaR–VaR ratios (Table 20). In general, it should be expected that sVaR would be at least as high as VaR, as sVaR is calibrated to a 1-year period of significant stress. This is verified in 88% of cases. This was 71% in 2023, 89% in 2022 and 73% in 2021.

124. Figure 6 shows the ratio of the average sVaR to the average VaR for each bank. The sVaR–VaR ratio varies significantly across the portfolios. Excluding outliers, the average sVaR–VaR ratio per portfolio varies between 0.09 and 34.50 and averages 2.25.

Figure 6: sVaR–VaR ratio for the average VaR and sVaR by portfolio



125. A few banks have a high sVaR–VaR ratio for portfolios in certain asset classes only. This suggests that these asset classes dominate the banks' real trading portfolios and, for that reason, drive the calibration of the sVaR window.

4.2.2 Drivers of variation

126. Based on the qualitative information provided by banks (Figure 7 to Figure 11), the most common methodological approach used by banks to model MR is HS (67%). Although most banks use the same methodological approach, the dispersion of VaR remains substantial because other modelling choices play a key role in producing variability of the risk measures (e.g., differences in time scaling and/or weighting scheme choices, absolute versus relative returns for different asset classes).

Figure 7: Qualitative data: VaR methodological approaches

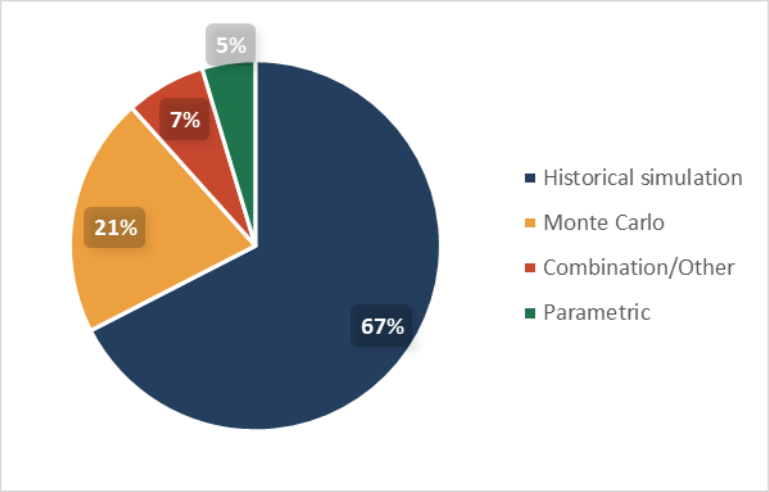
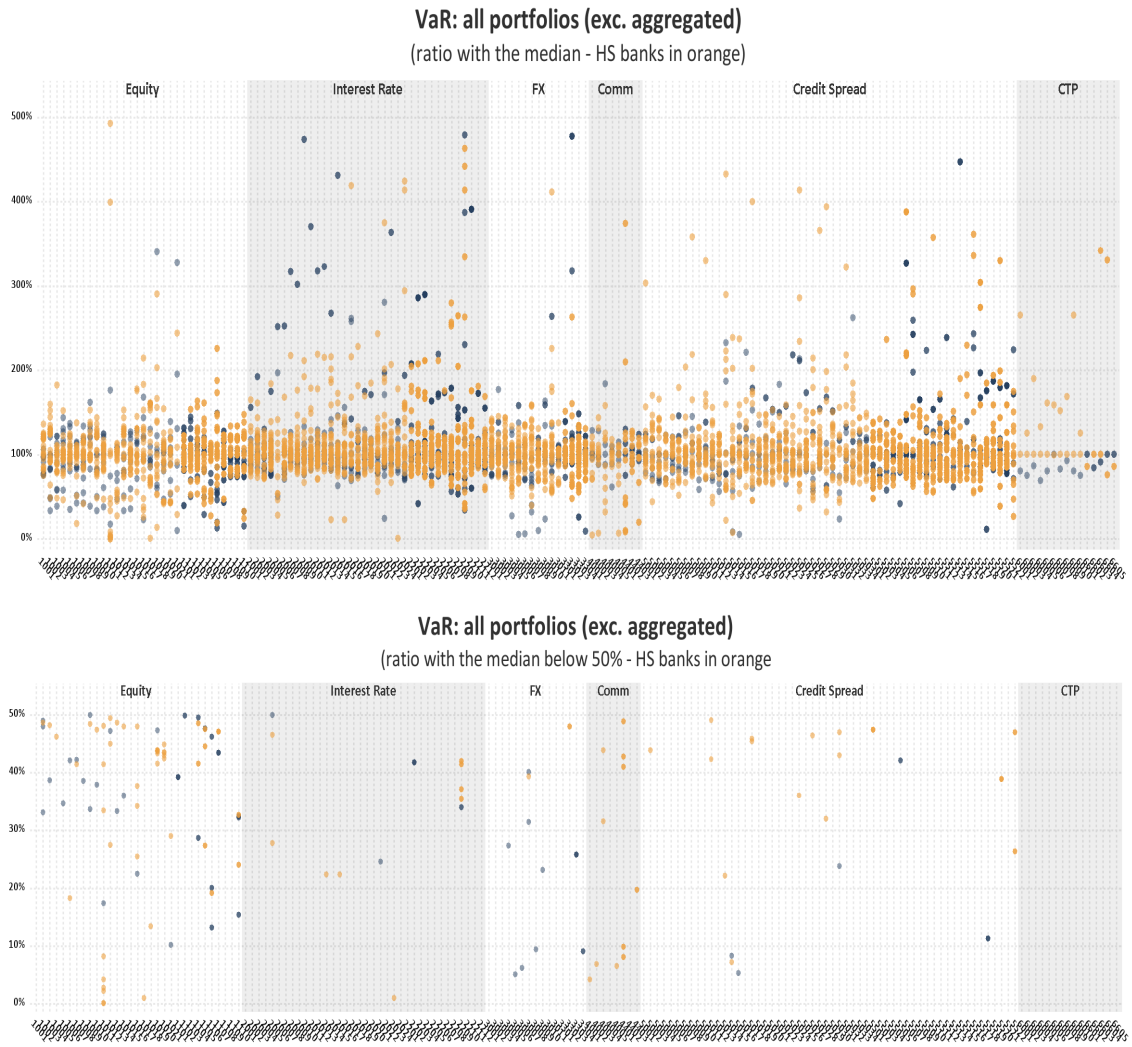
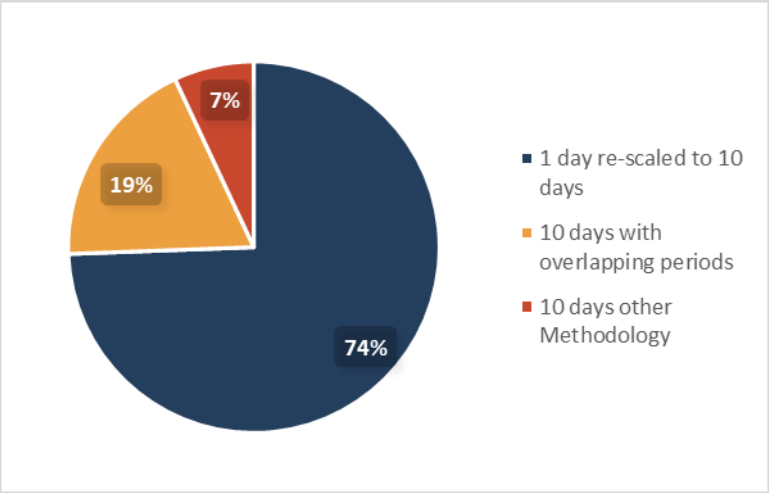


Figure 8: VaR submissions normalised by the median of each portfolio (by methodological approach)



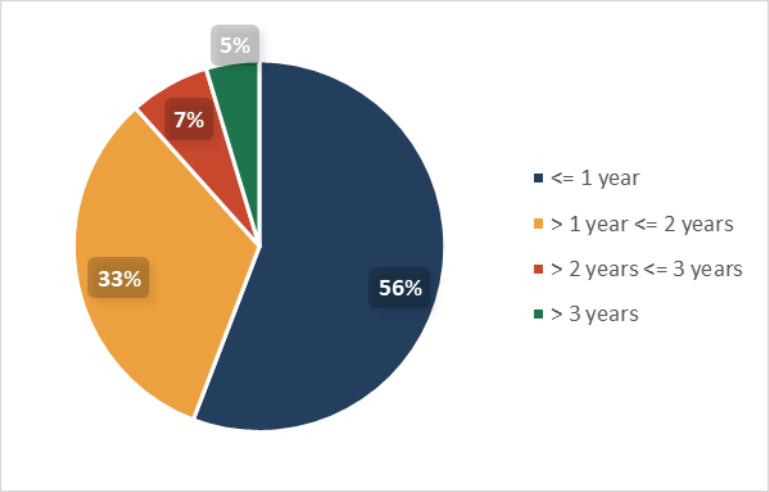
127. Regarding the regulatory 10-day VaR computation, by far the preferred method is rescaling the 1-day VaR to the 10-day VaR using the square root of time approximation.

Figure 9: Qualitative data: VaR time-scaling techniques



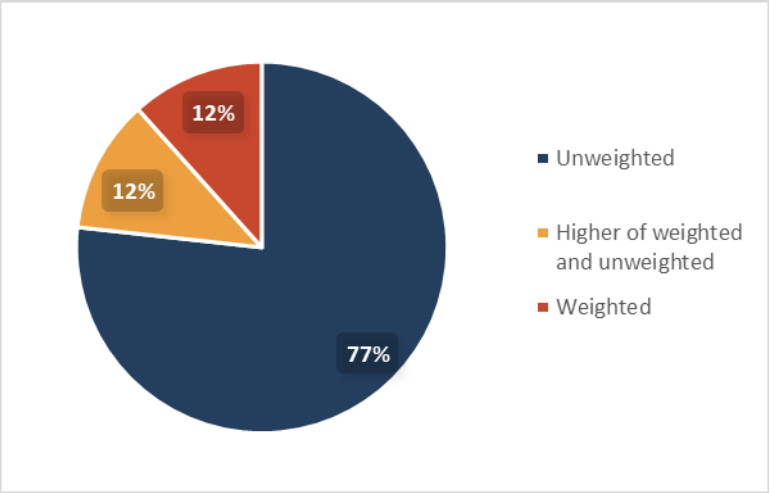
128. Regarding the historical lookback period used to calibrate banks' VaR models, 57% of the banks use the minimum period of one year and applying a period longer than 2 years is very unusual.

Figure 10: Qualitative data – length of VaR lookback period



129. As for the possible use of a data-weighting scheme, the great majority of banks' models use unweighted data in the regulatory VaR computation (77% of banks).

Figure 11: Qualitative data – VaR weighting choices



130. Finally, regarding supervisory actions on regulatory add-ons, 71% of the banks (31/43) in the sample have a total multiplication factor greater than the minimum of 3, which includes the addend resulting from the number of over-shootings (Table 1 in Article 366 of the CRR) and any supervisory extra charge(s). The average total multiplication factor in this sample is equal to 3.56, with a maximum of 5.63. As a result, quite a few banks either must correct for excessive over-shootings or are subject to supervisory measures. In addition, some banks have been assigned other kinds of added penalties that encompass risk 'not in VaR' and additional charges for IRC and APR. This was apparent from the additional and related information provided by some CAs about their supervised banks, and from discussions with some banks during the interviews.

131. These responses suggest that the observed variation may be due to a few different drivers. The EBA chooses to present the analysis using the following broad headings:

- supervisory actions;
- level of approval;
- Common stress period considered.

4.2.3 Supervisory actions

132. Supervisory actions can take different forms and are therefore difficult to capture fully in the analysis. However, the effects of some types of supervisory charges can be approximated. The effect of a higher VaR or sVaR multiplier imposed by a CA because of model weaknesses, for example, can be studied using the following proxy:

$$\text{Capital proxy} = m_{VaR} * VaR + m_{sVaR} * sVaR$$

where m_{VaR} and m_{sVaR} are the total regulatory multipliers given by 3 plus any add-on resulting from excessive backtesting exceptions and other prudential extra charges imposed by the regulator (where appropriate).

133. Including the multipliers in the analysis did not significantly change the results in terms of variability across the sample; that is, the positioning across the sample changed, but, on average, the extent of the dispersion did not.

134. Other supervisory measures, such as capital add-ons, cannot be easily captured. They are normally calculated at an aggregate level based on the banks' actual portfolios and cannot therefore be readily computed for the hypothetical portfolios used for benchmarking. Moreover, it tends to be the case that these add-ons are intended to capture difficulties in modelling risks associated with more exotic trades not represented well in the HPE.

4.2.4 Level of approval

135. Banks hold different levels of model approval for equity and interest-rate risks. Specifically, institutions may obtain approval for the general equity or interest-rate risk, or they may also be authorised to model the specific equity or interest-rate risk components (see Section 3.2 for further discussion). In general, approval for both the general and specific components enables banks to fully model the instruments included in the equity and credit-spread sections of the exercise. Banks with only general approval are nevertheless required to submit results for these instruments; however, this has been known to introduce additional dispersion in the reported risk measures. For this reason, in this exercise the EBA filtered all submissions and produced IQD statistics separately for banks belonging to each approval category.

136. Among the banks that submitted results for interest rate risk, 23 banks in the report have general and specific approval (see Table 22) and 17 banks have only general approval (see Table 23). Among the banks that submitted results for equity asset risk, 26 banks in the report have general and specific approval (see Table 24) and 8 banks have only general approval (see Table 25).

137. Table 7 summarises the result of the analysis when the filter for the level of approval is applied. The presence of banks with different levels of approval tends to moderately impact the benchmarking results.

138. As shown in Table 7, the IQD for the EQ asset class is smaller when considering only the subsample of banks with full approval compared with the full sample. The IQD for the CS asset class also decreases when focusing solely on banks with general risk approval; however, it should be noted that only a few banks lacking specific IR approval submitted CS results. Finally, for the IR asset class, splitting the sample between banks with both general and specific approval and those with only general approval results in only marginal changes to the benchmark. This confirms that submissions from banks with partial approval tend to increase the overall IQD.

Table 7: Asset class comparison for VaR in terms of level of approval

	VaR - Avg. Interquartile Range			
	All Banks	*IR Gen + Specific*	*IR Gen only*	*Eq Gen + Specific*
Equity	18%			10%
Interest Rate	12%	9%	11%	
Credit Spread	17%	15%	11%	

4.2.5 Common stress period considered

139. The stress window used by participating banks has long been recognised as one of the main drivers of the higher dispersion observed in sVaR relative to VaR[18]. Information on the stress period has also been collected for the 2020–2025 exercises and used to assess the impact of the selected stress window on the calibration of sVaR.

140. For their sVaR time window, banks typically select periods that include either 2008–2009 or 2011, with a clear preference for 2008–2009. Given the higher number of banks choosing the 2008–2009 window, the EBA filtered the sample to include only those institutions using this stress period, resulting in a subsample of 22 banks. The benchmark and the related statistics for this subsample of banks are available in Table 26 in the annex, and they are easily comparable with the full sample sVaR statistics inTable 17.

141. Table 8 summarises the results of this stress-period filtering analysis. It is evident that the choice of stress window has a significant impact on sVaR statistics. The subsample of banks applying the same stress period generally displays lower dispersion in sVaR compared with the full sample.

Table 8: Asset class comparison for sVaR in terms of the time window applied

	SVaR - Avg. Interquartile Range	
	All Banks	*Stressed Period*
Equity	32%	18%
Interest Rate	21%	14%
FX	26%	11%
Commodities	21%	12%
Credit Spread	36%	29%
CTP		
All-in	22%	10%

[18] This hypothesis was tested only from the 2019 exercise onwards due to a lack of information regarding the time window applied by the banks to calibrate the sVaR.

4.3 Analysis of IRC

142. Banks with an approved IRC model constitute a subsample of those with an approved VaR model; only banks using internal models for specific risks of debt instruments are permitted to use IRC models (Article 372 of the CRR).

143. The full set of submissions for IRC results for each trade, after the data-cleaning process has been run as previously described, is reported in Table 9.[19]

144. Within the hypothetical portfolio exercise (HPE), only a subset of banks submitted IRC results, and several of those reported very low values. This indicates that key risk factors relevant to the HPE were not modelled. While low submissions values may reflect unmodelled risk factors, this should not be interpreted as evidence that banks reporting higher IRC figures have fully incorporated all relevant risk factors from the portfolio in their models.

145. The number of submissions is limited for some of the all-in portfolios. Statistical inferences for these portfolios are thus not appropriate. A prerequisite for consideration of banks' submissions for the all-in portfolios is that a bank needs to be able to model all the corresponding underlying portfolios.

146. It is recommended that CAs assess the extent to which these missing risk factors are important in the context of banks' overall risk, and whether they need to be added to the model.

147. CAs should pay particular attention to portfolios where the IRC exhibits markedly higher dispersion—approximately 50%—which is significantly above the average level of dispersion.

148. As is the case for VaR and sVaR, banks can choose from a range of permitted modelling approaches for IRC. For example, banks need to choose:

- a source of credit risk estimates such as PD and loss given default (LGD).
- the number of systemic factors used to model the co-movement among obligors in their portfolios.
- the size and granularity of credit spread shocks to apply to positions with an obligor following a rating transition; and
- the liquidity horizons to assign to positions with a particular obligor.

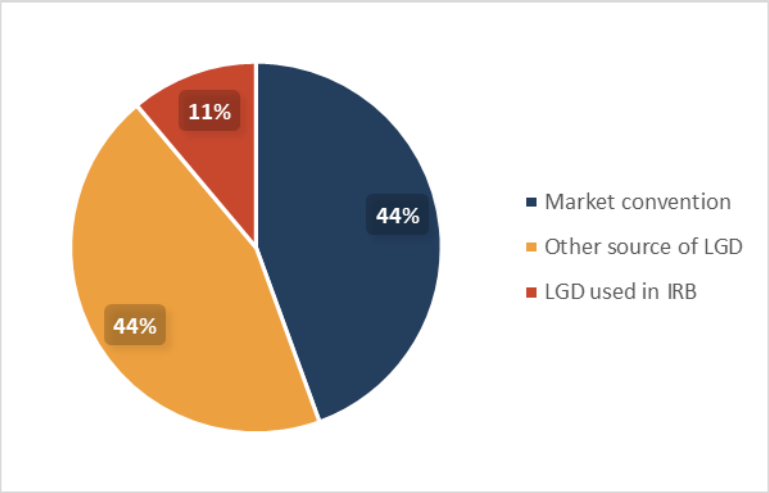
149. The responses to the qualitative questionnaire relating to the IRC methodological aspects suggest that the use of market LGD is highly applied among respondents (Figure 12), with 12

[19] This report is no longer reporting the summary of the responses to the qualitative questionnaire relating to the APR methodological aspects, since only a limited number of responses are available at the overall CTP model level, so no disclosure is possible without disclosing some specific information on the submitters. The average variability of the APR charge is also no longer reported, since the limited data available do not allow a meaningful computation of the IQD of each CTP.

out of 27 banks using market convention as the source of LGD. A minority of banks – 3 out of 27 – use their own IRB models as the source of LGD. The rest – 12 banks – use various other sources to obtain the LGD.

150. The PDs are provided by rating agencies in 64% of cases, by the IRB in 21% and by other sources in 14%. The transition matrices are mostly taken from rating agencies (20 respondents out of 26), and the rest of the banks use their IRB, 'market implied transition matrices and various other sources.

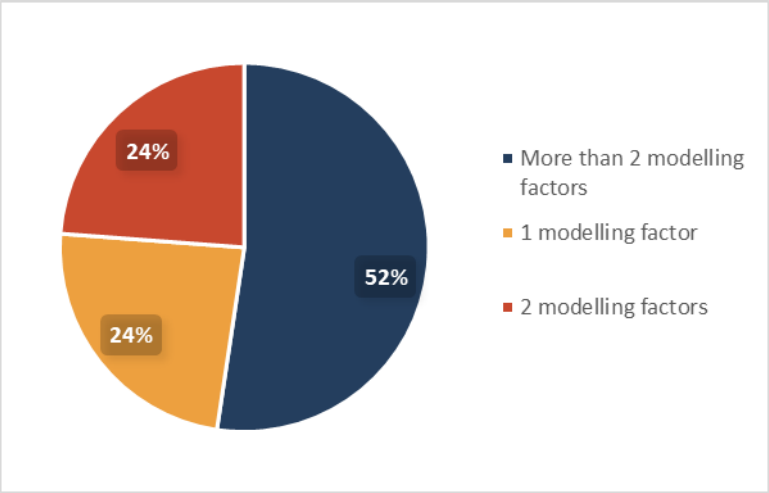
Figure 12: Qualitative data: source of LGD for IRC modelling



151. Moreover, many respondents stated that they use more than two systemic modelling factors at the overall IRC model level (Figure 13).

152. The liquidity horizon applied at the portfolio level for the IRC model is predominantly between nine and 12 months (76% of the responses).

Figure 13: Qualitative data – number of modelling factors for IRC



153. Hence, in the context of IRC the modelling practices across the sample of banks participating in the benchmarking exercise seem to be consistent.

154. Table 9 shows that the average variability of IRC is higher than that observed for VaR. This table presents a summary of the descriptive statistics concerning the IRC values submitted, along with the median, first and third quartiles used to select out-of-range values to be discussed with the banks during the interviews. EBA received on average 20 submissions for IRC in relation to the IR and CS hypothetical trades. We can observe that, even if the IQD for the single portfolios is sometimes quite significant, at least at the aggregate level, the IQD is approximately 34%.

155. The EBA also provided a disaggregated analysis of sources of LGD and numbers of modelling factors. It is possible to split the sample between market convention and non-market convention (IRB and other sources) and the number of modelling factors (1-2 vs. more than 2). In Table 10 below, the average interquartile is reported. The full set of results is also reported in Table 28, Table 29, Table 30 and Table 31.

Table 9: IRC statistics and cluster analysis

EU Statistics for IRC

		Main statistics								Percentiles			
	Port. ID	Min	Max	Ave.	STDev	STDev_trunc[1]	MAD (median absolute deviation)	Coefficient of variation (STDev/Mean)	Num obs.[2]	25th	50th	75th	IQD
Interest Rate	2001												
	2002												
	2003												
	2004												
	2005	38,079	561,861	243,850	182,422	208,305	80,558	75%	13	115,224	208,657	269,624	40%
	2006	4,243	91,951	30,970	21,319	40,495	13,266	69%	21	15,602	28,971	39,787	44%
	2007	128	2,645	1,076	929	2,611	514	86%	6	378	1,352	1,407	58%
	2008	45,812	948,909	426,580	276,277	254,488	258,949	65%	26	135,570	457,236	651,758	66%
	2009	32,628	565,841	315,734	200,664	200,664	177,345	64%	11	138,981	310,910	488,256	56%
	2010	5,843	477,616	197,606	192,397	192,397	90,788	97%	11	29,027	96,632	460,835	88%
	2011	2,931	20,090	11,365	5,416	5,416	3,977	48%	11	6,638	10,310	15,225	39%
	2012								3				
	2013	4,746	222,858	76,165	69,787	88,909	28,861	92%	23	24,948	49,614	111,498	63%
	2014	2,935	171,646	48,315	46,024	97,886	23,823	95%	23	12,974	38,108	71,251	69%
	2015	707	15,770	9,042	4,989	7,544	2,339	55%	8	5,772	11,017	12,053	35%
	2016	446,443	1,015,209	685,737	171,762	221,574	162,172	25%	19	533,384	652,971	763,048	18%
	2017	54,171	698,166	358,510	209,540	193,853	163,427	58%	22	186,719	370,019	490,332	45%
	2018												
	2019												
	2020												
	2021												
	2022	25,250	867,834	378,558	278,074	261,113	245,097	74%	26	76,683	399,086	589,213	77%
	2023												
	2024												
	2201	2,923	35,221	16,576	8,932	17,452	6,213	54%	20	10,249	16,731	22,561	38%
	2202	52,391	948,909	434,201	275,612	254,320	241,899	64%	26	135,570	469,923	649,383	65%
	2203	80,053	1,635,129	775,277	505,832	474,243	434,999	65%	26	196,659	902,931	1,180,491	71%
	2204												
	2205												
	2206												
	2207												
	2208	447,912	1,015,211	755,784	173,345	236,040	94,844	23%	18	681,959	763,013	868,313	12%
	2209	707	26,822	11,844	8,522	8,522	2,339	72%	6	8,410	11,017	13,088	22%
	2210	81,758	1,648,469	807,676	519,770	489,880	453,282	64%	26	290,950	911,897	1,255,646	62%
	2211	10,522	689,931	300,679	248,218	238,126	225,173	83%	26	48,465	243,391	521,504	83%
	2212												
Credit Spread	5001	1,373	10,010	4,791	2,754	3,380	1,638	58%	21	2,796	4,040	6,441	39%
	5002	3,097	16,232	9,167	4,002	5,820	2,959	44%	22	6,132	9,107	12,258	33%
	5003	6,699	311,134	84,309	97,088	150,646	28,003	115%	22	13,860	44,949	156,800	84%
	5004	5,440	24,973	15,748	5,406	6,052	3,837	34%	19	12,350	16,272	20,451	25%
	5005	22,323	68,829	40,420	10,725	12,838	5,952	27%	19	35,261	43,395	46,697	14%
	5006	1,967	7,999	4,449	2,103	2,253	1,935	47%	19	2,297	4,118	6,430	47%
	5007	291,193	878,452	592,321	163,971	164,267	65,664	28%	23	481,207	612,158	667,310	16%
	5008	2,128	10,210	5,614	2,317	2,528	972	41%	23	4,242	5,258	6,462	21%
	5009	6,475	241,831	117,222	58,879	110,622	31,478	50%	22	77,779	113,635	161,327	35%
	5010	914	5,792	2,380	1,413	2,382	630	59%	21	1,506	2,298	2,625	27%
	5011	145,509	818,081	479,156	180,861	183,758	134,026	38%	23	307,339	474,551	623,282	34%
	5012	52,447	292,407	152,657	72,242	138,168	49,948	47%	21	101,697	163,283	169,216	25%
	5013	21,318	151,735	86,198	35,588	35,607	23,410	41%	21	55,641	86,254	109,308	33%
	5014	16,140	187,681	92,738	53,145	49,031	49,685	57%	25	38,953	98,562	127,110	53%
	5015	962	9,341	4,736	2,134	2,880	1,808	45%	22	3,588	4,754	6,678	30%
	5016	3,467	27,958	16,125	6,077	6,493	2,281	38%	22	14,147	15,184	18,979	15%
	5017	399,584	1,051,573	740,626	181,546	219,490	96,294	25%	22	585,601	764,216	821,463	17%
	5018	22,226	87,578	54,302	20,690	19,889	19,284	38%	22	35,794	55,171	73,551	35%
	5019	158,274	798,871	535,049	153,786	191,525	86,197	29%	23	451,263	531,034	625,813	16%
	5020	23,291	586,620	290,536	182,525	177,788	167,543	63%	26	130,518	251,184	474,502	57%
	5021	1,021	30,181	16,304	8,504	9,856	7,266	52%	23	9,396	18,193	23,958	44%
	5022	55,297	239,456	163,145	56,375	56,375	45,875	35%	25	133,315	168,009	213,883	23%
	5023	3,318	241,032	77,994	66,682	113,552	37,248	86%	22	27,774	70,190	122,825	63%
	5024	5,307	43,408	20,170	10,756	11,698	7,051	53%	20	11,984	21,361	26,268	37%
	5025	5,328	75,271	36,186	19,707	23,335	11,913	55%	24	22,496	42,139	46,710	35%
	5026	2	11,203	2,778	4,012	5,858	489	144%	8	204	500	4,812	92%
	5027	3,684	222,981	92,947	60,842	69,016	44,639	66%	24	45,588	87,444	131,481	49%
	5028	18,304	68,239	44,429	14,853	13,891	10,152	33%	20	34,144	45,098	55,875	24%
	5029	8,576	69,540	37,727	18,510	35,584	14,742	49%	24	24,419	36,145	57,821	41%
	5030	8,238	598,274	175,066	206,550	275,459	62,659	118%	10	19,694	131,090	144,443	76%
	5031	6,411	616,451	237,076	194,456	212,064	121,839	82%	23	76,718	255,119	310,118	60%
	5032	233,749	621,179	447,382	123,605	123,605	119,319	28%	21	372,189	437,468	556,787	20%
	5033	207,402	587,982	426,297	111,216	124,950	81,807	26%	22	320,241	456,393	523,298	24%
	5034	18,485	776,256	337,311	232,031	212,900	195,322	69%	25	121,010	380,719	559,992	64%
	5501	6,954	311,129	69,324	89,169	164,089	17,197	129%	22	11,554	36,681	94,212	78%
	5502	31,419	71,244	51,825	9,092	10,419	3,461	18%	19	46,988	51,606	54,997	8%
	5503	20,291	156,217	85,976	33,299	36,238	20,026	39%	22	67,250	85,811	100,009	20%
	5504	6,942	311,134	84,136	95,046	169,958	25,197	113%	19	16,716	44,949	156,800	81%
	5505	10	86,171	39,897	24,186	23,153	17,973	61%	24	24,209	43,326	56,348	40%
	5506	266,868	1,021,936	624,931	192,477	204,128	148,731	31%	23	476,645	622,240	806,319	26%
	5507	73,620	195,435	120,956	27,170	39,118	6,748	23%	19	110,883	117,661	124,758	6%
	5508	239,459	950,774	641,812	186,355	178,993	148,213	29%	26	547,216	596,895	780,807	18%
	5509	438	20,806	6,642	4,669	15,872	2,231	70%	24	3,607	6,528	8,241	39%
	5510	196	111,550	23,650	30,031	48,670	10,494	127%	20	4,657	18,049	27,739	71%
	5511	1,480	169,498	76,347	42,893	49,968	25,599	56%	22	49,666	80,099	91,659	30%
	5512	2,762	45,240	22,706	11,512	10,940	7,056	51%	24	14,626	23,726	30,340	35%
	5513	6,823	311,134	84,428	97,179	166,203	26,369	115%	21	14,309	50,529	156,800	83%
	5514	784	85,484	38,603	27,647	27,010	21,263	72%	23	4,647	48,235	59,481	86%
	5515	11,095	152,214	67,251	41,414	45,258	15,579	62%	19	46,267	64,538	78,423	26%
	5516	17,896	51,307	30,045	9,166	15,272	3,305	31%	18	25,065	27,448	31,474	11%
	5517	20,521	152,213	77,938	41,238	43,429	28,707	53%	19	46,267	76,486	92,495	33%
	5518	784	85,484	38,603	27,647	27,010	21,263	72%	23	4,647	48,235	59,481	86%
	5519	34,871	428,466	192,152	107,387	121,480	67,243	56%	25	95,129	213,056	248,439	45%
	5520	22,295	90,261	54,760	21,162	23,048	12,673	39%	20	40,138	49,652	69,789	27%
	5521	2,397	144,609	44,384	36,658	50,555	24,580	83%	20	12,217	48,036	57,785	65%
	5522	7,258	43,631	22,409	8,154	13,900	3,507	36%	16	17,930	24,100	25,606	18%
ALL-IN no-CTP **	10000	524,817	1,442,922	920,735	281,159	392,511	228,542	31%	16	680,588	912,675	1,132,366	25%
IR Cumulative	12000	144,203	1,174,887	803,510	465,370	465,370	64,439	58%	6	270,476	1,069,375	1,092,741	60%
CS Cumulative **	15000	423,970	1,021,888	738,455	172,940	152,549	136,278	23%	21	634,574	719,899	904,639	18%

[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.*

156. The IQD dispersion of the subsample is very stable for IR and CS portfolios among different model choices.

Table 10: Coefficient of variation for regulatory IRC by modelling choice (%)

	VaR - Avg. Interquartile Range				
	All Banks	Source of LGDss		No. modelling factors	
		Market Convention	*Non-market Convention*	*1-2 factors*	*>2 factors*
Interest Rate	53%	61%	51%	46%	58%
Credit Spread	40%	38%	36%	36%	40%
All-in	34%	12%	29%	19%	15%

4.4 Diversification benefit

157. An additional metric considered as part of the analysis was the diversification benefit observed for VaR and sVaR in the aggregated portfolios.

158. The diversification benefit of a given metric (e.g., VaR) is computed as the absolute benefit, i.e., the difference between the sum of the single results for each individual position and the result for the aggregated portfolio, divided by the sum of the single results from each individual portfolio. Table 11 summarises the results of the analysis.

159. As expected, there is evidence that larger aggregated portfolios exhibited greater diversification benefits than smaller ones. The diversification benefit for all-in portfolio 10000 (all-in no-CTP portfolio), for instance, clearly exceeds the benefit for the other risk types, whose all-in portfolios are based on fewer individual instruments. Regarding the dispersion shown by the diversification benefits, it is possible to observe a significantly higher IQD for some portfolios than for others, and – in some cases – a quite comparable dispersion across VaR, sVaR and IRC (e.g., interest rate and commodity risk categories).

Table 11: Diversification benefit statistics

Diversification benefit statistics

Diversification benefit = (Sum of single portfolios VaR - Aggregated Port. VaR)/Sum of single portfolios VaR

VaR

		Other statistics			Percentiles			
	Port.	Ave.	STDev	Num obs. [3]	25th	50th	75th	Interquartile dispersion
ALL-IN no-CTP	10000	83%	2%	10	82%	82%	83%	1%
Equity Cumulative	11000	66%	7%	29	63%	67%	70%	5%
IR Cumulative	12000	51%	8%	34	47%	49%	51%	4%
FX Cumulative	13000	48%	9%	35	45%	49%	53%	8%
Commodity Cumulative	14000	15%	10%	11	10%	13%	17%	25%
Credit spread Cumulative	15000	11%	5%	22	8%	11%	15%	28%

sVaR

		Other statistics			Percentiles			
	Port.	Ave.	STDev	Num obs. [3]	25th	50th	75th	Interquartile dispersion
ALL-IN no-CTP	10000	43%	12%	10	36%	39%	48%	14%
Equity Cumulative	11000	27%	11%	29	20%	24%	30%	20%
IR Cumulative	12000	35%	11%	34	28%	33%	39%	17%
FX Cumulative	13000	27%	11%	35	20%	24%	30%	20%
Commodity Cumulative	14000	10%	10%	11	5%	7%	11%	38%
Credit spread Cumulative	15000	6%	3%	22	3%	6%	9%	47%

4.5 Dispersion in capital outcome

160. As a final point of comparison, a variable equal to the sum of regulatory VaR and sVaR was computed for each individual position. This variable was analysed in two ways: first, using each bank's total multiplication factor; and second, using only the regulatory multiplication factor—i.e. excluding any institution-specific add-ons set by CAs. The resulting values were then averaged across each risk type to derive a proxy for the implied capital outcome.

161. The exercise also sought to isolate the effect of the stress-period selection. To this end, the same statistics were recalculated for the subset of banks applying the 2008–2009 stress period.

Table 12: Interquartile dispersion for capital proxy

Interquartile dispersion for capital proxy

	Capital proxy (banks own mult)	*Capital proxy (fixed mult, =3)*	*Capital proxy Stressed period (fixed mult, =3)*
Equity	22%	21%	22%
IR	19%	15%	19%
FX	17%	16%	17%
Commodity	18%	15%	18%
Credit spreads	28%	26%	28%
CTP			

162. Table 12 indicates that variability is slightly amplified when regulatory add-ons are included. Nevertheless, the overall ranges of capital-value dispersion remain broadly similar regardless of whether banks' full multiplication factors or only the regulatory components are used. By contrast, filtering the sample to include only banks applying the same stress window appears to have a marginally negative effect in increasing variability. However, this finding must be interpreted cautiously, as the number of banks in this filtered subsample decreases—and, all else being equal, a smaller sample tends to increase the IQD.

4.6 Present value

163. The 2020 exercise introduced the PV as a statistic to be provided by the banks. The full set of statistics is provided in Table 27 for this year's exercise as well.

164. The average IQD of the PV among the single portfolios is fairly low (4%), much lower than in 2024. It is comparable to the low IQD of the previous exercises (it was 5% in 2023, it was 4% in 2022 and 11% in 2021).

165. The IQD would be even lower when portfolio 1011 is excluded (IQD of 100% due to its zero market value). In a few other cases where the PV is highly dispersed—such as portfolio 2212—the data indicate a genuine mispricing of the portfolio, which could negatively affect the computation of the risk measure for that portfolio. Fortunately, such cases appear to be relatively infrequent.

166. By asset class, after excluding outliers, the PV IQD is distributed as follows: EQ (1%), IR (2%), FX (1%), CO (4%), and CS (1%).

167. PV measures are useful for CAs when validating RM values. The ratio of RM to PV allows CAs to quickly assess whether an RM outlier results from a simple mispricing of the portfolio or whether it represents a genuine deviation from the RM benchmark.

5. Competent authorities' assessment

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

169. The EBA developed a dedicated questionnaire to support this assessment. The questionnaire asked CAs to provide detailed information on: (i) the level of priority assigned, based on judgemental analysis as well as qualitative and quantitative examination results; (ii) the overall assessment of the MR capital requirements produced by internal models; and (iii) the CAs' ongoing monitoring activities.

170.

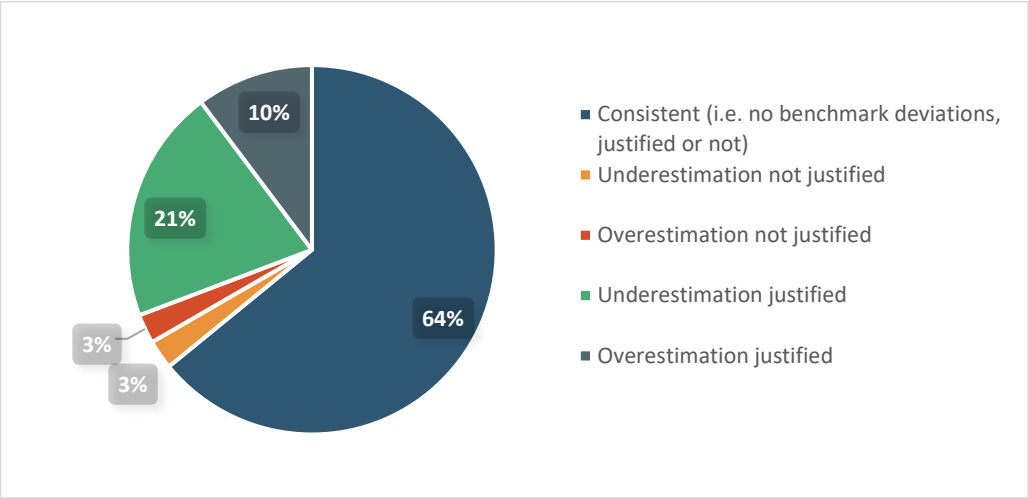
171. A total of 39 questionnaires from 12 Member States, provided by the CAs, have been considered in this assessment of the MR benchmarking exercise.

172. Regarding the level of priority assigned to the assessments, only one bank was reported as a high-priority case for intervention by the CAs. This high priority was attributed to the fact that the VaR models will fall under P2 after the implementation of the FRTB and therefore remain important for the CA.

173. Figure 14 reports the CAs' own overall assessments of the levels of own funds requirements. When it comes to benchmark deviations, justified or not, 14 banks were reported by CAs as under or overestimating MR own funds requirements, of which 12 provided justifications for this. Obviously, 'not justified' implies that further and targeted CA investigation was needed. Finally, 25 banks had consistent results (i.e., no benchmark deviations).

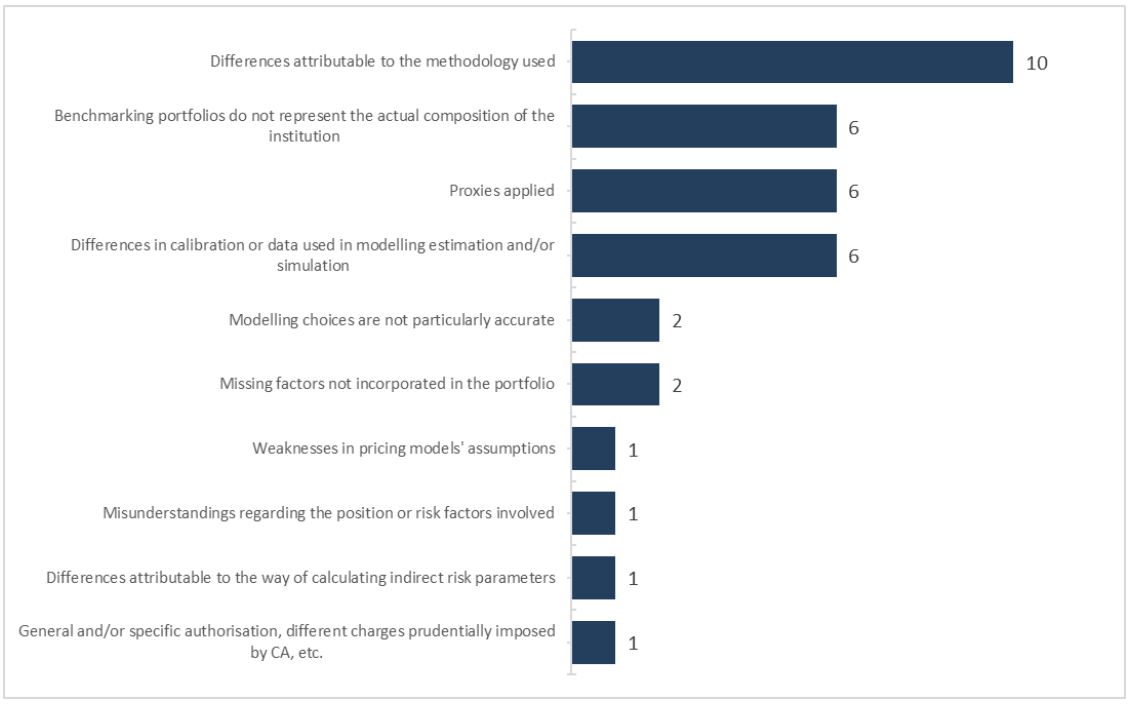
174. The CAs' assessments identified one case out of 39 of unjustified underestimation and one case of overestimation of internal model market capital requirements, both of which warrant further in-depth analysis. Naturally, the CAs—together with the joint supervisory teams, where applicable—pay close attention to potential instances of underestimation and overestimation across both portfolios and risk categories. Despite this scrutiny, both cases were classified as low priority by their respective supervisors.

Figure 14: CAs' own assessments of the levels of MR own funds requirements (BM exercise 2025)



175. The main (see Figure 15) factors and reasons that may explain possible underestimations are as follows: Differences attributable to the methodology used (10/36); Benchmarking portfolios do not represent the actual composition of the institution (6/36); Proxies applied (6/36); and Differences in calibration or data used in modelling estimation and/or simulation (6/36); These explanations, and very often a combination of these explanations, were offered by a large majority of the applicable respondents.

Figure 15: CAs' reported reasons for over-underestimation of MR own funds requirements (BM exercise 2025)



176. Overall, CAs planned or reported action in respect of 3 banks, such as the remedy of some of the model issue and continue to monitor the data quality and pricing model modules in the annual validation analyses. Of these, only one has due date for making improvements to their MR internal models, as already requested by CAs.

6. Conclusion

177. This report has presented an analysis of the variability identified in the results submitted by EU credit institutions authorised to use internal models for the determination of market risk own funds requirements.

178. It should be duly noted that, as the quantitative assessment is based on hypothetical portfolios, the report addresses potential rather than actual variations. While the analysis illustrates the degree of dispersion across these hypothetical portfolios, it does not permit direct inferences regarding under- or overestimation of market risk capital charges in real-world settings.

179. Nevertheless, the findings may assist in identifying supervisory measures aimed at achieving greater consistency and harmonisation across Member States, as well as in guiding more detailed cross-jurisdictional investigations.

180. The purpose of the benchmarking exercise was not to provide an exhaustive evaluation of all drivers of variation or of the implied capital requirements. Instead, it sought to offer supervisors additional insights into how comparability may be enhanced and how variability attributable to non-risk-based practices may be reduced.

181. It is expected that the conclusions drawn from routine supervisory model-monitoring activities will integrate the outcomes of the supervisory benchmarking exercises, thereby promoting closer alignment between competent authorities' targeted internal model reviews and the EU-wide benchmarking framework.

182. The 2025 benchmarking results indicate a general decline in IMV dispersion across all asset classes compared with the 2024 exercise. Equity, Interest Rate and Credit Spread instruments continue to show low dispersion. The FX asset class displays a substantial improvement, largely due to a clarification regarding the booking of FX forwards, which increased consistency in submissions. By contrast, the Commodities asset class continues to exhibit high dispersion, primarily driven by two instruments within a very limited sample and by the small number of submissions, both of which adversely influence the average IQD. All considered, the booking of the instruments for the 2025 exercise was quite good in general.

183. The variability of the risk measures—particularly the VaR—remains broadly consistent with that observed in the previous exercise and, overall, corresponds to the lowest dispersion recorded since the inception of the exercise. This relatively low level of dispersion reflects a combination of factors, including improved instructions, the stability of the portfolio set, and the efforts undertaken by both competent authorities and institutions in submitting revised data during the exercise. The variability of the VaR aggregated portfolios is limited: the 'all-in portfolio' IQD is 14% (it was 10% in 2023, 18% in 2023, 11% in 2022, and 16% in 2021). Aggregated by asset class, the portfolio IQD of the others is 11% (vs 9% in 2024, vs 12% in 2023,

9% in 2022 and 15% in 2021) on average and never above 14%. The standard analysis carried out in the 2019-2024 exercise – relating to the considerations of the level of approval and stress period – was repeated in the 2025 exercise as consolidated sample of information in the benchmarking

184. The 2025 Market Risk benchmarking report also presents a comparison with the SBM OFR. Overall, the SBM OFRs show an improvement in data quality and, as expected, exhibit a lower level of dispersion (8% IQD) relative to the IMA risk measures (see Table 5). The comprehensive analysis of the ASA component of the benchmarking exercise is provided in a separate dedicated report.

7. Annex 1 – Additional tables

Table 13: 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 14: 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 15: VaR cluster analysis – number of banks by range

2025 VaR cluster analysis: number of banks by range

(X = ratio with the median)

100

	Port. ID	300% < X	300% ≥ X >200%	200% ≥ X >150%	150% ≥ X >100%	100% ≥ X >50%	50% ≥ X >0	Num obs.
Equity	1001				15	16		31
	1002			1	14	12	3	30
	1003				14	11		25
	1004				13	13		26
	1005				13	14		27
	1006				13	11		24
	1007				15	12		27
	1008				11	14		25
	1009				14	12		26
	1010				14	12		26
	1011	4		1		4	6	15
	1012				13	8		21
	1013				13	13	1	27
	1014				14	12		26
	1015				11	14		25
	1016			2	9	9	5	25
	1017			9	5	13		27
	1018		1	2	6	11	1	21
	1019				14	9		23
	1020				11	8	1	20
	1021		1	1	2	3	2	9
	1101				13	14		27
	1102				11	13		24
	1103				11	13		24
	1104				13	11	2	26
	1105				13	9		22
	1106			1	11	11	3	26
	1107				13	13		26
	1108				15	15		30
	1109				14	15		29
	1110				15	10		25
Interest Rate	2001				18	21		39
	2002				16	20		36
	2003				19	21		40
	2004				18	21		39
	2005		2	1	4	5	3	15
	2006			1	14	18		33
	2007				17	21		38
	2008			1	13	18		32
	2009				16	21		37
	2010				15	21		36
	2011				16	21		37
	2012				17	21		38
	2013			1	13	19		33
	2014				14	20		34
	2015				16	18		34
	2016			1	9	15		25
	2017				12	15		27
	2018				17	22		39
	2019				18	21		39
	2020				16	16		32
	2021			1	13	19		33
	2022		1		13	18		32
	2023				13	16		29
	2024			6	9	19		34
	2201			2	12	18		32
	2202			2	12	17	1	32
	2203			2	12	18		32
	2204				17	18		35
	2205				13	20		33
	2206				17	22		39
	2207			3	13	20		36
	2208			1	11	15		27
	2209		2	2	9	14	5	32
	2210			1	14	18		33
	2211				17	21		38
	2212				14	16		30
FX	3001				15	18		33
	3002				15	18		33
	3003				13	18		31
	3004				17	15		32
	3005				15	17		32
	3006				18	16		34
	3007			3	15	14	2	34
	3008				16	13		29
	3009				15	16		31
	3010			2	13	18		33
	3011				13	11		24
	3301				15	17		32
	3302		1	1	12	17	1	32
	3303				17	16		33
	3304				16	13		29
Commodities	4001				7	7		14
	4002				7	7		14
	4003			2	4	5	2	13
	4004				6	6		12
	4005				6	6		12
	4401		1		5	3	5	14
	4402				6	7		13
	4403				5	5		10
Credit Spread	5001				10	13		23
	5002				11	12		23
	5003				10	14		24
	5004				11	11		22
	5005				10	9		19
	5006				11	11		22
	5007				11	12		23
	5008				10	13		23
	5009				11	11		22
	5010				9	13		22
	5011				12	11		23
	5012				13	12		25
	5013		4	3	2	11	1	21
	5014				11	11		22
	5015				10	13		23
	5016				11	13		24
	5017		1	6	4	11	2	24
	5018				10	12		22
	5019				12	16		28
	5020				10	16		26
	5021				11	15		26
	5022				12	15		27
	5023				12	16		28
	5024		3	1	5	11	1	21
	5025				11	16		27
	5026			1	9	11	1	22
	5027				11	15		26
	5028			4	5	11	1	21
	5029				9	14		23
	5030			1	6	5	2	14
	5031			1	9	13		23
	5032			2	7	12		21
	5033				11	14		25
	5034				11	14		25
	5501				12	12		24
	5502				9	11		20
	5503				10	12		22
	5504				10	11		21
	5505				11	12		23
	5506		1		9	13		23
	5507		2	2	3	12		19
	5508				11	16		27
	5509				13	14		27
	5510				10	13		23
	5511				10	13		23
	5512				12	13		25
	5513			1	11	12		24
	5514			1	9	14		24
	5515				7	11		18
	5516		1	1	5	11		18
	5517			3	5	11		19
	5518				10	12		22
	5519				11	15		26
	5520				6	11	1	18
	5521				8	12		20
	5522			4	4	7	2	17
CTP	6001							0
	6002							0
	6003							0
	6004							0
	6005							0
	6006							0
	6007							0
	6008							0
	6009							0
	6010							0
	6601							0
	6602							0
	6603							0
	6604							0
	6605							0
ALL-IN no-CTP	10000				8	8		16
Equity Cumulative	11000				13	14		27
IR Cumulative	12000				13	18		31
FX Cumulative	13000				17	16		33
Commodity Cumulative	14000				6	7		13
CS Cumulative	15000				7	12		19
CTP Cumulative	16000							0

Table 16: VaR statistics

EU Statistics for VaR

		Main statistics								Percentiles			
	Port. ID	Min	Max	Ave.	STDev	STDev_trunc [1]	MAD (median absolute deviation)	Coefficient of variation (STDev/Mean)	Num obs. [2]	25th	50th	75th	IQD
Equity	1001	428,488	716,899	575,765	100,922	98,886	107,075	18%	32	474,238	572,156	680,962	18%
	1002	26,651	84,707	57,687	15,455	15,455	13,459	27%	31	50,527	55,636	70,897	17%
	1003	37,508	58,088	46,914	5,730	8,508	4,545	12%	25	42,684	47,753	49,991	8%
	1004	11,515	20,155	15,455	2,176	2,761	944	14%	26	14,380	15,380	16,268	6%
	1005	265,321	412,010	335,042	37,572	41,723	20,661	11%	27	311,835	329,946	362,665	8%
	1006	4,576	8,441	6,201	779	1,274	388	13%	24	5,924	6,140	6,651	6%
	1007	33,350	61,683	47,244	6,902	8,893	6,240	15%	27	40,668	46,218	52,945	13%
	1008	11,525	18,713	14,767	1,853	2,386	802	13%	25	13,537	13,951	15,954	8%
	1009	39,943	76,949	56,655	11,562	13,190	10,755	20%	26	44,249	53,623	66,047	20%
	1010	30,552	47,536	38,642	4,921	6,560	3,842	13%	26	34,413	38,087	42,155	10%
	1011	0	151	27	42	74	8	155%	19	1	17	29	93%
	1012	6,218	12,866	10,944	1,929	2,682	550	18%	21	10,708	11,374	12,047	6%
	1013	18,143	53,579	38,073	9,734	9,734	8,421	26%	27	29,341	37,319	46,370	22%
	1014	33,681	55,900	43,567	5,733	7,273	3,021	13%	26	40,062	44,079	46,255	7%
	1015	2,362	6,212	4,455	910	992	624	20%	25	3,906	4,268	5,209	14%
	1016	77	572	331	134	135	79	41%	25	278	341	414	20%
	1017	70,606,574	181,518,035	126,523,075	42,512,048	41,879,999	37,356,302	34%	27	82,571,042	112,714,135	179,142,601	37%
	1018	2,660	40,360	19,749	8,745	11,240	4,986	44%	21	14,364	19,848	24,260	26%
	1019	238,456	372,540	302,828	35,729	76,560	22,243	12%	24	270,133	297,463	329,850	10%
	1020	140,674	436,444	303,896	76,753	87,221	42,167	25%	21	276,138	313,689	339,363	10%
	1021	56,244	1,354,523	589,447	419,097	554,100	219,822	71%	9	327,600	555,193	725,078	38%
	1101	299,244	453,571	368,389	42,642	45,634	33,141	12%	27	332,029	369,969	403,064	10%
	1102	2,695	5,178	3,891	548	788	262	14%	24	3,696	3,952	4,184	6%
	1103	2,763	5,291	4,039	725	843	525	18%	24	3,499	4,033	4,587	13%
	1104	6,172	18,105	12,467	3,196	3,425	2,014	26%	26	10,529	12,733	14,633	16%
	1105	6,000	12,869	10,676	2,191	2,713	599	21%	22	10,538	11,351	12,084	7%
	1106	3,729	33,681	18,436	7,730	8,349	5,903	42%	26	12,536	19,470	24,936	33%
	1107	44,431	81,487	64,152	9,602	11,480	7,524	15%	26	57,192	63,720	73,104	12%
	1108	409,014	745,190	562,339	102,164	95,396	102,018	18%	30	458,015	557,821	660,856	18%
	1109	399,917	663,287	541,819	93,879	91,473	95,910	17%	29	450,740	545,197	640,596	17%
	1110	43,904	88,415	63,878	12,531	19,251	9,908	20%	25	52,232	59,871	73,003	17%
Interest Rate	2001	100,332	178,629	132,664	17,105	22,948	10,589	13%	40	121,239	134,606	142,882	8%
	2002	60,671	106,620	84,624	11,930	14,285	7,963	14%	37	77,853	82,977	97,150	11%
	2003	14,864	26,531	20,364	3,197	3,016	2,515	16%	41	17,553	20,760	22,532	12%
	2004	44,467	82,660	58,625	9,193	13,005	6,415	16%	40	52,449	59,379	65,171	11%
	2005	6,675	60,407	26,859	17,147	69,886	10,510	64%	15	12,798	23,987	33,962	45%
	2006	21,249	50,635	29,100	5,688	12,253	3,117	20%	34	25,426	30,120	31,697	11%
	2007	13,485	20,523	16,462	1,672	3,418	786	10%	39	15,535	16,268	17,006	5%
	2008	23,224	52,942	30,940	6,066	15,464	3,162	20%	32	27,126	29,958	33,042	10%
	2009	8,014	16,764	11,840	1,812	3,231	764	15%	37	10,922	11,975	12,451	7%
	2010	12,632	19,977	15,497	1,590	3,009	931	10%	36	14,346	15,577	16,257	6%
	2011	12,318	22,454	17,465	2,394	4,368	1,592	14%	38	15,956	17,356	19,200	9%
	2012	16,544	25,609	20,632	2,194	4,261	966	11%	39	19,467	20,462	21,685	5%
	2013	20,654	40,506	26,345	4,732	8,833	2,117	18%	34	22,968	25,527	28,321	10%
	2014	7,908	14,273	11,952	1,465	2,655	1,057	12%	34	10,894	12,525	12,865	8%
	2015	17,205	31,609	23,583	3,950	4,229	2,686	17%	35	20,876	23,223	25,923	11%
	2016	9,768	23,778	14,208	3,487	7,322	2,011	25%	25	11,963	14,154	15,800	14%
	2017	24,771	45,690	34,276	6,205	7,980	4,756	18%	27	28,836	34,381	40,138	16%
	2018	194,002	328,598	257,098	33,310	40,913	23,055	13%	40	234,308	253,926	280,955	9%
	2019	112,213	162,483	136,688	13,119	24,336	8,858	10%	40	126,053	136,635	144,097	7%
	2020	20,321	40,308	30,006	5,542	5,897	4,902	19%	33	25,256	30,183	34,789	16%
	2021	11,005	25,069	15,183	2,954	5,268	1,135	20%	34	13,310	14,648	16,673	11%
	2022	13,551	42,131	20,984	4,949	13,659	1,862	24%	32	18,614	20,393	22,225	9%
	2023	87,759	146,284	112,611	14,918	17,896	9,231	13%	29	102,108	111,369	120,310	8%
	2024	23,205	53,511	34,969	9,673	15,119	4,582	28%	35	28,131	33,210	40,225	18%
	2201	11,551	26,844	15,342	3,379	5,828	1,669	22%	33	13,016	15,338	16,915	13%
	2202	16,978	71,705	42,158	10,185	20,597	4,256	24%	32	36,989	40,664	45,570	10%
	2203	28,935	68,050	40,573	8,271	20,046	2,259	20%	32	36,436	39,209	42,571	8%
	2204	113,286	190,000	151,019	15,619	20,983	7,856	10%	36	141,075	151,639	158,012	6%
	2205	8,984	14,769	12,180	1,593	3,443	1,099	13%	34	11,042	12,134	13,853	11%
	2206	309,564	481,459	387,338	44,460	74,118	28,037	12%	40	359,614	386,452	422,202	8%
	2207	43,620	137,967	77,165	21,824	33,700	12,663	28%	37	62,782	77,224	87,369	16%
	2208	15,744	46,446	30,499	8,503	9,826	5,570	28%	27	25,127	29,746	38,573	21%
	2209	2,737	21,181	8,005	4,070	9,432	2,122	51%	33	5,758	8,052	9,573	25%
	2210	39,296	114,464	65,883	13,141	46,435	5,429	20%	33	59,018	65,145	68,154	7%
	2211	107,065	150,170	126,431	10,957	23,230	7,367	9%	38	117,008	127,433	131,272	6%
	2212	80,809	170,269	131,725	20,678	26,825	14,779	16%	30	116,083	132,001	145,642	11%
FX	3001	312,260	549,764	424,543	67,149	76,521	45,368	16%	34	381,750	421,682	476,646	11%
	3002	200,354	342,284	267,581	35,645	45,852	22,370	13%	34	245,902	272,869	290,641	8%
	3003	303,418	563,042	418,322	67,834	76,030	40,236	16%	32	376,555	419,315	461,142	10%
	3004	124,225	276,815	201,008	39,329	41,995	18,333	20%	33	179,614	206,635	226,432	12%
	3005	214,265	445,555	313,917	57,381	72,746	34,534	18%	33	278,228	324,332	337,946	10%
	3006	306,694	592,818	447,947	80,238	77,321	54,647	18%	35	388,981	439,339	494,153	12%
	3007	19,026	76,789	49,220	15,411	14,866	9,564	31%	35	39,556	48,416	58,500	19%
	3008	321,951	508,284	426,412	45,758	60,341	28,187	11%	30	396,397	425,852	450,433	6%
	3009	166,758	384,210	274,644	45,655	61,289	26,754	17%	32	254,301	284,893	302,960	9%
	3010	8,165	26,811	14,612	4,757	7,795	3,110	33%	34	10,938	14,877	17,036	22%
	3011	566,359	728,480	657,386	48,137	81,929	36,210	7%	24	625,211	655,378	696,336	5%
	3301	310,182	417,393	354,551	26,726	44,408	19,962	8%	33	328,772	357,777	371,722	6%
	3302	60,427	331,483	127,985	47,433	126,290	16,094	37%	33	112,312	125,978	139,013	11%
	3303	104,350	254,546	187,862	43,629	43,629	31,934	23%	34	160,735	189,089	224,603	17%
	3304	336,290	517,677	428,017	44,852	59,676	26,708	11%	30	398,970	425,465	452,386	6%

Commodities	4001	732,571	1,331,709	1,035,514	177,492	307,974	87,936	17%	14	981,803	1,039,304	1,150,723	8%
	4002	916,742	1,493,532	1,103,337	175,472	315,520	61,956	16%	14	984,287	1,039,918	1,156,973	8%
	4003	17,790	103,710	56,340	24,377	24,377	14,505	43%	13	40,926	56,424	67,125	24%
	4004	226,878	310,764	265,025	25,356	37,260	20,632	10%	12	243,323	264,250	282,285	7%
	4005	849,652	1,492,010	1,261,115	191,987	374,370	103,264	15%	12	1,177,796	1,300,192	1,404,557	9%
	4401	3,636	94,618	39,280	24,513	40,872	14,031	62%	14	19,275	45,062	53,292	47%
	4402	237,782	381,644	307,180	44,581	44,581	30,860	15%	13	273,251	299,399	330,259	9%
	4403	751,290	1,396,589	1,150,269	183,395	329,415	97,570	16%	10	1,078,991	1,127,515	1,270,462	8%
Credit Spread	5001	1,420	2,446	1,949	305	355	247	16%	23	1,717	1,911	2,279	14%
	5002	3,247	6,892	4,941	1,109	1,109	854	23%	23	3,953	4,707	6,002	21%
	5003	2,032	4,346	3,107	751	732	627	24%	24	2,552	3,040	3,918	21%
	5004	8,337	15,796	12,204	2,545	2,385	2,148	21%	22	9,183	12,808	14,920	24%
	5005	11,088	16,983	14,232	1,907	2,141	1,571	13%	19	12,523	14,033	16,000	12%
	5006	1,019	2,225	1,538	350	350	258	23%	22	1,250	1,528	1,781	18%
	5007	6,356	10,229	8,104	986	1,197	546	12%	23	7,355	8,012	8,584	8%
	5008	1,860	3,613	2,457	464	805	309	19%	23	2,121	2,493	2,828	14%
	5009	5,199	7,839	6,620	641	853	409	10%	22	6,347	6,526	7,003	5%
	5010	1,376	2,684	1,919	370	535	173	19%	22	1,728	1,936	2,090	9%
	5011	3,897	7,824	5,735	1,094	1,231	688	19%	23	4,992	5,609	6,385	12%
	5012	5,163	9,839	7,853	1,427	1,395	1,252	18%	25	6,573	7,943	8,955	15%
	5013	386	5,040	2,089	1,296	1,702	506	62%	21	1,101	1,742	3,257	49%
	5014	1,869	4,990	3,529	807	1,322	305	23%	22	2,981	3,734	3,979	14%
	5015	1,788	4,905	3,296	700	798	483	21%	23	2,665	3,335	3,817	18%
	5016	5,390	12,107	8,867	1,670	1,839	1,104	19%	24	7,613	8,692	10,134	14%
	5017	15,397	68,524	37,262	15,863	25,008	9,112	43%	24	25,918	33,903	53,065	34%
	5018	15,948	32,842	22,911	4,500	4,327	2,972	20%	22	19,141	24,192	25,766	15%
	5019	5,784	12,670	8,753	1,964	2,324	1,529	22%	28	7,365	8,575	10,085	16%
	5020	7,344	15,197	10,918	2,088	2,834	1,375	19%	26	9,248	11,240	12,144	14%
	5021	11,822	19,873	15,758	2,197	3,155	1,839	14%	26	13,726	16,017	17,297	12%
	5022	17,072	35,923	25,461	5,348	6,410	3,501	21%	27	21,328	26,212	30,767	18%
	5023	29,333	55,845	37,581	6,284	13,340	3,409	17%	28	33,355	38,546	39,698	9%
	5024	2,101	12,471	6,216	2,970	3,793	1,061	48%	21	4,518	5,828	6,426	17%
	5025	29,516	52,176	36,871	5,459	9,029	3,718	15%	27	32,499	36,762	41,109	12%
	5026	3,990	15,412	8,371	3,300	3,656	2,759	39%	22	5,331	8,593	10,872	34%
	5027	39,007	61,330	47,032	6,204	9,428	3,836	13%	26	41,843	46,330	52,269	11%
	5028	4,446	24,601	13,207	5,916	6,350	3,880	45%	21	8,253	13,916	14,748	28%
	5029	34,721	67,755	50,601	10,580	12,437	7,396	21%	23	42,434	49,904	61,052	18%
	5030	24,381	88,563	52,923	19,176	21,100	13,945	36%	14	37,832	56,707	66,563	28%
	5031	10,554	23,958	15,126	3,587	5,803	2,393	24%	23	12,323	15,176	16,600	15%
	5032	33,299	81,407	50,402	13,451	16,626	7,413	27%	21	43,046	49,524	57,094	14%
	5033	10,717	21,013	16,181	2,883	2,985	2,471	18%	25	13,600	16,257	18,374	15%
	5034	6,251	11,819	8,744	1,394	1,546	924	16%	25	7,748	9,021	9,471	10%
	5501	2,987	6,900	4,826	1,211	1,153	993	25%	24	3,624	4,989	5,886	24%
	5502	17,077	31,813	24,622	4,673	4,673	4,562	19%	20	20,128	24,937	27,921	16%
	5503	3,370	6,048	4,821	689	850	523	14%	22	4,318	4,924	5,488	12%
	5504	7,503	15,063	11,706	2,401	2,190	2,030	21%	21	9,668	11,806	13,436	16%
	5505	3,061	4,711	3,876	428	428	280	11%	23	3,594	3,865	4,175	7%
	5506	4,073	12,208	5,810	1,819	3,302	674	31%	23	4,634	5,605	6,045	13%
	5507	12,939	50,694	23,815	11,934	16,665	4,362	50%	19	15,610	20,910	30,525	32%
	5508	29,251	57,876	40,507	7,494	9,986	5,139	19%	27	34,022	39,875	44,334	13%
	5509	3,839	8,105	6,093	1,184	1,277	616	19%	27	5,277	6,201	6,741	12%
	5510	4,945	11,397	8,367	1,673	2,086	932	20%	23	7,414	8,971	9,200	11%
	5511	16,817	34,524	24,228	5,244	6,479	3,508	22%	23	20,314	23,899	29,090	18%
	5512	8,490	16,743	12,218	2,596	2,530	2,239	21%	25	9,877	12,208	14,396	19%
	5513	1,318	3,220	2,190	609	566	565	28%	24	1,569	2,133	2,690	26%
	5514	8,656	23,498	12,557	2,901	12,086	1,024	23%	24	11,244	12,364	13,273	8%
	5515	23,932	46,547	31,923	5,314	10,376	2,731	17%	18	27,391	33,550	33,895	11%
	5516	9,354	38,806	17,523	6,730	12,076	3,284	38%	18	13,380	17,156	20,212	20%
	5517	25,123	84,028	44,426	14,715	21,579	4,507	33%	19	35,964	42,665	45,732	12%
	5518	111,200	147,697	126,474	10,278	28,221	6,304	8%	22	118,712	125,319	131,513	5%
	5519	94,681	157,198	116,251	16,746	32,351	9,677	14%	26	103,355	115,799	130,803	12%
	5520	6,919	25,624	16,986	4,142	6,980	2,578	24%	18	14,614	17,815	19,771	15%
	5521	89,203	145,564	112,978	14,152	33,209	11,312	13%	20	102,604	115,345	124,554	10%
	5522	9,858	65,588	39,600	16,618	19,218	11,018	42%	17	26,624	37,470	50,164	31%
CTP	6001								3				
	6002								3				
	6003								3				
	6004								3				
	6005								3				
	6006								3				
	6007								3				
	6008								3				
	6009								3				
	6010								3				
	6601								3				
	6602								3				
	6603								3				
	6604								3				
	6605								3				
ALL-IN no-CTP	10000	407,865	753,592	600,767	110,371	110,371	94,837	18%	16	530,232	597,910	704,288	14%
Equity Cumulative	11000	248,234	416,585	325,622	40,793	44,569	26,741	13%	27	291,643	334,108	359,135	10%
IR Cumulative	12000	173,019	398,986	315,599	60,457	91,453	40,329	19%	31	282,572	317,776	370,660	13%
FX Cumulative	13000	404,070	612,169	498,313	56,602	57,885	46,105	11%	34	453,174	499,283	535,638	8%
Commodity Cumulative	14000	240,198	372,774	308,573	41,541	41,541	30,851	14%	13	284,432	291,164	327,263	7%
CS Cumulative	15000	115,118	195,765	147,957	21,192	41,046	12,244	14%	19	132,178	149,900	166,732	12%
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.*

Table 17: sVaR statistics

EU Statistics for SVaR

		Main statistics								Percentiles			
	Port. ID	Min	Max	Ave.	STDev	STDev_trunc[1]	MAD (median absolute deviation)	Coefficient of variation (STDev/Mean)	Num obs.[2]	25th	50th	75th	IQD
Equity	1001	819,902	1,461,735	1,129,192	160,278	206,035	103,989	14%	29	1,010,333	1,129,780	1,217,581	9%
	1002	37,539	76,941	60,677	12,471	11,929	10,599	21%	32	51,913	61,359	72,058	16%
	1003	35,963	90,131	64,957	17,607	17,007	16,201	27%	29	48,259	63,524	82,789	26%
	1004	10,203	43,485	26,635	9,217	10,482	8,572	35%	28	19,307	27,027	35,531	30%
	1005	444,761	2,239,165	1,356,817	506,881	506,881	458,415	37%	28	881,357	1,381,739	1,834,277	35%
	1006	2,352	29,876	16,532	8,825	9,403	7,196	53%	26	9,610	14,701	25,105	45%
	1007	50,336	162,749	114,964	34,487	35,619	31,231	30%	28	78,392	117,522	149,411	31%
	1008	45,913	98,890	71,108	15,058	19,318	10,692	21%	26	56,899	68,864	81,429	18%
	1009	32,044	72,114	52,843	12,239	11,419	10,533	23%	29	43,225	49,799	65,355	20%
	1010	30,176	73,341	51,845	13,959	13,551	12,137	27%	28	39,647	47,291	66,116	25%
	1011	0	210	42	63	117	12	150%	22	1	16	38	95%
	1012	4,474	20,955	13,003	5,444	5,129	4,729	42%	26	7,009	13,258	17,818	44%
	1013	20,829	46,004	34,061	7,659	7,344	7,184	23%	28	27,791	34,290	41,540	20%
	1014	33,820	87,549	61,881	16,968	15,951	14,905	27%	29	46,885	56,309	78,603	25%
	1015	5,180	18,559	11,623	4,663	4,566	4,379	40%	26	7,028	9,872	16,135	39%
	1016	110	1,139	628	334	347	283	53%	25	381	668	933	42%
	1017	44,850,538	232,038,633	145,427,420	62,166,573	60,890,633	44,413,925	43%	27	68,988,766	163,364,865	206,933,178	50%
	1018	4,080	124,435	54,181	38,891	40,793	23,040	72%	21	22,126	47,266	75,467	55%
	1019	110,608	520,901	327,809	129,700	138,143	44,679	40%	30	134,427	385,436	417,556	51%
	1020	126,737	549,222	329,375	141,759	138,063	69,579	43%	24	144,465	383,056	429,708	50%
	1021	152,815	1,077,974	615,115	302,417	302,417	151,391	49%	10	523,691	588,165	826,473	22%
	1101	476,630	2,321,992	1,422,450	524,277	524,277	514,484	37%	28	932,899	1,405,101	1,923,652	35%
	1102	2,859	7,806	5,574	1,385	1,407	1,110	25%	27	4,524	5,644	6,751	20%
	1103	4,078	15,308	9,407	3,743	3,542	3,197	40%	27	6,036	10,579	12,232	34%
	1104	5,809	22,987	14,594	4,642	4,847	3,914	32%	27	11,279	14,831	18,255	24%
	1105	4,450	20,932	12,820	5,410	5,090	4,745	42%	26	6,612	13,144	17,369	45%
	1106	4,234	37,293	17,810	8,802	12,047	6,635	49%	25	10,540	19,126	22,383	36%
	1107	103,744	264,845	195,716	51,319	59,240	37,125	26%	25	143,730	203,932	237,198	25%
	1108	783,116	1,394,283	1,076,730	154,898	182,226	107,844	14%	27	964,984	1,084,121	1,164,984	9%
	1109	764,396	1,359,239	1,059,743	152,495	181,477	112,265	14%	27	948,688	1,068,203	1,159,396	10%
	1110	26,763	66,672	48,819	12,552	12,552	10,889	26%	28	39,667	49,031	60,689	21%
Interest Rate	2001	110,597	280,120	192,691	39,597	45,097	22,010	21%	38	164,127	197,248	215,744	14%
	2002	95,639	176,608	134,416	22,929	25,885	14,849	17%	35	119,166	131,398	149,473	11%
	2003	10,827	47,299	30,893	9,233	9,810	4,579	30%	38	26,807	30,222	35,713	14%
	2004	17,528	193,022	88,877	39,419	48,358	18,529	44%	38	72,746	97,000	107,085	19%
	2005	12,000	106,576	51,168	33,110	76,726	20,690	65%	14	26,899	39,809	84,628	52%
	2006	32,658	74,777	53,549	9,951	11,094	6,462	19%	32	46,595	52,809	59,981	13%
	2007	18,467	34,301	26,213	4,130	4,522	3,187	16%	36	23,042	26,589	28,933	11%
	2008	28,739	151,092	69,965	35,178	50,233	11,942	50%	31	46,773	59,286	80,287	26%
	2009	9,479	45,870	21,903	8,756	14,663	2,502	40%	34	17,339	19,921	22,110	12%
	2010	19,367	57,173	29,911	8,336	15,224	4,569	28%	35	23,883	28,812	33,020	16%
	2011	18,008	40,329	28,644	5,154	6,310	2,317	18%	37	25,983	28,349	32,414	11%
	2012	22,417	43,587	32,490	5,197	5,746	4,271	16%	36	28,675	32,975	36,275	12%
	2013	15,954	73,260	39,536	14,772	19,165	7,823	37%	35	29,341	36,410	46,482	23%
	2014	14,060	59,299	24,074	7,736	51,811	3,006	32%	34	19,908	23,094	25,714	13%
	2015	16,807	65,507	35,923	11,269	15,116	6,833	31%	34	27,336	39,003	41,001	20%
	2016	6,401	73,299	27,131	17,382	25,500	6,534	64%	25	17,679	23,669	30,300	26%
	2017	19,452	166,894	75,915	35,925	50,398	18,312	47%	25	51,365	71,681	99,599	32%
	2018	290,055	510,170	414,292	61,694	69,296	34,415	15%	37	375,610	402,225	482,110	12%
	2019	108,685	293,512	205,898	46,503	46,503	35,669	23%	39	174,614	200,760	246,049	17%
	2020	33,633	280,705	138,953	69,938	85,089	55,248	50%	33	96,397	136,477	192,308	33%
	2021	2,871	200,200	95,199	56,864	67,050	36,594	60%	37	52,811	87,239	148,115	47%
	2022	20,956	103,372	49,409	24,511	37,653	7,993	50%	30	32,644	40,907	52,752	24%
	2023	122,506	336,165	226,349	57,672	57,672	33,757	26%	31	173,747	237,602	257,177	19%
	2024	30,475	94,889	51,638	13,502	29,181	9,330	26%	34	41,000	51,404	60,128	19%
	2201	18,624	60,999	39,504	11,441	12,403	7,209	29%	34	32,441	42,065	48,135	19%
	2202	21,812	192,146	99,083	39,334	50,037	19,488	40%	32	79,000	97,160	120,816	21%
	2203	35,370	236,887	107,465	58,681	87,578	17,848	55%	31	74,263	96,320	117,337	22%
	2204	160,395	338,421	260,787	44,435	52,889	26,035	17%	36	232,201	265,119	286,992	11%
	2205	10,199	29,791	19,448	4,205	6,362	2,487	22%	36	16,535	19,644	21,818	14%
	2206	411,211	790,980	600,259	100,872	106,189	66,771	17%	38	529,715	590,780	648,275	10%
	2207	63,603	215,217	121,039	33,663	49,407	20,578	28%	36	97,831	119,683	139,660	18%
	2208	25,481	192,112	91,838	56,546	68,562	36,532	62%	27	42,749	81,637	137,471	53%
	2209	3,044	45,619	18,009	10,905	19,057	7,312	61%	33	8,670	19,482	22,557	44%
	2210	68,896	340,810	136,185	79,654	124,539	17,410	59%	32	87,474	98,929	156,448	28%
	2211	130,012	275,302	203,599	41,175	40,558	35,130	20%	38	171,621	194,356	238,394	16%
	2212	123,902	396,194	242,017	54,997	75,970	22,563	23%	30	220,131	246,522	264,947	9%
FX	3001	351,398	1,078,162	700,290	207,848	200,605	176,625	30%	37	517,062	691,703	853,512	25%
	3002	422,187	1,094,274	791,872	186,971	205,993	105,378	24%	35	585,754	815,360	948,173	24%
	3003	288,368	1,085,998	694,406	219,156	202,699	171,380	32%	35	520,199	691,608	862,989	25%
	3004	184,422	427,643	322,515	70,521	84,034	32,601	22%	31	260,575	341,776	367,919	17%
	3005	399,961	755,579	596,415	97,047	105,380	42,699	16%	33	570,534	599,304	652,454	7%
	3006	322,826	1,041,387	684,535	214,804	208,726	182,726	31%	35	560,683	658,297	882,178	22%
	3007	24,211	208,292	103,313	45,727	58,063	31,713	44%	33	74,965	106,290	133,963	28%
	3008	427,024	1,072,470	831,505	197,419	236,053	111,405	24%	30	586,199	892,043	966,115	24%
	3009	260,441	1,359,670	762,354	308,928	300,782	200,971	41%	35	446,258	861,215	999,599	38%
	3010	9,508	108,829	35,227	20,731	38,381	13,985	59%	35	15,664	36,029	45,233	49%
	3011	568,325	2,073,243	1,263,266	459,585	447,302	362,039	36%	28	755,641	1,379,731	1,648,214	37%
	3301	418,096	1,192,841	820,231	204,494	215,675	155,987	25%	35	659,459	823,902	968,698	19%
	3302	58,591	348,242	188,153	66,890	151,784	43,560	36%	32	129,995	213,617	236,180	29%
	3303	201,277	412,336	315,242	64,070	69,318	44,157	20%	33	262,480	322,228	368,536	17%
	3304	410,126	1,189,727	820,819	231,281	240,516	151,226	28%	33	588,633	887,492	968,445	24%

Commodities	4001	696,203	2,208,211	1,707,510	412,652	588,475	210,128	24%	14	1,581,632	1,742,016	1,973,580	11%
	4002	994,464	2,378,316	1,878,655	463,420	652,238	194,911	25%	14	1,785,784	1,963,260	2,175,606	10%
	4003	22,019	180,039	80,365	50,122	60,654	27,362	62%	12	43,641	64,163	124,334	48%
	4004	206,102	590,893	422,719	109,684	153,666	85,910	26%	12	341,221	443,979	483,149	17%
	4005	782,265	2,708,401	1,925,355	610,089	757,684	382,103	32%	12	1,661,673	1,904,602	2,411,836	18%
	4401	9,380	89,508	45,866	24,345	61,224	21,106	53%	14	27,662	53,733	59,294	36%
	4402	225,491	790,378	506,442	147,715	172,926	69,285	29%	12	430,939	507,963	575,978	14%
	4403	1,537,888	2,517,780	2,057,566	276,459	513,832	179,257	13%	10	1,895,773	2,023,727	2,279,984	9%
Credit Spread	5001	2,368	17,754	7,706	5,141	6,177	2,687	67%	22	3,187	7,945	12,536	59%
	5002	4,178	24,204	12,322	5,996	6,917	5,746	49%	23	6,375	13,223	18,249	48%
	5003	3,418	21,977	10,094	6,353	10,750	1,399	63%	20	5,387	7,824	16,303	50%
	5004	9,187	69,868	28,470	15,764	25,472	4,424	55%	19	19,727	24,374	33,586	26%
	5005	9,186	64,954	29,865	12,665	25,439	7,471	42%	18	22,784	31,448	36,161	23%
	5006	1,612	15,113	6,169	4,686	5,863	884	76%	20	2,756	4,102	9,289	54%
	5007	9,211	33,720	19,698	8,361	9,405	4,327	42%	23	13,406	17,041	28,760	36%
	5008	1,924	17,137	7,530	4,819	5,824	1,761	64%	23	3,830	5,531	12,139	52%
	5009	6,492	67,243	23,208	16,824	28,737	6,163	73%	21	12,909	20,216	29,531	39%
	5010	2,074	23,752	9,667	7,848	9,525	3,109	81%	24	3,124	6,222	16,696	68%
	5011	3,888	26,350	12,107	7,020	8,540	3,196	58%	23	7,834	9,864	16,052	34%
	5012	4,158	38,559	14,889	8,779	13,052	4,001	59%	23	10,244	12,891	17,431	26%
	5013	1,803	17,376	5,833	3,847	8,909	2,287	66%	21	2,905	5,819	7,316	43%
	5014	218	19,368	7,749	4,855	9,287	1,993	63%	24	4,833	7,284	9,740	34%
	5015	276	19,294	8,538	5,950	6,990	3,583	70%	24	4,391	7,756	12,443	48%
	5016	10,125	53,595	25,888	12,561	14,353	9,311	49%	23	13,587	24,891	35,524	45%
	5017	10,252	111,429	65,237	32,632	34,111	30,899	50%	24	40,263	61,865	99,579	42%
	5018	18,423	88,345	50,368	16,776	21,642	10,718	33%	20	37,222	54,299	60,062	23%
	5019	7,042	30,216	18,056	6,144	7,884	5,323	34%	26	12,456	19,325	23,638	31%
	5020	8,478	46,621	24,871	11,466	11,824	6,649	46%	28	17,207	23,111	35,180	34%
	5021	14,759	50,655	27,760	10,444	14,779	4,746	38%	25	21,249	26,611	34,259	23%
	5022	12,608	104,706	53,883	24,371	47,104	17,570	45%	28	33,672	49,485	70,997	36%
	5023	29,404	96,967	58,029	16,066	27,970	8,545	28%	27	46,214	59,425	66,969	18%
	5024	5,049	77,358	28,624	25,095	30,627	7,155	88%	20	10,089	19,221	55,416	69%
	5025	35,719	58,326	48,352	5,307	8,857	2,883	11%	25	46,120	49,039	51,382	5%
	5026	5,147	50,467	23,141	15,601	17,852	8,231	67%	21	11,640	17,386	39,682	55%
	5027	56,494	111,449	78,123	15,173	25,323	11,853	19%	28	66,695	76,569	88,865	14%
	5028	12,396	108,413	48,654	27,316	35,472	19,204	56%	20	28,522	49,661	69,055	42%
	5029	30,472	212,328	119,840	52,276	60,356	32,731	44%	24	81,258	122,569	162,577	33%
	5030	22,811	218,773	105,878	70,828	80,682	52,105	67%	14	42,436	95,480	164,751	59%
	5031	14,763	66,241	35,893	14,896	28,331	10,957	42%	22	25,238	39,218	42,071	25%
	5032	40,529	188,510	95,467	43,160	50,599	33,039	45%	22	61,416	94,504	128,555	35%
	5033	12,006	50,887	26,558	10,740	16,920	6,027	40%	23	16,600	26,153	30,987	30%
	5034	7,584	27,211	16,498	5,639	7,945	4,489	34%	24	12,576	16,620	20,591	24%
	5501	4,099	30,160	12,625	7,086	10,979	6,415	56%	23	5,693	13,512	17,804	52%
	5502	16,936	142,362	58,873	31,546	50,686	9,245	54%	19	41,957	57,512	61,955	19%
	5503	4,413	17,015	10,699	3,810	3,852	3,433	36%	24	8,331	9,999	14,102	26%
	5504	8,708	65,469	28,488	16,082	25,489	7,474	57%	18	17,571	27,579	33,499	31%
	5505	3,868	31,861	12,592	7,892	10,996	4,805	63%	21	8,317	11,038	16,305	32%
	5506	7,790	52,894	23,499	11,755	18,691	6,624	50%	24	16,084	20,815	30,606	31%
	5507	9,771	110,675	50,261	28,018	34,371	21,009	56%	20	27,570	50,042	55,223	33%
	5508	19,437	156,593	82,371	33,193	57,973	18,623	40%	28	60,880	84,339	96,394	23%
	5509	5,347	20,661	11,992	4,722	6,474	3,955	39%	27	7,823	11,572	15,689	33%
	5510	7,192	39,951	20,076	8,681	9,902	6,291	43%	24	13,137	20,184	24,290	30%
	5511	11,866	104,759	49,963	24,082	47,910	18,484	48%	24	29,469	47,466	67,331	39%
	5512	15,422	66,464	33,596	15,425	17,047	11,980	46%	24	19,832	35,488	45,153	39%
	5513	2,807	18,175	8,160	5,002	9,146	2,285	61%	19	4,310	9,394	13,679	52%
	5514	15,655	67,326	27,248	12,937	22,682	3,272	48%	24	20,175	23,391	28,886	18%
	5515	19,916	188,324	92,882	58,174	57,104	33,064	63%	20	46,487	84,907	149,035	52%
	5516	12,694	88,305	38,554	24,102	34,690	11,917	63%	18	20,678	32,305	54,338	45%
	5517	20,653	194,547	100,478	57,479	88,505	40,461	57%	18	56,530	99,779	156,101	47%
	5518	120,571	273,022	205,048	44,524	57,582	39,037	22%	23	163,633	200,314	244,602	20%
	5519	113,831	230,826	172,906	32,085	45,811	17,339	19%	28	151,206	171,687	190,921	12%
	5520	18,597	178,244	86,401	55,765	67,369	35,981	65%	20	40,103	71,749	143,819	56%
	5521	129,765	307,731	200,475	52,117	59,589	41,314	26%	21	161,104	212,594	220,100	15%
	5522	19,366	224,644	92,339	55,551	89,193	42,891	60%	17	45,838	88,913	128,560	47%
CTP	6001								3				
	6002								3				
	6003								3				
	6004								3				
	6005								3				
	6006								3				
	6007								3				
	6008								3				
	6009								3				
	6010								3				
	6601								3				
	6602								3				
	6603								3				
	6604								3				
	6605								3				
ALL-IN no-CTP	10000	621,474	1,706,420	1,146,659	329,818	428,581	294,135	29%	15	876,791	1,255,664	1,391,511	23%
Equity Cumulative	11000	283,977	1,289,447	715,220	308,216	302,294	233,310	43%	29	355,374	788,093	941,310	45%
IR Cumulative	12000	326,596	779,544	550,187	123,420	125,062	80,318	22%	32	486,505	533,000	647,395	14%
FX Cumulative	13000	552,543	1,525,819	1,036,914	279,326	291,637	179,710	27%	33	742,348	1,108,450	1,262,855	26%
Commodity Cumulative	14000	224,804	856,672	532,673	174,135	174,135	73,134	33%	13	454,498	527,631	563,369	11%
CS Cumulative	15000	169,350	353,139	248,819	48,298	81,471	39,194	19%	19	220,299	246,581	284,359	13%
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.*

Table 18: P&L VaR statistics

EU Statistics for PnL VaR

		Main statistics								Percentiles			
	Port. ID	Min	Max	Ave.	STDev	STDev_trunc[1]	MAD (median absolute deviation)	Coefficient of variation (STDev/Mean)	Num obs.[2]	25th	50th	75th	IQD
Equity	1001	443,879	705,400	579,451	65,717	248,514	3,773	11%	20	561,534	601,610	603,597	4%
	1002	30,560	69,662	58,053	9,437	26,446	70	16%	19	60,201	60,267	60,745	0%
	1003	25,465	76,195	49,299	9,479	22,436	1,294	19%	18	48,080	49,386	50,667	3%
	1004	6,445	17,337	13,804	2,875	6,826	1,312	21%	18	13,440	14,254	15,567	7%
	1005	267,197	364,329	312,388	23,532	155,533	10,359	8%	18	301,290	319,517	319,582	3%
	1006	4,182	7,603	5,823	778	2,560	111	13%	17	5,466	5,572	6,160	6%
	1007	35,366	44,279	39,623	2,339	16,468	298	6%	18	39,013	39,481	39,530	1%
	1008	12,893	18,251	14,180	1,804	8,351	26	13%	18	13,217	13,238	14,783	6%
	1009	30,409	68,850	58,622	7,583	20,793	577	13%	18	59,094	59,898	60,247	1%
	1010	20,577	48,375	39,728	6,480	17,738	1,921	16%	18	39,360	42,075	43,202	5%
	1011	0	916	107	261	672	14	245%	12	0	22	44	100%
	1012	1,582	16,896	4,449	3,227	16,831	540	73%	18	3,187	3,800	4,268	15%
	1013	21,504	50,945	43,966	6,419	16,652	2,233	15%	18	42,250	44,343	47,552	6%
	1014	25,366	56,481	46,203	7,428	22,274	986	16%	18	46,882	48,967	49,335	3%
	1015	3,096	6,195	4,255	804	4,206	417	19%	17	3,735	4,213	4,737	12%
	1016	105	1,313	431	264	639	76	61%	17	335	410	464	16%
	1017	868,476	145,121,302	73,651,314	71,813,377	71,813,377	62,626,288	98%	11	1,046,655	82,495,014	144,370,146	99%
	1018	11,755	52,404	25,313	13,845	29,916	8,755	55%	14	13,409	22,470	31,085	40%
	1019	120,382	182,466	150,152	16,711	20,775	7,880	11%	18	141,764	152,438	157,523	5%
	1020	67,085	636,468	246,224	114,340	317,298	25,478	46%	16	205,318	235,605	254,859	11%
	1021	356,079	2,056,850	1,083,249	700,518	700,518	426,344	65%	6	535,480	872,124	1,806,839	54%
	1101	291,869	414,405	347,333	29,706	156,775	14,535	9%	17	334,050	356,067	356,269	3%
	1102	2,069	4,949	3,761	603	1,721	212	16%	18	3,544	3,819	3,948	5%
	1103	2,739	5,358	3,892	763	5,006	499	20%	16	3,417	3,917	4,281	11%
	1104	4,750	23,702	14,706	4,452	5,912	1,784	30%	18	13,316	15,834	16,343	10%
	1105	1,582	16,620	4,541	3,188	16,787	710	70%	18	3,189	4,016	4,885	21%
	1106	458	23,520	7,157	5,746	14,168	1,842	80%	17	4,100	6,472	7,240	28%
	1107	45,034	190,414	70,618	43,356	130,555	4,156	61%	18	54,225	56,689	61,945	7%
	1108	429,260	698,038	561,334	67,712	253,944	9,666	12%	18	525,512	591,179	594,897	6%
	1109	65,481	673,949	516,422	129,730	253,405	11,804	25%	18	493,227	572,012	573,600	8%
	1110	13,958	76,438	59,718	16,271	28,625	234	27%	17	63,681	65,486	65,630	2%
Interest Rate	2001	71,701	170,549	132,728	17,510	76,871	5,640	13%	25	127,961	133,639	139,275	4%
	2002	24,527	105,435	75,061	18,665	51,384	10,721	25%	25	68,095	76,778	87,369	12%
	2003	17,524	24,692	21,134	2,077	15,063	1,234	10%	24	19,829	21,645	22,301	6%
	2004	25,333	83,039	58,611	11,010	35,340	5,342	19%	25	55,244	58,271	64,495	8%
	2005	11,247	30,790	19,411	6,090	80,456	4,263	31%	11	14,250	18,539	25,038	27%
	2006	18,869	37,889	29,026	4,457	17,241	2,352	15%	21	26,352	29,118	30,976	8%
	2007	11,226	19,234	15,323	1,857	13,476	1,227	12%	25	13,877	15,639	16,400	8%
	2008	15,122	35,794	28,259	4,725	13,920	2,517	17%	21	26,014	29,756	31,424	9%
	2009	10,350	24,097	12,571	2,643	7,922	545	21%	25	11,434	11,943	12,703	5%
	2010	13,491	23,886	16,391	2,346	11,649	1,345	14%	25	14,708	16,261	17,162	8%
	2011	14,423	32,742	17,730	4,300	11,542	962	24%	25	15,542	16,530	17,250	5%
	2012	12,725	23,811	18,995	2,567	16,461	1,894	14%	25	17,260	19,179	20,933	10%
	2013	5,158	55,799	27,738	9,454	17,113	1,546	34%	24	24,352	26,285	28,675	8%
	2014	11,037	19,211	13,003	1,669	13,348	774	13%	23	11,873	12,874	13,537	7%
	2015	4,076	34,291	22,499	5,906	20,628	1,830	26%	22	19,812	22,857	23,911	9%
	2016	11,210	42,406	18,174	10,660	15,270	1,817	59%	16	11,982	14,373	16,090	15%
	2017	13,980	65,828	35,591	11,881	26,514	5,457	33%	16	28,463	37,576	40,963	18%
	2018	18,989	301,493	227,834	55,670	178,980	30,799	24%	25	202,056	232,599	270,848	15%
	2019	102,765	159,280	132,022	14,916	83,716	9,448	11%	25	121,077	133,793	140,798	8%
	2020	21,521	68,224	31,383	8,972	19,342	3,141	29%	23	25,855	30,043	33,102	12%
	2021	11,790	34,235	15,483	5,152	14,623	1,050	33%	25	13,041	14,051	15,349	8%
	2022	14,301	37,135	20,312	4,673	11,068	1,862	23%	21	17,449	19,966	21,245	10%
	2023	42,874	118,688	104,239	16,225	85,547	6,116	16%	20	101,385	109,318	113,733	6%
	2024	20,931	63,978	31,104	9,036	37,603	1,624	29%	23	26,593	29,159	32,918	11%
	2201	9,443	22,647	14,384	3,605	8,467	2,272	25%	21	11,565	14,316	15,971	16%
	2202	31,226	117,033	44,843	17,750	46,677	5,419	40%	21	36,369	42,482	45,975	12%
	2203	25,540	82,380	40,737	11,243	42,439	2,661	28%	21	36,013	38,788	42,817	9%
	2204	8,605	175,565	139,140	30,098	95,831	8,663	22%	25	132,765	142,738	149,867	6%
	2205	9,217	28,081	12,461	3,869	12,953	941	31%	22	10,596	11,720	12,644	9%
	2206	118,813	454,814	349,489	69,380	265,082	49,707	20%	25	314,343	360,508	403,746	12%
	2207	55,769	216,212	95,633	43,813	71,369	9,564	46%	25	73,565	83,987	86,932	8%
	2208	16,811	92,347	37,993	20,390	81,404	3,987	54%	17	26,016	30,430	36,903	17%
	2209	3,011	32,407	12,297	9,547	12,673	1,964	78%	23	6,533	8,034	20,325	51%
	2210	52,498	83,487	64,330	7,065	74,658	3,842	11%	20	59,994	66,060	67,243	6%
	2211	102,724	229,294	127,268	24,275	82,934	7,147	19%	25	116,111	123,803	127,122	5%
	2212	108,276	304,142	139,855	43,270	104,655	12,510	31%	20	116,791	130,439	146,802	11%
FX	3001	356,658	569,459	437,004	78,678	214,893	28,708	18%	24	379,278	404,834	522,546	16%
	3002	48,810	369,112	260,942	54,147	196,712	16,794	21%	24	245,351	268,157	278,708	6%
	3003	303,361	553,026	402,993	59,308	78,253	18,251	15%	19	374,396	397,613	415,480	5%
	3004	174,115	287,290	223,135	32,253	109,976	21,038	15%	22	185,807	238,190	248,923	15%
	3005	20,270	468,595	299,489	80,020	187,445	33,087	27%	23	267,160	303,792	336,663	12%
	3006	348,392	645,294	451,341	89,106	218,234	41,460	20%	23	379,576	423,394	536,759	17%
	3007	21,282	78,366	53,423	14,691	40,689	7,235	28%	22	46,387	55,327	60,115	13%
	3008	154,812	503,456	394,092	63,793	187,432	16,334	16%	23	381,178	402,516	415,551	4%
	3009	202,427	294,465	252,698	23,026	118,923	16,818	9%	23	239,410	248,311	273,073	7%
	3010	11,898	64,940	20,054	13,770	29,760	1,713	69%	24	13,958	16,495	17,536	11%
	3011	550,519	1,134,625	680,123	142,800	375,469	50,853	21%	17	600,894	652,059	657,563	5%
	3301	275,839	394,048	333,781	29,602	271,031	15,872	9%	23	309,383	341,741	355,344	7%
	3302	89,805	326,818	117,504	50,500	194,448	6,355	43%	22	98,536	105,856	110,654	6%
	3303	18,076	279,092	197,087	51,718	118,987	30,873	26%	23	167,290	205,312	228,511	15%
	3304	342,233	499,923	403,573	37,333	189,827	15,943	9%	22	380,836	394,282	417,633	5%

Commodities	4001	5,398	1,299,680	852,420	479,306	813,937	78,223	56%	9	979,889	1,010,803	1,088,071	5%
	4002	3,596	1,146,968	810,885	452,731	946,244	88,044	56%	9	842,263	1,079,081	1,108,691	14%
	4003	13,930	180,649	121,212	57,302	133,777	38,550	47%	7	92,503	138,236	176,758	31%
	4004	18,322	282,757	190,593	85,765	208,609	45,055	45%	7	161,654	212,476	254,616	22%
	4005	1,638	1,559,740	1,025,367	664,151	1,138,018	108,556	65%	7	122,420	1,375,837	1,434,656	84%
	4401	3,793	137,797	49,251	46,585	59,049	40,187	95%	9	8,067	51,598	84,641	83%
	4402	3,624	442,118	320,209	145,828	349,654	34,845	46%	7	308,740	369,651	403,258	13%
	4403	6,707	1,376,814	858,667	578,898	1,077,449	199,701	67%	6	254,230	1,187,741	1,268,420	67%
Credit Spread	5001	1,483	2,805	1,828	386	1,336	136	21%	16	1,599	1,741	1,863	8%
	5002	1,915	7,705	4,451	1,542	2,154	667	35%	17	3,708	4,398	4,615	11%
	5003	2,101	5,000	3,517	717	1,424	473	20%	16	3,069	3,605	4,032	14%
	5004	379	15,694	10,607	4,073	5,370	2,349	38%	14	8,909	9,791	13,832	22%
	5005	9,630	16,582	13,889	2,034	4,983	839	15%	13	12,943	14,492	15,211	8%
	5006	980	1,801	1,332	293	944	206	22%	15	1,074	1,336	1,679	22%
	5007	5,735	12,539	8,054	1,515	2,509	715	19%	18	7,273	8,146	8,414	7%
	5008	1,320	9,808	2,736	2,105	7,079	105	77%	18	1,913	2,019	2,256	8%
	5009	3,166	9,501	6,627	1,411	4,052	844	21%	17	5,821	6,745	7,519	13%
	5010	905	5,736	1,930	1,104	2,219	287	57%	17	1,391	1,699	1,862	14%
	5011	2,017	9,962	6,165	1,683	2,353	887	27%	18	5,170	6,233	6,743	13%
	5012	3,616	10,383	7,152	1,652	2,996	792	23%	17	6,538	7,229	7,927	10%
	5013	920	10,819	2,740	2,615	4,691	815	95%	14	1,043	1,881	3,332	52%
	5014	262	9,857	3,506	2,235	6,298	858	64%	18	2,308	3,264	4,045	27%
	5015	1,451	8,745	3,383	1,950	6,603	462	58%	18	2,481	2,978	3,260	14%
	5016	4,171	15,671	7,958	2,399	9,021	533	30%	17	7,273	7,691	8,563	8%
	5017	18,289	37,789	27,941	5,991	56,424	4,216	21%	14	22,661	28,444	31,093	16%
	5018	10,540	28,081	19,587	4,598	22,561	3,707	24%	15	15,757	19,374	22,911	19%
	5019	6,291	9,915	7,821	887	7,331	603	11%	19	7,184	7,825	8,491	8%
	5020	7,646	12,444	9,966	1,143	1,772	546	12%	18	9,380	9,995	10,471	5%
	5021	11,770	17,219	15,092	1,589	2,025	705	11%	17	14,616	15,305	15,641	3%
	5022	16,156	28,158	22,516	3,289	3,924	2,691	15%	18	19,710	22,711	25,093	12%
	5023	28,559	43,333	34,731	3,860	4,164	2,795	11%	18	32,244	35,664	37,030	7%
	5024	3,173	11,474	5,789	2,298	4,967	1,045	40%	17	4,230	5,546	6,318	20%
	5025	28,570	37,630	32,904	2,835	3,689	2,733	9%	17	30,530	33,608	35,002	7%
	5026	3,981	19,137	8,645	4,045	7,542	1,864	47%	17	5,968	8,011	9,639	24%
	5027	36,244	52,842	42,413	4,332	8,059	2,694	10%	17	40,088	41,832	44,275	5%
	5028	6,341	23,118	13,017	3,669	16,391	2,025	28%	16	10,905	13,624	14,151	13%
	5029	28,584	74,506	50,144	12,681	22,227	8,632	25%	18	43,378	47,948	60,792	17%
	5030	5,126	99,906	50,401	29,598	29,598	25,848	59%	11	21,824	45,124	77,078	56%
	5031	8,614	35,546	15,719	7,522	32,178	1,494	48%	17	11,490	12,767	16,162	17%
	5032	18,101	74,250	45,823	14,079	29,048	8,594	31%	15	36,180	44,996	57,450	23%
	5033	11,253	18,762	14,281	2,203	13,377	1,661	15%	18	12,567	14,439	16,090	12%
	5034	1,784	12,138	8,172	2,137	8,017	960	26%	18	7,087	8,675	9,244	13%
	5501	2,346	6,861	4,665	1,499	2,533	1,378	32%	16	3,379	4,658	6,297	30%
	5502	17,263	50,599	25,083	8,527	25,264	2,590	34%	14	19,942	22,529	29,007	19%
	5503	3,168	10,707	5,146	1,764	21,520	783	34%	18	4,209	4,761	5,544	14%
	5504	8,181	28,210	12,623	5,034	81,928	2,321	40%	14	9,578	12,368	14,176	19%
	5505	1,798	11,120	4,188	1,908	62,916	394	46%	18	3,429	3,880	4,240	11%
	5506	3,997	24,668	6,590	5,182	114,373	515	79%	18	4,452	4,955	5,606	11%
	5507	13,752	101,664	25,665	22,702	48,353	1,595	89%	15	16,129	18,199	19,417	9%
	5508	28,584	44,399	35,806	4,234	4,620	2,803	12%	19	31,760	36,831	39,014	10%
	5509	3,482	6,982	5,308	981	906	783	19%	20	4,605	5,224	6,131	14%
	5510	6,514	9,699	8,078	868	21,113	608	11%	18	7,439	8,216	8,654	8%
	5511	16,318	29,329	21,665	3,893	17,405	2,984	18%	18	18,385	21,566	23,705	13%
	5512	4,600	28,344	11,608	5,177	9,719	1,366	45%	18	9,928	10,738	12,166	10%
	5513	1,347	3,165	1,913	455	1,136	298	24%	16	1,582	1,892	2,176	16%
	5514	10,429	14,104	12,155	1,104	11,698	917	9%	17	11,435	12,143	13,177	7%
	5515	25,377	43,013	32,064	5,320	19,383	3,023	17%	13	27,632	30,886	34,880	12%
	5516	12,402	25,063	16,626	3,294	12,161	1,601	20%	12	14,253	16,886	17,967	12%
	5517	34,256	79,464	44,183	12,262	26,391	4,484	28%	13	37,817	40,985	45,445	9%
	5518	98,126	143,288	123,937	11,555	133,420	5,020	9%	17	118,462	123,708	128,185	4%
	5519	93,924	131,115	105,864	9,075	24,782	5,658	9%	18	98,654	105,174	109,970	5%
	5520	10,603	29,475	17,575	4,696	16,670	1,418	27%	15	15,443	16,937	19,403	11%
	5521	90,471	115,672	103,137	8,326	110,417	7,003	8%	15	94,621	102,756	111,826	8%
	5522	20,202	60,369	32,242	12,268	20,677	8,013	38%	11	21,714	30,957	39,063	29%
CTP	6001								2				
	6002								2				
	6003								2				
	6004								2				
	6005								2				
	6006								2				
	6007								2				
	6008								2				
	6009								2				
	6010								2				
	6601								2				
	6602								2				
	6603								2				
	6604								2				
	6605								2				
ALL-IN no-CTP	10000	429,279	761,796	611,900	100,324	454,937	68,529	16%	10	543,434	607,011	700,143	13%
Equity Cumulative	11000	244,915	479,747	330,173	57,763	184,365	11,838	18%	19	302,931	327,297	330,780	4%
IR Cumulative	12000	170,532	385,725	291,498	50,972	82,496	11,814	18%	21	270,636	278,723	345,576	12%
FX Cumulative	13000	288,432	623,498	456,658	61,782	219,757	37,043	14%	23	421,001	465,642	491,877	8%
Commodity Cumulative	14000	308,376	437,672	366,311	48,262	327,665	36,395	13%	6	331,184	372,782	403,974	10%
CS Cumulative	15000	108,810	148,052	134,586	11,939	144,265	8,309	9%	14	124,849	139,418	143,994	7%
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.*

Table 19: Empirical expected shortfall statistics

EU Statistics for empirical expected shortfall

		Main statistics								Percentiles			
	Port. ID	Min	Max	Ave.	STDev	STDev_trunc[1]	MAD (median absolute deviation)	Coefficient of variation (STDev/Mean)	Num obs.[2]	25th	50th	75th	IQD
Equity	1001	447,481	658,501	549,419	54,307	231,839	4,383	10%	20	537,618	563,879	564,311	2%
	1002	28,720	81,082	65,891	12,619	28,159	767	19%	19	67,789	70,272	70,287	2%
	1003	25,081	85,450	50,134	10,889	21,097	1,836	22%	18	47,297	49,501	50,970	4%
	1004	6,313	17,080	13,834	2,658	6,602	739	19%	18	13,592	14,395	15,069	5%
	1005	282,820	355,536	319,370	18,446	161,970	9,400	6%	18	306,006	322,788	323,163	3%
	1006	3,780	7,283	5,758	745	2,685	68	13%	17	5,559	5,622	5,879	3%
	1007	42,527	51,099	45,881	1,782	14,511	547	4%	18	44,953	45,987	46,050	1%
	1008	12,478	16,031	13,638	1,117	9,125	143	8%	18	12,912	12,943	14,716	7%
	1009	28,578	79,248	65,581	10,028	22,339	1,728	15%	18	65,505	68,383	69,119	3%
	1010	20,345	49,685	41,165	6,210	16,519	1,748	15%	18	40,357	42,748	44,095	4%
	1011	-3	206	22	51	585	0	228%	17	0	0	22	100%
	1012	1,931	16,277	4,386	3,071	16,377	452	70%	18	3,291	3,772	4,197	12%
	1013	20,241	56,713	45,785	7,185	17,452	1,922	16%	18	43,816	47,646	48,736	5%
	1014	24,982	56,136	46,859	6,665	19,313	1,624	14%	18	46,120	49,102	49,445	3%
	1015	3,363	6,183	4,593	683	4,234	376	15%	17	4,226	4,632	4,949	8%
	1016	100	1,346	475	340	676	98	72%	18	308	391	523	26%
	1017	0	103,245,103	8,326,025	28,524,118	62,951,217	0	343%	13	0	933,915	1,070,979	100%
	1018	0	56,665	22,639	15,265	32,255	6,639	67%	15	12,235	19,968	29,077	41%
	1019	118,753	201,945	148,458	21,001	66,457	8,067	14%	20	137,023	146,344	152,905	5%
	1020	66,583	621,521	235,874	111,128	331,679	14,516	47%	16	205,691	221,547	237,262	7%
	1021	348,746	1,907,140	1,065,491	671,325	671,325	430,002	63%	6	533,635	871,193	1,861,042	55%
	1101	312,005	386,916	346,240	21,567	171,820	15,573	6%	17	329,570	348,642	349,131	3%
	1102	2,039	5,123	3,824	652	1,562	188	17%	18	3,563	3,832	3,980	6%
	1103	2,909	13,533	4,626	2,375	4,767	405	51%	17	3,660	4,228	4,448	10%
	1104	5,868	19,389	15,255	3,291	5,573	1,023	22%	17	14,533	16,019	16,860	7%
	1105	1,930	16,158	4,704	3,289	16,190	576	70%	18	3,291	3,890	4,662	17%
	1106	444	21,505	9,498	4,388	15,537	1,517	46%	16	7,065	10,099	11,074	22%
	1107	55,137	179,649	71,935	35,852	116,812	3,791	50%	18	56,164	59,928	63,994	7%
	1108	426,944	637,604	525,703	51,938	238,943	8,193	10%	18	509,174	541,618	544,807	3%
	1109	67,692	620,654	486,984	116,050	236,182	12,762	24%	18	476,610	526,176	529,366	5%
	1110	13,592	78,947	61,888	17,202	34,776	682	28%	17	65,422	67,688	67,865	2%
Interest Rate	2001	74,990	181,439	145,571	18,357	93,878	4,906	13%	25	142,501	149,358	153,073	4%
	2002	21,819	109,618	74,811	18,860	67,257	10,327	25%	25	67,987	77,558	86,763	12%
	2003	17,455	23,175	20,462	1,195	14,471	621	6%	24	19,930	20,468	21,087	3%
	2004	26,749	85,264	57,848	10,338	31,467	4,126	18%	25	55,619	57,951	61,864	5%
	2005	11,428	27,926	18,629	5,438	80,607	3,496	29%	11	15,053	19,251	21,051	17%
	2006	20,751	37,756	28,212	4,382	16,075	1,694	16%	21	26,087	27,664	29,284	6%
	2007	12,794	18,637	15,390	1,827	12,026	1,585	12%	25	13,794	15,968	16,784	10%
	2008	17,383	39,491	29,055	5,197	12,798	2,215	18%	21	27,021	30,552	31,265	7%
	2009	11,428	23,278	13,747	2,135	7,927	366	16%	25	13,090	13,478	13,763	3%
	2010	15,902	24,586	17,989	1,641	11,674	417	9%	25	17,276	17,806	18,034	2%
	2011	14,950	29,498	17,461	3,646	11,802	454	21%	25	15,550	15,994	17,212	5%
	2012	13,973	23,220	19,001	2,507	17,120	2,388	13%	25	17,284	19,876	21,209	10%
	2013	4,846	53,980	27,630	9,159	17,453	2,080	33%	24	23,715	25,990	28,412	9%
	2014	11,819	17,868	14,067	1,244	13,293	277	9%	23	13,530	13,900	14,416	3%
	2015	4,253	32,577	21,966	5,501	20,064	961	25%	22	20,924	21,599	23,184	5%
	2016	10,917	43,468	17,474	10,963	15,163	1,699	63%	16	11,333	13,369	15,057	14%
	2017	14,153	54,888	33,355	9,930	29,132	3,366	30%	16	29,078	32,889	35,447	10%
	2018	18,286	309,856	225,118	52,792	169,930	12,605	24%	25	207,376	223,754	251,633	10%
	2019	98,829	160,376	126,379	15,283	96,244	6,966	12%	25	117,224	124,713	132,743	6%
	2020	24,066	36,240	28,965	3,014	20,839	2,350	10%	22	26,406	29,677	30,373	7%
	2021	11,817	34,703	16,240	5,539	15,339	1,872	34%	25	13,547	14,770	16,561	10%
	2022	13,883	37,116	20,332	4,793	10,596	1,544	24%	21	18,129	19,693	21,579	9%
	2023	38,550	117,623	100,329	16,463	77,248	6,065	16%	20	96,429	104,197	107,577	5%
	2024	27,584	99,119	38,659	14,830	34,109	1,495	38%	24	33,151	34,537	37,392	6%
	2201	9,554	22,087	14,569	3,375	8,018	1,816	23%	21	12,514	14,021	15,750	11%
	2202	31,538	113,458	44,531	17,303	48,023	3,708	39%	21	36,677	41,079	47,776	13%
	2203	26,042	79,673	39,936	10,800	41,254	3,570	27%	21	35,027	37,957	42,118	9%
	2204	10,758	171,681	134,986	29,696	91,556	6,768	22%	25	128,484	135,270	147,526	7%
	2205	0	31,731	11,478	5,624	14,459	870	49%	24	10,371	11,264	12,113	8%
	2206	109,070	464,738	343,704	66,567	263,005	19,975	19%	25	317,346	334,433	379,009	9%
	2207	63,994	210,555	92,323	35,553	73,299	5,673	39%	24	77,359	84,017	88,669	7%
	2208	16,654	101,640	38,536	22,093	92,163	5,216	57%	17	26,683	29,450	34,587	13%
	2209	2,927	29,319	11,202	8,490	11,778	1,954	76%	22	6,168	8,174	12,403	34%
	2210	59,658	84,325	69,490	6,122	74,639	2,941	9%	20	65,825	68,525	72,325	5%
	2211	100,694	214,754	122,119	23,242	91,040	6,614	19%	25	109,592	116,782	122,581	6%
	2212	108,289	286,937	131,097	39,485	107,768	7,008	30%	20	112,677	119,324	137,489	10%
FX	3001	369,989	543,425	422,588	34,371	201,746	14,766	8%	24	407,219	423,111	436,790	4%
	3002	49,165	360,010	253,187	51,534	171,164	11,610	20%	24	241,093	261,377	266,452	5%
	3003	275,347	544,037	416,904	46,407	125,780	16,072	11%	22	397,994	421,611	437,591	5%
	3004	175,464	298,178	215,341	24,948	112,994	6,699	12%	22	200,764	215,327	216,979	4%
	3005	41,340	408,272	289,658	65,781	191,209	14,397	23%	23	276,761	299,727	307,191	5%
	3006	365,343	639,903	430,354	59,412	205,626	15,639	14%	23	403,097	423,350	437,038	4%
	3007	20,870	76,353	51,091	13,906	45,468	7,742	27%	22	42,725	53,937	58,124	15%
	3008	144,348	479,602	397,438	61,422	181,731	16,547	16%	23	387,513	407,738	423,194	4%
	3009	194,806	330,160	274,035	29,416	131,433	11,419	11%	23	264,058	283,240	290,116	5%
	3010	11,594	60,421	19,166	13,162	29,272	1,448	69%	24	13,661	15,346	16,328	9%
	3011	538,444	1,156,285	664,311	141,457	388,304	22,424	21%	17	597,969	624,263	634,426	3%
	3301	303,738	390,057	331,829	23,426	264,222	11,374	7%	23	313,974	329,953	346,963	5%
	3302	89,661	293,686	115,819	45,905	171,007	5,803	40%	22	97,974	105,436	108,567	5%
	3303	19,487	273,999	191,038	44,850	117,405	9,710	24%	23	184,581	191,203	205,415	5%
	3304	358,115	493,544	416,324	29,625	181,586	17,283	7%	22	396,032	416,473	430,928	4%

Commodities	4001	4,748	1,153,451	814,611	457,807	800,547	146,264	56%	9	857,654	1,017,265	1,131,013	14%
	4002	3,106	1,098,895	775,321	426,451	863,278	113,088	55%	9	806,759	1,006,182	1,040,516	13%
	4003	12,118	179,209	115,032	57,135	138,975	38,197	50%	7	87,784	126,082	175,230	33%
	4004	17,119	235,915	179,143	74,044	223,235	18,485	41%	7	181,001	205,290	223,085	10%
	4005	1,652	1,430,634	978,434	631,748	1,092,798	126,899	65%	7	117,077	1,318,387	1,402,265	85%
	4401	3,600	152,582	58,057	54,060	54,060	35,290	93%	10	10,962	48,528	80,904	76%
	4402	3,156	371,641	277,168	124,732	356,114	37,962	45%	7	283,667	318,478	345,582	10%
	4403	6,211	3,229,067	1,162,366	1,042,012	1,042,012	168,159	90%	7	224,063	1,199,463	1,237,620	69%
Credit Spread	5001	1,432	2,466	1,802	265	1,294	160	15%	16	1,642	1,781	1,945	8%
	5002	2,076	6,693	4,253	1,230	2,131	758	29%	17	3,625	4,459	4,866	15%
	5003	2,154	4,314	2,976	524	1,540	399	18%	16	2,629	3,017	3,312	11%
	5004	9,280	15,204	12,415	2,087	5,720	1,846	17%	13	11,265	12,558	14,404	12%
	5005	11,082	17,039	14,778	2,208	5,836	1,371	15%	13	13,093	15,629	16,595	12%
	5006	952	1,744	1,285	276	975	198	22%	15	1,035	1,266	1,593	21%
	5007	5,058	11,301	8,718	1,655	3,101	1,105	19%	18	7,603	8,975	9,823	13%
	5008	1,467	9,093	2,853	1,972	5,718	165	69%	18	1,982	2,139	2,494	11%
	5009	3,227	9,097	6,105	1,354	4,050	906	22%	17	5,120	6,160	6,822	14%
	5010	1,004	3,409	1,793	588	2,198	299	33%	16	1,416	1,783	2,113	20%
	5011	1,835	9,056	5,612	1,466	2,367	505	26%	17	5,236	5,689	6,043	7%
	5012	3,395	13,640	7,625	2,260	3,081	1,129	30%	18	6,291	7,672	8,549	15%
	5013	882	9,986	2,512	2,363	5,211	822	94%	14	983	1,832	3,162	53%
	5014	252	9,226	3,580	2,144	7,743	751	60%	18	2,513	3,358	4,016	23%
	5015	1,726	9,133	3,833	2,124	7,805	640	55%	18	2,630	3,307	3,913	20%
	5016	4,309	16,124	7,631	2,445	9,325	236	32%	17	6,994	7,239	7,736	5%
	5017	0	44,272	25,960	9,633	53,578	2,398	37%	15	22,995	26,574	31,005	15%
	5018	13,261	27,245	19,705	3,852	23,701	3,539	20%	15	16,947	19,970	22,843	15%
	5019	6,869	10,380	8,525	923	6,640	428	11%	19	8,017	8,425	9,089	6%
	5020	9,302	13,803	11,214	1,077	1,263	670	10%	18	10,473	11,378	11,656	5%
	5021	11,264	16,927	14,280	1,475	1,697	574	10%	18	13,132	14,558	14,994	7%
	5022	19,913	30,134	24,534	3,196	3,668	2,435	13%	18	22,099	24,641	26,444	9%
	5023	34,890	44,514	38,607	2,493	4,153	1,428	7%	17	36,243	38,933	39,859	5%
	5024	3,004	12,052	5,867	2,503	5,422	1,099	43%	17	4,298	5,368	6,607	21%
	5025	34,628	44,330	37,697	2,645	6,516	1,209	7%	18	36,024	37,018	38,441	3%
	5026	3,832	20,748	8,931	4,123	7,559	2,369	46%	17	6,251	8,696	9,575	21%
	5027	5,451	56,707	42,784	10,320	19,268	1,944	24%	18	41,734	43,339	46,520	5%
	5028	7,509	25,544	13,381	4,205	16,702	1,755	31%	16	10,820	13,480	14,215	14%
	5029	34,157	70,559	52,766	10,916	19,888	7,854	21%	18	45,826	54,287	61,194	14%
	5030	5,468	89,390	48,384	25,746	25,746	17,681	53%	11	33,712	43,849	62,791	30%
	5031	8,440	40,291	16,676	7,717	33,520	1,624	46%	17	12,671	14,371	17,032	15%
	5032	20,931	84,513	45,925	15,030	29,241	6,045	33%	15	37,726	43,350	53,903	18%
	5033	12,548	18,111	15,161	1,507	12,335	1,054	10%	18	14,051	15,167	16,199	7%
	5034	1,802	12,492	8,756	2,224	7,422	968	25%	18	7,970	9,252	9,593	9%
	5501	2,440	6,169	4,354	1,155	2,831	790	27%	16	3,540	4,306	5,212	19%
	5502	19,726	56,769	27,980	8,982	22,440	2,374	32%	14	23,302	27,468	29,022	11%
	5503	3,019	13,090	5,703	2,110	24,925	645	37%	18	4,684	5,494	6,042	13%
	5504	9,227	29,265	13,442	4,868	76,568	1,402	36%	14	10,776	12,951	14,061	13%
	5505	1,786	10,809	3,923	1,876	66,055	448	48%	18	3,017	3,622	3,939	13%
	5506	3,973	22,557	6,598	4,796	109,103	609	73%	18	4,439	5,208	5,657	12%
	5507	12,914	48,784	20,485	10,043	43,653	1,643	49%	14	15,394	17,367	19,861	13%
	5508	34,374	44,949	40,209	3,012	3,046	1,974	8%	19	38,019	40,186	42,787	6%
	5509	3,958	6,477	5,323	696	696	396	13%	19	4,946	5,341	5,903	9%
	5510	7,136	9,751	8,529	713	20,929	274	8%	18	8,369	8,654	8,890	3%
	5511	19,385	29,801	24,127	3,252	16,164	2,943	14%	18	21,399	24,126	27,546	13%
	5512	4,214	25,679	11,256	4,575	9,042	1,430	41%	18	9,495	10,937	11,764	11%
	5513	1,539	3,013	1,869	362	1,220	207	19%	16	1,607	1,824	2,021	11%
	5514	12,269	14,565	13,466	569	11,538	154	4%	17	13,297	13,487	13,606	1%
	5515	21,382	51,075	32,295	7,113	20,931	3,281	22%	13	28,229	30,816	34,959	11%
	5516	12,075	25,694	17,590	3,556	12,840	1,407	20%	12	15,657	16,981	19,440	11%
	5517	34,549	91,945	46,794	15,457	30,880	5,324	33%	13	38,755	41,384	48,150	11%
	5518	100,560	148,701	118,663	13,471	135,109	5,325	11%	17	109,287	114,598	120,168	5%
	5519	108,459	144,039	118,682	8,921	14,180	3,855	8%	18	112,873	118,073	120,820	3%
	5520	11,124	32,435	17,922	5,629	20,424	1,608	31%	15	15,126	16,882	18,383	10%
	5521	104,410	130,445	114,911	7,024	103,817	4,460	6%	15	109,437	115,176	119,542	4%
	5522	19,587	60,694	33,847	12,905	21,516	9,120	38%	11	25,135	30,284	45,826	29%
CTP	6001								2				
	6002								2				
	6003								2				
	6004								2				
	6005								2				
	6006								2				
	6007								2				
	6008								2				
	6009								2				
	6010								2				
	6601								2				
	6602								2				
	6603								2				
	6604								2				
	6605								2				
ALL-IN no-CTP	10000	431,541	723,151	586,165	83,943	470,925	34,902	14%	10	541,350	574,963	660,773	10%
Equity Cumulative	11000	267,970	520,366	326,623	72,948	212,507	10,800	22%	19	290,811	307,513	309,615	3%
IR Cumulative	12000	175,247	388,700	290,327	49,200	78,803	16,176	17%	21	266,172	289,127	328,365	10%
FX Cumulative	13000	10,786	580,470	434,259	103,133	233,955	29,698	24%	24	424,301	455,537	483,139	6%
Commodity Cumulative	14000	282,400	370,601	321,840	34,750	341,046	24,088	11%	6	296,111	340,275	344,286	8%
CS Cumulative	15000	133,203	162,814	148,796	8,529	135,159	6,645	6%	14	142,169	149,739	155,459	4%
CTP Cumulative	16000								3				

[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.*

Table 20: sVaR/VaR statistics

EU Statistics for sVaR/VaR

		Main statistics								Percentiles			
	Port. ID	Min	Max	Ave.	STDev	STDev_trunc[1]	MAD (median absolute deviation)	Coefficient of variation (STDev/Mean)	Num obs.[2]	25th	50th	75th	IQD
Equity	1001	0.84	2.43	1.89	0.41			21%	24	1.73	1.86	2.23	13%
	1002	0.53	1.93	1.11	0.35			31%	28	0.97	1.04	1.32	15%
	1003	0.85	3.16	1.55	0.48			31%	29	1.22	1.55	1.79	19%
	1004	0.54	6.71	2.10	1.21			58%	26	1.44	1.74	2.36	24%
	1005	1.31	7.81	4.00	1.76			44%	24	2.25	4.37	5.51	42%
	1006	0.78	5.15	3.19	1.29			41%	26	2.17	3.38	4.40	34%
	1007	0.97	3.75	2.48	0.79			32%	25	1.72	2.57	3.20	30%
	1008	1.42	6.11	4.30	1.35			32%	26	3.63	4.66	5.14	17%
	1009	0.54	1.90	1.05	0.29			28%	23	0.96	1.03	1.16	9%
	1010	0.95	3.26	1.47	0.50			34%	25	1.17	1.30	1.67	17%
	1011	0.52	2.42	1.36	0.57			42%	18	1.00	1.14	1.93	32%
	1012	0.54	2.74	1.39	0.47			34%	22	1.09	1.37	1.55	18%
	1013	0.47	1.40	0.90	0.22			24%	24	0.76	0.94	0.99	13%
	1014	0.97	3.26	1.62	0.50			31%	25	1.25	1.62	1.80	18%
	1015	1.12	4.42	2.80	0.96			34%	21	1.92	3.07	3.57	30%
	1016	1.01	4.69	1.89	0.91			48%	22	1.27	1.53	2.09	24%
	1017	0.30	2.25	1.23	0.48			39%	24	1.13	1.18	1.50	14%
	1018	0.82	11.74	2.96	2.39			81%	22	1.56	2.23	3.47	38%
	1019	0.49	2.39	1.30	0.35			27%	29	1.06	1.26	1.48	17%
	1020	0.85	2.39	1.31	0.39			30%	19	1.02	1.21	1.38	15%
	1021	0.76	3.28	1.30	0.77			59%	9	0.81	0.97	1.16	18%
	1101	1.32	7.26	4.18	1.50			36%	24	3.09	4.33	5.19	25%
	1102	0.79	3.01	1.52	0.48			32%	23	1.20	1.45	1.73	18%
	1103	1.12	4.00	2.33	0.80			34%	22	1.54	2.49	2.97	32%
	1104	0.55	2.31	1.29	0.36			28%	23	1.10	1.30	1.36	10%
	1105	0.52	2.74	1.34	0.47			35%	20	1.03	1.35	1.45	17%
	1106	0.54	2.97	1.38	0.60			43%	21	1.06	1.14	1.56	19%
	1107	1.18	4.50	2.95	1.09			37%	23	1.87	3.37	3.85	35%
	1108	0.82	2.39	1.82	0.40			22%	25	1.68	1.83	2.13	12%
	1109	0.82	2.55	1.91	0.43			22%	26	1.71	1.93	2.25	14%
	1110	0.42	2.05	0.99	0.43			43%	24	0.70	0.87	1.13	23%
Interest Rate	2001	0.75	5.40	1.65	0.81			49%	36	1.25	1.51	1.68	15%
	2002	0.80	2.83	1.53	0.44			29%	36	1.17	1.59	1.83	22%
	2003	0.29	2.31	1.54	0.50			33%	30	1.47	1.65	1.81	10%
	2004	0.33	3.60	1.74	0.82			47%	39	1.24	1.62	2.05	24%
	2005	0.72	9.51	2.98	2.39			80%	14	1.72	2.16	3.14	29%
	2006	0.94	2.92	1.86	0.55			30%	29	1.40	1.85	2.33	25%
	2007	0.77	2.16	1.53	0.36			23%	36	1.28	1.49	1.78	16%
	2008	0.81	5.54	2.41	1.29			53%	30	1.68	1.93	2.55	21%
	2009	0.85	4.66	2.12	1.13			53%	36	1.35	1.64	2.88	36%
	2010	1.21	4.61	2.13	0.94			44%	30	1.47	1.79	2.64	28%
	2011	0.93	3.42	1.60	0.47			29%	35	1.27	1.55	1.81	18%
	2012	0.99	2.22	1.55	0.32			21%	35	1.30	1.49	1.78	16%
	2013	0.60	4.30	1.58	0.82			52%	36	1.09	1.40	1.72	22%
	2014	0.96	16.91	3.52	3.83			109%	37	1.58	1.83	3.13	33%
	2015	0.75	11.42	1.85	1.74			94%	34	1.26	1.64	1.76	16%
	2016	0.50	5.52	2.04	1.11			54%	27	1.42	1.91	2.27	23%
	2017	0.48	6.74	2.42	1.42			59%	24	1.66	1.91	3.05	29%
	2018	0.87	2.48	1.61	0.35			22%	35	1.31	1.66	1.81	16%
	2019	0.50	2.51	1.43	0.46			32%	38	1.16	1.50	1.74	20%
	2020	1.43	18.31	5.58	3.39			61%	31	3.58	4.94	6.65	30%
	2021	0.11	25.52	7.17	5.64			79%	39	3.01	5.24	10.47	55%
	2022	0.81	6.42	2.39	1.27			53%	30	1.73	1.92	2.49	18%
	2023	1.21	4.05	2.09	0.63			30%	29	1.81	2.08	2.40	14%
	2024	0.65	4.30	1.68	0.69			41%	40	1.22	1.52	1.91	22%
	2201	0.99	4.64	2.57	1.04			41%	33	1.74	2.58	3.22	30%
	2202	0.80	4.26	2.28	0.79			35%	26	2.01	2.19	2.77	16%
	2203	0.81	8.82	3.06	1.96			64%	30	1.88	2.31	3.50	30%
	2204	1.20	3.82	1.88	0.55			29%	36	1.50	1.77	2.04	15%
	2205	0.73	3.87	1.64	0.62			38%	35	1.33	1.53	1.74	13%
	2206	0.75	2.57	1.58	0.40			25%	36	1.28	1.55	1.85	18%
	2207	0.74	5.54	1.94	1.12			57%	37	1.36	1.55	1.86	16%
	2208	0.92	7.96	3.04	1.59			52%	26	1.80	2.58	3.96	38%
	2209	0.68	7.65	2.47	1.48			60%	34	1.38	2.08	2.87	35%
	2210	0.71	6.22	2.22	1.33			60%	34	1.41	1.69	2.64	30%
	2211	0.54	2.50	1.50	0.38			25%	40	1.26	1.52	1.77	17%
	2212	0.77	5.41	2.13	1.03			48%	33	1.45	1.97	2.31	23%
FX	3001	0.67	2.29	1.58	0.44			28%	36	1.25	1.70	1.89	20%
	3002	1.25	4.43	2.74	0.90			33%	37	2.05	2.80	3.40	25%
	3003	0.67	2.33	1.62	0.47			29%	34	1.24	1.76	1.99	23%
	3004	0.81	2.57	1.60	0.41			26%	35	1.38	1.57	1.84	14%
	3005	1.14	4.81	1.94	0.65			33%	35	1.67	1.83	2.14	13%
	3006	0.66	4.56	1.64	0.71			43%	33	1.14	1.72	1.99	27%
	3007	0.41	6.87	2.46	1.06			43%	33	2.00	2.27	2.86	18%
	3008	0.90	10.62	2.16	1.59			74%	32	1.57	2.06	2.18	16%
	3009	0.99	4.87	2.80	1.13			40%	33	1.84	2.87	3.55	32%
	3010	0.71	35.73	3.61	6.19			171%	31	1.20	1.68	3.29	47%
	3011	0.97	2.97	1.94	0.60			31%	25	1.50	2.06	2.37	23%
	3301	0.75	3.67	2.23	0.68			31%	34	1.76	2.34	2.72	21%
	3302	0.95	2.05	1.52	0.36			24%	32	1.17	1.57	1.85	22%
	3303	0.85	2.85	1.68	0.46			28%	28	1.43	1.66	1.96	16%
	3304	0.95	10.62	2.14	1.63			76%	32	1.31	2.07	2.23	26%

Commodities	4001	0.63	2.66	1.55	0.50			32%	13	1.26	1.48	1.75	16%
	4002	0.67	2.28	1.82	0.49			27%	12	1.69	2.04	2.15	12%
	4003	0.75	2.86	1.52	0.61			40%	12	1.13	1.26	2.08	30%
	4004	1.19	3.46	1.90	0.64			34%	10	1.64	1.72	2.00	10%
	4005	0.92	2.18	1.53	0.43			28%	12	1.22	1.55	1.81	20%
	4401	0.32	5.67	1.83	1.48			81%	14	0.84	1.37	2.12	43%
	4402	0.63	3.17	1.79	0.73			41%	11	1.34	1.62	2.27	26%
	4403	1.21	2.78	1.88	0.49			26%	10	1.53	1.74	2.12	16%
Credit Spread	5001	1.21	17.10	4.83	4.03			84%	20	1.82	2.69	7.38	60%
	5002	0.98	9.81	2.95	1.89			64%	19	1.74	2.58	3.45	33%
	5003	1.43	18.89	5.77	5.30			92%	17	1.85	3.85	6.89	58%
	5004	0.88	8.41	3.27	2.05			63%	19	1.74	2.71	4.10	40%
	5005	1.03	8.55	3.09	2.01			65%	19	1.63	2.36	3.82	40%
	5006	1.02	15.43	5.31	4.78			90%	18	1.79	2.62	9.02	67%
	5007	0.87	5.89	2.71	1.22			45%	19	1.83	2.52	3.59	33%
	5008	1.03	9.43	3.28	2.29			70%	21	1.61	1.89	5.51	55%
	5009	1.25	15.73	5.86	4.42			76%	21	2.51	3.59	9.00	56%
	5010	0.99	13.69	5.02	4.16			83%	21	1.64	3.43	6.98	62%
	5011	0.93	6.22	2.76	1.43			52%	20	1.71	2.21	3.60	35%
	5012	0.65	10.41	2.56	2.19			85%	24	1.34	1.75	2.51	30%
	5013	0.90	6.46	3.19	1.52			48%	18	2.16	2.92	3.91	29%
	5014	0.62	27.22	3.50	5.41			155%	22	1.42	1.95	3.30	40%
	5015	0.07	27.44	3.96	5.70			144%	20	1.50	2.47	3.77	43%
	5016	0.99	6.83	3.04	1.65			54%	22	1.60	2.96	3.63	39%
	5017	0.30	7.24	2.16	1.78			82%	24	1.13	1.74	2.39	36%
	5018	0.68	3.59	2.35	0.80			34%	18	1.89	2.48	2.95	22%
	5019	0.78	6.93	2.58	1.57			61%	24	1.42	2.25	3.67	44%
	5020	0.62	6.78	2.46	1.54			62%	27	1.14	2.27	3.19	47%
	5021	0.89	4.50	1.82	0.84			46%	25	1.18	1.71	2.32	33%
	5022	0.59	15.48	2.42	2.72			112%	26	1.48	1.74	2.38	24%
	5023	0.76	4.61	1.69	0.76			45%	25	1.16	1.57	1.99	27%
	5024	1.06	21.19	7.76	6.53			84%	19	1.88	5.25	13.53	76%
	5025	0.73	2.33	1.29	0.35			27%	26	1.13	1.26	1.43	12%
	5026	0.63	9.65	3.66	2.49			68%	20	1.39	2.92	5.98	62%
	5027	0.39	4.56	1.68	0.72			43%	26	1.32	1.55	1.84	17%
	5028	0.76	29.36	6.03	7.05			117%	20	1.55	3.26	6.33	61%
	5029	0.64	5.00	2.41	1.10			46%	22	1.47	2.19	2.93	33%
	5030	0.74	3.90	2.41	1.10			46%	13	1.63	2.54	3.59	37%
	5031	1.01	9.41	2.88	2.00			70%	23	1.61	2.21	3.16	33%
	5032	0.65	5.66	2.11	1.24			59%	21	0.96	1.77	2.75	48%
	5033	0.57	5.94	2.07	1.33			64%	24	1.10	1.57	2.79	43%
	5034	0.81	7.11	2.37	1.32			56%	21	1.44	2.09	2.82	32%
	5501	1.03	11.13	3.48	2.41			69%	20	1.85	2.97	3.61	32%
	5502	1.10	7.12	3.28	1.77			54%	15	2.07	2.51	4.16	33%
	5503	0.79	3.90	2.40	0.91			38%	21	1.80	2.51	2.99	25%
	5504	0.78	8.27	3.17	2.07			65%	19	1.66	2.46	3.90	40%
	5505	1.01	10.10	4.33	2.84			66%	25	2.44	3.22	5.92	42%
	5506	1.01	10.57	4.44	2.49			56%	26	2.62	3.79	5.58	36%
	5507	0.22	7.01	2.42	1.51			63%	23	1.37	2.36	3.13	39%
	5508	0.57	8.74	2.40	1.73			72%	30	1.40	1.74	2.79	33%
	5509	0.93	7.37	2.34	1.33			57%	30	1.57	1.87	2.84	29%
	5510	0.80	7.11	2.60	1.40			54%	26	1.51	2.53	3.33	38%
	5511	0.58	16.08	2.67	2.92			110%	26	1.38	1.91	2.46	28%
	5512	1.08	7.04	3.02	1.59			53%	26	1.96	2.50	4.17	36%
	5513	1.27	24.01	6.59	6.26			95%	24	2.15	4.60	7.76	57%
	5514	0.73	5.57	2.26	1.09			48%	26	1.62	1.96	2.30	17%
	5515	0.55	6.16	2.73	1.53			56%	21	1.50	2.34	3.45	39%
	5516	0.61	5.35	2.32	1.13			48%	21	1.44	2.21	3.19	38%
	5517	0.51	4.50	2.45	1.06			43%	21	1.63	2.27	2.99	30%
	5518	0.51	2.01	1.43	0.43			30%	26	1.12	1.56	1.80	23%
	5519	0.71	3.80	1.55	0.67			43%	30	1.15	1.38	1.63	17%
	5520	1.09	25.76	6.80	7.05			104%	22	1.74	3.01	8.03	64%
	5521	0.88	3.79	1.90	0.79			41%	22	1.36	1.70	2.40	28%
	5522	0.64	7.85	2.92	1.85			64%	15	1.71	2.22	3.68	36%
CTP	6001								3				
	6002								3				
	6003								2				
	6004								2				
	6005								3				
	6006								3				
	6007								3				
	6008								3				
	6009								3				
	6010								3				
	6601								3				
	6602								3				
	6603								3				
	6604								3				
	6605								3				
ALL-IN no-CTP	10000	0.83	4.55	2.10	0.86			41%	16	1.57	2.01	2.49	23%
Equity Cumulative	11000	0.78	4.20	2.28	1.06			47%	30	1.23	2.52	3.01	42%
IR Cumulative	12000	0.86	3.12	1.62	0.42			26%	34	1.32	1.59	1.84	16%
FX Cumulative	13000	1.01	3.72	2.09	0.66			31%	36	1.60	2.25	2.52	22%
Commodity Cumulative	14000	0.62	3.02	1.78	0.64			36%	13	1.51	1.68	2.07	16%
CS Cumulative	15000	0.84	4.50	1.92	0.93			48%	22	1.37	1.67	2.12	22%
CTP Cumulative	16000								1				

[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.*

Table 21: P&L VaR/VaR statistics

EU Statistics for P&L VaR/VaR

		Main statistics							Percentiles		
	Port. ID	Min	Max	Ave.	STDev	STDev_trunc [1]	MAD (median absolute deviation)	Coefficient of variation (STDev/Mean)	Num obs. [2]	25th	50th	75th
Equity	1001	0.22	1.26	0.99	0.26			26%	21	0.96	1.07	1.15
	1002	0.17	1.41	1.00	0.30			30%	20	0.87	1.08	1.20
	1003	0.14	1.26	0.86	0.25			29%	18	0.84	0.97	0.97
	1004	0.19	1.40	1.00	0.30			30%	18	0.97	1.04	1.17
	1005	0.23	1.29	1.01	0.27			26%	20	1.02	1.04	1.14
	1006	0.34	1.51	1.03	0.23			23%	17	0.96	1.10	1.13
	1007	0.33	1.58	1.16	0.25			22%	19	1.02	1.21	1.28
	1008	0.17	1.29	0.95	0.27			29%	17	1.00	1.03	1.05
	1009	0.18	1.35	0.93	0.30			32%	19	0.75	1.05	1.13
	1010	0.14	1.26	0.86	0.25			29%	19	0.84	0.94	0.98
	1011	0.00	5.67	1.52	1.93			128%	6	0.21	0.95	1.42
	1012	0.75	4.46	2.91	0.87			30%	15	2.64	3.00	3.41
	1013	0.16	1.30	0.87	0.28			32%	19	0.76	0.93	1.07
	1014	0.17	1.30	0.83	0.24			29%	19	0.80	0.90	0.92
	1015	0.16	1.43	0.95	0.37			39%	18	0.79	1.01	1.19
	1016	0.12	1.14	0.73	0.29			39%	18	0.54	0.81	0.96
	1017	0.50	133.00	54.25	55.70			103%	10	1.23	36.55	103.20
	1018	0.31	1.69	0.89	0.35			39%	14	0.81	0.86	0.96
	1019	0.62	2.44	1.97	0.40			21%	16	1.88	2.03	2.20
	1020	0.43	2.56	1.39	0.48			34%	14	1.30	1.41	1.57
	1021	0.18	0.73	0.49	0.21			43%	5	0.30	0.58	0.66
	1101	0.21	109.29	6.42	23.60			368%	20	1.01	1.04	1.18
	1102	0.13	1.17	0.93	0.27			29%	18	0.88	1.02	1.09
	1103	0.10	1.44	0.88	0.43			49%	17	0.52	0.97	1.21
	1104	0.19	3.42	0.95	0.65			69%	18	0.72	0.90	0.95
	1105	0.76	4.46	2.74	0.98			36%	16	2.29	2.91	3.43
	1106	0.36	9.85	3.71	2.72			73%	19	1.93	3.02	5.45
	1107	0.11	1.37	1.05	0.32			31%	18	1.00	1.15	1.25
	1108	0.23	1.29	1.00	0.27			27%	20	0.96	1.11	1.14
	1109	0.24	9.96	1.45	2.02			139%	19	0.97	1.11	1.14
	1110	0.20	1.56	0.94	0.32			34%	18	0.77	1.04	1.13
Interest Rate	2001	0.25	1.89	1.01	0.27			26%	26	0.90	1.05	1.09
	2002	0.33	3.31	1.20	0.56			46%	25	1.01	1.08	1.17
	2003	0.22	1.26	0.91	0.27			30%	27	0.76	1.02	1.08
	2004	0.30	2.39	1.06	0.33			31%	26	0.94	1.04	1.08
	2005	0.90	1.26	1.08	0.11			10%	10	1.00	1.07	1.18
	2006	0.25	1.32	0.98	0.24			25%	23	0.93	1.04	1.12
	2007	0.21	1.52	1.05	0.23			22%	26	1.01	1.07	1.13
	2008	0.33	1.98	1.05	0.31			29%	23	1.00	1.04	1.15
	2009	0.25	1.39	0.94	0.21			22%	25	0.80	1.01	1.04
	2010	0.22	1.29	0.96	0.21			22%	24	0.86	1.02	1.06
	2011	0.28	1.42	0.98	0.22			22%	25	0.93	1.02	1.08
	2012	0.21	1.59	1.07	0.24			23%	26	1.01	1.08	1.15
	2013	0.32	1.27	0.94	0.21			22%	22	0.88	1.01	1.04
	2014	0.06	1.08	0.89	0.25			29%	23	0.80	1.02	1.03
	2015	0.21	1.17	0.91	0.28			30%	22	0.90	1.03	1.08
	2016	0.17	1.56	0.95	0.36			38%	16	0.81	1.04	1.12
	2017	0.33	1.17	0.89	0.24			27%	16	0.83	0.99	1.05
	2018	0.24	13.46	1.55	2.39			155%	26	1.01	1.07	1.15
	2019	0.23	1.36	1.01	0.19			18%	26	1.00	1.03	1.07
	2020	0.16	1.32	0.98	0.29			30%	22	0.88	1.05	1.19
	2021	0.63	1.40	1.07	0.15			14%	24	1.01	1.07	1.13
	2022	0.29	1.37	0.98	0.26			27%	23	0.96	1.02	1.13
	2023	0.22	2.43	1.07	0.38			35%	20	1.00	1.02	1.08
	2024	0.19	2.04	1.16	0.41			35%	25	1.04	1.15	1.28
	2201	0.25	1.82	1.08	0.29			27%	21	0.99	1.04	1.09
	2202	0.11	1.65	1.01	0.31			30%	22	0.96	1.03	1.11
	2203	0.16	1.69	1.01	0.30			29%	22	0.98	1.01	1.06
	2204	0.27	18.48	1.75	3.49			199%	24	1.01	1.02	1.11
	2205	0.18	1.34	0.97	0.28			29%	24	0.97	1.04	1.11
	2206	0.24	3.16	1.14	0.46			40%	26	1.01	1.06	1.17
	2207	0.34	1.44	0.91	0.24			27%	24	0.73	1.03	1.06
	2208	0.32	1.29	0.92	0.29			32%	16	0.85	1.04	1.08
	2209	0.04	1.35	0.81	0.35			44%	22	0.61	0.98	1.05
	2210	0.16	1.36	0.94	0.30			32%	23	0.90	1.02	1.12
	2211	0.22	1.29	0.99	0.20			20%	26	1.00	1.03	1.06
	2212	0.26	1.42	0.98	0.26			26%	20	0.91	1.04	1.08
FX	3001	0.21	1.41	1.03	0.28			27%	22	0.99	1.04	1.19
	3002	0.14	6.44	1.15	1.10			95%	25	0.87	1.02	1.06
	3003	0.21	1.41	1.05	0.25			23%	20	1.00	1.04	1.23
	3004	0.11	1.21	0.85	0.27			32%	23	0.77	0.93	1.01
	3005	0.23	16.35	1.56	3.03			195%	25	0.84	1.04	1.09
	3006	0.23	1.42	1.00	0.25			26%	25	1.00	1.02	1.11
	3007	0.14	1.56	0.90	0.32			35%	25	0.86	0.92	0.98
	3008	0.16	3.10	1.06	0.52			49%	21	0.95	1.06	1.09
	3009	0.23	1.58	1.01	0.27			27%	25	0.92	1.06	1.12
	3010	0.05	1.24	0.85	0.29			35%	24	0.59	0.99	1.03
	3011	0.32	1.20	0.92	0.22			24%	14	0.89	1.01	1.06
	3301	0.24	1.27	1.01	0.23			23%	24	1.02	1.05	1.09
	3302	0.11	1.38	0.98	0.37			37%	25	0.74	1.15	1.25
	3303	0.13	11.07	1.26	2.02			161%	25	0.72	0.95	1.05
	3304	0.16	292.89	14.87	62.17			418%	21	0.96	1.07	1.09

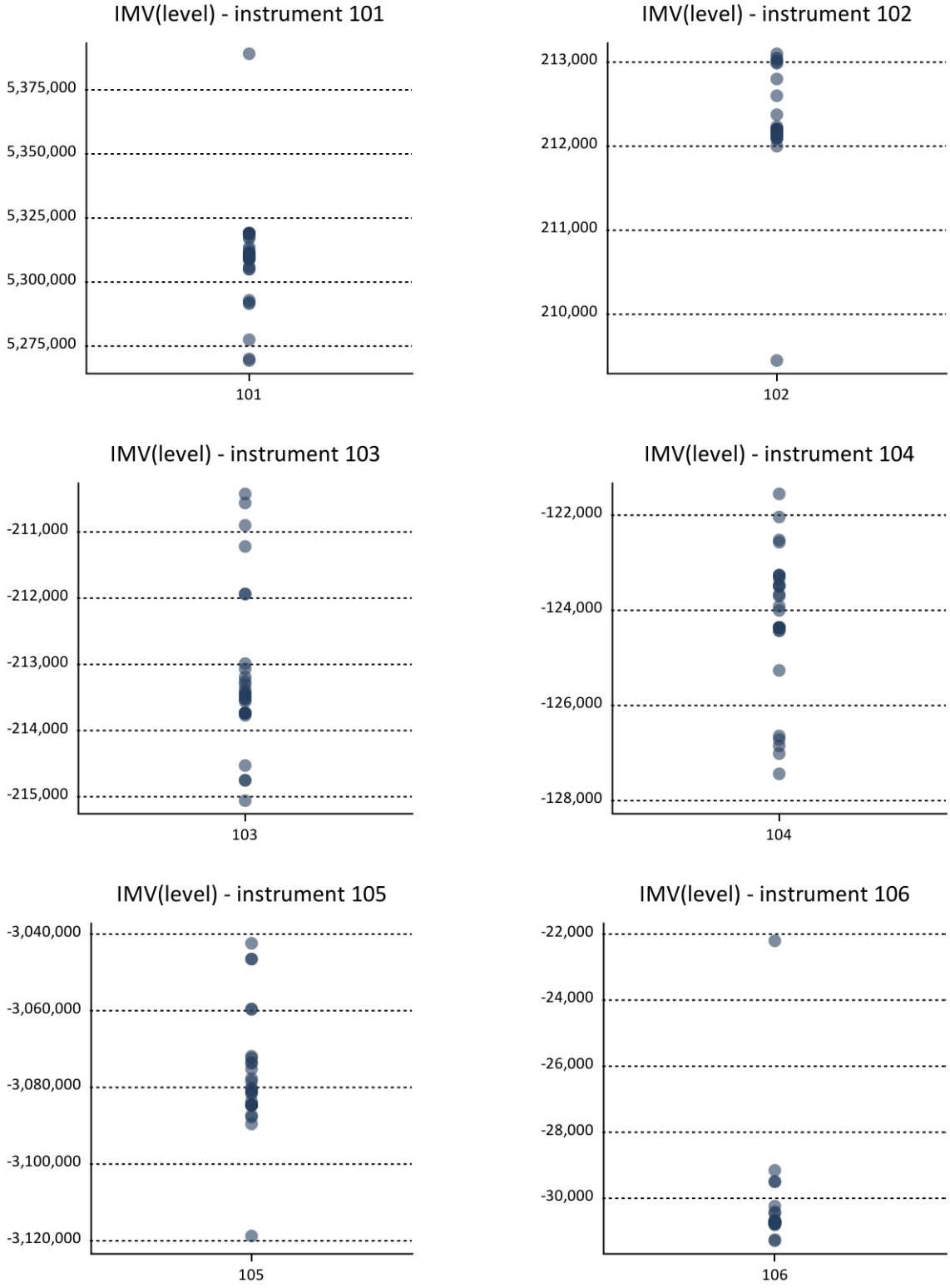
Commodities	*4001*	0.33	215.90	24.73	67.59			273%	9	0.74	1.00	1.02
	4002	0.31	289.19	33.04	90.56			274%	9	1.00	1.10	1.20
	4003	0.14	0.53	0.37	0.16			45%	7	0.20	0.48	0.51
	4004	0.40	1.63	1.10	0.35			32%	7	1.00	1.20	1.25
	4005	0.31	866.69	124.46	303.01			243%	7	0.64	0.97	1.00
	4401	0.34	2.29	0.99	0.55			55%	9	0.50	0.91	1.15
	4402	0.31	0.97	0.77	0.24			31%	7	0.63	0.93	0.96
	4403	0.32	1.07	0.81	0.31			39%	5	0.55	1.03	1.06
Credit Spread	*5001*	0.39	1.34	1.06	0.21			20%	16	1.01	1.07	1.18
	5002	0.36	2.50	1.21	0.43			36%	16	1.01	1.16	1.38
	5003	0.35	1.27	0.92	0.26			28%	17	0.67	1.02	1.07
	5004	0.34	39.82	3.64	9.67			265%	15	1.00	1.01	1.32
	5005	0.76	1.35	1.05	0.17			16%	12	1.01	1.04	1.08
	5006	0.47	1.34	1.02	0.20			20%	15	0.99	1.03	1.12
	5007	0.87	1.64	1.09	0.19			17%	16	1.00	1.04	1.11
	5008	0.32	2.15	1.16	0.38			33%	16	1.01	1.08	1.19
	5009	0.32	1.93	1.03	0.35			34%	17	0.99	1.02	1.10
	5010	0.32	2.16	1.09	0.35			32%	15	1.01	1.04	1.13
	5011	0.31	1.27	1.00	0.21			21%	16	0.99	1.03	1.09
	5012	0.34	1.98	1.14	0.32			28%	19	1.05	1.13	1.27
	5013	0.02	2.06	0.98	0.44			45%	13	1.00	1.03	1.04
	5014	0.13	2.31	1.21	0.48			40%	16	1.07	1.19	1.42
	5015	0.13	2.31	1.09	0.44			40%	17	1.02	1.06	1.23
	5016	0.27	1.66	1.06	0.34			32%	18	0.99	1.06	1.17
	5017	0.31	1.46	1.00	0.28			28%	15	0.94	1.03	1.13
	5018	1.01	1.82	1.21	0.20			16%	15	1.10	1.12	1.27
	5019	0.26	1.34	0.99	0.29			29%	21	0.81	1.04	1.21
	5020	0.67	1.52	1.05	0.21			20%	20	0.91	1.08	1.19
	5021	0.89	1.84	1.11	0.21			19%	20	1.01	1.03	1.14
	5022	0.32	4.15	1.22	0.70			57%	20	1.03	1.07	1.20
	5023	0.33	1.23	1.02	0.18			17%	20	1.01	1.04	1.08
	5024	0.56	1.19	0.96	0.16			17%	14	0.93	1.02	1.04
	5025	0.99	2.57	1.20	0.34			29%	19	1.06	1.10	1.22
	5026	0.64	1.81	1.03	0.30			29%	15	0.84	1.03	1.10
	5027	0.95	8.84	1.55	1.77			114%	18	1.08	1.13	1.20
	5028	0.45	1.51	0.94	0.25			27%	15	0.81	1.00	1.04
	5029	0.33	1.48	1.05	0.23			22%	18	1.01	1.04	1.17
	5030	0.30	2.15	1.14	0.48			42%	10	0.89	1.07	1.32
	5031	0.79	1.83	1.15	0.24			21%	15	1.03	1.09	1.21
	5032	0.32	2.47	1.14	0.47			41%	15	1.00	1.08	1.19
	5033	0.70	1.38	1.10	0.17			15%	17	1.01	1.08	1.24
	5034	0.72	4.50	1.23	0.83			68%	17	0.89	1.04	1.17
	5501	0.34	1.32	1.02	0.25			25%	17	1.01	1.06	1.21
	5502	0.34	1.35	1.06	0.25			24%	13	1.00	1.01	1.27
	5503	0.06	1.45	0.96	0.33			35%	17	0.89	1.01	1.15
	5504	0.04	1.42	0.93	0.36			38%	14	0.82	1.01	1.10
	5505	0.01	2.00	1.03	0.40			39%	17	1.00	1.03	1.14
	5506	0.01	2.55	1.05	0.49			47%	17	0.97	1.04	1.15
	5507	0.32	1.30	0.95	0.21			23%	14	0.88	1.01	1.03
	5508	0.87	1.43	1.11	0.14			12%	20	1.03	1.07	1.19
	5509	0.33	1.45	1.03	0.23			22%	19	0.97	1.03	1.09
	5510	0.62	1.32	0.99	0.18			19%	18	0.91	1.03	1.09
	5511	0.32	1.46	1.06	0.21			20%	18	1.02	1.06	1.13
	5512	0.34	1.95	1.08	0.39			36%	19	0.96	1.05	1.17
	5513	0.48	1.54	1.10	0.24			21%	17	0.99	1.04	1.21
	5514	0.38	1.27	0.94	0.20			21%	18	0.83	1.01	1.07
	5515	0.31	1.33	0.92	0.25			28%	12	0.85	1.00	1.05
	5516	0.32	1.53	0.91	0.30			34%	13	0.77	1.01	1.06
	5517	0.31	1.61	0.93	0.30			32%	13	0.71	1.00	1.03
	5518	0.87	1.19	1.02	0.08			8%	17	1.01	1.02	1.08
	5519	0.96	1.32	1.11	0.10			9%	18	1.04	1.09	1.14
	5520	0.65	1.13	0.95	0.14			14%	13	0.84	1.01	1.07
	5521	1.00	1.36	1.14	0.10			9%	15	1.05	1.13	1.21
	5522	0.36	1.31	1.05	0.31			29%	12	1.01	1.17	1.25
CTP	*6001*								2			
	6002								2			
	6003								2			
	6004								2			
	6005								2			
	6006								2			
	6007								2			
	6008								2			
	6009								2			
	6010								2			
	6601								2			
	6602								2			
	6603								2			
	6604								2			
	6605								2			
ALL-IN no-CTP	*10000*	0.34	1.17	0.90	0.25			28%	10	0.73	1.01	1.06
Equity Cumulative	*11000*	0.18	1.21	0.92	0.25			27%	20	0.88	1.03	1.06
IR Cumulative	*12000*	0.34	1.47	1.06	0.21			20%	22	1.01	1.08	1.11
FX Cumulative	*13000*	0.15	1.68	1.02	0.28			27%	24	0.98	1.06	1.12
Commodity Cumulative	*14000*	0.30	0.98	0.78	0.23			30%	7	0.67	0.92	0.95
CS Cumulative	*15000*	1.00	1.37	1.14	0.12			11%	14	1.04	1.10	1.25
CTP Cumulative	*16000*											

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

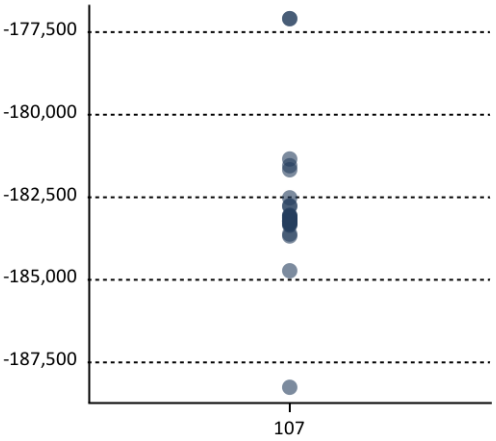
[2] Refers to the number of banks included in the computation of the statistics

*** 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.*

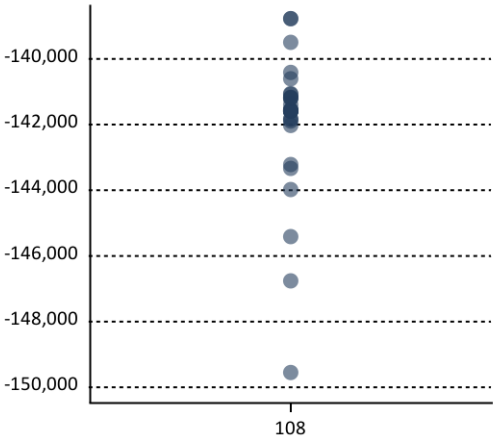
Figure 16: IMV scatter plots (all)



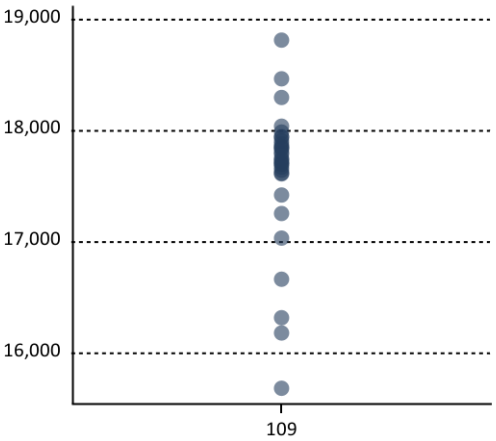
IMV(level) - instrument 107



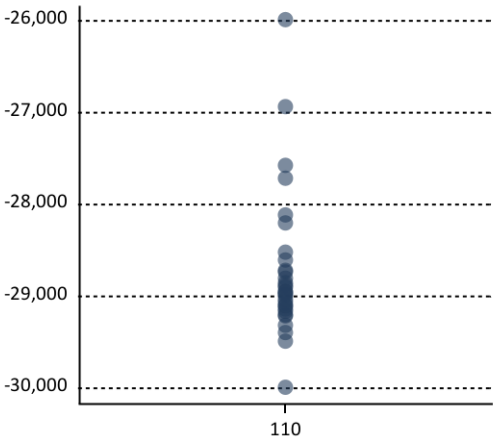
IMV(level) - instrument 108



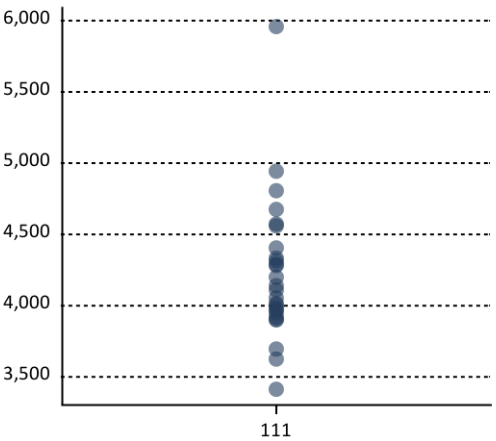
IMV(level) - instrument 109



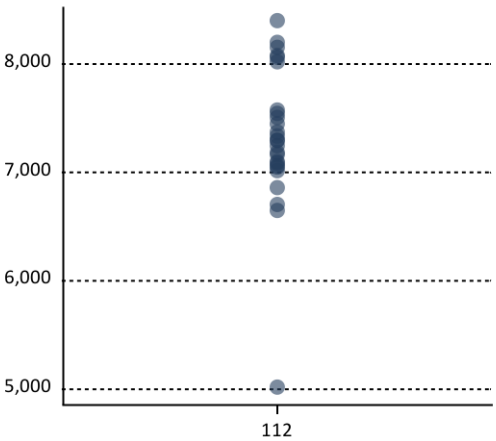
IMV(level) - instrument 110



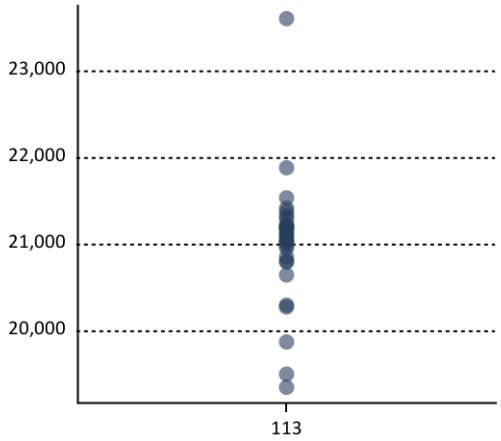
IMV(level) - instrument 111



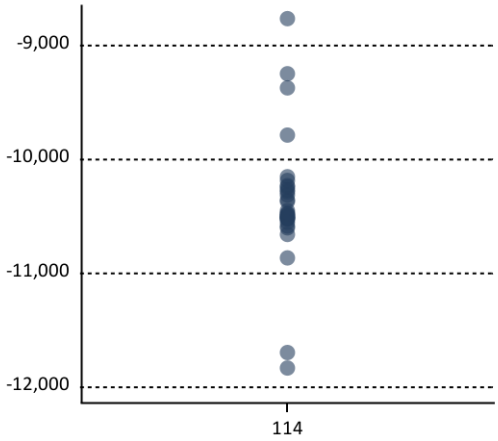
IMV(level) - instrument 112



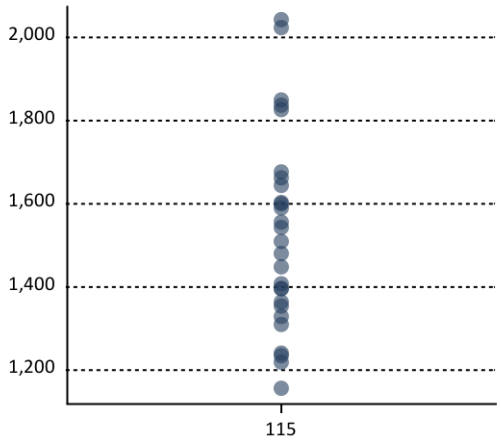
IMV(level) - instrument 113



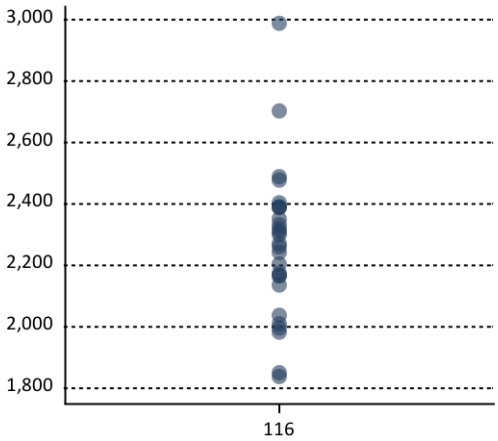
IMV(level) - instrument 114



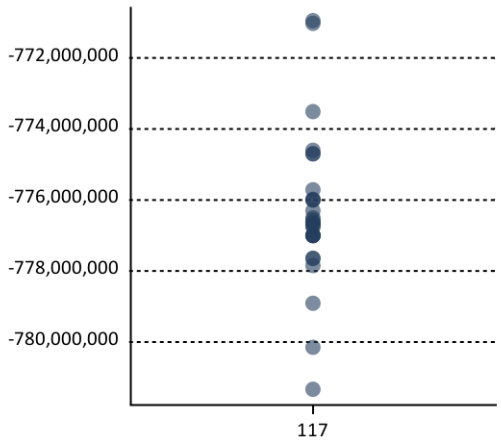
IMV(level) - instrument 115



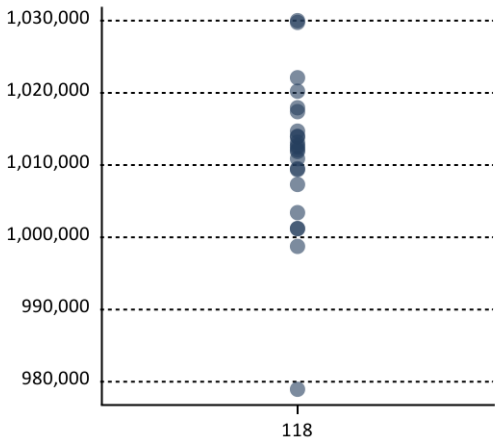
IMV(level) - instrument 116

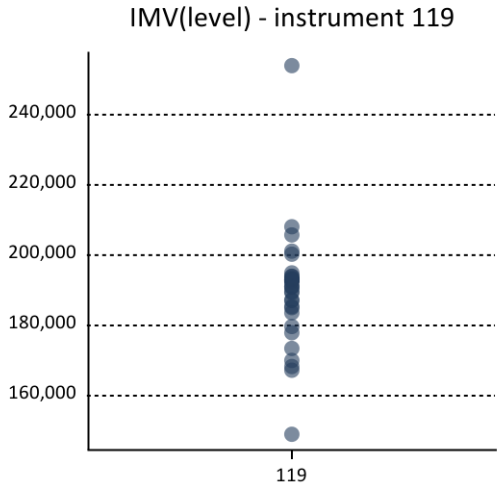


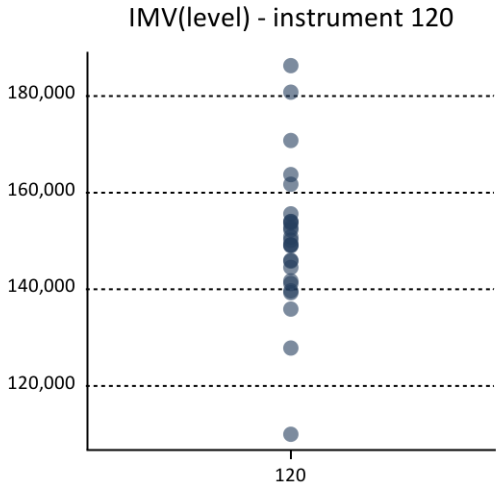
IMV(level) - instrument 117

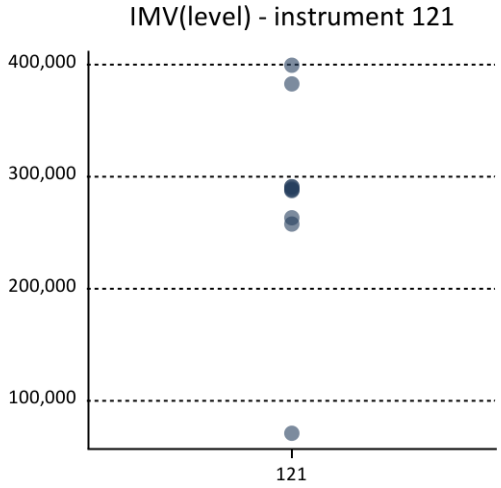


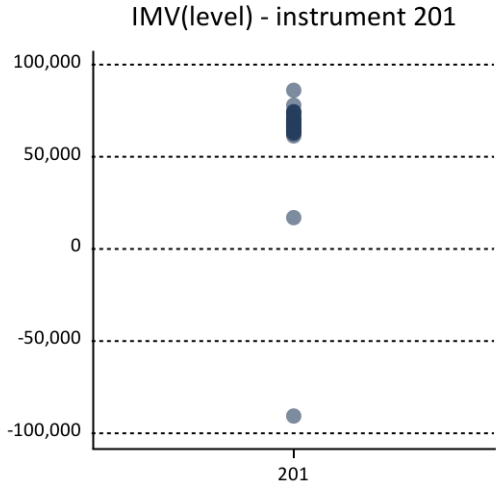
IMV(level) - instrument 118

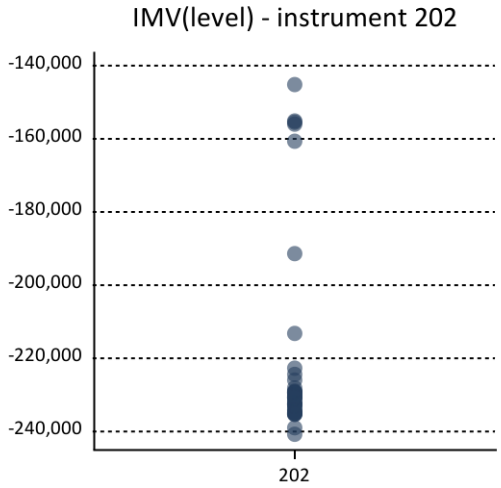


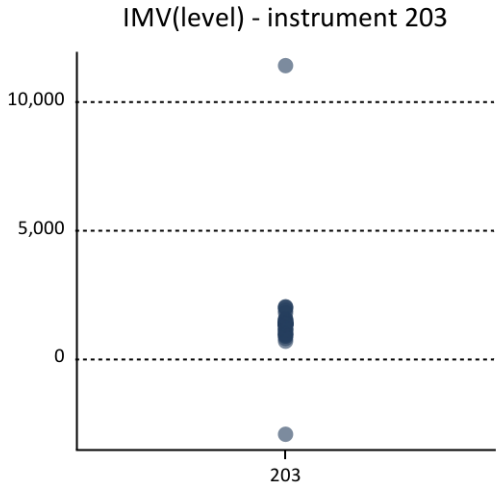

IMV(level) - instrument 119
240,000
220,000
200,000
180,000
160,000
119

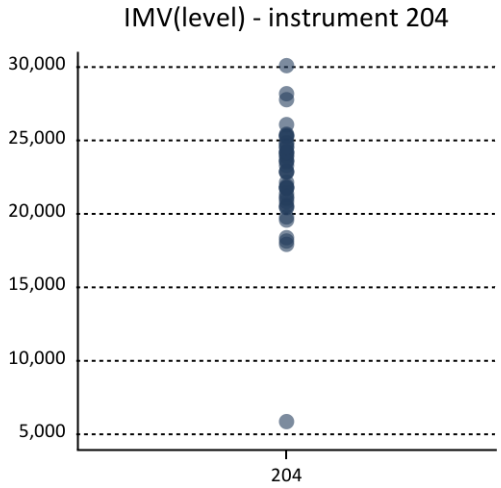

IMV(level) - instrument 120
180,000
160,000
140,000
120,000
120

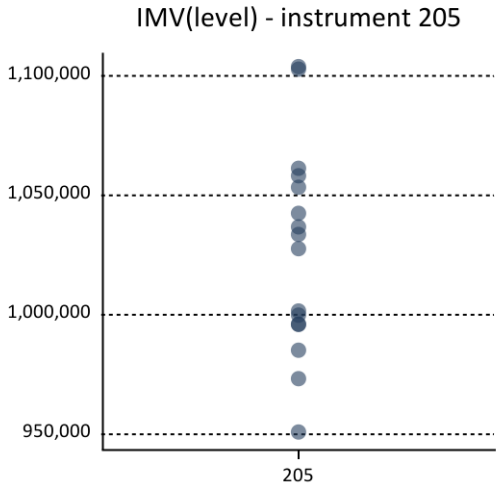

IMV(level) - instrument 121
400,000
300,000
200,000
100,000
121

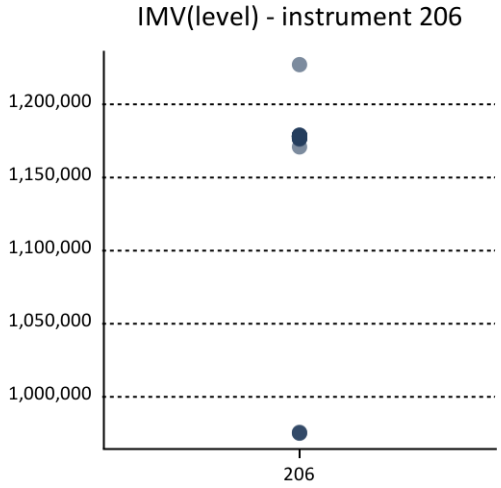

IMV(level) - instrument 201
100,000
50,000
0
-50,000
-100,000
201

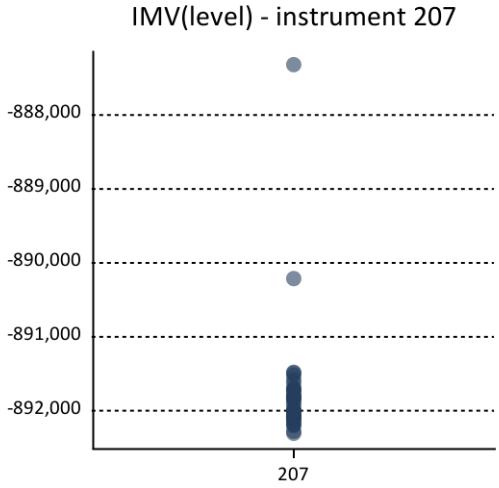

IMV(level) - instrument 202
-140,000
-160,000
-180,000
-200,000
-220,000
-240,000
202

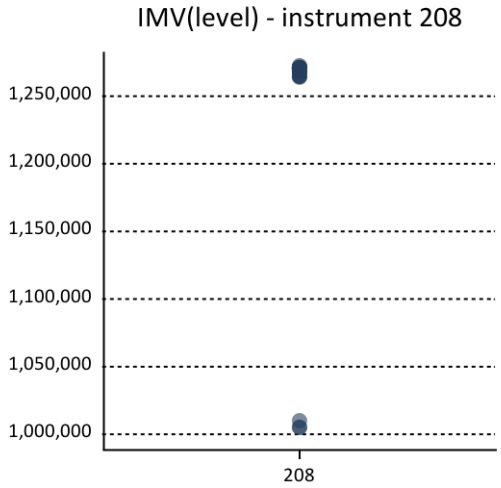

IMV(level) - instrument 203
10,000
5,000
0
203

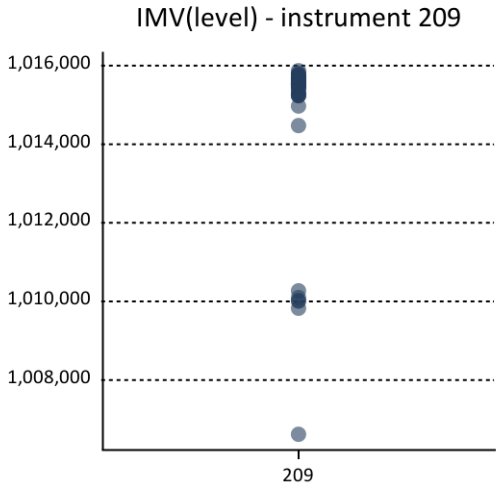

IMV(level) - instrument 204
30,000
25,000
20,000
15,000
10,000
5,000
204

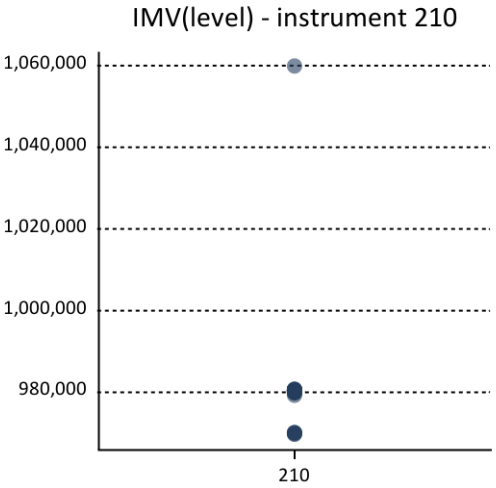

IMV(level) - instrument 205
1,100,000
1,050,000
1,000,000
950,000
205

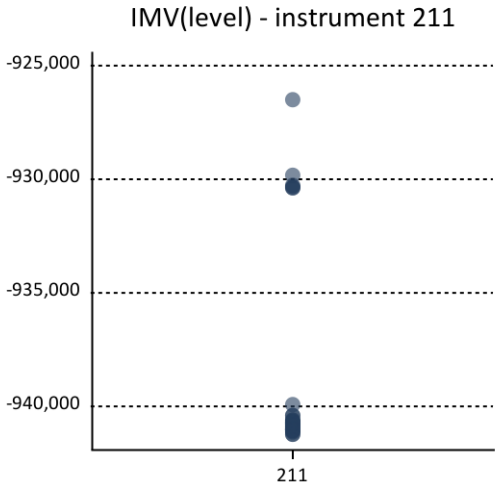

IMV(level) - instrument 206
1,200,000
1,150,000
1,100,000
1,050,000
1,000,000
206

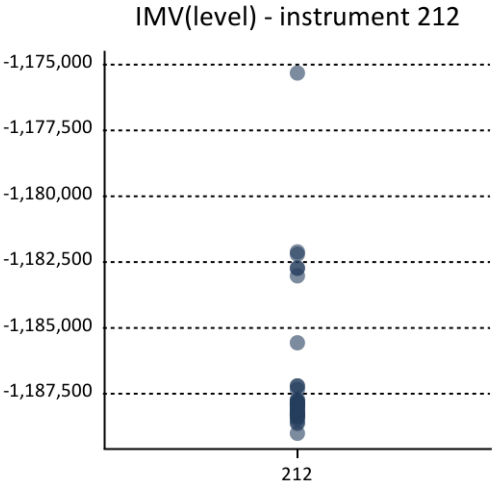

IMV(level) - instrument 207
-888,000
-889,000
-890,000
-891,000
-892,000
207

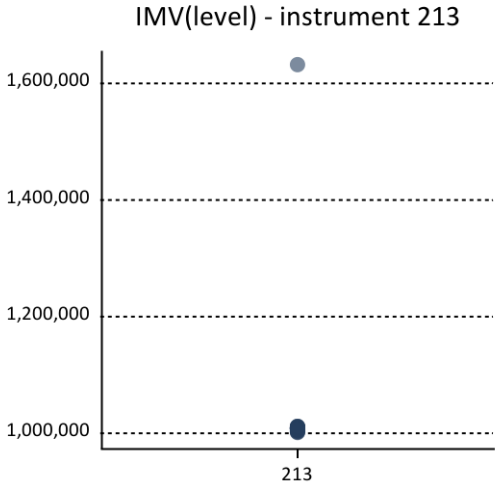

IMV(level) - instrument 208
1,250,000
1,200,000
1,150,000
1,100,000
1,050,000
1,000,000
208

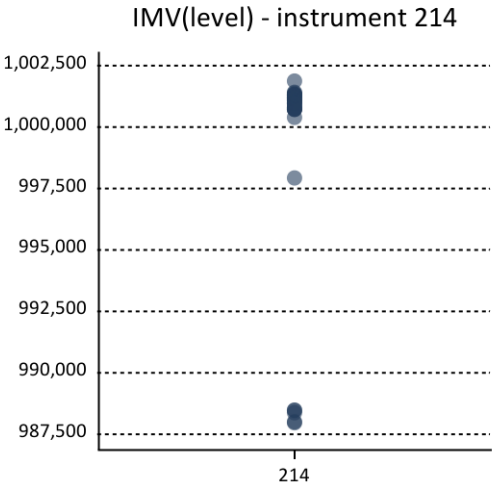

IMV(level) - instrument 209
1,016,000
1,014,000
1,012,000
1,010,000
1,008,000
209

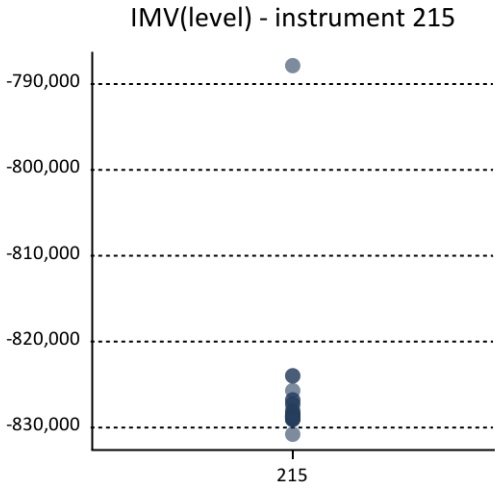

IMV(level) - instrument 210
1,060,000
1,040,000
1,020,000
1,000,000
980,000
210

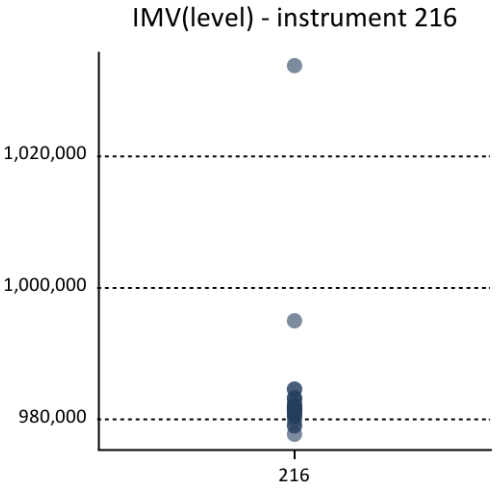

IMV(level) - instrument 211
-925,000
-930,000
-935,000
-940,000
211

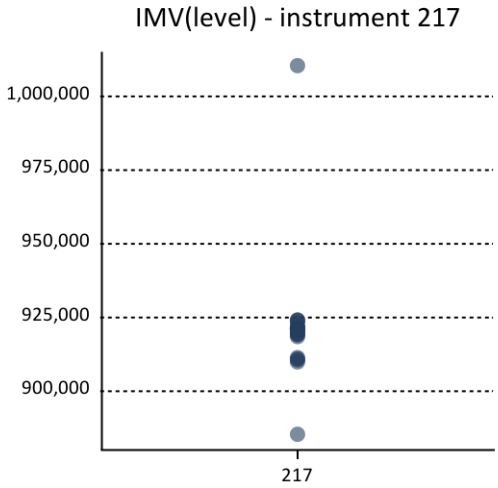

IMV(level) - instrument 212
-1,175,000
-1,177,500
-1,180,000
-1,182,500
-1,185,000
-1,187,500
212

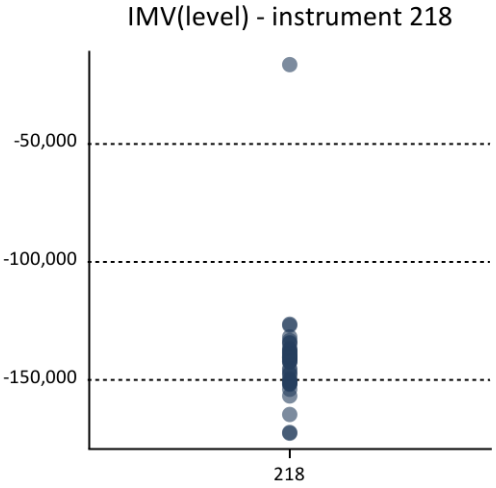

IMV(level) - instrument 213
1,600,000
1,400,000
1,200,000
1,000,000
213

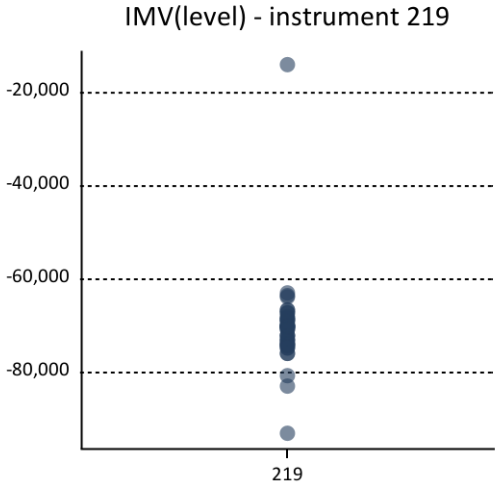

IMV(level) - instrument 214
1,002,500
1,000,000
997,500
995,000
992,500
990,000
987,500
214

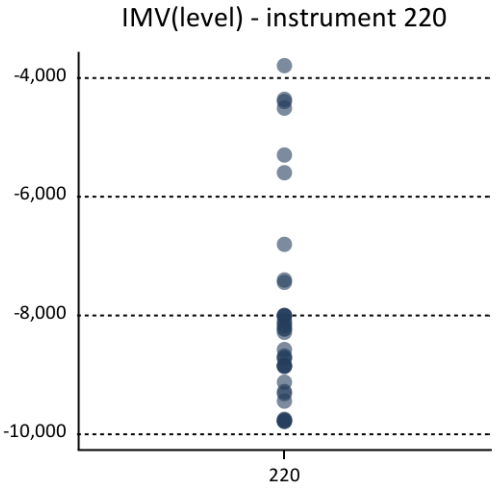

IMV(level) - instrument 215
-790,000
-800,000
-810,000
-820,000
-830,000
215

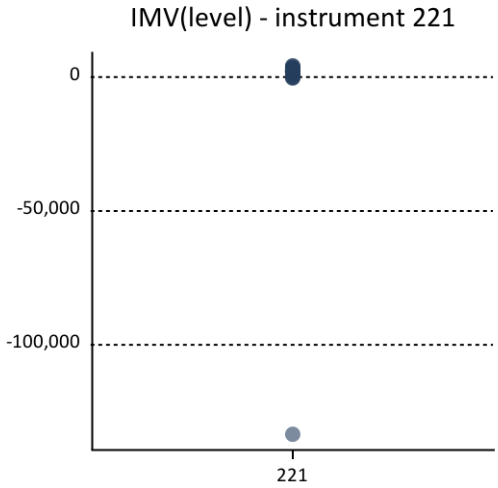

IMV(level) - instrument 216
1,020,000
1,000,000
980,000
216

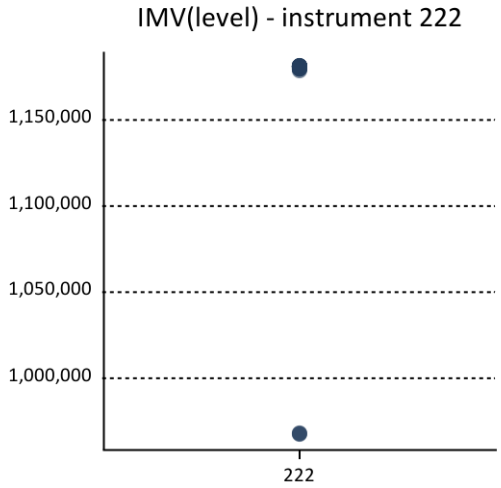

IMV(level) - instrument 217
1,000,000
975,000
950,000
925,000
900,000
217

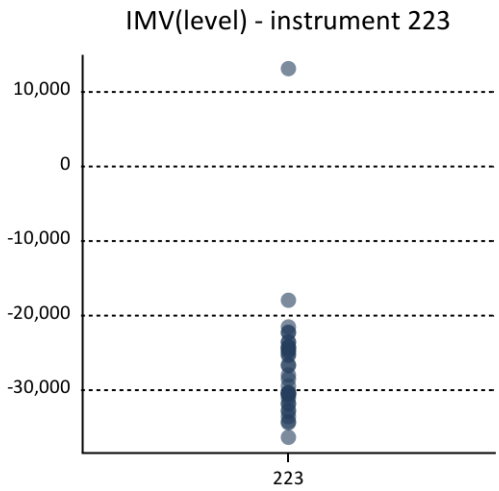

IMV(level) - instrument 218
-50,000
-100,000
-150,000
218

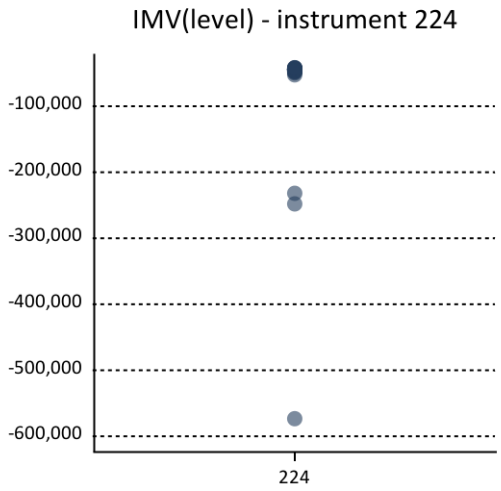

IMV(level) - instrument 219
-20,000
-40,000
-60,000
-80,000
219

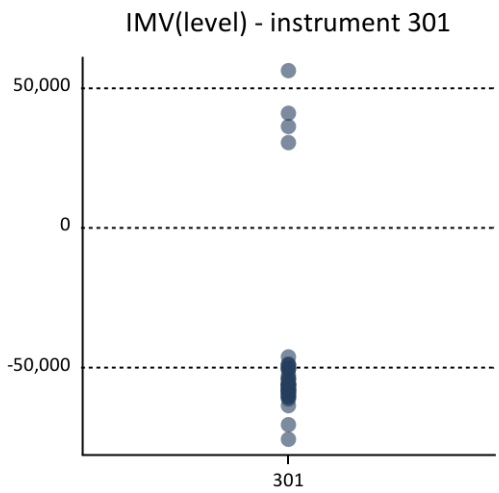

IMV(level) - instrument 220
-4,000
-6,000
-8,000
-10,000
220

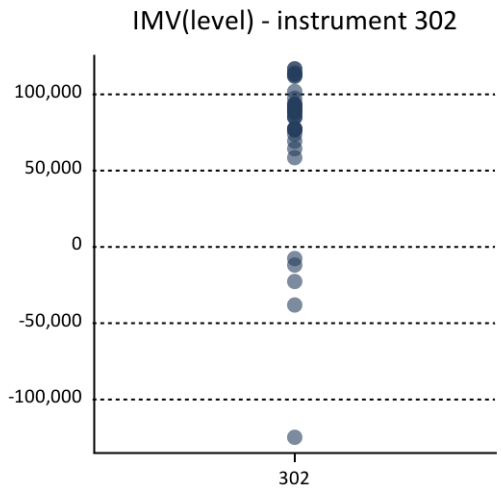

IMV(level) - instrument 221
0
-50,000
-100,000
221

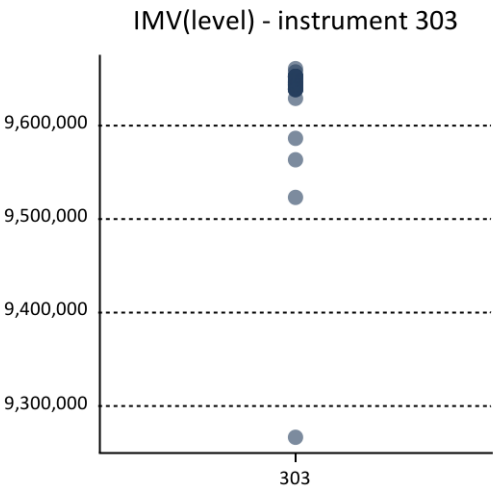

IMV(level) - instrument 222
1,150,000
1,100,000
1,050,000
1,000,000
222

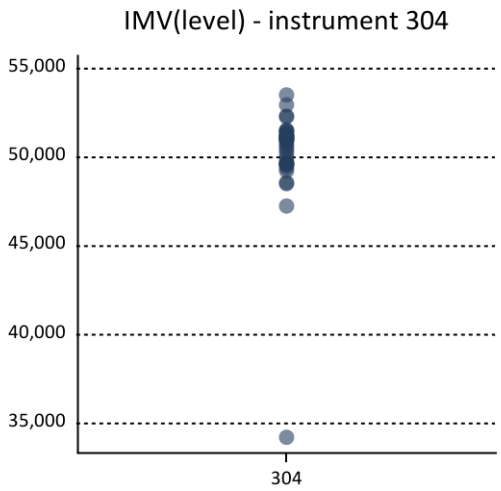

IMV(level) - instrument 223
10,000
0
-10,000
-20,000
-30,000
223

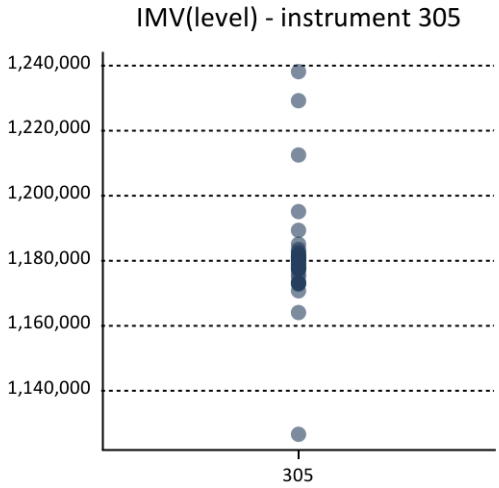

IMV(level) - instrument 224
-100,000
-200,000
-300,000
-400,000
-500,000
-600,000
224

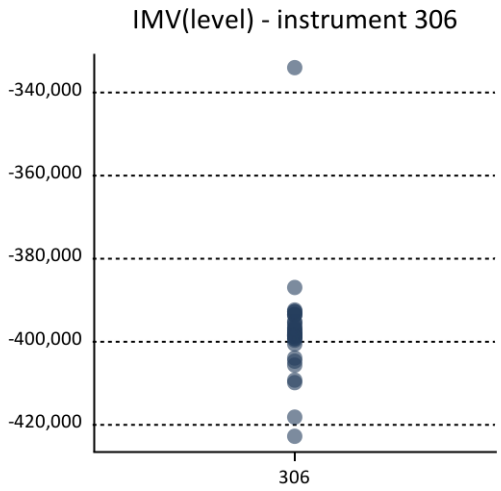

IMV(level) - instrument 301
50,000
0
-50,000
301

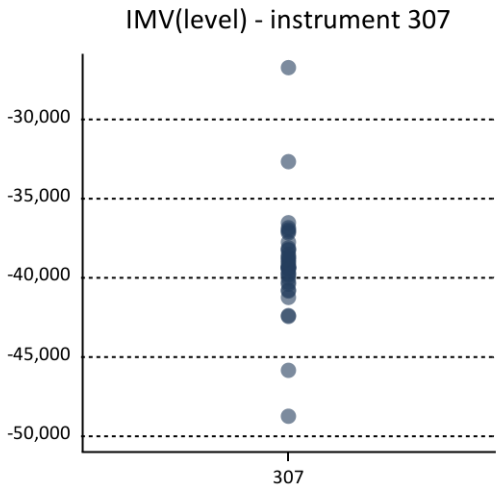

IMV(level) - instrument 302
100,000
50,000
0
-50,000
-100,000
302

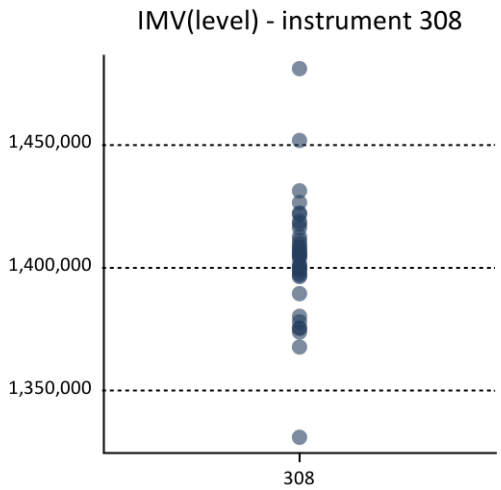

IMV(level) - instrument 303
9,600,000
9,500,000
9,400,000
9,300,000
303

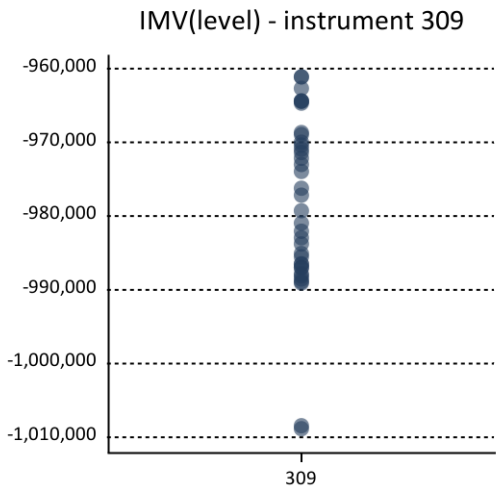

IMV(level) - instrument 304
55,000
50,000
45,000
40,000
35,000
304

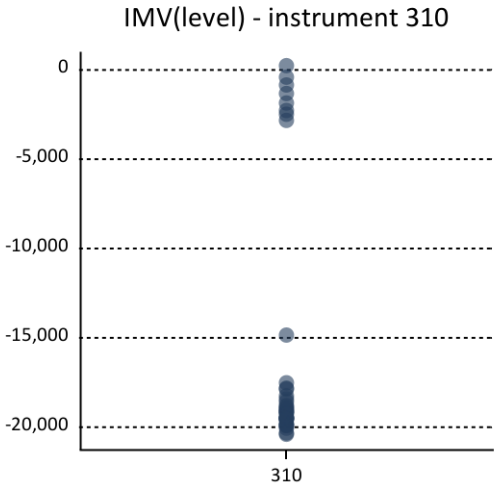

IMV(level) - instrument 305
1,240,000
1,220,000
1,200,000
1,180,000
1,160,000
1,140,000
305

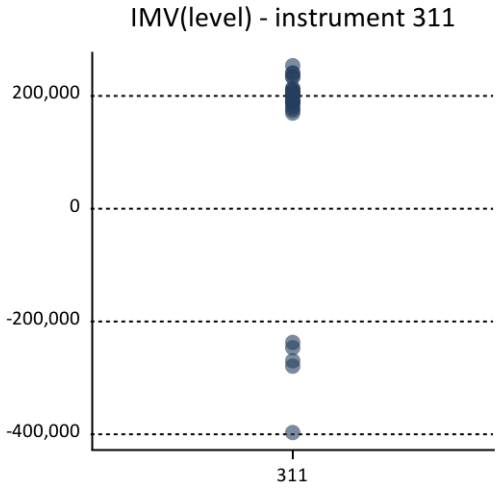

IMV(level) - instrument 306
-340,000
-360,000
-380,000
-400,000
-420,000
306

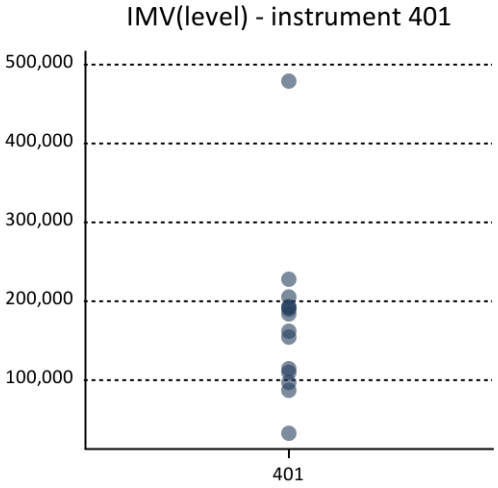

IMV(level) - instrument 307
-30,000
-35,000
-40,000
-45,000
-50,000
307

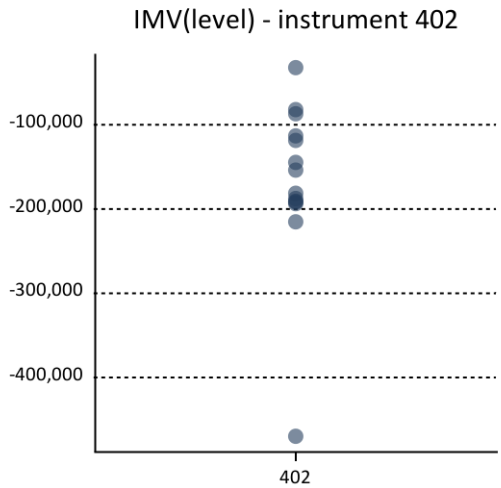

IMV(level) - instrument 308
1,450,000
1,400,000
1,350,000
308

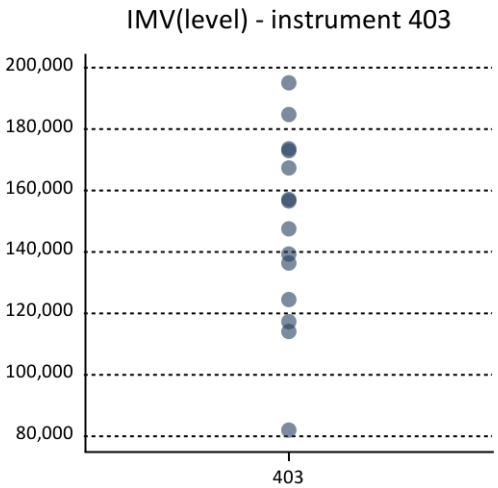

IMV(level) - instrument 309
-960,000
-970,000
-980,000
-990,000
-1,000,000
-1,010,000
309

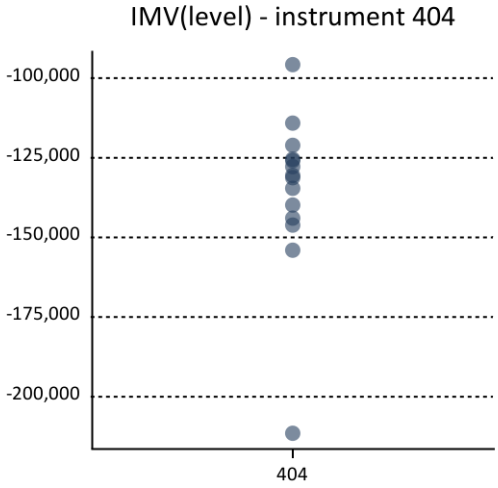

IMV(level) - instrument 310
0
-5,000
-10,000
-15,000
-20,000
310

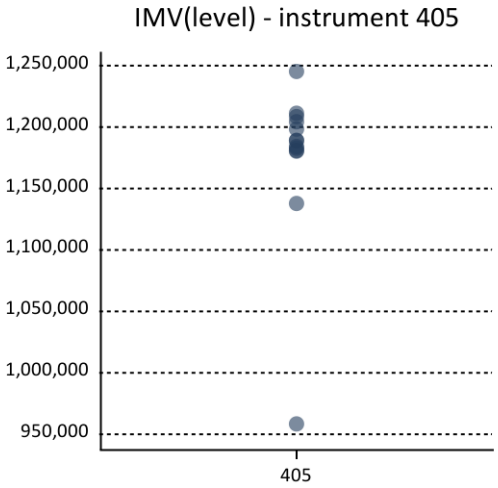

IMV(level) - instrument 311
200,000
0
-200,000
-400,000
311

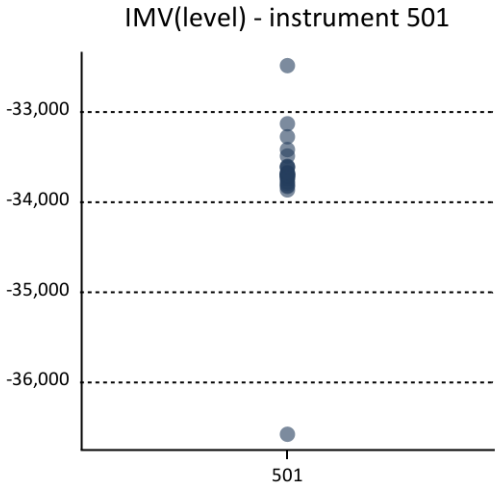

IMV(level) - instrument 401
500,000
400,000
300,000
200,000
100,000
401

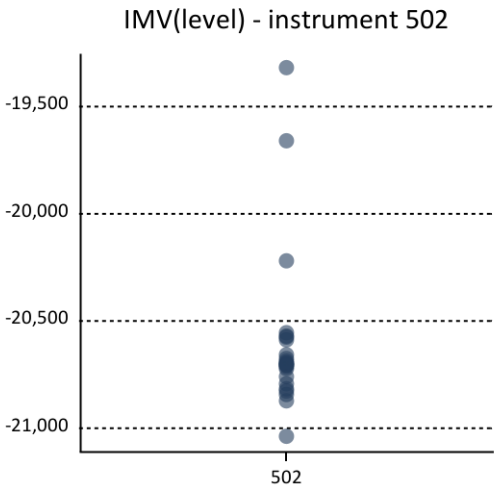

IMV(level) - instrument 402
-100,000
-200,000
-300,000
-400,000
402

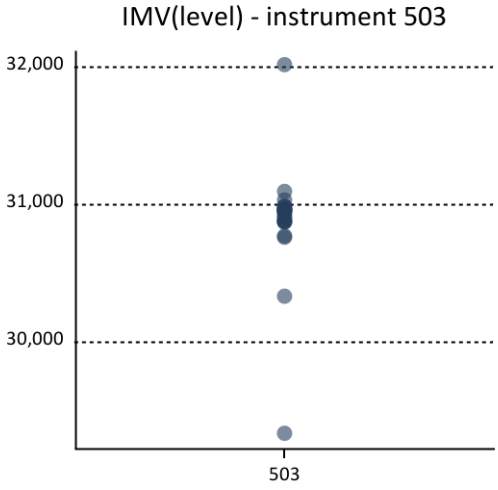

IMV(level) - instrument 403
200,000
180,000
160,000
140,000
120,000
100,000
80,000
403

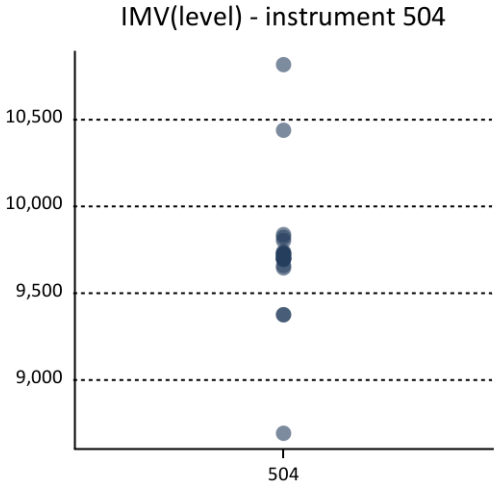

IMV(level) - instrument 404
-100,000
-125,000
-150,000
-175,000
-200,000
404

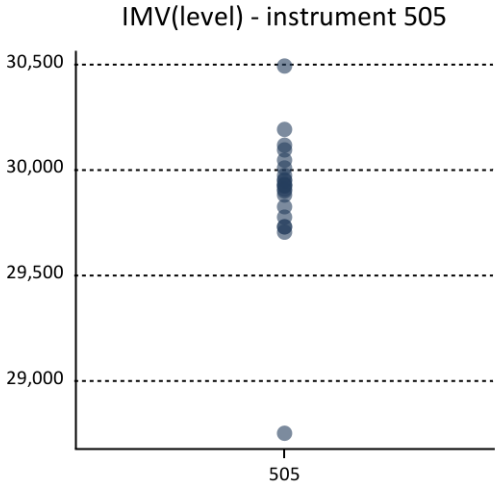

IMV(level) - instrument 405
1,250,000
1,200,000
1,150,000
1,100,000
1,050,000
1,000,000
950,000
405

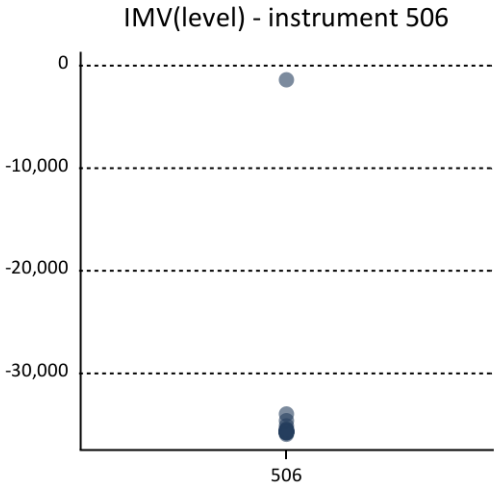

IMV(level) - instrument 501
-33,000
-34,000
-35,000
-36,000
501

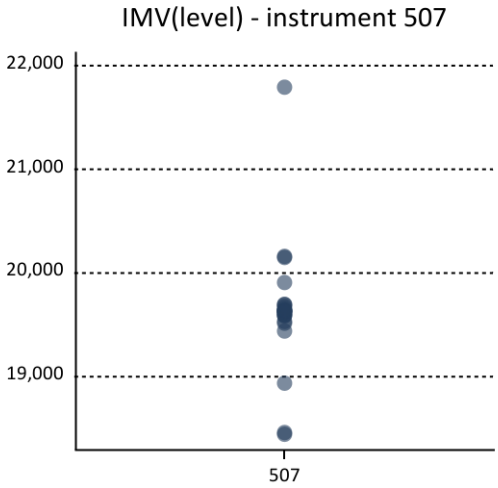

IMV(level) - instrument 502
-19,500
-20,000
-20,500
-21,000
502

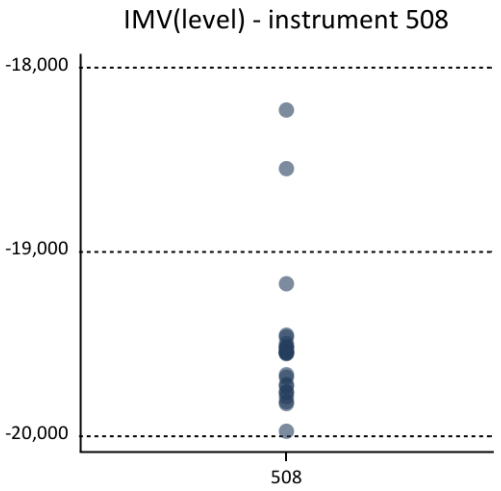

IMV(level) - instrument 503
32,000
31,000
30,000
503

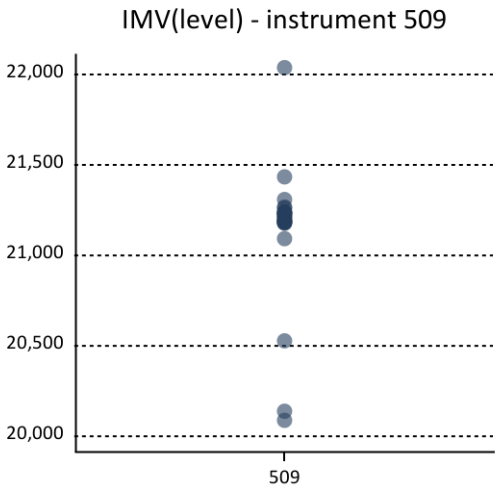

IMV(level) - instrument 504
10,500
10,000
9,500
9,000
504

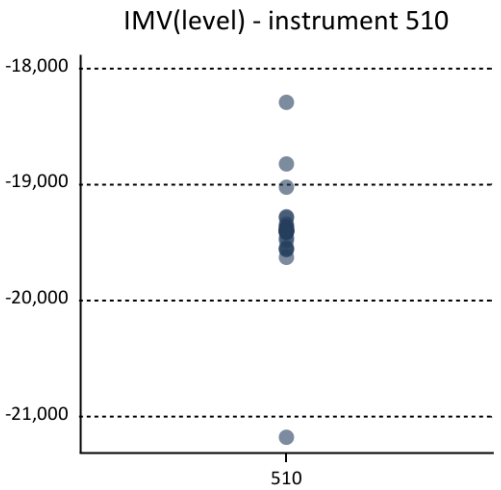

IMV(level) - instrument 505
30,500
30,000
29,500
29,000
505

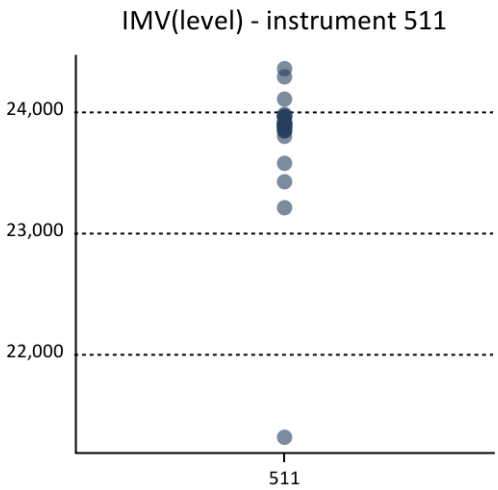

IMV(level) - instrument 506
0
-10,000
-20,000
-30,000
506


IMV(level) - instrument 507
22,000
21,000
20,000
19,000
507

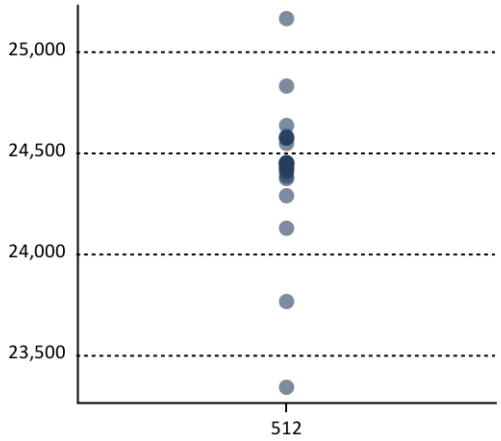

IMV(level) - instrument 508
-18,000
-19,000
-20,000
508


IMV(level) - instrument 509
22,000
21,500
21,000
20,500
20,000
509

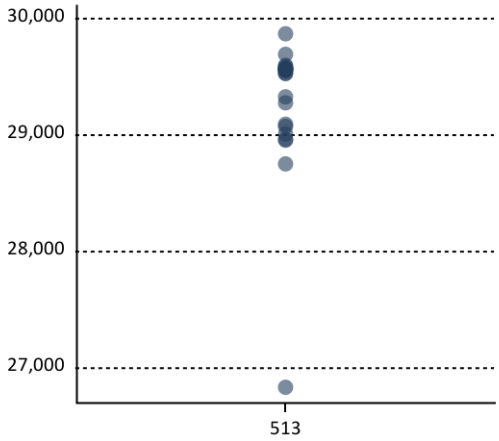

IMV(level) - instrument 510
-18,000
-19,000
-20,000
-21,000
510


IMV(level) - instrument 511
24,000
23,000
22,000
511

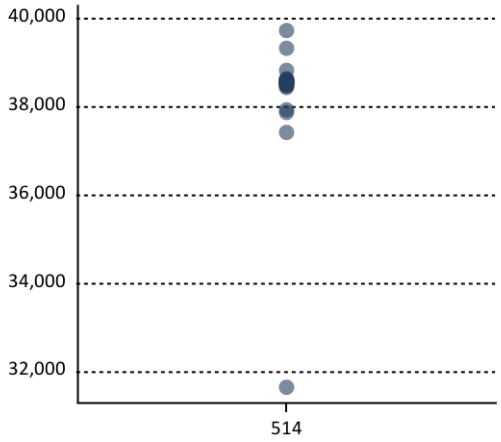
IMV(level) - instrument 512



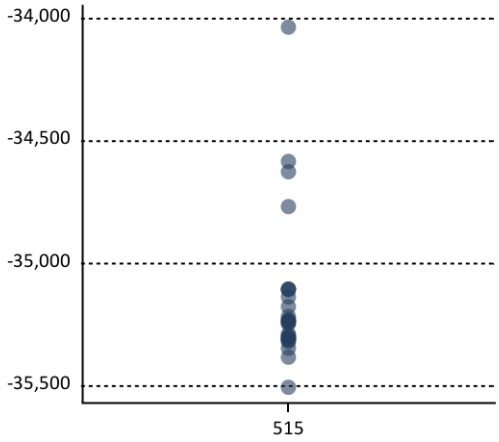
IMV(level) - instrument 513



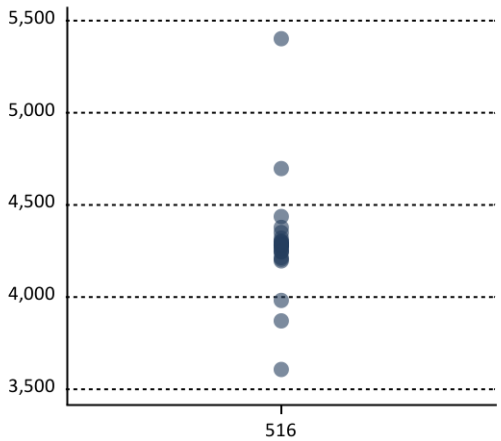
IMV(level) - instrument 514



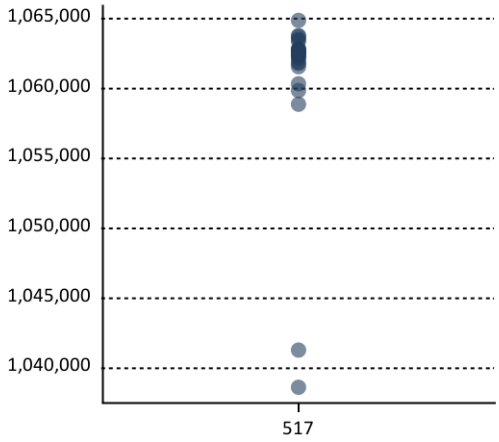
IMV(level) - instrument 515

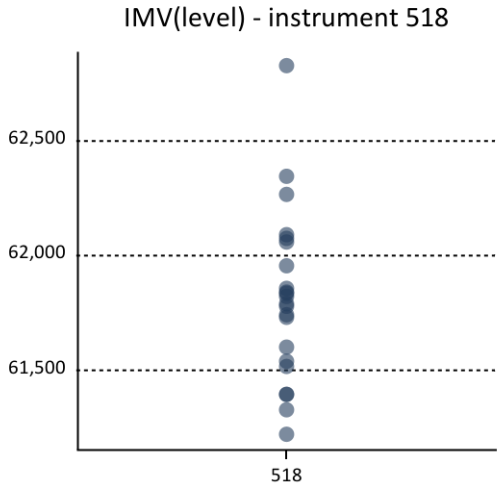


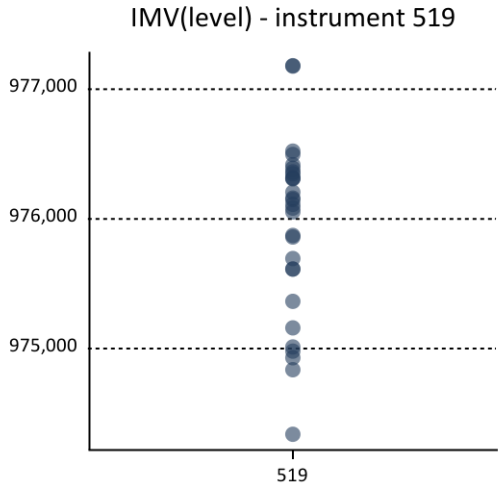
IMV(level) - instrument 516

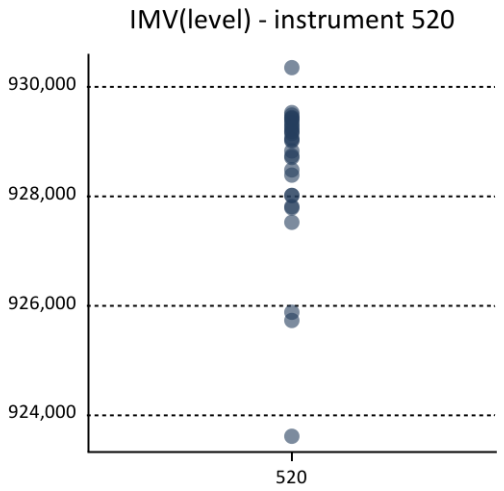


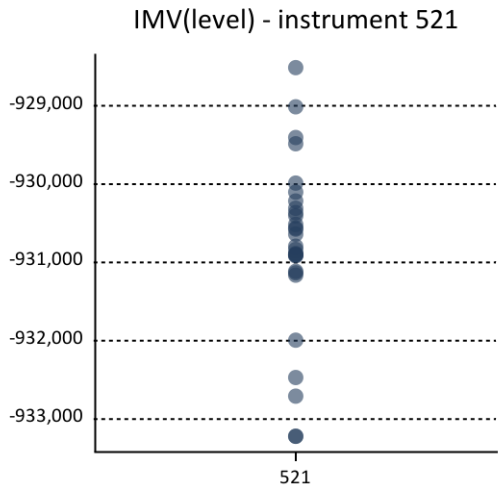
IMV(level) - instrument 517

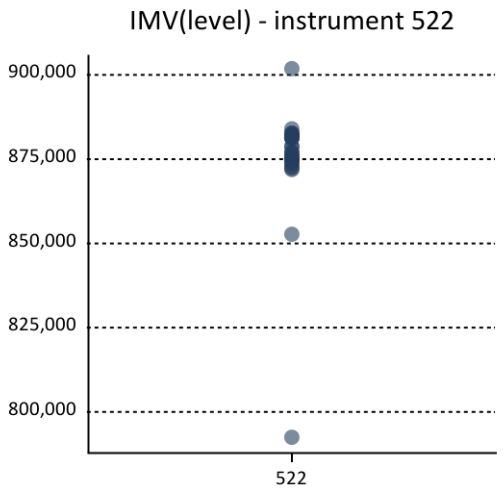


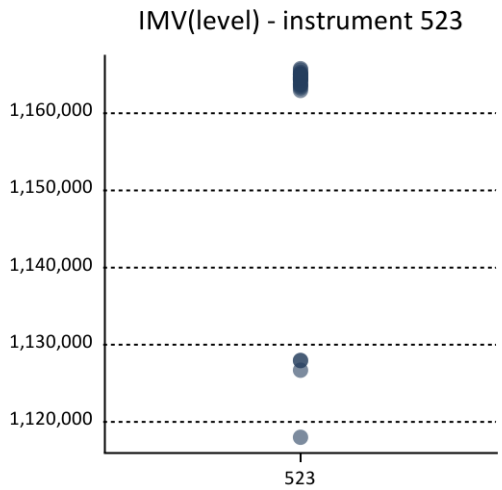

IMV(level) - instrument 518
62,500
62,000
61,500
518

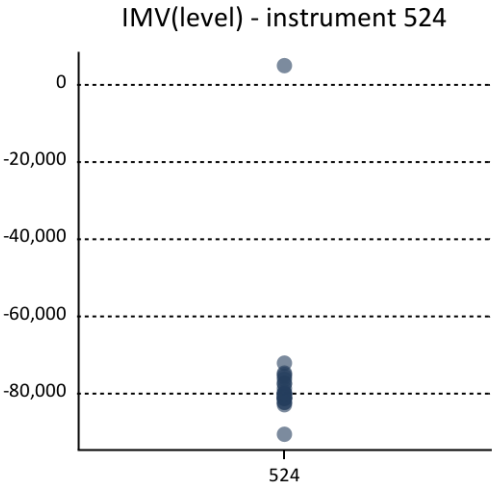

IMV(level) - instrument 519
977,000
976,000
975,000
519

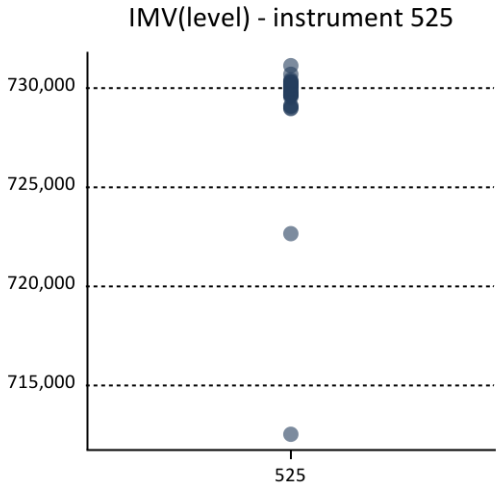

IMV(level) - instrument 520
930,000
928,000
926,000
924,000
520

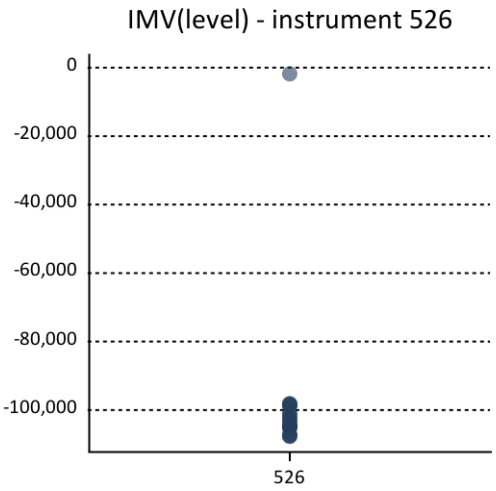

IMV(level) - instrument 521
-929,000
-930,000
-931,000
-932,000
-933,000
521

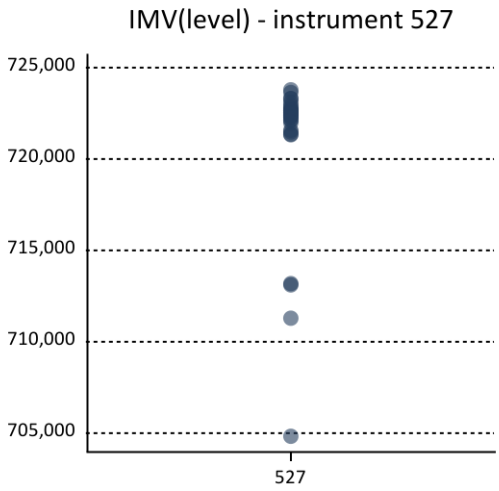

IMV(level) - instrument 522
900,000
875,000
850,000
825,000
800,000
522

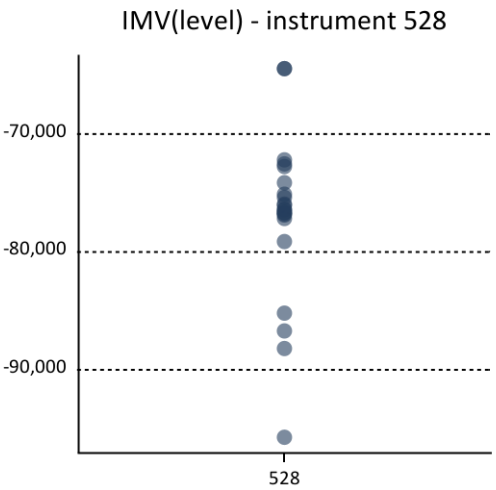

IMV(level) - instrument 523
1,160,000
1,150,000
1,140,000
1,130,000
1,120,000
523

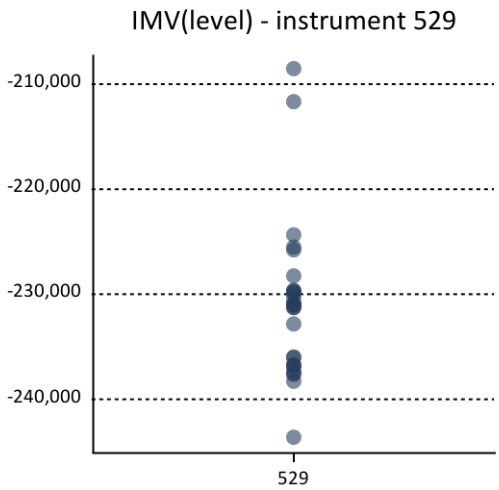

IMV(level) - instrument 524
0
-20,000
-40,000
-60,000
-80,000
524

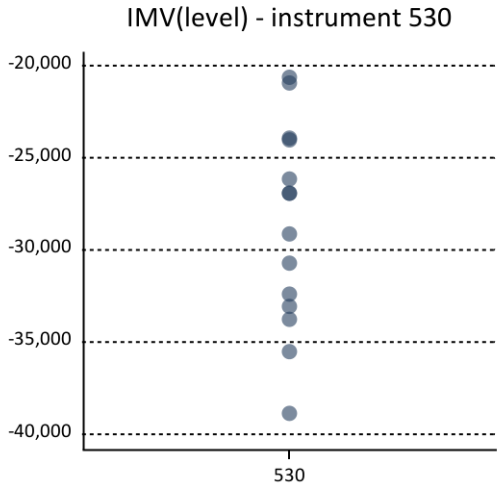

IMV(level) - instrument 525
730,000
725,000
720,000
715,000
525

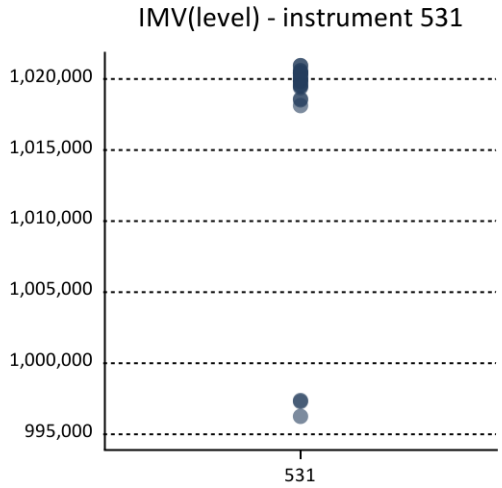

IMV(level) - instrument 526
0
-20,000
-40,000
-60,000
-80,000
-100,000
526

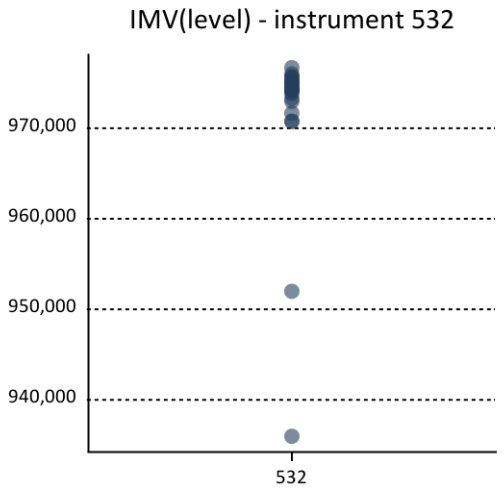

IMV(level) - instrument 527
725,000
720,000
715,000
710,000
705,000
527

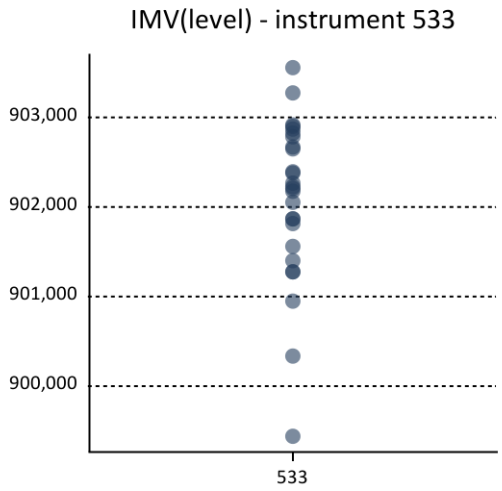

IMV(level) - instrument 528
-70,000
-80,000
-90,000
528

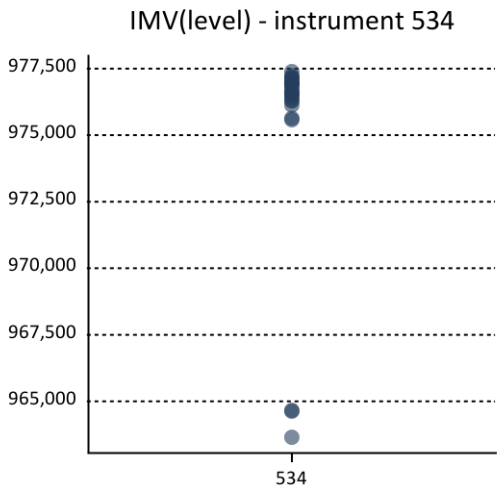

IMV(level) - instrument 529
-210,000
-220,000
-230,000
-240,000
529

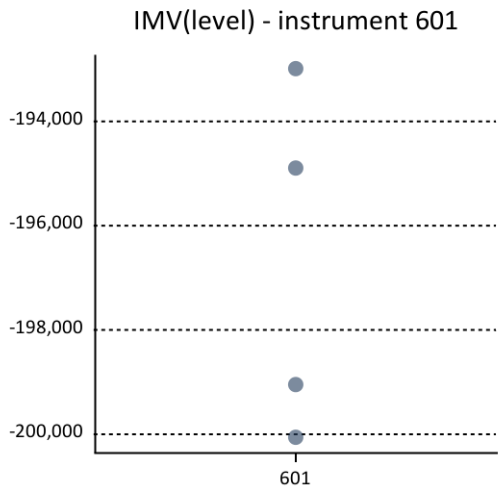

IMV(level) - instrument 530
-20,000
-25,000
-30,000
-35,000
-40,000
530


IMV(level) - instrument 531
1,020,000
1,015,000
1,010,000
1,005,000
1,000,000
995,000
531

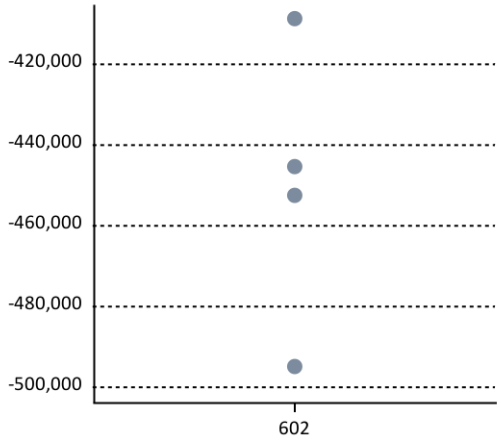

IMV(level) - instrument 532
970,000
960,000
950,000
940,000
532


IMV(level) - instrument 533
903,000
902,000
901,000
900,000
533

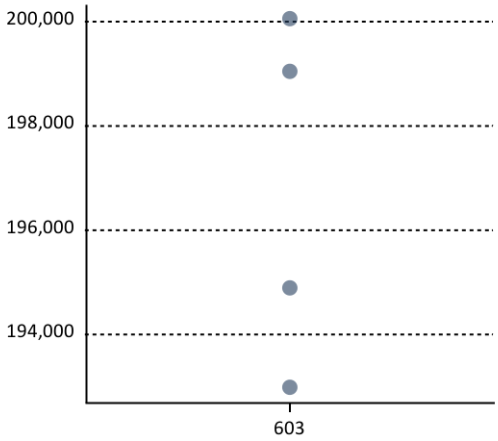

IMV(level) - instrument 534
977,500
975,000
972,500
970,000
967,500
965,000
534


IMV(level) - instrument 601
-194,000
-196,000
-198,000
-200,000
601

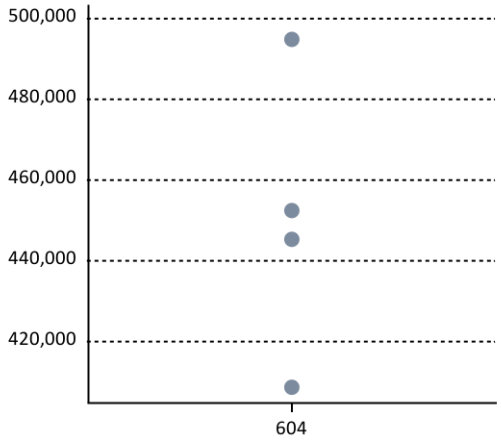
IMV(level) - instrument 602



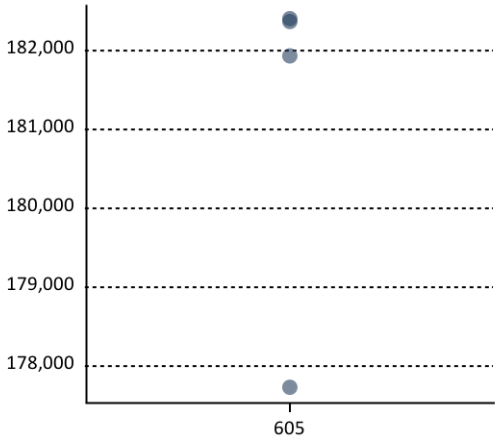
IMV(level) - instrument 603



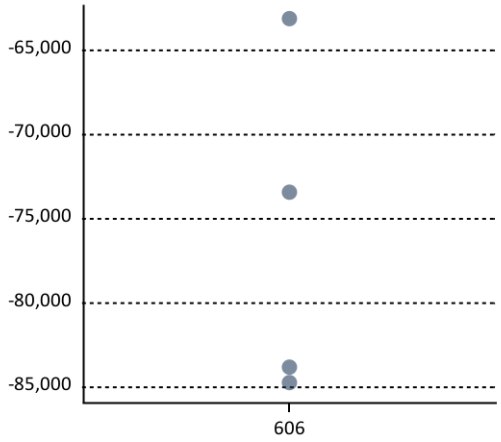
IMV(level) - instrument 604



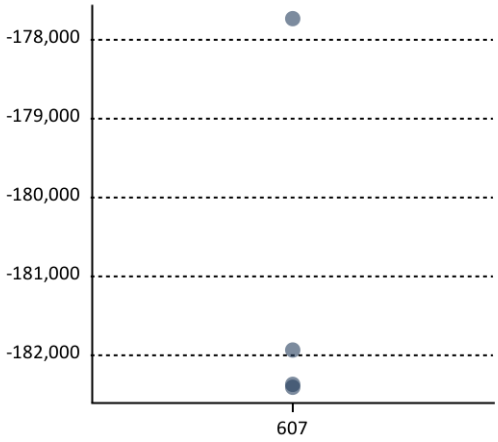
IMV(level) - instrument 605



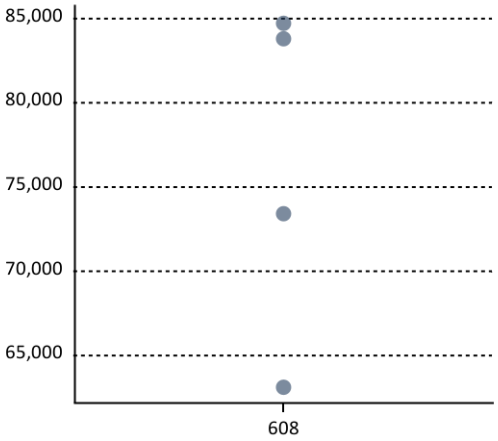
IMV(level) - instrument 606



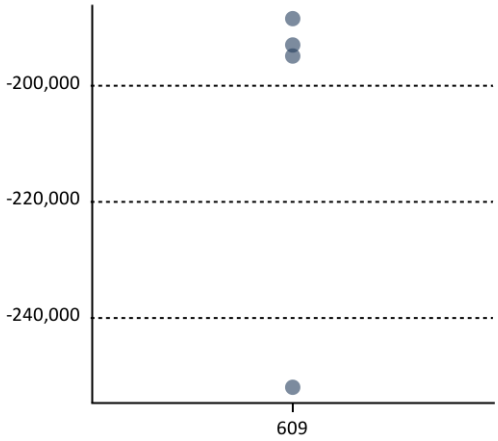
IMV(level) - instrument 607



IMV(level) - instrument 608



IMV(level) - instrument 609



IMV(level) - instrument 610

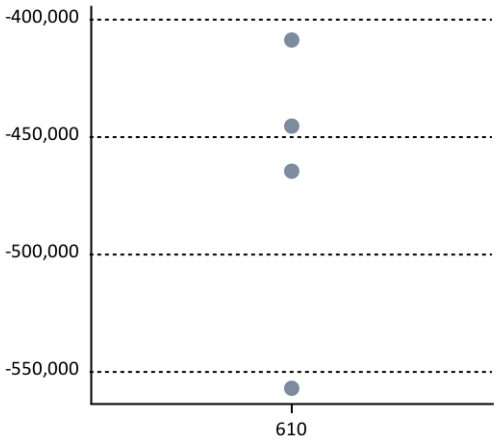
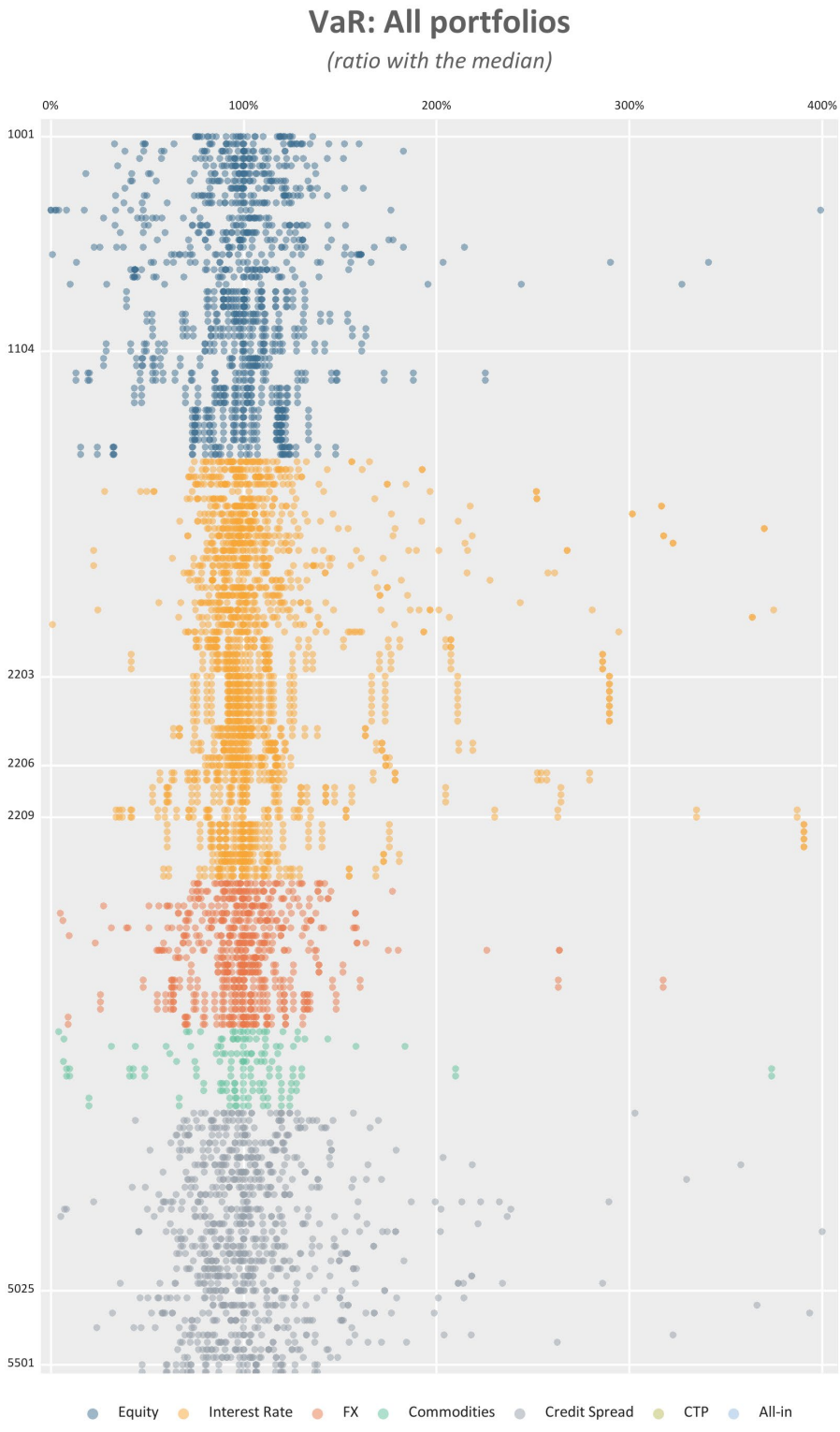
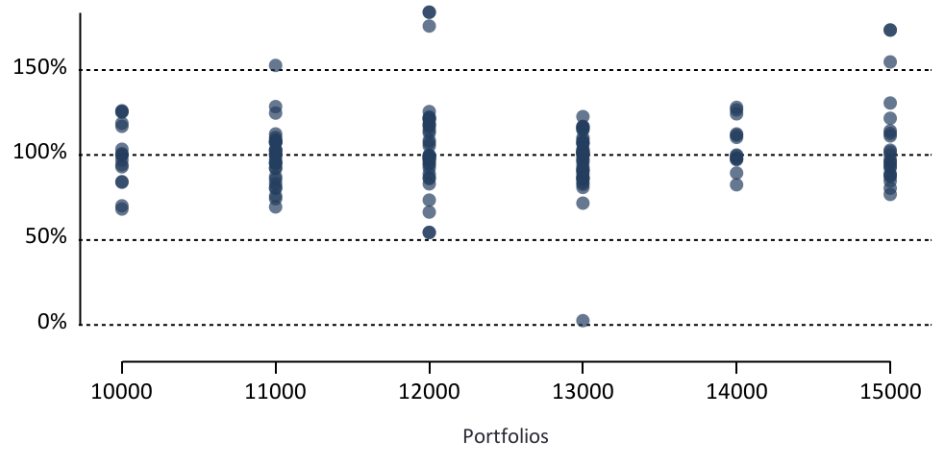


Figure 17: VaR submissions normalised by the median of each portfolio (by asset class)



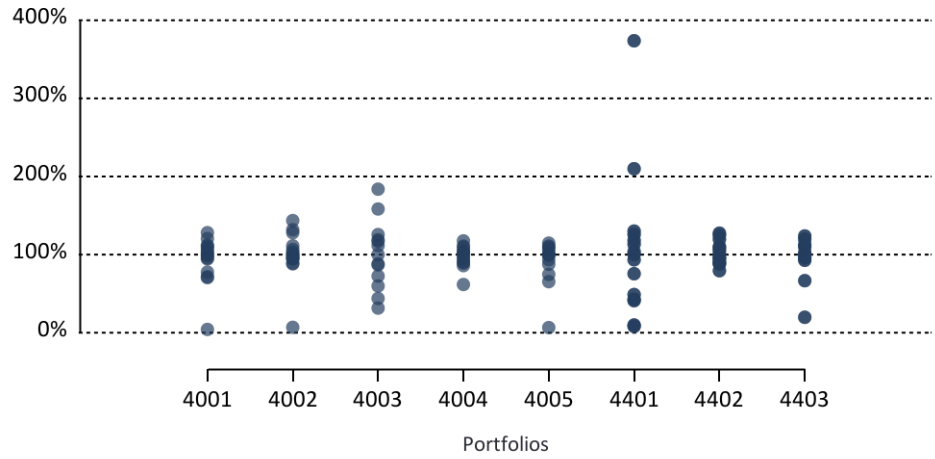
VaR: Aggregated portfolios

(ratio with the median)



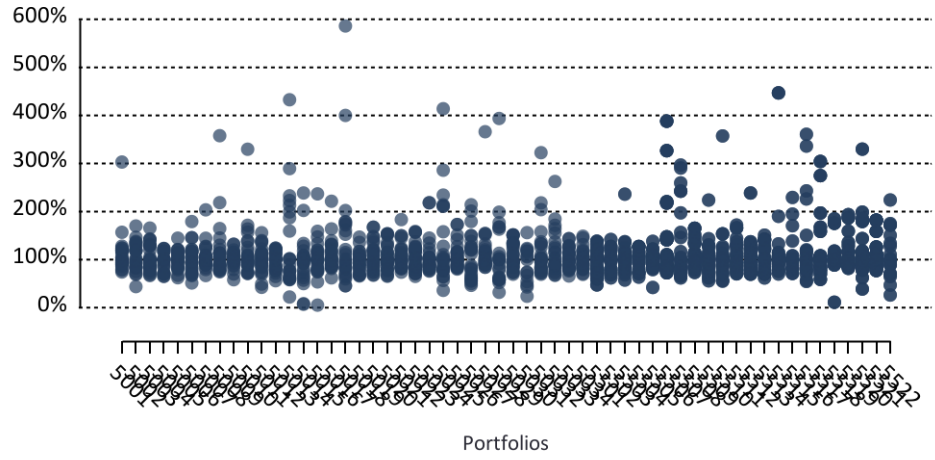
VaR: Commodities portfolios

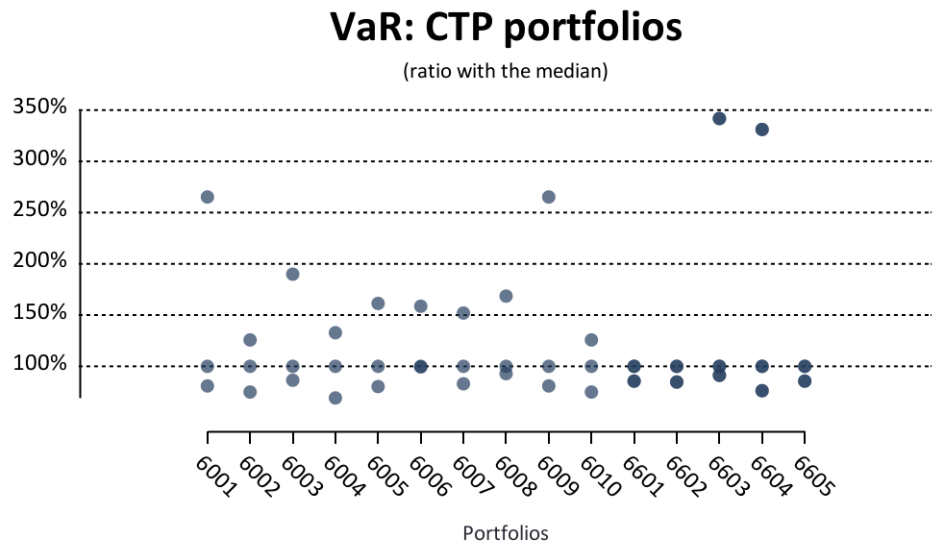
(ratio with the median)

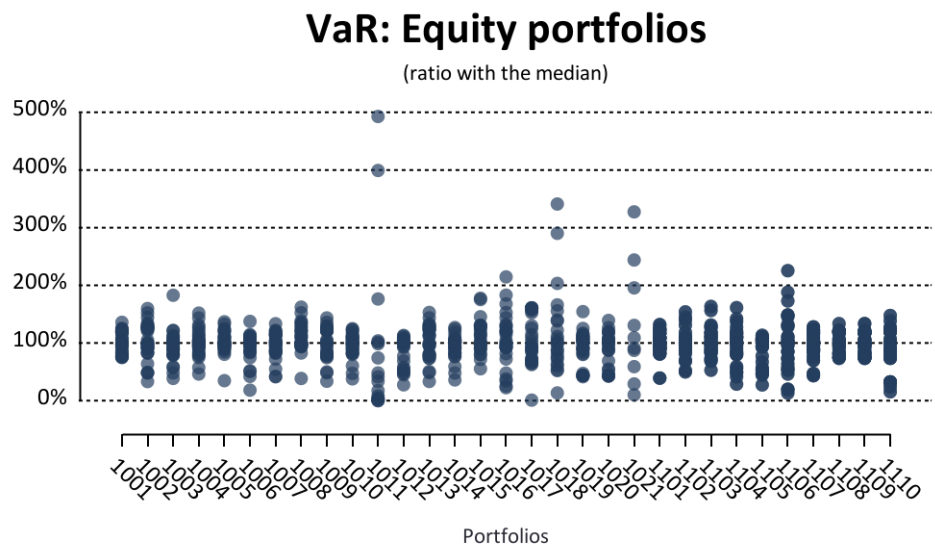


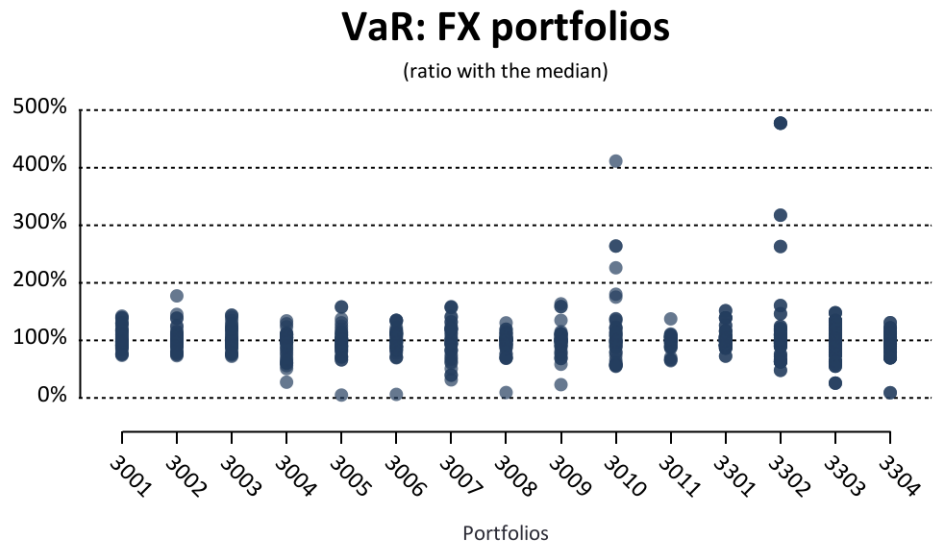
VaR: Credit Spread portfolios

(ratio with the median)




VaR: CTP portfolios
(ratio with the median)
350%
300%
250%
200%
150%
100%
6001 6002 6003 6004 6005 6006 6007 6008 6009 6010 6601 6602 6603 6604 6605
Portfolios


VaR: Equity portfolios
(ratio with the median)
500%
400%
300%
200%
100%
0%
1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1101 1102 1103 1104 1105 1106 1107 1108 1109 1110
Portfolios


VaR: FX portfolios
(ratio with the median)
500%
400%
300%
200%
100%
0%
3001
3002
3003
3004
3005
3006
3007
3008
3009
3010
3011
3301
3302
3303
3304
Portfolios

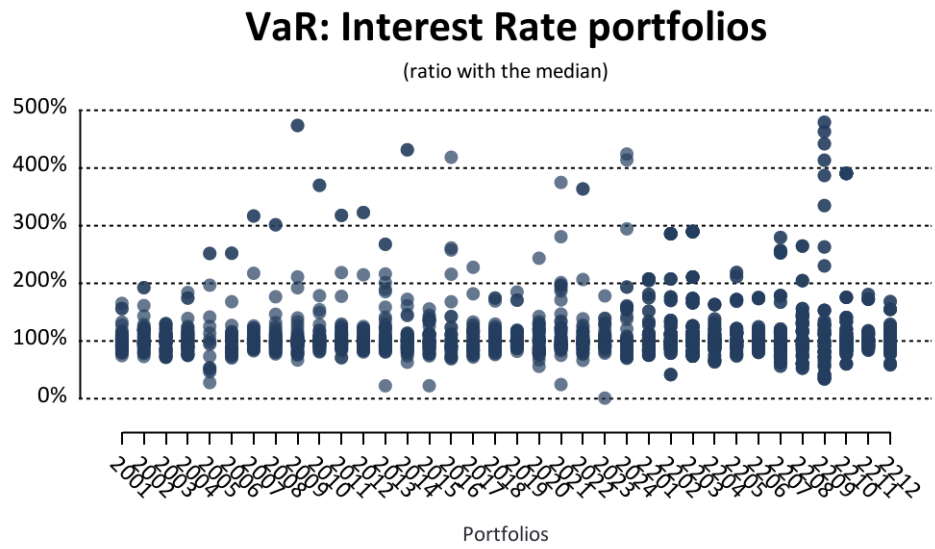
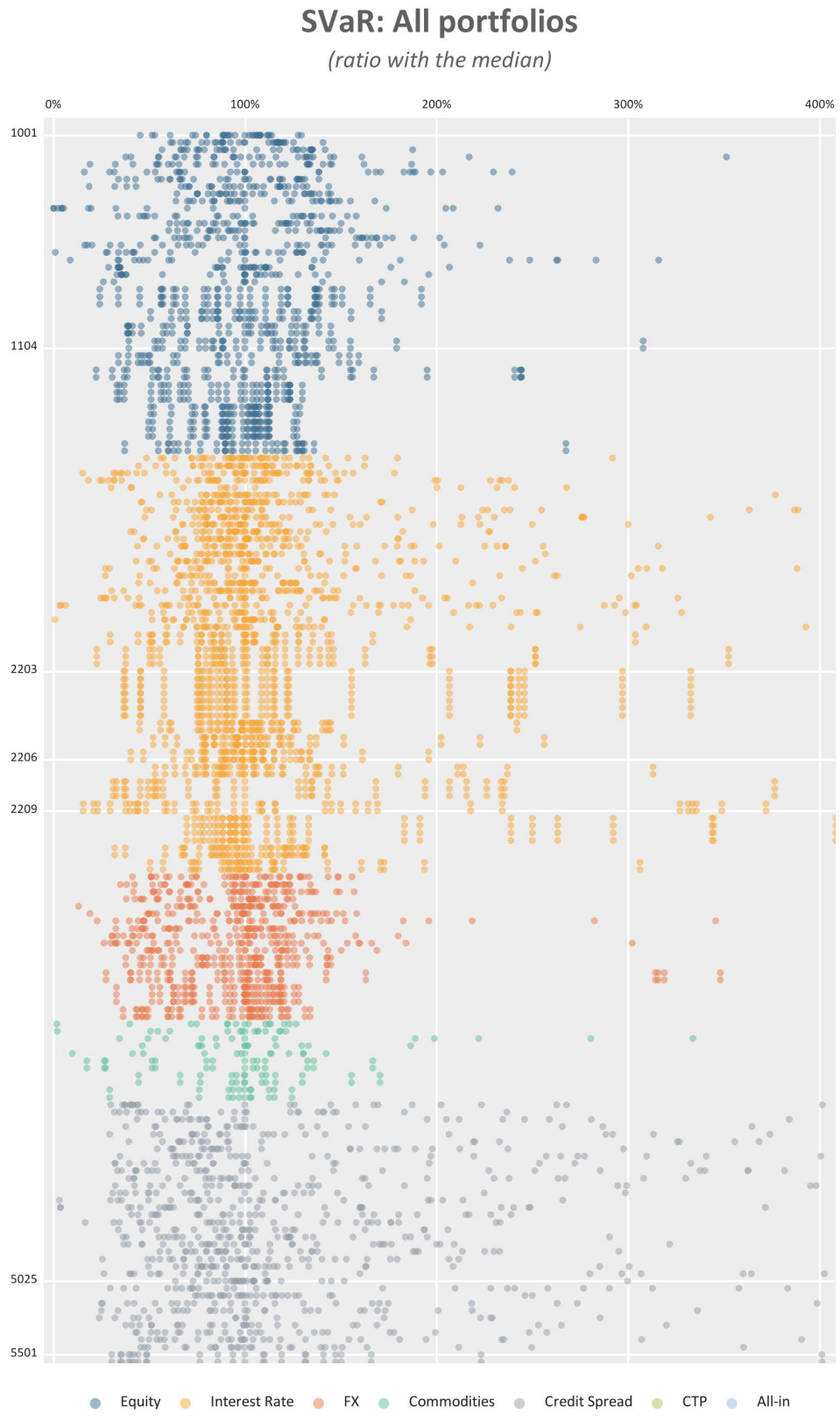
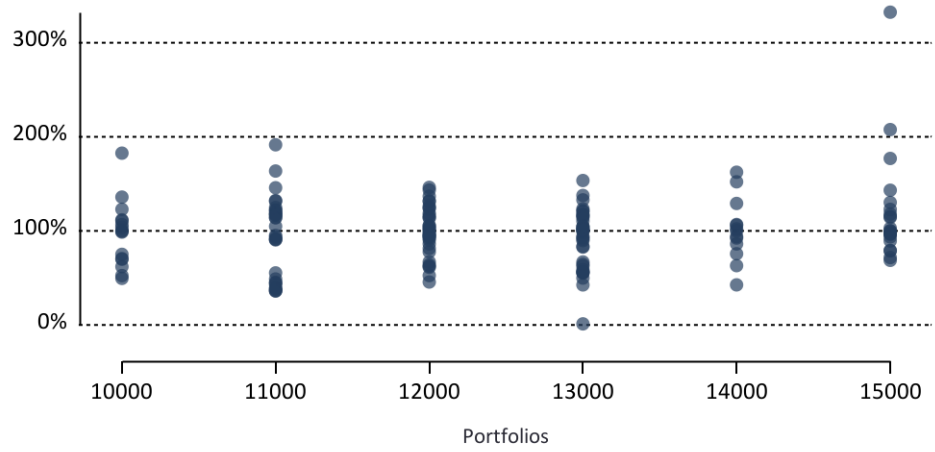

VaR: Interest Rate portfolios
(ratio with the median)
500%
400%
300%
200%
100%
0%
Portfolios

Figure 18: sVaR submissions normalised by the median of each portfolio (by asset class)



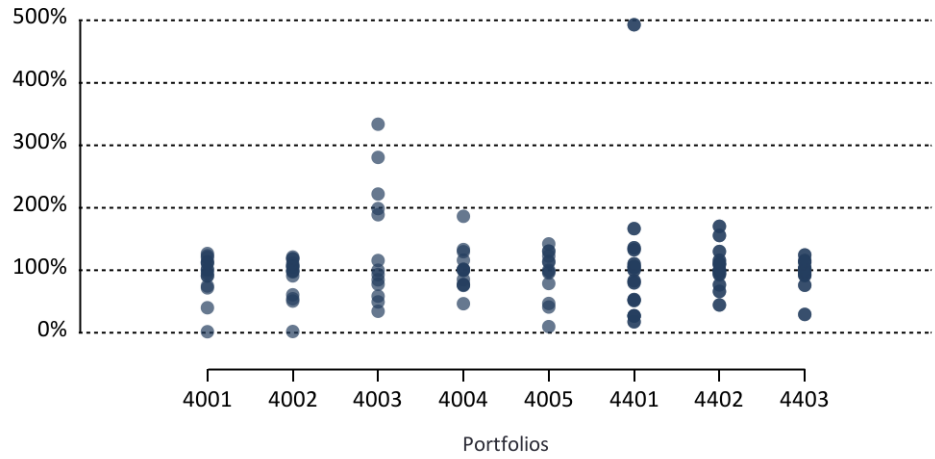
SVaR: Aggregated portfolios

(ratio with the median)



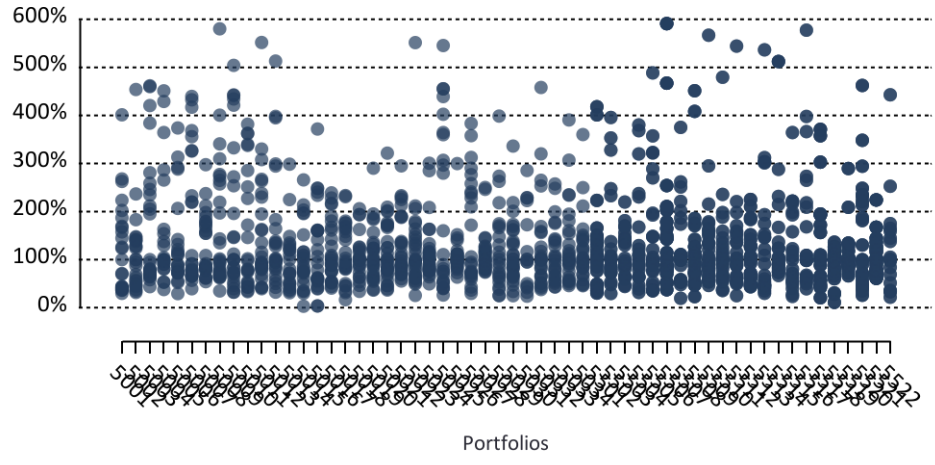
SVaR: Commodities portfolios

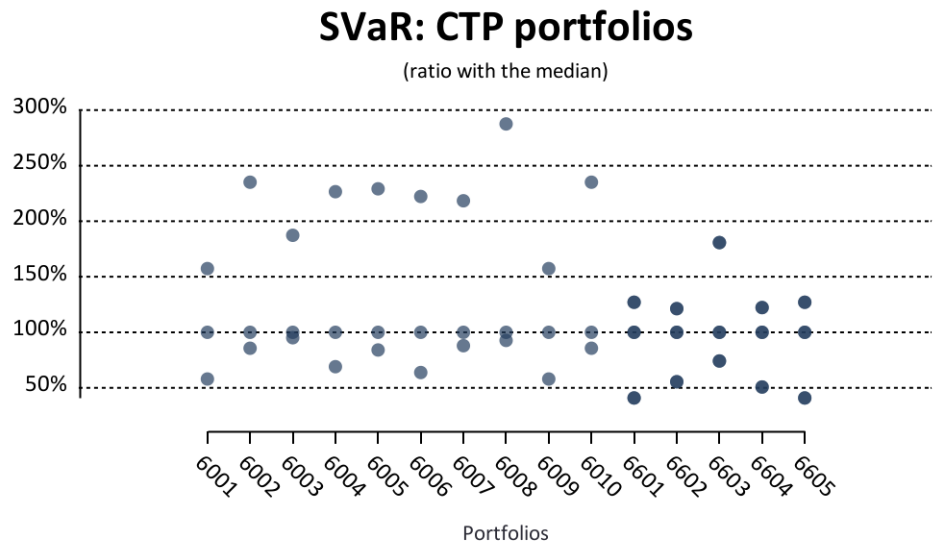
(ratio with the median)

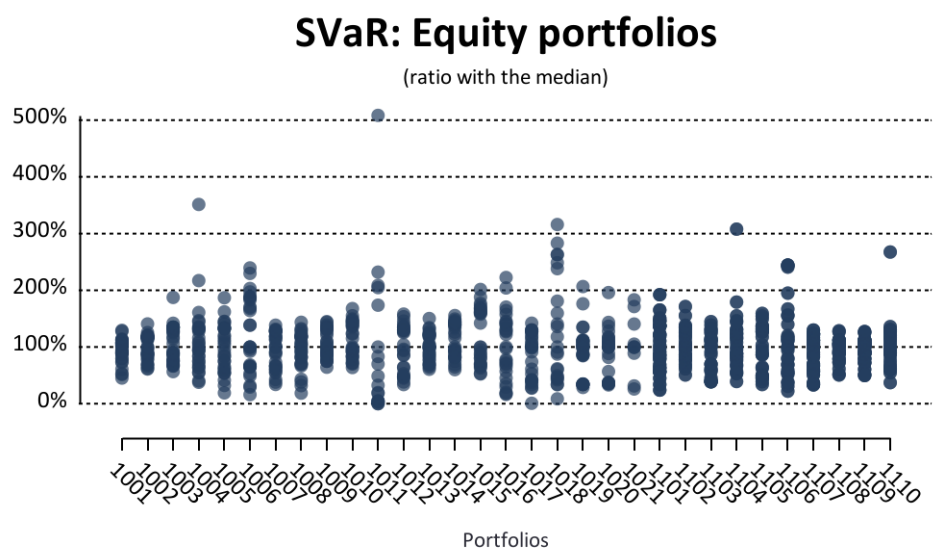


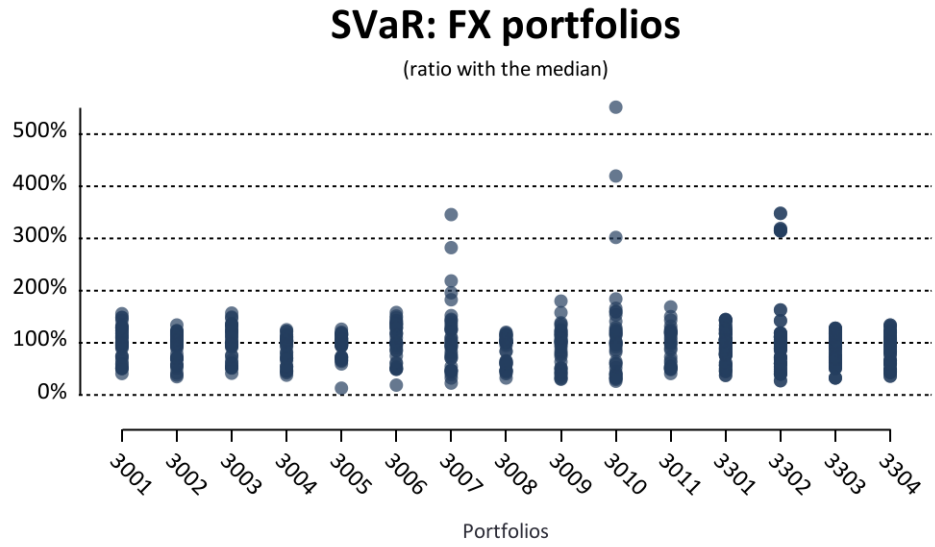
SVaR: Credit Spread portfolios

(ratio with the median)




SVaR: CTP portfolios
(ratio with the median)
300%
250%
200%
150%
100%
50%
6001 6002 6003 6004 6005 6006 6007 6008 6009 6010 6601 6602 6603 6604 6605
Portfolios


SVaR: Equity portfolios
(ratio with the median)
500%
400%
300%
200%
100%
0%
1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1101 1102 1103 1104 1105 1106 1107 1108 1109 1110
Portfolios


SVaR: FX portfolios
(ratio with the median)
500%
400%
300%
200%
100%
0%
3001
3002
3003
3004
3005
3006
3007
3008
3009
3010
3011
3301
3302
3303
3304
Portfolios

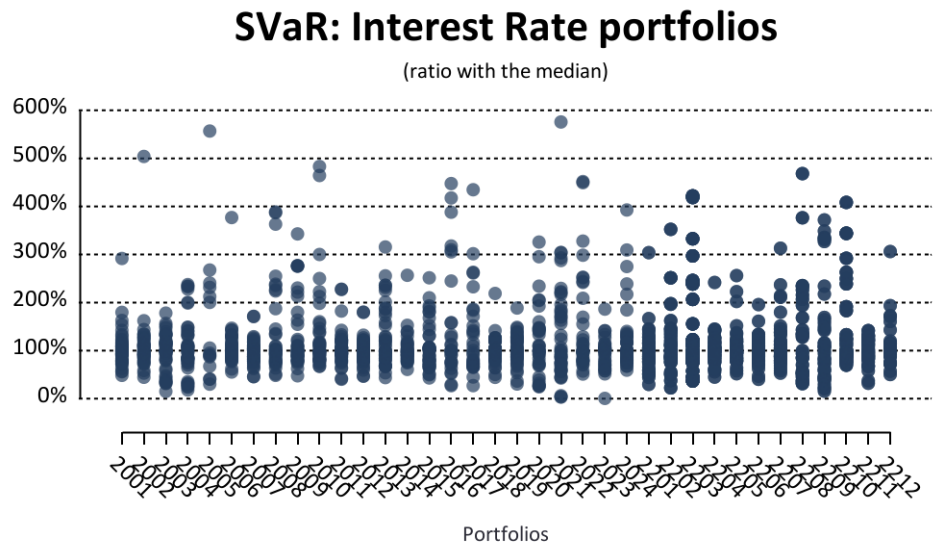

SVaR: Interest Rate portfolios
(ratio with the median)
600%
500%
400%
300%
200%
100%
0%
Portfolios

Figure 19: sVaR submissions normalised by the median of each portfolio (by methodological approach)

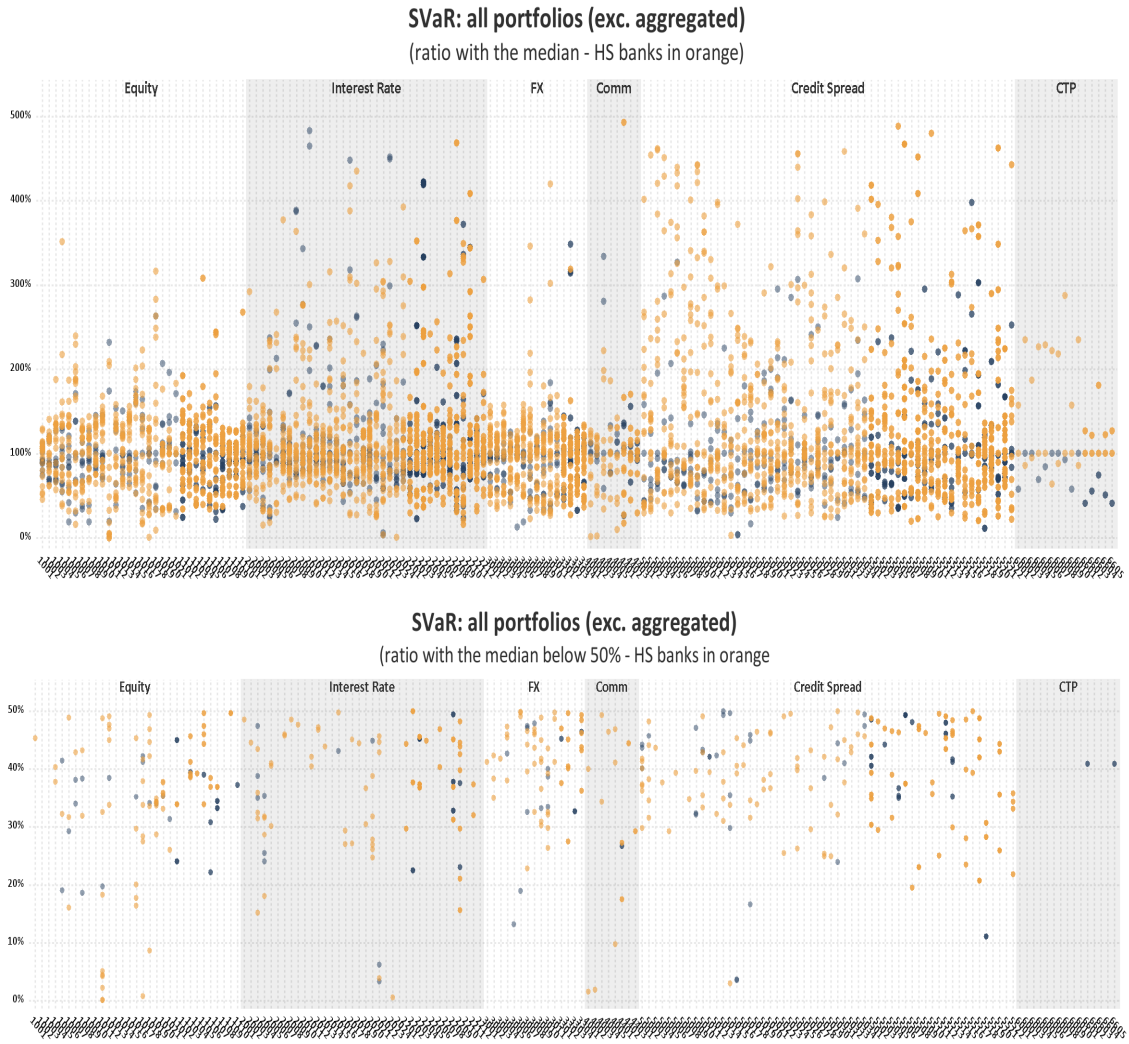


Table 22: VaR statistics (IR and CS asset classes – only banks with general and specific IR risk approval)

EU Statistics for VaR

		Other stats						Percentiles							
	Port. ID	Min	Max	Ave.	STDev	Coefficient of variation (STDev/Mean)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	Interquantile range
Interest Rate	2001	108,572	178,629	138,419	17,501	13%	21	117,531	119,010	125,907	137,883	146,114	158,125	171,751	7%
	2002	65,064	103,109	82,561	10,383	13%	20	66,611	72,235	77,839	81,147	85,727	98,335	99,544	5%
	2003	14,864	26,531	21,737	3,108	14%	22	15,697	17,315	20,358	22,457	23,475	25,199	25,723	7%
	2004	44,641	82,660	59,234	8,601	15%	21	47,262	49,316	53,566	59,867	63,709	68,463	69,066	9%
	2005	6,675	60,407	27,194	16,201	60%	8	8,530	10,385	19,947	25,937	31,034	41,896	51,151	22%
	2006	21,249	50,635	30,268	6,575	22%	19	22,837	23,764	26,044	30,120	32,489	35,551	39,524	11%
	2007	13,852	20,523	16,699	1,846	11%	20	14,024	14,816	15,696	16,237	17,524	19,529	19,886	6%
	2008	24,480	52,942	31,453	6,165	20%	19	25,303	26,158	28,167	29,946	33,355	34,972	38,857	8%
	2009	9,836	16,764	12,316	1,631	13%	19	10,652	11,040	11,378	11,753	12,691	14,416	15,280	5%
	2010	13,246	18,483	15,846	1,327	8%	18	14,121	14,769	15,214	15,457	16,513	17,728	18,324	4%
	2011	12,318	22,454	17,556	2,709	15%	19	14,295	15,001	16,334	16,928	19,111	21,583	22,103	8%
	2012	17,027	25,609	20,935	2,407	11%	20	17,110	18,442	19,790	20,313	22,497	24,465	24,919	6%
	2013	21,698	40,506	27,718	5,097	18%	16	22,613	23,012	23,986	26,246	30,422	33,880	36,354	12%
	2014	9,902	14,273	12,257	1,268	10%	17	10,539	10,797	11,550	12,501	12,926	13,971	14,186	6%
	2015	18,295	31,609	25,173	3,936	16%	17	19,870	20,631	22,382	25,563	26,114	31,101	31,609	8%
	2016	11,076	20,158	14,648	2,538	17%	14	11,623	12,145	12,876	14,084	15,841	17,531	18,485	10%
	2017	24,771	45,690	35,068	6,322	18%	15	26,168	27,562	29,911	36,428	40,195	42,128	43,675	15%
	2018	194,002	328,598	256,417	34,171	13%	21	204,311	226,642	230,139	250,850	278,489	300,108	303,828	10%
	2019	112,213	162,483	135,334	13,586	10%	21	112,213	122,540	126,446	135,155	140,599	158,244	159,984	5%
	2020	22,567	39,144	31,081	5,460	18%	18	23,328	24,307	26,229	31,100	35,565	38,328	39,130	15%
	2021	12,546	18,137	15,100	1,815	12%	17	12,883	13,247	13,747	14,240	16,673	17,775	18,015	10%
	2022	15,703	42,131	21,640	5,667	26%	19	15,996	17,082	19,158	20,685	22,986	24,352	27,568	9%
	2023	90,935	141,295	111,281	13,287	12%	16	96,632	99,033	101,705	110,825	118,903	127,313	133,909	8%
	2024	23,205	53,203	35,679	10,046	28%	20	24,616	25,883	28,605	32,590	42,033	51,638	52,581	19%
	2201	11,551	23,272	15,124	3,603	24%	18	11,577	11,723	13,044	14,204	15,490	20,789	23,272	9%
	2202	34,169	55,216	42,593	6,371	15%	18	35,030	36,791	37,939	40,665	45,834	53,758	53,977	9%
	2203	31,712	49,469	40,447	4,496	11%	18	35,738	36,862	37,888	39,745	42,423	46,567	49,469	6%
	2204	134,039	181,499	152,511	13,709	9%	18	135,396	137,458	142,846	150,569	158,733	168,654	180,873	5%
	2205	9,458	14,726	12,087	1,378	11%	18	10,156	10,813	11,389	11,703	13,297	13,862	14,010	8%
	2206	309,564	481,459	384,518	44,928	12%	21	315,723	337,981	357,780	375,978	417,225	453,603	454,887	8%
	2207	49,346	137,967	81,847	22,031	27%	19	56,723	61,365	66,585	80,085	88,951	98,845	130,052	14%
	2208	21,730	43,763	33,009	6,448	20%	15	24,799	26,690	28,744	30,266	38,598	41,251	42,822	15%
	2209	3,383	21,181	9,403	4,562	49%	17	4,488	5,060	7,264	8,052	10,403	14,813	19,067	18%
	2210	56,968	114,464	69,928	14,381	21%	19	57,098	57,166	60,907	66,879	70,641	88,029	94,013	7%
	2211	107,065	150,170	125,281	10,727	9%	20	107,065	114,405	119,766	125,371	128,654	135,100	148,008	4%
	2212	80,809	170,269	130,423	20,642	16%	17	104,439	112,949	116,083	131,011	141,281	152,325	162,965	10%
Credit Spread	5001	1,489	2,446	1,966	313	16%	14	1,517	1,586	1,727	1,929	2,269	2,343	2,396	14%
	5002	3,320	6,892	5,036	1,163	23%	15	3,738	3,918	3,963	4,584	6,061	6,453	6,611	21%
	5003	2,090	4,346	3,138	732	23%	15	2,161	2,242	2,673	3,040	3,772	4,135	4,292	17%
	5004	8,385	15,796	12,525	2,580	21%	15	8,876	9,107	10,165	12,891	14,956	15,435	15,703	19%
	5005	11,554	16,983	14,499	1,813	13%	13	11,797	12,072	13,417	14,431	16,000	16,718	16,929	9%
	5006	1,043	2,225	1,549	326	21%	15	1,089	1,148	1,282	1,597	1,778	1,827	1,964	16%
	5007	6,356	10,229	8,043	991	12%	17	6,602	6,977	7,355	7,900	8,410	9,184	9,902	7%
	5008	1,901	3,613	2,385	436	18%	17	1,901	1,948	2,128	2,238	2,638	2,816	2,985	11%
	5009	5,199	7,839	6,511	713	11%	17	5,565	5,656	6,129	6,480	7,002	7,467	7,581	7%
	5010	1,447	2,684	1,921	309	16%	17	1,447	1,599	1,735	1,886	2,046	2,241	2,477	8%
	5011	3,897	7,736	5,678	1,066	19%	18	4,156	4,558	4,992	5,512	6,365	7,059	7,611	12%
	5012	5,163	9,839	7,843	1,467	19%	18	5,653	6,035	6,818	7,964	8,934	9,707	9,838	13%
	5013	386	5,040	2,216	1,389	63%	15	825	1,023	1,145	1,742	3,365	3,917	4,350	49%
	5014	2,134	4,990	3,626	836	23%	18	2,301	2,467	3,087	3,778	3,980	4,837	4,990	13%
	5015	2,488	4,448	3,285	561	17%	18	2,503	2,506	2,833	3,327	3,607	3,974	4,064	12%
	5016	5,390	11,472	8,669	1,745	20%	18	5,390	6,583	7,503	8,693	9,973	10,731	11,384	14%
	5017	15,529	68,524	40,209	15,506	39%	14	23,219	27,570	29,445	35,902	54,018	60,163	63,370	29%
	5018	15,948	32,842	23,783	4,934	21%	14	16,280	17,182	19,696	24,934	26,849	28,345	29,942	15%
	5019	5,784	12,670	8,948	1,933	22%	19	6,641	6,736	7,407	9,104	10,085	11,682	12,018	15%
	5020	7,474	15,197	11,133	2,285	21%	17	8,445	8,688	8,974	11,066	12,591	14,547	14,686	17%
	5021	13,036	19,429	15,906	2,115	13%	17	13,036	13,258	13,728	15,757	17,575	18,782	19,361	12%
	5022	17,072	35,923	25,173	5,751	23%	19	18,297	18,683	21,135	23,057	30,555	32,850	33,192	18%
	5023	29,333	55,845	38,433	7,224	19%	19	29,764	30,633	33,355	38,546	40,110	48,093	52,194	9%
	5024	3,306	12,311	5,849	2,563	44%	12	3,552	3,755	4,408	5,324	6,002	8,897	10,604	15%
	5025	29,516	52,176	37,088	6,014	16%	18	30,161	30,829	31,895	36,345	40,509	43,978	47,553	12%
	5026	4,766	15,412	8,390	3,255	39%	13	4,792	4,975	6,080	7,222	10,476	12,478	13,892	27%
	5027	39,047	61,330	47,358	6,643	14%	18	40,733	41,246	41,635	45,581	52,089	56,549	58,897	11%
	5028	7,283	24,601	14,599	5,760	39%	13	7,753	8,208	10,970	13,967	15,755	23,215	23,843	18%
	5029	36,605	67,755	53,050	10,416	20%	15	37,571	39,765	45,446	53,808	62,404	66,019	66,741	16%
	5030	24,381	88,563	53,628	25,763	48%	7	25,054	25,727	28,706	66,563	69,241	77,357	82,960	41%
	5031	10,554	20,803	14,564	3,345	23%	15	10,812	10,984	11,967	14,810	15,726	19,718	20,329	14%
	5032	33,299	81,407	50,024	12,880	26%	13	34,786	37,231	43,335	45,026	57,094	62,422	70,233	14%
	5033	10,717	21,013	16,409	3,310	20%	17	12,113	12,662	13,600	16,257	18,773	20,553	20,841	16%
	5034	6,251	11,819	8,732	1,526	17%	17	6,959	7,221	7,363	8,840	9,764	10,662	11,037	14%
	5501	3,020	6,900	4,906	1,279	26%	16	3,190	3,332	3,902	5,086	5,965	6,571	6,846	21%
	5502	17,077	31,813	25,071	4,618	18%	14	18,263	19,252	21,096	25,538	28,616	30,468	31,027	15%
	5503	3,370	6,048	4,771	753	16%	16	3,576	3,795	4,278	4,748	5,193	5,655	5,780	10%
	5504	8,523	15,063	12,060	2,280	19%	15	8,562	8,736	10,272	12,431	13,636	14,913	14,983	14%
	5505	3,139	4,711	3,898	453	12%	17	3,252	3,280	3,730	3,865	4,175	4,447	4,708	6%
	5506	4,073	8,266	5,626	1,312	23%	18	4,307	4,382	4,730	5,108	6,006	8,028	8,266	12%
	5507	13,738	50,694	23,801	11,662	49%	12	13,791	14,012	16,984	19,768	24,634	40,402	45,501	18%
	5508	29,251	57,876	39,972	7,563	19%	18	31,108	31,948	33,866	39,316	43,286	47,871	53,742	12%
	5509	4,450	8,105	6,227	1,038	17%	19	4,765	4,962	5,541	6,277	6,648	7,910	7,995	9%
	5510	5,085	11,066	8,467	1,483	18%	17	6,207	6,487	7,732	8,879	9,200	9,851	10,239	9%
	5511	16,817	34,524	23,482	5,405	23%	18	16,923	17,820	19,765	21,909	26,387	31,481	32,987	14%
	5512	8,490	16,257	11,948	2,579	22%	18	8,490	8,754	9,776	11,456	13,869	15,405	16,039	17%
	5513	1,492	3,220	2,269	595	26%	16	1,514	1,525	1,786	2,172	2,806	3,025	3,084	22%
	5514	9,604	23,498	13,352	3,102	23%	16	10,734	11,429	11,898	12,474	13,623	15,304	18,192	7%
	5515	23,932	36,282	31,556	3,952	13%	12	25,404	26,686	28,371	33,016	33,915	35,889	36,182	9%
	5516	9,757	38,806	17,920	7,238	40%	12	11,642	13,204	14,720	16,928	18,318	20,608	28,821	11%
	5517	29,880	71,461	42,021	10,381	25%	12	32,215	34,310	36,455	40,861	43,439	45,673	57,310	9%
	5518	111,890	147,697	124,690	8,378	7%	14	115,878	118,127	119,566	124,054	125,991	131,763	138,528	3%
	5519	94,681	157,198	117,393	17,395	15%	18	97,046	99,956	104,332	115,800	120,865	140,196	150,044	7%
	5520	11,091	25,624	17,815	3,865	22%	11	12,602	14,112	15,877	17,750	20,043	21,053	23,339	12%
	5521	89,203	145,564	112,389	14,327	13%	13	94,548	98,903	103,136	114,427	116,854	125,539	133,943	6%
	5522	9,858	65,588	41,954	16,842	40%	11	18,241	26,624	33,456	36,901	53,290	64,390	64,989	23%
IR Cumulative	12000	173,019	398,986	305,338	73,415	24%	17	173,057	173,066	293,663	313,961	364,014	386,246	390,892	11%
CS Cumulative	15000	115,118	195,765	145,106	20,671	14%	13	118,458	122,733	132,178	144,422	152,662	164,223	178,345	7%

Table 23: VaR statistics (IR and CS asset classes – only banks with general IR risk approval)

EU Statistics for VaR

		Other stats						Percentiles							
	Port. ID	Min	Max	Ave.	STDev	Coefficient of variation (STDev/Mean)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	Interquantile range
Interest Rate	2001	100,332	151,078	127,594	13,780	11%	17	106,732	110,221	119,423	127,513	136,492	143,452	147,428	7%
	2002	60,671	106,620	86,118	13,327	15%	16	65,257	68,349	79,030	86,380	97,372	100,061	102,467	10%
	2003	14,898	23,282	19,309	2,742	14%	17	15,320	15,908	17,045	19,906	21,997	22,619	22,787	13%
	2004	44,467	74,348	59,141	10,444	18%	17	45,071	45,293	52,455	58,891	67,255	72,178	73,418	12%
	2005	11,155	23,308	15,544	4,965	32%	5	11,484	11,812	12,798	12,849	17,608	21,028	22,168	16%
	2006	21,738	34,953	28,067	4,197	15%	12	22,446	23,269	25,606	26,523	31,091	33,499	34,295	10%
	2007	13,485	19,890	16,349	1,492	9%	17	14,495	14,894	15,527	16,559	16,978	17,683	18,937	4%
	2008	23,922	43,862	30,525	5,897	19%	10	24,485	25,048	26,633	29,869	31,682	36,712	40,287	9%
	2009	8,014	15,957	11,372	1,967	17%	15	8,780	9,124	10,130	11,554	12,329	12,954	14,111	10%
	2010	12,632	19,977	15,212	1,891	12%	15	12,741	13,216	13,946	14,779	16,218	16,911	17,856	8%
	2011	12,359	20,575	17,233	2,143	12%	16	14,379	15,113	15,941	17,326	18,622	19,864	20,273	8%
	2012	16,544	24,966	20,469	1,962	10%	17	17,910	18,638	19,467	20,535	21,222	22,855	23,297	4%
	2013	20,654	30,796	24,159	3,151	13%	15	20,741	21,023	22,282	23,563	24,310	29,372	30,290	4%
	2014	7,908	13,823	11,535	1,652	14%	14	8,802	9,532	10,518	11,871	12,622	13,223	13,562	9%
	2015	17,205	26,148	21,734	2,833	13%	16	17,693	17,964	19,534	22,290	22,959	25,829	26,123	8%
	2016	9,768	23,778	13,290	4,297	32%	9	9,873	9,978	10,190	12,482	14,154	16,386	20,082	16%
	2017	25,810	40,297	31,613	5,447	17%	9	25,970	26,129	28,794	28,967	33,511	40,170	40,233	8%
	2018	199,121	317,004	257,240	33,761	13%	17	209,589	216,686	238,476	253,926	283,421	303,033	310,002	9%
	2019	118,772	161,339	134,887	13,661	10%	17	118,887	119,944	124,678	134,331	139,970	157,187	158,347	6%
	2020	23,556	40,308	28,811	5,156	18%	13	23,691	23,883	24,868	26,466	30,782	35,416	37,892	11%
	2021	12,199	25,069	15,669	3,879	25%	15	12,539	12,715	13,157	14,171	17,448	20,775	22,573	14%
	2022	16,582	28,253	20,664	3,367	16%	10	17,061	17,541	18,508	20,031	21,568	24,093	26,173	8%
	2023	87,759	146,284	115,950	18,221	16%	10	93,755	99,752	105,870	112,535	121,963	144,401	145,343	7%
	2024	23,672	53,511	34,508	9,532	28%	14	23,740	24,644	28,317	32,776	35,024	50,269	52,680	11%
	2201	12,685	26,844	16,292	3,910	24%	13	12,693	12,742	13,149	15,919	16,978	19,851	23,046	13%
	2202	16,978	71,705	41,233	13,605	33%	11	24,512	32,045	35,206	38,529	45,533	51,005	61,355	13%
	2203	28,935	68,050	40,522	10,917	27%	11	29,336	29,736	34,408	38,059	43,544	48,548	58,299	12%
	2204	113,286	190,000	148,616	18,249	12%	16	124,550	129,815	138,162	149,489	154,271	169,251	175,406	6%
	2205	8,984	14,769	11,918	1,751	15%	14	9,198	9,784	10,909	11,654	13,223	14,127	14,357	10%
	2206	321,786	464,189	387,277	44,755	12%	17	324,294	328,900	363,473	388,818	422,730	451,048	454,399	8%
	2207	43,620	93,342	69,157	14,237	21%	15	46,986	50,971	58,036	72,715	77,443	84,393	89,822	14%
	2208	15,744	35,213	23,817	6,856	29%	9	16,607	17,470	18,001	22,655	29,223	30,757	32,985	24%
	2209	2,737	10,159	6,087	2,649	44%	14	2,810	2,892	3,616	5,870	8,443	9,542	9,778	40%
	2210	39,296	73,914	60,408	9,587	16%	11	46,609	53,921	54,647	61,709	66,432	69,931	71,923	10%
	2211	110,258	144,493	124,401	11,691	9%	16	112,123	112,854	115,161	122,820	129,249	143,689	144,275	6%
	2212	105,315	165,575	138,574	20,841	15%	10	109,596	113,877	123,643	139,177	154,713	164,010	164,792	11%
Credit Spread	5001						4								
	5002						4								
	5003						4								
	5004						4								
	5005						3								
	5006						4								
	5007						4								
	5008						4								
	5009						4								
	5010						3								
	5011						4								
	5012	6,357	9,623	8,616	1,292	15%	5	6,876	7,395	8,951	8,955	9,196	9,452	9,538	1%
	5013						2								
	5014						3								
	5015						3								
	5016						4								
	5017	15,397	31,654	23,701	6,438	27%	5	16,384	17,371	20,331	22,798	28,327	30,323	30,989	16%
	5018						4								
	5019	5,882	8,575	7,401	1,015	14%	7	6,007	6,132	6,828	7,440	8,127	8,506	8,541	9%
	5020	7,344	11,346	9,816	1,576	16%	7	7,500	7,655	8,952	10,380	10,868	11,152	11,249	10%
	5021	12,968	17,018	14,445	1,544	11%	7	13,072	13,176	13,372	13,728	15,330	16,452	16,735	7%
	5022	18,746	31,235	24,324	4,419	18%	7	19,378	20,010	21,414	22,768	27,347	28,987	30,111	12%
	5023	31,382	47,169	37,932	5,347	14%	7	32,047	32,712	33,888	39,353	39,923	43,111	45,140	8%
	5024						4								
	5025	32,499	46,737	38,879	5,329	14%	7	32,748	32,997	34,606	38,462	42,621	44,305	45,521	10%
	5026						4								
	5027	39,007	61,330	49,538	7,957	16%	6	40,303	41,599	44,734	49,316	53,617	57,698	59,514	9%
	5028						4								
	5029	34,721	67,121	52,028	13,331	26%	5	37,111	39,502	46,673	47,871	63,756	65,775	66,448	15%
	5030						4								
	5031						4								
	5032						4								
	5033	12,795	15,877	14,267	1,372	10%	5	12,885	12,976	13,247	13,890	15,526	15,737	15,807	8%
	5034						4								
	5501						4								
	5502						3								
	5503	4,318	5,578	4,906	587	12%	5	4,349	4,381	4,475	4,670	5,488	5,542	5,560	10%
	5504						3								
	5505						4								
	5506						4								
	5507						4								
	5508	32,167	54,803	39,133	7,972	20%	7	32,682	33,197	33,953	37,028	41,015	48,522	51,662	9%
	5509	3,839	6,645	4,944	1,165	24%	6	3,875	3,911	4,099	4,537	5,751	6,386	6,515	17%
	5510	4,945	9,200	7,391	1,809	24%	5	5,174	5,403	6,091	7,990	8,727	9,011	9,105	18%
	5511	18,518	30,956	23,850	4,967	21%	5	18,889	19,261	20,375	22,933	26,468	29,161	30,058	13%
	5512	8,627	16,743	11,092	3,335	30%	5	8,675	8,723	8,867	9,877	11,347	14,585	15,664	12%
	5513						4								
	5514						4								
	5515						3								
	5516						4								
	5517						4								
	5518						4								
	5519	98,749	148,781	122,170	20,054	16%	6	100,192	101,635	106,204	122,619	135,294	142,257	145,519	12%
	5520						4								
	5521						4								
	5522						4								
IR Cumulative	12000	211,070	387,133	317,488	54,950	17%	11	242,352	273,633	279,101	313,779	360,645	384,612	385,873	13%
CS Cumulative	15000						4								

Table 24: VaR statistics (EQ asset class – only banks with general and specific EQ risk approval)

EU Statistics for VaR

		Other stats						Percentiles							
	Port. ID	Min	Max	Ave.	STDev	Coefficient of variation (STDev/Mean)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	Interquantile range
	1001	428,488	710,321	568,281	101,307	18%	22	436,845	441,900	467,778	566,937	676,292	692,427	694,392	18%
	1002	27,227	84,707	61,089	13,665	22%	23	45,870	46,178	51,292	58,437	71,589	74,415	79,736	17%
	1003	37,508	58,075	47,026	5,395	11%	20	38,539	38,593	43,119	47,811	50,050	52,954	54,115	7%
	1004	11,515	20,155	15,648	1,986	13%	20	12,639	13,999	14,639	15,436	16,477	18,094	18,877	6%
	1005	265,321	412,010	333,958	38,251	11%	20	291,367	296,190	311,835	329,917	358,472	392,734	404,110	7%
	1006	5,106	8,441	6,322	756	12%	20	5,220	5,239	6,069	6,254	6,764	6,948	7,104	5%
	1007	33,350	61,683	46,949	6,830	15%	22	39,163	39,909	41,115	46,437	52,834	54,834	56,262	12%
	1008	11,525	18,055	14,592	1,827	13%	18	12,876	13,157	13,399	13,887	15,860	17,230	17,779	8%
	1009	42,224	76,949	58,239	10,947	19%	21	42,803	43,870	48,427	56,419	66,348	69,513	72,853	16%
	1010	30,552	47,073	38,566	4,924	13%	21	31,110	31,870	34,413	38,126	42,155	44,528	46,134	10%
	1011	0	101	20	33	166%	11	0	0	1	6	19	66	84	95%
	1012	6,218	12,717	11,148	1,673	15%	17	7,508	9,455	11,068	11,718	12,043	12,236	12,450	4%
	1013	18,913	53,579	39,742	8,967	23%	21	27,363	29,045	35,398	42,203	46,278	48,778	49,729	13%
	1014	33,681	55,900	43,498	5,648	13%	21	33,931	36,193	40,208	44,697	46,255	49,136	52,213	7%
	1015	3,419	6,212	4,629	759	16%	18	3,745	3,875	4,184	4,364	5,144	5,579	5,675	10%
Equity	1016	87	521	348	109	31%	19	125	223	318	356	412	452	493	13%
	1017	70,606,574	181,518,035	126,842,351	44,861,572	35%	19	74,736,763	75,195,673	82,024,817	123,208,197	177,790,748	181,193,092	181,333,897	37%
	1018	2,660	32,977	20,445	7,460	36%	16	10,127	13,762	17,057	20,054	25,056	29,345	31,424	19%
	1019	238,456	372,540	296,139	37,219	13%	20	240,561	251,061	269,670	297,463	317,464	342,829	349,169	8%
	1020	167,383	436,444	299,509	73,059	24%	16	170,836	194,121	275,332	305,893	334,664	383,435	406,923	10%
	1021	56,244	1,354,523	538,280	474,261	88%	6	82,460	108,676	202,731	466,364	695,091	1,039,801	1,197,162	55%
	1101	299,244	453,571	369,220	43,873	12%	20	312,640	328,709	338,083	369,969	403,382	433,767	451,645	9%
	1102	2,766	5,178	3,995	489	12%	20	3,358	3,615	3,793	3,952	4,215	4,422	4,701	5%
	1103	2,763	5,291	4,080	727	18%	18	2,835	3,267	3,603	4,002	4,485	5,123	5,192	11%
	1104	6,306	18,105	13,147	2,968	23%	21	7,533	10,155	11,446	13,855	15,128	16,225	17,448	14%
	1105	6,000	12,600	10,797	2,053	19%	18	6,068	7,152	10,670	11,659	12,028	12,223	12,411	6%
	1106	3,891	33,681	17,828	7,254	41%	20	8,745	10,143	12,536	18,042	21,501	26,041	29,180	26%
	1107	54,230	81,487	65,863	8,654	13%	20	54,612	55,809	57,575	64,980	73,486	78,032	78,395	12%
	1108	409,014	745,190	563,602	103,959	18%	22	416,987	428,676	460,137	569,026	660,348	672,087	677,089	18%
	1109	399,917	653,477	540,126	93,706	17%	21	405,634	417,178	450,740	547,864	638,439	650,924	652,290	17%
	1110	43,904	88,415	65,201	12,768	20%	20	44,128	49,301	52,657	67,964	73,914	76,870	83,150	17%
Equity Cumulative	11000	248,234	416,585	327,394	45,689	14%	21	253,613	253,613	291,643	335,823	359,980	368,709	375,557	10%

Table 25: VaR statistics (EQ asset class – only banks with general EQ risk approval)

EU Statistics for VaR

		Other stats						Percentiles							
	Port. ID	Min	Max	Ave.	STDev	Coefficient of variation (STDev/Mean)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	Interquantile range
	1001	437,213	716,899	593,235	105,500	18%	6	465,482	493,751	553,533	573,481	676,961	712,475	714,687	10%
	1002						4								
	1003						1								
	1004						3								
	1005						3								
	1006						1								
	1007						2								
	1008						3								
	1009						1								
	1010						1								
	1011						3								
	1012						1								
	1013						2								
	1014						1								
	1015						3								
Equity	1016						3								
	1017	72,336,536	180,910,972	109,797,032	39,202,278	36%	6	73,205,986	74,075,435	82,933,770	106,865,099	114,352,143	148,450,561	164,680,767	16%
	1018						1								
	1019						2								
	1020						2								
	1021						1								
	1101						3								
	1102						1								
	1103						2								
	1104						1								
	1105						1								
	1106						2								
	1107						3								
	1108						4								
	1109						4								
	1110						1								
Equity Cumulative	11000						3								

Table 26: Stress VaR statistics (2008-2009 stress period only)

EU Statistics for SVaR

		Other stats						Percentiles								Extreme Values range (Full Sample)		
	Port. ID	Min	Max	Ave.	STDev	Coefficient of variation (STDev/Mean)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	Interquantile range	STDev_trunc[1]	-2*STDev_trunc	+2*STDev_trunc
Equity	1001	819,902	1,275,097	1,127,561	117,552	10%	17	962,604	1,000,682	1,043,324	1,179,310	1,216,020	1,220,011	1,233,945	8%	206,035	717,711	1,541,849
	1002	40,777	73,695	62,983	11,384	18%	17	42,049	47,906	54,234	70,307	72,297	73,026	73,533	14%	11,929	37,501	85,217
	1003	42,401	90,131	72,252	16,351	23%	15	43,088	48,113	58,341	79,492	85,498	85,804	87,152	19%	17,007	29,509	97,539
	1004	17,125	43,485	31,587	7,388	23%	14	20,736	23,493	26,718	31,980	36,409	39,410	40,944	15%	10,482	6,064	47,991
	1005	1,030,083	1,995,681	1,580,536	344,381	22%	15	1,040,895	1,087,170	1,245,225	1,669,746	1,840,154	1,906,674	1,958,745	19%	506,881	367,977	2,395,501
	1006	2,352	28,973	19,785	8,268	42%	14	7,149	10,888	14,239	22,262	27,235	27,717	28,187	31%	9,403	-4,105	33,508
	1007	71,700	154,386	126,836	26,555	21%	15	81,593	92,308	111,348	133,014	150,314	152,058	153,064	15%	35,619	46,285	188,760
	1008	48,842	91,105	75,201	12,167	16%	15	53,743	58,794	67,648	81,337	82,219	86,127	88,437	10%	19,318	30,229	107,499
	1009	37,294	69,117	55,428	11,122	20%	16	39,419	40,830	46,517	57,120	65,603	66,960	67,526	17%	11,419	26,960	72,638
	1010	33,095	73,341	56,045	14,087	25%	15	34,103	36,589	44,472	58,808	68,106	70,310	71,479	21%	13,551	20,189	74,393
	1011	1	118	27	33	124%	11	2	3	7	14	34	38	78	68%	117	-217	250
	1012	4,474	20,955	15,256	5,423	36%	13	5,692	6,916	12,733	17,312	18,536	20,132	20,584	19%	5,129	3,001	23,515
	1013	23,937	46,004	37,150	6,834	18%	16	25,568	27,341	34,052	38,113	42,174	44,495	45,540	11%	7,344	19,602	48,978
	1014	36,489	87,549	67,284	16,883	25%	16	40,799	44,154	52,907	73,281	80,963	83,333	84,959	21%	15,951	24,407	88,211
	1015	6,880	17,466	13,899	3,673	26%	14	7,585	8,385	10,874	15,841	16,334	16,666	16,954	20%	4,566	740	19,004
	1016	235	1,139	757	297	39%	12	272	311	596	856	940	1,043	1,091	22%	347	-25	1,362
	1017	120,793,010	212,912,224	181,693,019	28,692,050	16%	12	136,555,067	150,808,592	163,535,168	187,484,892	207,824,553	211,303,176	212,221,812	12%	60,890,633	41,583,598	285,146,131
	1018	16,104	117,471	55,717	30,148	54%	10	17,821	19,538	41,763	51,556	65,914	88,690	103,080	22%	40,793	-34,320	128,853
	1019	110,608	520,901	373,854	115,468	31%	15	125,545	211,336	357,982	396,407	427,180	482,773	519,866	9%	138,143	109,151	661,722
	1020	126,737	549,222	371,625	134,938	36%	10	131,546	136,355	382,054	409,419	439,245	461,620	505,421	7%	138,063	106,930	659,182
	1021	184,383	1,077,974	638,133	271,779	43%	7	304,181	423,979	585,192	589,654	722,268	927,073	1,002,524	10%	302,417	-16,669	1,192,998
	1101	1,102,341	2,061,039	1,658,366	355,411	21%	15	1,125,176	1,161,550	1,287,111	1,720,495	1,930,442	2,006,119	2,048,719	20%	524,277	356,547	2,453,655
	1102	4,524	7,806	6,033	1,121	19%	15	4,637	4,744	4,845	5,947	6,916	7,441	7,662	18%	1,407	2,831	8,457
	1103	4,832	13,792	10,855	2,609	24%	14	5,615	6,965	10,623	11,623	12,186	13,335	13,547	7%	3,542	3,496	17,662
	1104	7,845	19,475	13,764	4,361	32%	14	8,002	8,193	9,930	13,578	17,467	19,035	19,406	28%	4,847	5,138	24,524
	1105	4,450	20,932	15,161	5,395	36%	13	5,691	6,915	12,704	17,242	18,101	20,168	20,557	18%	5,090	2,965	23,324
	1106	4,234	31,964	17,544	7,897	45%	14	5,303	7,087	11,126	19,047	21,908	25,443	28,578	33%	12,047	-4,969	43,221
	1107	134,951	264,845	219,264	37,993	17%	14	156,392	172,809	200,423	226,685	250,870	251,521	256,214	11%	59,240	85,453	322,411
	1108	783,116	1,204,389	1,068,218	109,063	10%	16	914,184	961,429	997,942	1,110,739	1,142,481	1,163,645	1,174,835	7%	182,226	719,669	1,448,572
	1109	764,396	1,184,882	1,052,996	112,496	11%	16	897,577	945,330	968,151	1,098,548	1,131,739	1,154,868	1,165,768	8%	181,477	705,249	1,431,158
	1110	26,763	66,672	51,514	13,423	26%	14	28,521	31,898	42,695	55,337	63,279	64,047	65,048	19%	12,552	23,928	74,135
Interest Rate	2001	157,645	242,789	201,440	22,545	11%	22	164,746	176,836	184,454	202,196	215,495	227,743	236,907	8%	45,097	107,053	287,442
	2002	95,639	175,848	132,914	20,943	16%	21	102,285	107,182	119,510	128,988	145,924	150,771	171,206	10%	25,885	79,627	183,169
	2003	17,773	45,897	32,547	6,314	19%	20	24,221	24,946	29,539	33,373	35,510	40,094	40,708	9%	9,810	10,602	49,843
	2004	62,208	143,570	95,596	22,152	23%	22	68,452	72,846	79,135	93,590	106,264	128,949	129,361	15%	48,358	285	193,715
	2005	12,000	106,576	56,212	40,836	73%	5	16,532	21,064	34,661	35,662	92,161	100,810	103,693	45%	76,726	-113,643	193,261
	2006	42,189	74,777	51,440	7,929	15%	17	43,810	44,626	46,410	49,850	53,545	59,609	64,071	7%	11,094	30,620	74,997
	2007	19,656	31,208	25,494	3,203	13%	21	20,766	21,212	22,989	26,612	27,693	28,833	29,033	9%	4,522	17,544	35,634
	2008	30,324	79,098	52,276	11,063	21%	18	36,795	40,815	45,552	52,490	59,192	62,292	66,574	13%	50,233	-41,181	159,753
	2009	12,478	23,836	18,432	2,658	14%	22	14,691	15,327	17,363	18,410	19,918	21,747	22,095	7%	14,663	-9,405	49,247
	2010	20,900	33,020	26,738	3,525	13%	22	21,939	22,893	23,904	26,728	28,669	31,957	32,667	9%	15,224	-1,636	59,261
	2011	18,008	34,376	27,322	3,711	14%	22	22,042	22,385	26,028	27,571	29,818	30,303	32,309	7%	6,310	15,729	40,969
	2012	24,806	37,882	31,500	3,723	12%	21	25,690	26,701	28,556	33,050	33,459	35,754	36,795	8%	5,746	21,483	44,467
	2013	25,063	67,968	41,166	12,326	30%	19	28,477	29,244	33,086	35,883	45,988	59,123	65,541	16%	19,165	-1,921	74,740
	2014	14,060	32,030	22,246	3,882	17%	21	17,819	17,834	19,908	22,312	24,452	26,580	26,659	10%	51,811	-80,527	126,715
	2015	25,520	65,507	40,868	9,107	22%	17	26,973	31,420	38,584	40,423	41,690	51,035	53,933	4%	15,116	8,771	69,234
	2016	12,378	73,299	26,455	18,188	69%	13	12,605	13,196	17,679	21,624	23,669	51,698	64,086	14%	25,500	-27,332	74,670
	2017	46,694	131,871	68,521	26,057	38%	14	47,515	48,325	51,478	55,897	80,765	101,117	112,303	22%	50,398	-29,114	172,477
	2018	290,055	510,170	418,975	58,640	14%	21	335,665	338,339	392,862	414,515	481,186	498,208	506,839	10%	69,296	263,633	540,817
	2019	135,918	259,195	204,798	35,295	17%	22	145,613	164,850	181,863	201,376	236,072	250,737	254,187	13%	46,503	107,754	293,765
	2020	36,726	280,705	166,361	71,028	43%	17	56,269	80,440	125,671	181,895	200,307	269,306	279,152	23%	85,089	-33,701	306,656
	2021	52,811	200,200	130,846	51,311	39%	17	59,782	63,883	86,703	148,115	170,990	193,146	195,300	33%	67,050	-46,861	221,339
	2022	20,956	69,383	38,714	10,627	27%	18	27,604	29,345	32,274	39,237	40,788	48,681	55,247	12%	37,653	-34,399	116,214
	2023	122,506	301,730	224,386	45,142	20%	17	156,112	164,739	206,445	237,175	245,134	265,637	277,434	9%	57,672	122,258	352,946
	2024	34,864	71,972	49,795	10,492	21%	19	38,244	39,939	40,934	49,028	55,994	65,317	66,651	16%	29,181	-6,957	109,766
	2201	18,624	50,840	37,029	10,181	27%	18	20,730	21,398	33,119	40,037	43,919	48,266	48,913	14%	12,403	17,260	66,870
	2202	21,812	141,845	82,048	26,082	32%	19	45,898	50,119	75,451	84,571	93,926	108,439	112,263	11%	50,037	-2,913	197,233
	2203	35,909	149,971	81,556	26,685	33%	19	42,718	43,757	73,196	82,389	90,629	107,120	120,600	11%	87,578	-78,835	271,475
	2204	160,395	338,421	273,443	42,258	15%	19	201,478	238,561	259,798	274,850	295,774	319,405	334,304	6%	52,889	159,341	370,897
	2205	15,466	29,791	19,946	3,462	17%	20	15,643	16,423	17,548	19,268	21,382	23,579	24,646	10%	6,362	6,919	32,369
	2206	425,290	766,320	595,543	88,671	15%	22	456,839	467,965	546,441	599,310	644,458	706,742	746,203	8%	106,189	378,401	803,158
	2207	88,528	181,023	124,742	28,037	22%	20	94,794	95,198	103,977	119,459	138,130	166,856	174,128	14%	49,407	20,869	218,497
	2208	26,738	176,065	73,141	42,479	58%	14	29,395	32,627	41,314	63,243	102,910	114,885	137,574	43%	68,562	-55,486	218,760
	2209	8,670	45,619	23,350	10,384	44%	16	10,814	11,909	17,659	21,190	28,396	37,675	43,209	23%	19,057	-18,632	57,595
	2210	68,896	123,709	94,476	15,638	17%	19	72,561	75,176	84,015	94,115	99,801	116,834	122,172	9%	124,539	-150,148	348,006
	2211	130,012	253,626	191,739	33,244	17%	22	134,251	160,201	169,698	188,262	219,307	233,342	238,171	13%	40,558	113,240	275,472
	2212	187,192	295,994	244,537	27,079	11%	18	211,606	218,866	227,237	240,255	260,829	283,181	285,849	7%	75,970	94,583	398,462
FX	3001	634,297	1,024,916	806,572	114,488	14%	20	655,759	668,475	695,159	801,916	890,640	929,009	992,854	12%	200,605	290,493	1,092,912
	3002	574,742	1,094,274	877,417	130,594	15%	20	637,733	719,332	798,584	925,072	956,568	1,003,433	1,009,561	9%	205,993	403,374	1,227,345
	3003	632,129	1,032,464	811,213	127,435	16%	18	653,743	668,902	694,322	818,807	912,771	962,674	1,022,990	14%	202,699	286,210	1,097,007
	3004	244,078	427,643	345,314	48,202	14%	18	258,100	273,927	325,549	349,866	373,600	393,280	419,187	7%	84,034	173,707	509,844
	3005	561,216	755,579	639,619	55,026	9%	18	562,533	569,893	603,314	625,327	686,470	703,342	717,465	6%	105,380	388,544	810,065
	3006	647,686	995,822	808,751	118,745	15%	18	648,555	651,151	683,080	843,232	895,860	940,232	976,151	13%	208,726	240,845	1,075,749
	3007	34,644	152,331	111,234	32,375	29%	17	53,194	68,351	97,589	115,512	133,963	145,035	149,124	16%	58,063	-9,835	222,416
	3008	427,024	1,072,470	864,133	181,160	21%	19	508,466	572,462	798,140	918,756	985,662	1,023,330	1,028,379	11%	236,053	419,937	1,364,150
	3009	286,274	1,359,670	913,651	232,143	25%	18	582,042	658,695	834,971	938,932	1,038,223	1,104,346	1,199,704	11%	300,782	259,651	1,462,779
	3010	13,910	108,829	40,421	20,662	51%	18	14,321	19,565	33,678	38,999	44,962	52,159	63,340	14%	38,381	-40,732	112,793
	3011	568,325	2,073,243	1,512,937	370,345	24%	16	897,810	1,123,572	1,367,811	1,620,004	1,701,840	1,899,154	2,002,391	11%	447,302	485,126	2,274,335
	3301	659,459	1,100,708	880,547	120,866	14%	20	689,877	718,996	808,005	869,738	970,933	1,032,400	1,049,744	9%	215,675	392,552	1,255,253
	3302	105,890	348,242	211,956	55,998	26%	17	123,145	129,129	191,218	217,237	237,400	246,311	272,305	11%	151,784	-89,951	517,184
	3303	262,480	404,437	344,369	37,126	11%	18	284,538	299,666	322,373	346,355	370,185	385,263	390,414	7%	69,318	183,592	460,864
	3304	411,445	1,189,727	899,149	195,517	22%	19	517,734	694,178	823,023	924,513	991,241	1,103,712	1,167,884	9%	240,516	406,460	1,368,524

Commodities	4001	1,581,632	2,144,445	1,819,557	224,101	12%	8	1,582,045	1,582,459	1,641,927	1,758,024	2,004,262	2,110,750	2,127,597	10%	588,475	565,066	2,918,966
	4002	1,785,784	2,378,316	2,138,610	205,647	10%	8	1,837,143	1,888,503	2,053,804	2,137,743	2,318,727	2,341,943	2,360,129	6%	652,238	658,784	3,267,737
	4003	31,605	142,428	93,504	43,317	46%	6	39,745	47,884	66,662	97,648	125,932	134,979	138,703	31%	60,654	-57,146	185,472
	4004	339,174	515,088	431,535	56,690	13%	7	351,078	362,983	410,871	443,979	450,382	476,761	495,925	5%	153,666	136,647	751,310
	4005	1,823,488	2,486,274	2,163,385	287,614	13%	6	1,833,616	1,843,744	1,936,715	2,160,250	2,405,947	2,486,162	2,486,218	11%	757,684	389,234	3,419,970
	4401	14,639	73,050	46,698	19,722	42%	7	18,546	22,453	36,162	53,733	56,569	63,482	68,266	22%	61,224	-68,715	176,181
	4402	472,454	660,312	535,523	64,341	12%	7	476,349	480,244	495,430	507,963	558,537	602,395	631,353	6%	172,926	162,112	853,814
	4403	1,852,891	2,517,780	2,098,085	267,212	13%	6	1,863,612	1,874,332	1,912,664	1,993,531	2,257,186	2,426,393	2,472,086	8%	513,832	996,063	3,051,390
Credit Spread	5001	2,875	13,275	5,766	4,203	73%	8	2,900	2,925	3,127	3,392	7,040	12,040	12,658	38%	6,177	-4,409	20,298
	5002	4,178	24,204	11,527	7,060	61%	10	4,574	4,970	5,878	8,961	16,916	18,845	21,524	48%	6,917	-610	27,057
	5003	4,550	19,245	9,751	5,762	59%	9	4,939	5,328	5,932	6,279	16,039	17,102	18,173	46%	10,750	-13,676	29,324
	5004	22,033	64,731	31,632	15,846	50%	7	22,065	22,096	23,090	24,269	32,106	49,733	57,232	16%	25,472	-26,571	75,318
	5005	24,745	36,161	31,071	4,780	15%	6	25,405	26,066	27,670	31,448	35,020	35,698	35,930	12%	25,439	-19,431	82,327
	5006	3,183	15,113	8,146	5,837	72%	7	3,216	3,249	3,504	3,757	13,980	14,802	14,958	60%	5,863	-7,625	15,829
	5007	10,419	33,720	20,951	8,991	43%	10	11,671	12,923	14,194	16,575	29,276	32,339	33,030	35%	9,405	-1,769	35,851
	5008	3,438	17,137	8,014	4,992	62%	9	3,595	3,752	3,956	5,450	10,897	14,817	15,977	47%	5,824	-6,118	17,180
	5009	9,518	67,243	30,579	23,142	76%	8	10,705	11,892	14,406	16,868	52,223	58,700	62,971	57%	28,737	-37,257	77,689
	5010	3,050	22,546	11,041	8,800	80%	9	3,109	3,168	3,368	4,760	21,010	21,428	21,987	72%	9,525	-12,829	25,273
	5011	6,767	26,350	15,019	7,784	52%	9	7,194	7,621	9,103	10,394	22,691	24,042	25,196	43%	8,540	-7,216	26,944
	5012	4,158	38,559	14,214	9,607	68%	10	5,587	7,016	10,344	12,212	12,913	22,937	30,748	11%	13,052	-13,212	38,994
	5013	4,203	8,628	6,602	1,485	22%	8	4,371	4,538	5,956	6,996	7,390	7,917	8,272	11%	8,909	-11,999	23,638
	5014	3,612	15,574	8,030	4,319	54%	9	3,949	4,286	5,414	7,136	7,945	14,956	15,265	19%	9,287	-11,291	25,858
	5015	4,289	19,294	9,683	6,172	64%	9	4,371	4,453	4,677	6,089	12,419	18,770	19,032	45%	6,990	-6,225	21,737
	5016	18,685	53,595	31,918	12,849	40%	10	18,838	18,990	22,015	27,357	41,261	47,911	50,753	30%	14,353	-3,815	53,597
	5017	30,998	108,996	74,519	26,751	36%	9	38,802	46,606	57,721	71,151	97,740	102,933	105,964	26%	34,111	-6,356	130,086
	5018	45,913	88,345	59,491	13,120	22%	8	48,574	51,236	53,561	54,812	59,849	73,913	81,129	6%	21,642	11,016	97,582
	5019	12,203	26,217	18,019	4,711	26%	12	12,342	12,515	14,202	17,356	20,742	23,906	24,949	19%	7,884	3,557	35,094
	5020	17,865	46,621	26,921	10,278	38%	13	18,167	18,434	19,403	23,148	28,787	44,677	46,369	19%	11,824	-536	46,759
	5021	19,155	36,687	26,140	5,974	23%	10	19,382	19,610	22,925	23,673	29,663	34,502	35,594	13%	14,779	-2,947	56,169
	5022	24,254	102,133	56,239	22,638	40%	12	27,839	31,774	44,530	49,486	66,763	86,857	94,804	20%	47,104	-44,722	143,692
	5023	38,054	73,193	52,086	10,423	20%	12	39,481	41,192	46,183	49,421	55,737	66,482	69,770	9%	27,970	3,484	115,366
	5024	9,715	70,052	27,693	23,965	87%	7	10,707	11,699	13,731	15,607	35,509	60,301	65,177	44%	30,627	-42,034	80,476
	5025	42,236	58,326	49,463	4,988	10%	11	43,139	44,041	46,070	48,499	52,954	54,759	56,543	7%	8,857	31,325	66,754
	5026	12,375	50,467	25,909	16,198	63%	8	12,438	12,501	13,024	17,062	40,984	46,563	48,515	52%	17,852	-18,317	53,090
	5027	56,494	97,993	73,582	13,822	19%	13	57,122	58,352	63,451	67,884	81,142	93,249	95,412	12%	25,323	25,922	127,216
	5028	19,095	108,413	59,004	30,331	51%	8	23,645	28,195	39,426	51,649	83,158	91,730	100,071	36%	35,472	-21,284	120,606
	5029	30,472	199,127	120,761	59,658	49%	10	42,798	55,125	77,647	116,483	168,331	196,736	197,931	37%	60,356	1,858	243,281
	5030	22,811	218,773	103,516	83,360	81%	9	25,542	28,273	37,471	69,338	176,750	214,556	216,664	65%	80,682	-65,884	256,844
	5031	16,076	66,241	36,046	17,574	49%	11	16,850	17,624	22,727	32,075	47,662	62,206	64,224	35%	28,331	-17,444	95,880
	5032	61,416	167,878	112,992	36,111	32%	10	67,748	74,081	93,266	101,149	134,637	166,029	166,953	18%	50,599	-6,694	195,703
	5033	16,600	34,393	25,945	5,086	20%	11	18,140	19,680	23,383	25,999	29,060	30,987	32,690	11%	16,920	-7,686	59,992
	5034	11,512	27,211	17,352	4,487	26%	11	12,747	13,981	14,741	16,109	18,400	23,196	25,204	11%	7,945	731	32,510
	5501	4,808	22,407	10,517	6,461	61%	9	5,011	5,214	5,472	6,580	14,777	18,668	20,537	46%	10,979	-8,446	35,471
	5502	44,912	142,362	66,287	34,031	51%	7	46,349	47,785	49,748	58,300	59,470	92,885	117,623	9%	50,686	-43,860	158,885
	5503	4,413	17,015	10,880	3,926	36%	10	6,034	7,656	8,710	9,324	14,388	14,763	15,889	25%	3,852	2,295	17,703
	5504	17,758	63,568	31,311	16,890	54%	6	18,749	19,740	22,233	24,597	33,076	49,597	56,583	20%	25,489	-23,398	78,556
	5505	4,051	31,861	16,024	10,401	65%	8	5,544	7,037	10,053	10,913	23,725	30,427	31,144	40%	10,996	-10,953	33,029
	5506	14,619	43,789	24,972	10,736	43%	9	15,196	15,773	16,760	18,535	31,132	38,465	41,127	30%	18,691	-16,568	58,197
	5507	44,064	110,675	68,245	26,802	39%	8	45,935	47,806	49,472	52,239	90,451	103,804	107,239	29%	34,371	-18,701	118,785
	5508	45,242	119,829	80,458	21,418	27%	12	51,946	57,866	64,868	79,685	91,502	105,582	112,591	17%	57,973	-31,606	200,285
	5509	6,195	20,661	13,087	4,561	35%	11	7,452	8,709	9,955	12,342	16,359	18,876	19,769	24%	6,474	-1,375	24,519
	5510	13,223	39,951	22,356	8,468	38%	10	13,543	13,863	16,926	19,870	26,003	32,908	36,429	21%	9,902	380	39,989
	5511	25,814	93,988	51,698	20,201	39%	10	27,940	30,067	41,343	47,234	62,230	72,313	83,151	20%	47,910	-48,353	143,286
	5512	21,813	65,139	39,628	14,102	36%	10	22,619	23,424	26,938	41,360	45,739	54,962	60,050	26%	17,047	1,394	69,583
	5513	3,306	18,175	9,420	5,908	63%	8	3,668	4,031	4,366	7,449	14,473	16,969	17,572	54%	9,146	-8,897	27,685
	5514	17,181	24,234	21,349	2,252	11%	11	18,100	19,019	20,175	21,056	23,391	24,133	24,184	7%	22,682	-21,973	68,755
	5515	41,210	134,054	82,418	30,228	37%	7	46,485	51,760	63,434	84,907	94,945	113,064	123,559	20%	57,104	-29,300	199,114
	5516	17,977	88,305	55,277	27,238	49%	7	23,099	28,221	35,093	54,338	78,068	86,709	87,507	38%	34,690	-37,076	101,685
	5517	57,716	194,547	115,406	45,579	39%	7	66,820	75,923	93,040	103,910	132,796	171,479	183,013	18%	88,505	-77,232	276,790
	5518	120,571	251,309	189,839	39,774	21%	11	127,057	133,542	167,335	196,207	215,053	228,032	239,671	12%	57,582	85,151	315,477
	5519	113,831	230,826	170,757	33,243	19%	13	134,365	148,078	150,588	158,473	200,692	214,443	222,566	14%	45,811	80,064	263,310
	5520	37,010	166,252	90,494	52,608	58%	7	38,866	40,721	53,757	70,300	126,191	161,782	164,017	40%	67,369	-62,990	206,487
	5521	145,801	307,731	203,097	59,428	29%	9	148,217	150,633	161,104	165,630	246,483	278,126	292,929	21%	59,589	93,416	331,772
	5522	19,366	155,550	73,249	49,905	68%	9	23,808	28,251	31,817	61,523	93,314	148,536	152,043	49%	89,193	-89,474	267,300
CTP	6001	181,056	491,592	328,343	155,882	47%	3	194,188	207,321	246,718	312,380	401,986	455,750	473,671	24%	0	0	0
	6002	128,458	352,630	210,355	123,683	59%	3	130,610	132,762	139,217	149,976	251,303	312,099	332,365	29%	0	0	0
	6003	188,569	371,420	252,756	102,881	41%	3	189,540	190,511	193,424	198,279	284,850	336,792	354,106	19%	0	0	0
	6004	135,870	445,827	259,484	164,224	63%	3	141,958	148,047	166,312	196,754	321,291	396,012	420,920	32%	0	0	0
	6005	28,255	77,006	46,287	26,737	58%	3	28,790	29,324	30,928	33,601	55,304	68,325	72,666	28%	0	0	0
	6006	18,183	63,350	36,677	23,668	65%	3	19,215	20,246	23,341	28,499	45,925	56,380	59,865	33%	0	0	0
	6007	25,545	63,439	39,343	20,941	53%	3	25,895	26,245	27,295	29,045	46,242	56,560	60,000	26%	0	0	0
	6008	25,813	80,092	44,585	30,767	69%	3	26,017	26,220	26,831	27,849	53,971	69,643	74,868	34%	0	0	0
	6009	181,056	491,592	328,343	155,882	47%	3	194,188	207,321	246,718	312,380	401,986	455,750	473,671	24%	0	0	0
	6010	128,458	352,630	210,355	123,683	59%	3	130,610	132,762	139,217	149,976	251,303	312,099	332,365	29%	0	0	0
	6601	65,945	204,887	144,033	71,056	49%	3	75,477	85,009	113,606	161,266	183,077	196,163	200,525	23%	0	0	0
	6602	65,483	143,144	108,877	39,627	36%	3	70,735	75,987	91,743	118,003	130,574	138,116	140,630	17%	0	0	0
	6603	7,747	18,879	12,357	5,807	47%	3	8,017	8,286	9,096	10,444	14,662	17,192	18,036	23%	0	0	0
	6604	6,737	16,230	12,080	4,858	40%	3	7,391	8,044	10,005	13,273	14,752	15,639	15,934	19%	0	0	0
	6605	65,945	204,887	144,033	71,056	49%	3	75,477	85,009	113,606	161,266	183,077	196,163	200,525	23%	0	0	0
ALL-IN no-CTP	10000	1,239,420	1,706,420	1,370,169	162,761	12%	7	1,242,488	1,245,556	1,255,664	1,339,363	1,397,327	1,524,454	1,615,437	5%	428,581	398,503	2,112,825
Equity Cumulative	11000	283,977	1,042,127	809,456	211,937	26%	16	359,765	548,707	732,056	898,851	946,101	972,115	997,788	13%	302,294	183,504	1,392,682
IR Cumulative	12000	340,272	703,158	521,069	95,625	18%	17	353,945	403,163	481,478	512,658	562,821	637,064	670,506	8%	125,062	282,876	783,124
FX Cumulative	13000	917,620	1,473,617	1,163,074	146,343	13%	18	983,292	1,006,374	1,055,625	1,137,510	1,278,269	1,352,172	1,383,565	10%	291,637	525,175	1,691,724
Commodity Cumulative	14000	454,498	681,480	536,943	80,653	15%	6	462,752	471,006	489,592	517,400	557,270	622,425	651,952	6%	174,135	179,361	875,901
CS Cumulative	15000	176,681	321,085	242,084	53,124	22%	8	182,891	189,100	195,030	237,061	285,961	299,863	310,474	19%	81,471	83,640	409,523
CTP Cumulative	16000																	

Table 27: PV statistics

EU Statistics for PV

		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	5,379,600	5,392,003	5,385,550	3,003	3,884	863	0%	27	5,382,871	5,386,737	5,387,600	0%
	1002	263,848	265,037	264,487	231	595	17	0%	26	264,520	264,533	264,570	0%
	1003	-265,238	-260,924	-264,419	882	66,092	42	0%	24	-264,787	-264,766	-264,421	0%
	1004	-88,146	-87,077	-87,475	179	25,140	31	0%	25	-87,482	-87,452	-87,421	0%
	1005	-3,501,101	-3,492,060	-3,495,537	2,000	619,082	605	0%	25	-3,496,286	-3,495,081	-3,494,804	0%
	1006	-32,912	-26,565	-32,447	1,254	8,207	7	4%	24	-32,703	-32,694	-32,691	0%
	1007	-244,524	-209,749	-242,495	6,812	36,760	72	3%	26	-244,114	-244,095	-243,901	0%
	1008	-161,484	-160,793	-161,158	153	37,866	34	0%	25	-161,217	-161,204	-161,071	0%
	1009	45,705	47,512	46,506	360	668	82	1%	24	46,376	46,447	46,543	0%
	1010	-63,886	-60,502	-62,819	766	1,342	304	1%	24	-63,267	-62,921	-62,645	0%
	1011	0	32	7	9	17	3	136%	20	0	4	11	100%
	1012	5,557	6,754	6,195	379	413	282	6%	22	6,025	6,166	6,489	4%
	1013	47,066	49,727	48,656	702	994	257	1%	25	48,525	48,772	49,030	1%
	1014	-26,765	-24,816	-25,816	479	657	230	2%	26	-26,103	-25,756	-25,557	1%
	1015	6,283	7,414	6,883	236	511	85	3%	21	6,806	6,910	6,956	1%
	1016	173	452	315	70	90	19	22%	22	293	306	347	8%
	1017	-759,777,402	-708,897,701	-756,311,187	10,137,410	218,197,490	877,262	1%	24	-759,239,663	-757,910,093	-757,537,738	0%
	1018	1,013,147	1,043,887	1,024,051	7,876	11,514	4,391	1%	18	1,018,447	1,023,369	1,027,452	0%
	1019	124,578	138,919	131,396	3,316	5,011	1,198	3%	28	130,553	131,682	132,682	1%
	1020	132,471	146,278	137,739	3,243	6,973	1,114	2%	21	136,076	137,492	138,362	1%
	1021	51,662	263,134	159,711	63,283	88,575	31,449	40%	8	128,074	170,779	198,157	21%
Interest Rate	1101	-3,853,952	-3,583,325	-3,836,899	52,865	687,462	519	1%	25	-3,847,946	-3,847,306	-3,846,909	0%
	1102	-14,955	-13,293	-14,178	294	499	114	2%	24	-14,309	-14,200	-14,056	1%
	1103	6,466	7,487	7,157	249	513	84	4%	21	7,114	7,208	7,271	1%
	1104	-17,486	-15,513	-16,536	422	940	183	3%	23	-16,752	-16,524	-16,386	1%
	1105	5,560	6,758	6,215	386	419	304	6%	21	6,057	6,231	6,489	3%
	1106	237,866	239,175	238,574	368	482	229	0%	25	238,272	238,719	238,828	0%
	1107	-444,757	-397,249	-440,117	11,458	79,027	227	3%	24	-444,006	-443,943	-443,583	0%
	1108	5,116,164	5,644,418	5,152,619	112,940	584,727	713	2%	26	5,121,744	5,122,008	5,122,835	0%
	1109	5,029,087	5,731,870	5,071,872	144,273	738,596	759	3%	26	5,034,319	5,034,570	5,035,423	0%
	1110	122,559	177,424	174,553	10,877	31,611	108	6%	25	176,649	177,088	177,122	0%
	2001	88,044	128,957	106,957	7,937	15,242	2,582	7%	34	104,501	106,667	109,666	2%
	2002	-167,471	-150,130	-159,222	3,855	5,612	2,081	2%	34	-161,614	-159,635	-157,452	1%
	2003	17,255	25,864	21,205	2,215	2,584	550	10%	36	20,115	20,722	21,166	3%
	2004	130,302	157,006	144,691	4,848	7,295	1,043	3%	34	143,413	144,423	145,444	1%
	2005	955,071	1,106,998	1,014,923	39,009	120,507	27,921	4%	14	985,170	1,016,481	1,040,555	3%
	2006	1,126,734	1,189,975	1,167,935	11,365	34,513	209	1%	32	1,169,620	1,170,094	1,170,204	0%
	2007	-898,786	-895,467	-897,589	589	1,112	161	0%	38	-897,816	-897,568	-897,489	0%
	2008	1,224,052	1,282,061	1,275,977	13,070	48,306	279	1%	30	1,279,113	1,279,902	1,280,115	0%
	2009	1,019,079	1,020,535	1,019,773	269	838	123	0%	33	1,019,700	1,019,747	1,019,897	0%
	2010	986,350	992,875	992,005	1,054	2,983	95	0%	35	992,068	992,170	992,267	0%
	2011	-937,889	-935,591	-937,103	396	1,162	122	0%	38	-937,282	-937,063	-936,977	0%
	2012	-1,205,786	-1,194,400	-1,196,025	1,813	6,527	263	0%	36	-1,196,082	-1,195,498	-1,195,384	0%
	2013	1,000,239	1,018,450	1,007,023	5,657	7,071	4,996	1%	35	1,001,456	1,007,052	1,012,031	1%
	2014	1,006,497	1,013,489	1,010,888	2,395	5,315	632	0%	35	1,008,715	1,012,579	1,012,771	0%
	2015	-850,186	-821,842	-844,825	5,168	18,101	244	1%	37	-846,170	-845,907	-845,726	0%
	2016	994,813	1,020,011	1,010,681	3,992	13,549	492	0%	26	1,009,644	1,010,953	1,011,367	0%
	2017	912,315	938,602	931,261	4,516	23,449	750	1%	25	931,420	932,183	932,832	0%
	2018	-34,351	-9,927	-23,565	6,567	6,986	5,343	28%	37	-28,174	-22,557	-19,779	18%
	2019	-68,778	-55,314	-62,333	3,436	3,436	2,368	6%	38	-64,893	-62,045	-60,551	3%
	2020	-29,536	-21,004	-24,996	1,995	2,501	377	8%	32	-25,556	-25,264	-24,648	2%
	2021	22,190	44,570	33,079	3,697	7,970	998	11%	32	32,564	33,712	34,526	3%
	2022	1,154,008	1,199,840	1,195,641	11,262	38,728	208	1%	30	1,198,566	1,198,884	1,199,068	0%
	2023	-98,780	-55,365	-77,702	10,997	13,051	6,152	14%	28	-85,412	-74,855	-71,364	9%
	2024	-159,204	-37,534	-45,820	19,268	75,264	825	42%	37	-43,784	-42,598	-41,781	2%
FX	2201	229,226	298,389	271,646	9,216	71,581	190	3%	32	272,276	272,531	272,715	0%
	2202	1,453,277	1,580,450	1,547,547	21,371	142,705	617	1%	30	1,549,949	1,552,461	1,552,658	0%
	2203	947,481	2,161,799	1,420,085	178,307	380,090	596	13%	32	1,429,468	1,432,016	1,432,160	0%
	2204	49,451	113,114	82,974	12,192	17,098	4,236	15%	35	79,444	81,614	88,041	5%
	2205	26,748	66,922	45,115	7,816	12,779	2,217	17%	33	42,853	44,955	46,916	5%
	2206	-103,943	-66,197	-85,874	10,529	10,238	7,957	12%	39	-94,142	-85,477	-77,803	10%
	2207	-79,647	-37,880	-52,645	9,003	15,448	3,248	17%	32	-55,262	-52,296	-48,381	7%
	2208	1,081,115	1,118,347	1,097,593	6,598	17,752	609	1%	25	1,095,937	1,097,205	1,097,734	0%
	2209	-835,526	-819,287	-825,422	3,497	5,940	799	0%	35	-826,061	-825,095	-824,721	0%
	2210	4,032,477	4,629,460	4,287,548	93,480	197,464	3,253	2%	32	4,296,993	4,301,256	4,304,425	0%
	2211	951,387	966,840	957,924	3,413	5,080	2,330	0%	36	955,317	957,704	959,920	0%
	2212	-17,896	69,362	26,662	23,285	24,316	15,615	87%	30	9,957	30,621	39,541	60%
	3001	-922,947	-874,095	-906,392	9,481	36,173	2,815	1%	31	-911,282	-908,588	-903,257	0%
	3002	121,036	195,222	156,449	12,295	28,359	2,485	8%	33	153,605	155,501	160,547	2%
	3003	8,672,999	10,981,501	8,817,106	404,307	3,409,987	2,461	5%	31	8,729,981	8,730,625	8,738,897	0%
	3004	321,638	338,083	328,765	3,969	5,385	2,427	1%	30	327,101	328,111	330,723	1%
	3005	1,916,975	1,940,260	1,927,650	4,926	6,182	2,026	0%	31	1,925,472	1,928,333	1,930,327	0%
	3006	-1,062,404	-1,045,765	-1,054,906	4,451	6,149	3,076	0%	30	-1,058,016	-1,055,529	-1,051,809	0%
	3007	-30,728	-21,758	-26,389	1,730	3,431	765	7%	33	-27,472	-26,646	-25,407	4%
	3008	835,018	865,957	853,151	7,110	10,304	1,879	1%	31	849,698	851,031	857,778	0%
	3009	-482,331	-456,145	-469,065	5,842	17,073	3,121	1%	32	-472,624	-469,796	-466,365	1%
	3010	-7,312	-1,221	-5,809	1,353	6,794	309	23%	30	-6,375	-5,778	-5,718	5%
	3011	426,226	724,076	555,648	47,895	133,193	6,720	9%	24	543,189	552,060	557,855	1%
	3301	-783,641	-726,759	-751,880	11,277	27,256	2,985	2%	34	-756,436	-754,972	-747,330	1%
	3302	9,004,525	11,360,165	9,151,894	427,250	4,062,485	3,812	5%	29	9,058,508	9,060,434	9,066,126	0%
	3303	1,193,493	1,208,129	1,200,751	3,868	5,108	1,509	0%	30	1,199,290	1,200,908	1,202,154	0%
	3304	790,898	850,200	827,410	11,150	23,614	5,063	1%	32	822,726	824,553	836,490	1%
Commodities	4001	1,699,173	2,008,324	1,854,624	79,404	90,033	21,144	4%	13	1,833,330	1,865,291	1,881,735	1%
	4002	-2,032,722	-1,730,972	-1,873,355	76,517	89,422	26,187	4%	13	-1,895,706	-1,875,273	-1,849,469	1%
	4003	25,893	76,425	46,421	15,332	15,332	9,564	33%	12	33,128	48,471	55,637	25%
	4004	-222,081	-158,242	-183,861	17,113	19,985	5,007	9%	11	-191,232	-185,151	-170,556	6%
	4005	2,804,778	3,066,199	2,944,989	69,085	100,808	22,092	2%	11	2,886,900	2,949,903	2,976,788	2%
	4401	-31,799	-1,823	-15,275	8,405	12,733	6,620	55%	13	-19,736	-15,425	-8,091	42%
	4402	-178,821	-103,800	-142,664	22,453	27,691	18,582	16%	11	-160,612	-140,353	-122,808	13%
	4403	1,540,931	1,786,243	1,673,895	74,541	90,058	39,756	5%	9	1,646,509	1,684,681	1,697,730	2%

Credit Spread	5001	-34,780	-33,308	-34,320	284	1,256	67	1%	20	-34,438	-34,408	-34,263	0%
	5002	-26,012	-23,888	-24,916	437	601	206	2%	21	-25,116	-24,859	-24,785	1%
	5003	30,700	32,385	31,906	332	890	148	1%	21	31,816	31,955	32,082	0%
	5004	-2,131	488	-789	655	839	348	83%	19	-1,258	-689	-635	33%
	5005	11,969	16,474	14,416	1,126	1,559	663	8%	19	13,792	14,799	14,923	4%
	5006	-37,718	-36,558	-37,299	221	568	112	1%	20	-37,394	-37,327	-37,201	0%
	5007	16,197	18,118	16,947	466	923	192	3%	21	16,752	16,944	17,130	1%
	5008	-20,213	-16,560	-17,483	823	1,818	127	5%	23	-17,615	-17,219	-17,134	1%
	5009	23,345	24,813	24,238	366	776	123	2%	21	24,190	24,261	24,495	1%
	5010	-22,223	-18,734	-19,905	608	1,438	68	3%	22	-19,997	-19,817	-19,783	1%
	5011	22,660	25,622	24,822	618	1,148	179	3%	21	24,871	24,937	25,116	0%
	5012	21,483	22,630	22,002	306	757	184	1%	21	21,726	22,051	22,214	1%
	5013	29,748	30,960	30,341	392	867	335	1%	17	30,012	30,475	30,712	1%
	5014	35,671	36,382	36,053	144	535	88	0%	21	35,960	36,071	36,134	0%
	5015	-34,178	-32,288	-33,557	370	821	102	1%	21	-33,713	-33,611	-33,494	0%
	5016	-360	3,549	2,171	753	1,672	243	35%	22	1,891	2,361	2,472	13%
	5017	1,040,912	1,052,242	1,045,383	2,394	3,490	535	0%	22	1,044,350	1,045,542	1,045,966	0%
	5018	68,611	71,813	70,211	875	992	607	1%	19	69,641	70,262	70,736	1%
	5019	981,964	986,772	985,558	961	2,185	524	0%	25	985,219	985,755	985,981	0%
	5020	939,857	946,938	945,360	1,494	3,237	574	0%	25	944,797	945,733	946,222	0%
	5021	-947,690	-940,882	-945,030	1,483	2,865	421	0%	24	-945,632	-945,014	-944,862	0%
	5022	859,415	895,991	879,367	7,029	16,264	626	1%	25	875,477	880,955	881,536	0%
	5023	1,095,253	1,135,970	1,112,242	6,822	16,791	351	1%	25	1,112,074	1,112,385	1,112,834	0%
	5024	-96,574	-70,647	-79,351	4,774	19,312	1,425	6%	20	-79,963	-79,048	-77,451	2%
	5025	708,583	712,412	710,853	947	4,698	128	0%	25	710,904	711,119	711,213	0%
	5026	-111,500	-98,714	-105,218	4,256	6,865	3,633	4%	19	-109,229	-106,218	-101,319	4%
	5027	664,778	683,134	680,284	4,548	10,041	194	1%	26	681,436	681,612	681,809	0%
	5028	-85,466	-45,741	-58,270	8,839	17,342	2,865	15%	20	-59,772	-58,353	-54,523	5%
	5029	-233,760	-221,170	-229,588	3,596	8,019	2,927	2%	21	-233,280	-228,697	-227,882	1%
	5030	-17,085	-3,018	-10,272	4,796	4,796	3,791	47%	14	-13,613	-8,903	-6,571	35%
	5031	998,330	1,000,593	999,538	560	716	238	0%	21	999,387	999,628	999,852	0%
	5032	943,053	969,588	957,871	5,395	9,539	1,264	1%	20	956,253	958,308	959,546	0%
	5033	918,707	924,608	922,653	1,519	3,750	699	0%	23	921,949	923,277	923,620	0%
	5034	973,572	977,281	976,130	955	2,013	279	0%	23	975,649	976,499	976,692	0%
	5501	-29,317	-25,533	-27,289	691	1,093	172	3%	21	-27,468	-27,272	-27,187	1%
	5502	11,285	16,962	13,965	1,526	1,526	1,141	11%	19	12,873	14,081	14,317	5%
	5503	-1,024	5,062	-47	1,147	2,782	59	2417%	23	-347	-213	-163	36%
	5504	30,254	32,048	31,043	389	472	278	1%	17	30,846	31,136	31,297	1%
	5505	3,866	4,717	4,439	152	854	39	3%	22	4,412	4,447	4,507	1%
	5506	50,508	52,194	51,711	426	1,152	169	1%	22	51,349	51,842	51,974	1%
	5507	1,112,481	1,118,299	1,115,470	1,683	2,934	786	0%	17	1,115,078	1,115,832	1,116,588	0%
	5508	2,775,110	2,825,270	2,809,514	10,572	24,715	1,564	0%	25	2,805,664	2,812,561	2,813,131	0%
	5509	-2,143	2,122	871	1,070	1,719	139	123%	22	1,008	1,130	1,286	12%
	5510	931,384	981,273	967,234	8,473	27,442	491	1%	23	967,604	968,587	968,914	0%
	5511	831,850	862,227	846,454	5,833	16,990	537	1%	21	842,308	847,366	847,911	0%
	5512	405	6,967	3,351	1,392	1,911	794	42%	20	2,598	3,220	3,965	21%
	5513	-5,653	-5,206	-5,394	96	155	61	2%	19	-5,443	-5,394	-5,330	1%
	5514	990,596	1,014,506	997,972	4,333	9,953	340	0%	21	995,618	997,922	998,143	0%
	5515	915,259	933,552	929,969	4,223	16,804	950	1%	18	929,696	931,589	931,852	0%
	5516	1,022,895	1,027,812	1,025,413	1,498	1,602	1,087	0%	17	1,023,923	1,025,760	1,026,119	0%
	5517	1,929,990	1,964,145	1,954,501	7,103	17,275	1,257	0%	18	1,952,612	1,956,854	1,957,740	0%
	5518	925,703	948,769	935,860	4,523	10,886	1,999	1%	20	933,751	935,599	937,749	0%
	5519	2,475,604	2,513,597	2,503,031	8,646	24,032	464	0%	24	2,504,574	2,505,065	2,505,659	0%
	5520	-277,865	-221,842	-242,592	13,653	26,952	8,296	6%	19	-247,775	-244,157	-234,538	3%
	5521	2,217,943	2,447,468	2,301,474	49,179	81,055	6,555	2%	18	2,284,424	2,292,173	2,297,534	0%
	5522	-246,793	-219,156	-236,714	7,189	12,710	4,604	3%	16	-243,794	-235,444	-233,275	2%
CTP	6001								3				
	6002								3				
	6003								3				
	6004								3				
	6005								3				
	6006								3				
	6007								3				
	6008								3				
	6009								3				
	6010								3				
	6601								3				
	6602								3				
	6603								3				
	6604								3				
	6605								3				
ALL-IN no-CTP	10000	7,005,709	11,112,996	9,196,512	912,978	259,123,240	62,538	10%	14	9,214,875	9,336,771	9,395,794	1%
Equity Cumulative	11000	1,614,926	2,025,853	1,766,261	61,559	442,629	919	4%	25	1,760,814	1,761,615	1,762,523	0%
IR Cumulative	12000	780,764	2,042,582	1,287,216	171,782	383,245	13,797	13%	30	1,252,445	1,287,917	1,298,007	2%
FX Cumulative	13000	1,219,949	1,462,602	1,278,586	37,979	143,534	10,752	3%	32	1,267,167	1,272,048	1,291,147	1%
Commodity Cumulative	14000	-203,219	-113,616	-157,466	31,866	47,077	30,063	20%	11	-184,622	-153,820	-126,667	19%
CS Cumulative	15000	4,970,513	5,306,461	5,149,675	71,278	97,740	8,040	1%	17	5,137,027	5,155,606	5,162,879	0%
CTP Cumulative	16000												

Table 28: IRC – modelling choice: source of LGD – market convention

EU Statistics for IRC

		Other stats						Percentiles									
	Port. ID	Min	Max	Ave.	STDev	Coefficient of variation (STDev/Mean)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	Interquantile range	STDev_trunc[2]	Extreme Values range (Full Sample) -2*STDev_trunc	Extreme Values range (Full Sample) +2*STDev_trunc
Equity	1001																	
	1002																	
	1003																	
	1004																	
	1005																	
	1006																	
	1007																	
	1008																	
	1009																	
	1010																	
	1011																	
	1012																	
	1013																	
	1014																	
	1015																	
	1016																	
	1017																	
	1018																	
	1019																	
	1020																	
	1021																	
	1101																	
	1102																	
	1103																	
	1104																	
	1105																	
	1106																	
	1107																	
	1108																	
	1109																	
	1110																	
Interest Rate	2001																	
	2002																	
	2003																	
	2004																	
	2005	112,918	269,624	185,591	72,177	39%	6	113,495	114,071	120,704	179,337	248,212	263,365	266,495	35%	208,305	-207,952	625,266
	2006	0	51,995	14,808	15,809	107%	11	0	0	2,122	14,538	20,605	29,091	40,543	81%	40,495	-52,020	109,962
	2007	0	2,645	413	891	216%	10	0	0	0	0	96	1,481	2,063	100%	2,611	-3,871	6,574
	2008	49,338	948,909	472,528	317,227	67%	12	56,872	70,289	137,685	527,068	740,382	760,273	846,033	69%	254,488	-51,740	966,211
	2009						3											
	2010						3											
	2011						3											
	2012						2											
	2013	0	200,019	48,753	58,452	120%	11	2,373	4,746	17,870	27,167	46,012	111,498	155,759	44%	88,909	-128,205	227,433
	2014	6,043	109,687	26,352	31,615	120%	10	6,145	6,246	9,081	14,579	30,439	48,199	78,943	54%	97,886	-157,664	233,880
	2015						3											
	2016	451,224	763,048	712,109	115,300	16%	7	538,408	625,592	745,964	754,564	762,001	763,007	763,027	1%	221,574	209,823	1,096,120
	2017	92,291	698,166	401,031	265,364	66%	9	93,963	95,636	107,747	382,388	661,795	684,596	691,381	72%	193,853	-17,687	757,724
	2018						4											
	2019						4											
	2020																	
	2021																	
	2022	25,250	867,834	423,300	328,589	78%	12	27,965	34,442	83,844	459,042	678,777	833,613	857,132	78%	261,113	-123,140	921,311
	2023																	
	2024																	
	2201	0	35,221	9,437	10,446	111%	11	0	0	1,462	7,369	13,535	16,731	25,976	81%	17,452	-18,173	51,636
	2202	52,391	948,909	474,375	317,029	67%	12	58,972	71,477	141,439	531,301	740,830	763,186	847,704	68%	254,320	-38,717	978,563
	2203	80,053	1,635,129	800,474	582,214	73%	12	82,585	94,197	181,468	863,679	1,335,440	1,350,013	1,478,749	76%	474,243	-45,555	1,851,417
	2204																	
	2205																	
	2206																	
	2207																	
	2208	447,912	821,973	735,132	142,865	19%	6	526,679	605,446	762,996	784,497	808,186	815,453	818,713	3%	236,040	290,932	1,235,094
	2209						1											
	2210	81,758	1,648,469	819,058	589,345	72%	12	89,169	105,559	201,019	886,503	1,342,284	1,369,086	1,495,346	74%	489,880	-67,862	1,891,657
	2211	10,522	689,931	316,737	278,145	88%	12	11,811	15,077	45,673	232,067	575,479	676,678	687,059	85%	238,126	-232,860	719,642
	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																	

	5001	2,109	9,581	4,131	2,273	55%	11	2,211	2,313	2,614	3,255	4,673	6,677	8,129	28%	3,380	-2,720	10,801
	5002	3,097	16,232	7,587	4,001	53%	10	3,148	3,200	4,680	7,118	8,959	11,656	13,944	31%	5,820	-2,533	20,746
	5003	6,699	311,134	72,145	107,101	148%	12	6,833	6,996	9,010	23,857	62,977	258,210	291,706	75%	150,646	-256,343	346,241
	5004	8,262	24,973	17,959	5,610	31%	7	9,902	11,541	15,000	20,451	21,015	22,602	23,787	17%	6,052	4,168	28,375
	5005	24,047	50,223	38,147	8,863	23%	8	25,588	27,130	33,883	38,415	44,259	47,531	48,877	13%	12,838	17,720	69,071
	5006	0	7,477	3,669	2,326	63%	11	1,082	2,164	2,282	2,915	5,274	6,844	7,161	40%	2,253	-389	8,625
	5007	553,259	878,452	667,608	114,589	17%	10	579,764	606,268	614,278	615,359	664,014	876,743	877,597	4%	164,267	283,624	940,692
	5008	2,938	10,210	5,688	2,354	41%	10	3,348	3,757	4,307	5,236	5,873	9,506	9,858	15%	2,528	202	10,314
	5009	51,271	229,501	125,301	59,491	47%	11	60,379	69,486	72,807	106,539	168,089	194,232	211,867	40%	110,622	-107,608	334,878
	5010	1,579	5,792	2,830	1,540	54%	10	1,598	1,617	1,675	2,356	3,039	5,406	5,599	29%	2,382	-2,465	7,062
	5011	217,985	624,725	546,423	132,225	24%	9	327,071	436,156	546,378	620,795	622,240	623,571	624,148	6%	183,758	107,034	842,067
	5012	52,447	290,610	149,079	72,390	49%	11	56,186	59,924	103,848	159,622	168,862	245,314	267,962	24%	138,168	-113,052	439,618
	5013	21,318	128,638	72,045	37,679	52%	9	27,316	33,313	36,985	82,325	99,598	113,340	120,989	46%	35,607	15,040	157,468
	5014	16,140	187,681	88,135	60,939	69%	11	22,953	29,766	35,527	72,576	131,546	176,384	182,033	57%	49,031	500	196,623
	5015	1,920	7,574	4,867	1,838	38%	11	2,415	2,910	3,771	4,514	6,476	7,221	7,398	26%	2,880	-1,005	10,513
	5016	7,974	27,958	17,518	6,001	34%	9	10,443	12,912	14,731	15,184	19,477	25,440	26,699	14%	6,493	2,197	28,170
	5017	399,584	907,325	717,332	161,288	22%	10	441,023	482,462	656,457	790,182	797,397	810,510	858,918	10%	219,490	325,237	1,203,196
	5018	35,794	87,578	59,128	17,666	30%	10	38,746	41,697	46,290	53,576	73,045	81,690	84,634	22%	19,889	15,393	94,949
	5019	491,853	755,417	595,762	75,348	13%	10	499,183	506,512	569,150	585,036	631,816	661,223	708,320	5%	191,525	147,985	914,084
	5020	63,101	545,929	342,431	192,203	56%	11	64,145	65,188	230,564	279,589	530,569	545,402	545,666	39%	177,788	-104,392	606,760
	5021	1,669	30,181	15,318	8,505	56%	10	4,050	6,431	9,773	14,451	19,480	25,360	27,770	33%	9,856	-1,520	37,905
	5022	79,780	239,364	169,860	54,339	32%	10	82,678	85,575	146,878	174,293	211,786	221,751	230,558	18%	56,375	55,259	280,759
	5023	15,021	241,032	90,035	68,591	76%	11	21,398	27,774	37,855	70,190	130,489	153,486	197,259	55%	113,552	-156,913	297,293
	5024	0	26,685	12,977	8,173	63%	11	2,654	5,307	6,398	12,406	18,486	22,850	24,768	49%	11,698	-2,035	44,757
	5025	0	45,304	23,980	16,878	70%	10	2,500	5,000	10,254	22,497	40,395	45,191	45,247	60%	23,335	-4,532	88,809
	5026	0	11,203	1,944	3,958	204%	9	0	0	0	0	500	6,875	9,039	100%	5,858	-11,216	12,215
	5027	26,400	164,165	68,879	48,307	70%	11	26,439	26,477	33,840	53,165	83,612	147,198	155,682	42%	69,016	-50,587	225,475
Credit Spread	5028	20,069	68,087	39,279	13,346	34%	10	24,266	28,463	33,531	35,037	45,932	52,280	60,184	16%	13,891	17,316	72,880
	5029	8,576	69,540	37,429	21,089	56%	12	14,055	18,763	23,939	25,606	60,694	62,351	65,625	43%	35,584	-35,023	107,313
	5030	0	131,090	45,442	55,214	122%	6	2,060	4,119	9,870	17,229	79,074	114,979	123,034	78%	275,459	-419,829	682,008
	5031	42,461	534,859	222,965	170,706	77%	10	57,877	73,292	85,046	185,069	289,159	481,341	508,100	55%	212,064	-169,010	679,247
	5032	254,280	621,179	519,172	108,139	21%	10	325,809	397,339	524,106	557,262	565,800	593,688	607,433	4%	123,605	190,259	684,677
	5033	310,603	587,982	495,215	77,611	16%	10	376,209	441,814	478,054	504,776	523,696	580,818	584,400	5%	124,950	206,493	706,293
	5034	18,485	576,561	349,860	236,836	68%	11	32,649	46,813	134,905	470,691	567,939	576,041	576,301	62%	212,900	-45,080	806,518
	5501	7,383	311,129	69,620	103,053	148%	12	8,052	8,691	9,617	23,637	60,395	237,245	279,234	73%	164,089	-291,497	364,859
	5502	41,080	71,244	52,677	8,622	16%	8	43,859	46,637	49,085	51,152	54,181	59,620	65,432	5%	10,419	30,768	72,443
	5503	20,291	141,920	77,778	33,732	43%	9	33,777	47,264	67,250	74,746	98,146	108,391	125,156	19%	36,238	13,335	158,287
	5504	6,942	311,134	84,732	110,124	130%	10	10,551	14,159	16,383	34,367	87,681	266,435	288,784	69%	169,958	-294,967	384,865
	5505	5,363	86,171	43,968	24,094	55%	10	13,418	21,472	29,436	42,182	57,656	73,999	80,085	32%	23,153	-2,980	89,633
	5506	563,595	863,182	661,869	95,379	14%	9	586,989	610,382	622,092	623,282	631,051	797,694	830,438	1%	204,128	213,984	1,030,495
	5507	73,620	195,435	116,972	32,156	27%	10	77,646	81,671	111,255	117,835	119,158	128,683	162,059	3%	39,118	39,425	195,897
	5508	279,589	950,774	642,590	177,759	28%	12	394,275	495,706	580,324	596,536	751,888	842,793	892,588	13%	178,993	238,909	954,881
	5509	438	20,806	7,237	6,672	92%	11	679	920	2,748	4,127	10,153	16,812	18,809	57%	15,872	-25,215	38,271
	5510	196	111,550	24,652	36,835	149%	9	256	315	807	9,428	25,199	65,102	88,326	94%	48,670	-79,290	115,389
	5511	1,480	149,615	73,657	55,145	75%	8	10,314	19,148	30,997	64,799	116,021	144,347	146,981	58%	49,968	-19,837	180,036
	5512	2,762	45,240	26,192	12,645	48%	11	6,374	9,985	20,664	27,788	35,850	38,261	41,751	27%	10,940	1,847	45,605
	5513	6,823	311,134	75,220	111,833	149%	11	6,883	6,942	8,502	14,370	75,171	276,179	293,657	80%	166,203	-281,877	382,934
	5514	784	73,418	36,052	30,627	85%	11	1,168	1,551	3,235	30,977	64,679	68,955	71,187	90%	27,010	-5,785	102,255
	5515	11,095	152,214	75,650	49,330	65%	8	23,405	35,715	47,517	57,186	104,172	144,808	148,511	37%	45,258	-25,977	155,053
	5516	0	31,474	23,527	9,861	42%	8	8,070	16,139	24,563	25,773	28,265	29,798	30,636	7%	15,272	-3,095	57,991
	5517	31,474	152,213	77,916	46,243	59%	8	36,652	41,829	47,401	55,723	104,786	144,824	148,518	38%	43,429	-10,371	163,343
	5518	784	73,418	36,052	30,627	85%	11	1,168	1,551	3,235	30,977	64,679	68,955	71,187	90%	27,010	-5,785	102,255
	5519	34,871	364,749	175,809	113,408	65%	12	45,280	53,900	83,296	169,723	256,316	329,923	349,711	51%	121,480	-29,904	456,017
	5520	22,295	89,637	47,520	19,048	40%	10	27,281	32,267	35,473	45,729	49,348	69,418	79,527	16%	23,048	3,556	95,749
	5521	4,406	144,609	51,856	48,547	94%	9	6,010	7,613	11,928	34,042	91,794	104,696	124,653	77%	50,555	-53,075	149,146
	5522	14,392	43,631	24,564	8,842	36%	8	15,288	16,185	19,348	25,088	25,572	31,061	37,346	14%	13,900	-3,700	51,901
	6001																	
	6002																	
	6003																	
	6004																	
	6005																	
	6006																	
CTP	6007																	
	6008																	
	6009																	
	6010																	
	6601																	
	6602																	
	6603																	
	6604																	
	6605																	
ALL-IN no CTP	10000	645,079	1,334,222	834,831	262,869	31%	6	651,334	657,590	675,344	723,454	873,464	1,123,449	1,228,835	13%	392,511	127,653	1,697,697
Equity Cumulative	11000																	
IR Cumulative	12000																	
FX Cumulative	13000																	
Commodity Cumulative	14000																	
CS Cumulative	15000	620,808	959,364	732,155	121,988	17%	8	625,626	630,444	643,198	680,328	798,738	887,133	923,249	11%	152,549	414,802	1,024,996
CTP Cumulative	16000																	

Table 29: IRC – modelling choice: source of LGD – non-market convention

EU Statistics for IRC

		Other stats						Percentiles								Extreme Values range (Full Sample)		
	Port. ID	Min	Max	Ave.	STDev	Coefficient of variation (STDev/Mean)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	Interquantile range	STDev_trunc[2]	-2*STDev_trunc	+2*STDev_trunc
Equity	1001																	
	1002																	
	1003																	
	1004																	
	1005																	
	1006																	
	1007																	
	1008																	
	1009																	
	1010																	
	1011																	
	1012																	
	1013																	
	1014																	
	1015																	
	1016																	
	1017																	
	1018																	
	1019																	
	1020																	
	1021																	
	1101																	
	1102																	
	1103																	
	1104																	
	1105																	
	1106																	
	1107																	
	1108																	
	1109																	
	1110																	
Interest Rate	2001																	
	2002																	
	2003																	
	2004																	
	2005	38,079	561,861	293,787	236,455	80%	7	45,456	52,834	102,261	195,782	528,132	561,861	561,861	68%	208,305	-207,952	625,266
	2006	12,391	91,951	37,499	22,437	60%	13	13,359	14,878	18,444	34,029	47,971	61,901	76,010	44%	40,495	-52,020	109,962
	2007	0	1,407	167	395	237%	14	0	0	0	0	0	496	847		2,611	-3,871	6,574
	2008	45,812	730,636	387,195	240,865	62%	14	70,689	89,493	135,770	431,372	596,713	637,290	679,365	63%	254,488	-51,740	966,211
	2009	32,628	521,504	312,344	209,879	67%	8	38,171	43,714	116,352	390,332	488,256	498,230	509,867	62%	200,664	-90,417	712,238
	2010	5,843	477,616	254,360	198,125	78%	8	13,957	22,072	79,731	252,045	460,835	465,869	471,743	71%	192,397	-288,162	481,426
	2011	2,931	20,090	13,043	5,393	41%	8	5,188	7,445	10,078	14,287	15,877	18,511	19,300	22%	5,416	-522	21,142
	2012	0	2,141	306	809	265%	7	0	0	0	0	0	856	1,499				
	2013	18,933	222,858	93,501	74,503	80%	13	19,215	21,426	40,775	76,937	122,614	216,072	221,801	50%	88,909	-128,205	227,433
	2014	2,935	171,646	65,209	49,220	75%	13	11,987	18,576	24,702	62,850	86,688	123,432	143,867	56%	97,886	-157,664	233,880
	2015	0	15,770	7,820	6,257	80%	6	177	354	2,633	9,714	11,017	13,394	14,582	61%	7,544	-4,070	26,104
	2016	446,443	1,015,209	670,353	200,809	30%	12	468,378	486,325	521,619	586,745	850,401	937,975	974,806	24%	221,574	209,823	1,096,120
	2017	54,171	632,480	329,072	166,124	50%	13	55,401	82,321	226,464	360,645	397,855	485,562	547,191	27%	193,853	-17,687	757,724
	2018						3											
	2019						3											
	2020																	
	2021																	
	2022	37,262	651,268	340,208	232,186	68%	14	50,832	60,462	106,199	351,878	543,536	581,450	610,932	67%	261,113	-123,140	921,311
	2023																	
	2024																	
	2201	8,963	35,185	18,976	7,502	40%	12	9,769	10,577	13,546	19,562	22,631	25,122	29,790	25%	17,452	-18,173	51,636
	2202	67,428	771,879	399,767	241,390	60%	14	87,789	100,608	146,266	443,159	597,838	635,902	692,257	61%	254,320	-38,717	978,563
	2203	125,108	1,393,349	753,680	451,816	60%	14	137,520	159,940	308,098	902,932	1,092,741	1,216,421	1,289,916	56%	474,243	-45,555	1,851,417
	2204																	
	2205																	
	2206																	
	2207																	
	2208	492,008	1,015,211	766,111	191,864	25%	12	492,008	496,146	644,815	784,766	899,762	1,005,642	1,012,592	17%	236,040	290,932	1,235,094
	2209	0	26,822	9,662	9,729	101%	6	177	354	2,633	9,714	11,017	18,920	22,871	61%	8,522	-6,026	28,060
	2210	100,904	1,531,948	797,920	474,791	60%	14	149,090	209,810	346,863	911,898	1,098,769	1,364,851	1,473,826	52%	489,880	-67,862	1,891,657
	2211	19,407	688,022	286,915	229,304	80%	14	27,388	31,968	61,351	257,930	484,362	511,530	579,785	78%	238,126	-232,860	719,642
	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																	

	5001	1,373	10,010	5,517	3,162	57%	10	1,610	1,847	3,486	4,994	8,122	9,824	9,917	40%	3,380	-2,720	10,801
	5002	4,360	16,076	10,483	3,651	35%	12	4,954	5,689	8,233	10,592	12,716	14,819	15,429	21%	5,820	-2,533	20,746
	5003	15,513	239,331	98,906	86,837	88%	10	17,862	20,212	22,067	65,598	171,031	207,869	223,600	77%	150,646	-256,343	346,241
	5004	5,440	24,228	14,458	5,072	35%	12	7,451	9,245	11,908	14,027	17,512	19,614	21,781	19%	6,052	4,168	28,375
	5005	22,323	68,829	42,073	12,039	29%	11	26,546	30,768	35,427	43,395	46,697	49,885	59,357	14%	12,838	17,720	69,071
	5006	0	7,999	4,417	2,548	58%	10	885	1,770	2,523	4,339	6,271	7,213	7,606	43%	2,253	-389	8,625
	5007	291,193	816,185	534,408	176,315	33%	13	294,112	298,724	466,403	504,550	656,950	785,196	815,274	17%	164,267	283,624	940,692
	5008	2,128	10,055	5,558	2,382	43%	13	2,159	2,525	4,242	5,022	6,462	8,539	9,145	21%	2,528	202	10,314
	5009	6,475	241,831	109,143	59,978	55%	11	42,127	77,779	80,955	102,032	116,158	177,018	209,425	18%	110,622	-107,608	334,878
	5010	914	5,026	1,971	1,215	62%	11	914	914	1,195	1,506	2,407	2,906	3,966	34%	2,382	-2,465	7,062
	5011	145,509	818,081	435,913	198,624	46%	14	181,098	224,154	300,308	422,102	595,803	666,945	720,393	33%	183,758	107,034	842,067
	5012	70,221	292,407	156,594	75,777	48%	10	80,836	91,450	104,413	140,370	168,412	280,603	286,505	23%	138,168	-113,052	439,618
	5013	50,665	151,735	96,814	31,360	32%	12	53,402	57,810	77,715	96,202	111,190	139,121	146,159	18%	35,607	15,040	157,468
	5014	17,490	166,000	96,354	48,224	50%	14	26,082	33,182	54,223	107,502	123,206	156,836	162,436	39%	49,031	500	196,623
	5015	962	9,341	4,606	2,480	54%	11	1,461	1,960	3,114	3,841	6,345	7,026	8,184	34%	2,880	-1,005	10,513
	5016	3,467	27,390	15,161	6,177	41%	13	4,993	7,336	13,290	15,136	17,200	22,068	24,660	13%	6,493	2,197	28,170
	5017	475,807	1,051,573	760,039	201,824	27%	12	505,253	529,346	571,537	763,670	890,440	1,040,446	1,049,422	22%	219,490	325,237	1,203,196
	5018	22,226	86,340	50,281	22,871	45%	12	24,513	26,502	29,313	50,088	72,514	77,138	81,498	42%	19,889	15,393	94,949
	5019	158,274	798,871	488,347	183,482	38%	13	216,430	275,718	434,030	451,263	586,102	753,602	790,878	15%	191,525	147,985	914,084
	5020	23,291	586,620	252,480	171,572	68%	15	25,505	54,328	114,352	228,405	375,268	461,952	508,137	53%	177,788	-104,392	606,760
	5021	0	29,195	15,844	9,580	60%	14	664	1,758	9,685	17,127	23,913	25,257	26,635	42%	9,856	-1,520	37,905
	5022	55,297	239,456	158,669	59,131	37%	15	69,949	78,323	121,688	159,539	204,552	229,412	237,507	25%	56,375	55,259	280,759
	5023	3,318	219,865	65,954	65,680	100%	11	9,441	15,563	20,835	40,321	91,805	127,959	173,912	63%	113,552	-156,913	297,293
	5024	0	43,408	23,696	12,798	54%	11	5,737	11,473	14,416	25,620	33,872	35,326	39,367	40%	11,698	-2,035	44,757
	5025	5,328	75,271	41,911	20,170	48%	15	13,629	20,364	26,701	45,143	53,435	69,022	74,645	33%	23,335	-4,532	88,809
	5026	0	3,830	394	1,096	278%	12	0	0	0	0	103	475	1,989	100%	5,858	-11,216	12,215
	5027	0	222,981	105,218	69,040	66%	14	2,395	14,255	62,767	114,829	131,538	199,228	212,313	35%	69,016	-50,587	225,475
Credit Spread	5028	18,304	68,239	49,579	15,123	31%	10	25,711	33,117	42,216	54,521	56,387	66,507	67,373	14%	13,891	17,316	72,880
	5029	12,057	58,850	38,024	16,477	43%	12	14,465	17,177	26,079	35,277	54,187	58,325	58,631	35%	35,584	-35,023	107,313
	5030	84,945	598,274	295,602	237,651	80%	5	96,845	108,744	144,443	144,443	505,904	561,326	579,800	56%	275,459	-419,829	682,008
	5031	6,411	616,451	247,931	217,198	88%	13	22,206	33,293	57,839	272,133	310,118	587,479	610,354	69%	212,064	-169,010	679,247
	5032	233,749	542,000	382,119	100,959	26%	11	237,195	240,641	302,987	421,635	431,963	496,738	519,369	18%	123,605	190,259	684,677
	5033	207,402	563,740	368,865	103,774	28%	12	238,378	265,697	293,761	378,773	400,197	513,913	541,654	15%	124,950	206,493	706,293
	5034	19,902	776,256	327,451	236,663	72%	14	26,836	38,299	101,774	360,359	451,452	604,885	672,470	63%	212,900	-45,080	806,518
	5501	6,954	230,459	68,968	74,650	108%	10	13,068	19,182	20,958	30,613	101,252	164,166	197,312	66%	164,089	-291,497	364,859
	5502	31,419	68,829	51,206	9,786	19%	11	37,407	43,395	45,969	51,536	57,022	59,047	63,938	11%	10,419	30,768	72,443
	5503	38,929	156,217	91,652	33,114	36%	13	42,351	48,077	71,953	90,256	109,722	129,714	142,372	21%	36,238	13,335	158,287
	5504	14,309	234,225	83,473	81,743	98%	9	17,171	20,032	22,708	42,049	156,800	185,476	209,851	75%	169,958	-294,967	384,865
	5505	10	79,478	36,990	24,721	67%	14	2,539	4,207	21,241	38,116	49,888	65,823	70,602	40%	23,153	-2,980	89,633
	5506	266,868	1,021,936	601,185	235,681	39%	14	298,394	316,332	418,540	599,229	815,006	820,599	891,067	32%	204,128	213,984	1,030,495
	5507	102,650	171,708	125,383	21,350	17%	9	102,864	103,079	115,258	121,754	135,282	145,217	158,462	8%	39,118	39,425	195,897
	5508	239,459	942,735	641,146	200,116	31%	14	360,082	428,487	464,583	691,008	780,807	824,407	868,008	25%	178,993	238,909	954,881
	5509	0	8,509	5,701	2,545	45%	14	1,141	2,189	4,598	6,438	7,391	8,348	8,509	23%	15,872	-25,215	38,271
	5510	0	78,076	20,928	24,757	118%	12	364	1,106	5,429	12,082	23,895	57,918	68,678	63%	48,670	-79,290	115,389
	5511	19,750	169,498	77,884	36,436	47%	14	20,592	29,631	64,636	80,099	90,606	99,901	126,556	17%	49,968	-19,837	180,036
	5512	4,977	38,118	19,757	10,009	51%	13	5,956	6,741	11,676	23,110	24,814	30,466	34,261	36%	10,940	1,847	45,605
	5513	14,309	238,103	94,556	82,899	88%	10	17,200	20,092	22,067	61,902	165,196	184,436	211,270	76%	166,203	-281,877	382,934
	5514	0	85,484	37,792	27,151	72%	13	1,163	2,125	19,472	42,116	57,119	59,481	69,882	49%	27,010	-5,785	102,255
	5515	11,137	141,800	61,143	35,867	59%	11	13,925	16,712	40,729	64,538	74,476	78,423	110,112	29%	45,258	-25,977	155,053
	5516	17,896	51,307	32,054	11,252	35%	11	19,209	20,521	24,736	26,903	42,597	44,835	48,071	27%	15,272	-3,095	57,991
	5517	20,521	144,933	77,954	39,550	51%	11	26,223	31,925	54,688	76,486	89,124	142,741	143,837	24%	43,429	-10,371	163,343
	5518	0	85,484	37,792	27,151	72%	13	1,163	2,125	19,472	42,116	57,119	59,481	69,882	49%	27,010	-5,785	102,255
	5519	35,283	428,466	207,237	103,733	50%	13	64,999	95,552	140,230	213,056	237,278	331,502	382,747	26%	121,480	-29,904	456,017
	5520	30,092	90,261	62,001	21,589	35%	10	35,115	40,139	47,435	56,684	82,647	90,261	90,261	27%	23,048	3,556	95,749
	5521	2,397	72,444	38,270	24,009	63%	11	2,789	3,180	17,896	48,036	53,643	60,600	66,522	50%	50,555	-53,075	149,146
	5522	7,258	30,490	20,255	7,326	36%	8	9,400	11,543	17,524	20,985	24,115	27,922	29,206	16%	13,900	-3,700	51,901
	6001																	
	6002																	
	6003																	
	6004																	
	6005																	
	6006																	
CTP	6007																	
	6008																	
	6009																	
	6010																	
	6601																	
	6602																	
	6603																	
	6604																	
	6605																	
ALL-IN no CTP	10000	524,817	1,442,922	972,278	292,387	30%	10	559,875	594,932	777,302	990,025	1,132,366	1,291,326	1,367,124	19%	392,511	127,653	1,697,697
Equity Cumulative	11000																	
IR Cumulative	12000	144,203	1,174,887	803,510	465,370	58%	6	175,771	207,340	464,359	1,069,375	1,092,741	1,133,814	1,154,351	40%	465,370	138,635	2,000,116
FX Cumulative	13000																	
Commodity Cumulative	14000																	
CS Cumulative	15000	423,970	1,021,888	742,332	202,790	27%	13	460,982	490,515	514,158	769,184	904,639	944,069	980,930	28%	152,549	414,802	1,024,996
CTP Cumulative	16000																	

Table 30: IRC – modelling choice: source of LGD – 1-2 modelling factors

EU Statistics for IRC

		Other stats						Percentiles									
	Port. ID	Min	Max	Ave.	STDev	Coefficient of variation (STDev/Mean)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	Interquantile range	STDev_trunc[2]	Extreme Values range (Full Sample) -2*STDev_trunc	Extreme Values range (Full Sample) +2*STDev_trunc
Equity	1001																	
	1002																	
	1003																	
	1004																	
	1005																	
	1006																	
	1007																	
	1008																	
	1009																	
	1010																	
	1011																	
	1012																	
	1013																	
	1014																	
	1015																	
	1016																	
	1017																	
	1018																	
	1019																	
	1020																	
	1021																	
	1101																	
	1102																	
	1103																	
	1104																	
	1105																	
	1106																	
	1107																	
	1108																	
	1109																	
	1110																	
Interest Rate	2001																	
	2002																	
	2003																	
	2004																	
	2005	38,079	561,861	230,345	200,173	87%	9	47,915	57,752	112,918	141,851	257,106	561,861	561,861	39%	208,305	-207,952	625,266
	2006	0	91,951	30,411	27,396	90%	14	0	0	14,138	23,620	47,971	61,367	74,682	54%	40,495	-52,020	109,962
	2007	0	2,645	225	704	313%	14	0	0	0	0	0	303	1,171		2,611	-3,871	6,574
	2008	45,812	948,909	480,258	274,755	57%	15	108,643	136,698	258,012	576,257	700,427	752,525	817,976	46%	254,488	-51,740	966,211
	2009	138,981	565,841	372,557	174,790	47%	7	141,057	143,134	228,406	469,753	488,256	519,290	542,566	36%	200,664	-90,417	712,238
	2010	5,843	460,835	217,449	194,971	90%	7	11,298	16,752	45,271	218,546	373,190	460,835	460,835	78%	192,397	-288,162	481,426
	2011	2,931	20,090	11,923	6,440	54%	7	3,594	4,257	7,016	14,287	16,061	18,736	19,413	39%	5,416	-522	21,142
	2012	0	208	35	85	245%	6	0	0	0	0	0	104	156				
	2013	0	221,096	60,913	63,434	104%	16	12,833	18,022	23,562	42,654	56,445	153,736	202,255	41%	88,909	-128,205	227,433
	2014	2,935	171,646	44,793	51,688	115%	12	4,644	6,308	11,903	21,362	62,850	110,477	140,914	68%	97,886	-157,664	233,880
	2015	0	15,770	9,004	6,101	68%	6	784	1,567	5,105	11,017	12,570	14,429	15,100	42%	7,544	-4,070	26,104
	2016	446,443	1,015,209	632,399	173,798	27%	12	449,073	454,734	486,325	581,180	751,209	760,376	875,406	21%	221,574	209,823	1,096,120
	2017	54,171	698,166	425,246	220,916	52%	13	77,043	111,177	360,645	397,855	632,480	677,322	687,989	27%	193,853	-17,687	757,724
	2018						4											
	2019						4											
	2020																	
	2021																	
	2022	37,262	867,834	413,353	270,507	65%	15	62,092	78,659	207,041	516,224	644,183	689,029	750,872	51%	261,113	-123,140	921,311
	2023																	
	2024																	
	2201	0	35,221	15,424	11,978	78%	13	0	0	7,369	14,090	22,561	32,660	35,199	51%	17,452	-18,173	51,636
	2202	67,428	948,909	488,216	272,170	56%	15	115,127	138,700	281,609	578,015	704,369	769,087	824,988	43%	254,320	-38,717	978,563
	2203	125,108	1,635,129	872,691	497,687	57%	15	163,574	180,811	465,149	1,046,009	1,283,585	1,347,647	1,436,100	47%	474,243	-45,555	1,851,417
	2204																	
	2205																	
	2206																	
	2207																	
	2208	447,912	1,015,211	710,118	190,259	27%	11	469,960	492,008	512,696	805,946	823,905	878,889	947,050	23%	236,040	290,932	1,235,094
	2209						4											
	2210	100,904	1,648,469	897,775	511,874	57%	15	169,221	199,844	477,464	1,073,796	1,348,288	1,413,543	1,504,312	48%	489,880	-67,862	1,891,657
	2211	19,407	689,931	345,189	249,156	72%	15	30,303	40,679	120,149	469,753	527,049	652,582	686,276	63%	238,126	-232,860	719,642
	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																	

	5001	1,900	9,803	5,134	2,955	58%	12	2,015	2,141	3,049	3,619	7,178	9,491	9,681	40%	3,380	-2,720	10,801
	5002	3,097	16,232	9,337	4,351	47%	12	3,160	3,326	6,264	9,671	12,258	14,636	15,499	32%	5,820	-2,533	20,746
	5003	6,699	311,134	103,510	118,488	114%	12	6,833	7,326	13,089	35,716	213,113	272,162	291,706	88%	150,646	-256,343	346,241
	5004	8,262	24,973	16,086	6,272	39%	9	8,596	8,929	12,350	14,367	21,021	24,377	24,675	26%	6,052	4,168	28,375
	5005	22,323	50,223	40,063	11,166	28%	9	23,013	23,702	30,768	46,377	46,697	49,953	50,088	21%	12,838	17,720	69,071
	5006	0	7,999	4,847	2,555	53%	13	1,180	2,033	2,466	6,271	6,844	7,407	7,686	47%	2,253	-389	8,625
	5007	291,193	876,553	587,406	153,196	26%	13	396,319	469,364	481,207	612,158	656,950	785,196	839,421	15%	164,267	283,624	940,692
	5008	2,128	10,210	5,632	2,646	47%	13	2,159	2,332	4,299	5,214	6,462	9,752	10,117	20%	2,528	202	10,314
	5009	6,475	241,831	122,022	69,510	57%	13	33,353	55,942	80,585	106,539	177,018	222,447	234,433	37%	110,622	-107,608	334,878
	5010	914	5,792	2,397	1,519	63%	12	914	948	1,540	2,096	2,424	4,778	5,371	22%	2,382	-2,465	7,062
	5011	297,964	818,081	552,905	137,698	25%	13	351,750	401,405	456,597	550,752	624,725	667,228	727,908	16%	183,758	107,034	842,067
	5012	52,447	292,407	166,323	78,782	47%	11	73,128	93,809	99,860	164,761	209,138	279,291	285,849	35%	138,168	-113,052	439,618
	5013	21,318	141,597	93,416	31,816	34%	11	49,322	77,326	80,713	86,254	109,308	128,638	135,118	15%	35,607	15,040	157,468
	5014	29,766	187,681	111,547	48,007	43%	14	40,507	48,673	83,154	113,443	145,180	171,624	180,338	27%	49,031	500	196,623
	5015	1,960	7,574	5,173	1,791	35%	12	2,992	3,837	3,841	4,634	6,773	7,202	7,380	28%	2,880	-1,005	10,513
	5016	3,467	27,958	15,949	7,626	48%	13	4,993	6,403	13,290	15,217	19,477	26,874	27,617	19%	6,493	2,197	28,170
	5017	399,584	1,051,573	669,362	198,119	30%	12	441,507	477,393	519,927	650,169	790,389	896,149	972,237	21%	219,490	325,237	1,203,196
	5018	22,226	81,036	51,091	19,662	38%	11	24,305	26,384	39,074	48,494	63,697	77,537	79,287	24%	19,889	15,393	94,949
	5019	255,201	785,549	533,708	139,949	26%	14	371,440	434,456	451,263	499,997	615,672	724,019	765,963	15%	191,525	147,985	914,084
	5020	26,454	586,620	303,532	187,561	62%	15	53,568	78,387	159,629	251,184	468,604	533,820	557,767	49%	177,788	-104,392	606,760
	5021	1,021	30,181	16,809	9,016	54%	15	2,740	4,870	9,518	18,825	24,391	25,257	26,734	44%	9,856	-1,520	37,905
	5022	79,780	236,672	166,606	45,650	27%	15	80,959	102,204	145,881	168,009	195,220	219,285	224,857	14%	56,375	55,259	280,759
	5023	3,318	241,032	80,346	70,109	87%	15	15,039	20,680	36,361	60,785	104,088	183,103	226,215	48%	113,552	-156,913	297,293
	5024	0	43,408	21,793	12,300	56%	13	7,073	11,866	12,406	20,325	33,872	35,035	38,559	46%	11,698	-2,035	44,757
	5025	0	75,271	37,994	18,532	49%	15	11,083	19,553	26,701	43,521	46,710	56,613	65,274	27%	23,335	-4,532	88,809
	5026	0	11,203	1,101	3,355	305%	11	0	0	0	0	205	500	5,852	100%	5,858	-11,216	12,215
	5027	0	182,099	71,100	52,153	73%	16	2,763	15,042	35,842	62,024	106,110	139,397	155,923	50%	69,016	-50,587	225,475
Credit Spread	5028	18,304	68,087	44,695	16,477	37%	13	19,363	21,934	33,997	48,231	56,387	64,329	67,024	25%	13,891	17,316	72,880
	5029	8,576	69,540	40,298	19,819	49%	15	14,077	18,178	24,519	34,408	58,651	62,141	64,557	41%	35,584	-35,023	107,313
	5030	8,238	144,443	91,129	62,154	68%	6	11,102	13,966	39,487	114,979	141,105	144,443	144,443	56%	275,459	-419,829	682,008
	5031	6,411	606,289	210,707	199,802	95%	14	23,522	35,654	63,096	116,395	272,133	517,020	559,860	62%	212,064	-169,010	679,247
	5032	240,641	621,179	448,703	128,876	29%	13	248,824	263,424	372,189	426,457	556,787	585,923	602,851	20%	123,605	190,259	684,677
	5033	207,402	587,982	430,569	114,528	27%	14	244,010	273,762	377,833	466,134	514,534	551,693	572,225	15%	124,950	206,493	706,293
	5034	18,485	776,256	382,061	227,183	59%	15	26,945	46,188	229,471	403,530	549,623	600,367	664,486	41%	212,900	-45,080	806,518
	5501	6,954	311,129	89,347	111,399	125%	12	7,190	7,505	14,508	25,765	145,241	250,870	279,234	82%	164,089	-291,497	364,859
	5502	31,419	71,244	53,894	10,548	20%	9	38,459	45,499	51,606	54,638	59,047	61,486	66,365	7%	10,419	30,768	72,443
	5503	20,291	100,009	67,085	24,778	37%	12	30,542	39,499	51,664	68,008	90,256	96,161	98,253	27%	36,238	13,335	158,287
	5504	6,942	311,134	101,272	117,984	117%	10	10,257	13,572	19,941	41,759	188,490	266,435	288,784	81%	169,958	-294,967	384,865
	5505	3,901	79,478	43,693	24,065	55%	14	4,563	10,423	28,729	45,570	64,896	70,599	75,037	39%	23,153	-2,980	89,633
	5506	399,870	1,021,936	681,861	159,808	23%	14	448,413	501,264	622,082	647,317	808,756	820,599	891,067	13%	204,128	213,984	1,030,495
	5507	102,650	195,435	122,034	26,605	22%	10	102,891	103,132	111,977	116,634	119,158	129,122	162,279	3%	39,118	39,425	195,897
	5508	425,033	942,735	655,480	166,064	25%	16	433,668	436,793	532,439	638,564	789,745	834,037	869,420	19%	178,993	238,909	954,881
	5509	1,756	16,812	6,835	3,843	56%	15	1,942	2,602	4,207	6,463	8,509	10,392	12,990	34%	15,872	-25,215	38,271
	5510	345	111,550	23,948	30,118	126%	13	535	1,372	5,537	17,078	25,199	48,848	76,714	64%	48,670	-79,290	115,389
	5511	1,480	107,332	63,830	33,976	53%	13	12,442	21,144	32,423	79,467	81,464	100,978	104,993	43%	49,968	-19,837	180,036
	5512	4,977	45,240	24,856	12,372	50%	14	6,037	7,621	18,010	24,270	35,044	38,218	40,704	32%	10,940	1,847	45,605
	5513	6,823	311,134	100,602	116,774	116%	12	6,888	7,326	13,426	35,632	193,381	272,371	291,909	87%	166,203	-281,877	382,934
	5514	784	68,955	38,435	26,932	70%	13	1,407	1,845	19,472	54,354	59,481	65,458	67,169	51%	27,010	-5,785	102,255
	5515	28,188	152,214	77,722	37,828	49%	11	39,524	50,859	56,681	64,538	83,081	141,634	146,924	19%	45,258	-25,977	155,053
	5516	0	51,307	27,741	12,696	46%	11	11,528	23,056	24,286	25,964	29,790	42,710	47,009	10%	15,272	-3,095	57,991
	5517	31,925	152,213	82,799	36,097	44%	11	39,852	47,779	64,025	76,486	89,711	141,657	146,935	17%	43,429	-10,371	163,343
	5518	784	68,955	38,435	26,932	70%	13	1,407	1,845	19,472	54,354	59,481	65,458	67,169	51%	27,010	-5,785	102,255
	5519	35,283	352,268	179,905	89,230	50%	16	49,949	69,824	94,542	213,683	240,068	258,401	284,994	43%	121,480	-29,904	456,017
	5520	22,295	90,261	56,673	22,688	40%	13	26,973	31,878	43,495	49,720	72,407	90,136	90,261	25%	23,048	3,556	95,749
	5521	2,397	94,718	43,244	30,016	69%	13	2,867	3,425	24,139	48,036	54,971	85,555	92,964	39%	50,555	-53,075	149,146
	5522	13,379	43,631	23,511	9,168	39%	8	14,630	15,881	19,348	20,985	25,596	31,865	37,748	14%	13,900	-3,700	51,901
	6001																	
	6002																	
	6003																	
	6004																	
	6005																	
	6006																	
CTP	6007																	
	6008																	
	6009																	
	6010																	
	6601																	
	6602																	
	6603																	
	6604																	
	6605																	
ALL-IN no CTP	10000	524,817	1,334,222	936,766	274,661	29%	8	575,666	626,515	721,084	981,089	1,132,366	1,192,923	1,263,572	22%	392,511	127,653	1,697,697
Equity Cumulative	11000																	
IR Cumulative	12000						3											
FX Cumulative	13000																	
Commodity Cumulative	14000																	
CS Cumulative	15000	485,656	1,021,888	779,283	181,477	23%	12	501,332	524,823	657,777	817,885	916,885	958,790	987,500	16%	152,549	414,802	1,024,996
CTP Cumulative	16000																	

Table 31: IRC – modelling choice: source of LGD – >2 modelling factors

EU Statistics for IRC

		Other stats						Percentiles								Extreme Values range (Full Sample)		
	Port. ID	Min	Max	Ave.	STDev	Coefficient of variation (STDev/Mean)	Num obs.	5th	10th	25th	50th (Median)	75th	90th	95th	Interquantile range	STDev_trunc[2]	-2*STDev_trunc	+2*STDev_trunc
Equity	1001																	
	1002																	
	1003																	
	1004																	
	1005																	
	1006																	
	1007																	
	1008																	
	1009																	
	1010																	
	1011																	
	1012																	
	1013																	
	1014																	
	1015																	
	1016																	
	1017																	
	1018																	
	1019																	
	1020																	
	1021																	
	1101																	
	1102																	
	1103																	
	1104																	
	1105																	
	1106																	
	1107																	
	1108																	
	1109																	
	1110																	
Interest Rate	2001																	
	2002																	
	2003																	
	2004																	
	2005						4											
	2006	4,243	39,787	22,463	12,836	57%	10	5,128	6,012	13,904	20,605	32,765	39,390	39,589	40%	40,495	-52,020	109,962
	2007	0	1,407	331	579	175%	10	0	0	0	0	410	1,358	1,382	100%	2,611	-3,871	6,574
	2008	49,338	745,971	353,382	273,715	77%	11	56,187	63,036	93,099	421,949	583,159	651,758	698,865	72%	254,488	-51,740	966,211
	2009						4											
	2010						4											
	2011						4											
	2012						3											
	2013	4,746	222,858	97,148	80,486	83%	8	9,605	14,465	34,762	84,090	141,965	206,871	214,864	61%	88,909	-128,205	227,433
	2014	6,269	125,348	52,157	41,111	79%	11	8,259	10,249	18,999	41,367	78,970	109,687	117,518	61%	97,886	-157,664	233,880
	2015						3											
	2016	551,726	941,749	777,174	132,986	17%	7	591,462	631,198	723,579	763,048	868,270	919,104	930,427	9%	221,574	209,823	1,096,120
	2017	56,221	490,332	262,113	156,075	60%	9	72,321	88,422	107,747	285,982	316,238	471,250	480,791	49%	193,853	-17,687	757,724
	2018						3											
	2019						3											
	2020																	
	2021																	
	2022	25,250	848,376	331,111	294,238	89%	11	27,719	30,187	62,010	331,103	575,159	589,213	718,795	81%	261,113	-123,140	921,311
	2023																	
	2024																	
	2201	2,923	25,375	13,101	7,305	56%	10	3,598	4,274	9,240	12,118	16,797	23,095	24,235	29%	17,452	-18,173	51,636
	2202	52,391	747,764	360,545	275,416	76%	11	58,374	64,356	101,846	421,949	599,225	649,383	698,574	71%	254,320	-38,717	978,563
	2203	80,053	1,393,349	642,439	509,167	79%	11	82,355	84,657	170,431	623,508	1,139,368	1,180,491	1,286,920	74%	474,243	-45,555	1,851,417
	2204																	
	2205																	
	2206																	
	2207																	
	2208	681,959	1,010,449	827,546	122,373	15%	7	700,480	719,001	753,337	763,048	915,346	981,607	996,028	10%	236,040	290,932	1,235,094
	2209						3											
	2210	81,758	1,531,948	684,814	528,961	77%	11	88,495	95,232	232,993	623,508	1,166,549	1,255,646	1,393,797	67%	489,880	-67,862	1,891,657
	2211	10,522	688,022	239,983	245,144	102%	11	11,694	12,866	32,157	201,559	406,579	538,329	613,176	85%	238,126	-232,860	719,642
	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																	

	5001	1,373	10,010	4,334	2,559	59%	9	1,749	2,125	2,796	3,955	5,390	6,691	8,350	32%	3,380	-2,720	10,801
	5002	4,196	16,076	8,964	3,763	42%	10	4,756	5,316	6,433	8,221	10,389	14,290	15,183	24%	5,820	-2,533	20,746
	5003	7,484	175,775	61,269	61,268	100%	10	8,400	9,316	22,067	36,505	86,097	158,698	167,236	59%	150,646	-256,343	346,241
	5004	5,440	21,008	15,444	4,822	31%	10	7,754	10,068	13,697	16,230	19,161	20,507	20,757	17%	6,052	4,168	28,375
	5005	28,451	68,829	40,741	10,909	27%	10	31,516	34,580	35,617	37,407	42,652	47,337	58,083	9%	12,838	17,720	69,071
	5006	0	4,578	2,690	1,419	53%	8	741	1,482	2,152	2,591	3,557	4,243	4,410	25%	2,253	-389	8,625
	5007	296,058	878,452	598,711	185,338	31%	10	302,057	308,055	575,095	614,582	663,863	822,412	850,432	7%	164,267	283,624	940,692
	5008	3,848	9,428	5,592	1,945	35%	10	3,873	3,898	4,264	4,935	5,975	8,626	9,027	17%	2,528	202	10,314
	5009	69,486	174,850	110,289	41,965	38%	9	70,086	70,687	77,779	87,580	150,589	164,032	169,441	32%	110,622	-107,608	334,878
	5010	1,139	5,363	2,356	1,350	57%	9	1,199	1,260	1,506	1,621	2,906	3,614	4,489	32%	2,382	-2,465	7,062
	5011	145,509	636,220	383,283	191,337	50%	10	170,148	194,787	233,465	308,364	589,355	624,576	630,398	43%	183,758	107,034	842,067
	5012	59,924	290,610	137,626	64,977	47%	10	64,558	69,191	110,395	121,214	162,852	178,461	234,536	19%	138,168	-113,052	439,618
	5013	36,312	151,735	78,259	39,446	50%	10	36,615	36,918	48,260	66,743	107,037	120,326	136,030	38%	35,607	15,040	157,468
	5014	16,140	166,000	68,799	51,543	75%	11	16,815	17,490	32,360	38,953	108,376	127,110	146,555	54%	49,031	500	196,623
	5015	962	9,341	4,212	2,480	59%	10	1,393	1,824	2,521	3,771	5,703	6,571	7,956	39%	2,880	-1,005	10,513
	5016	12,639	22,840	16,380	3,095	19%	9	13,476	14,313	14,775	15,101	18,278	19,751	21,296	11%	6,493	2,197	28,170
	5017	612,387	1,047,662	826,144	118,460	14%	10	680,710	749,033	789,707	798,881	851,930	982,717	1,015,190	4%	219,490	325,237	1,203,196
	5018	27,568	87,578	57,514	22,129	38%	11	28,732	29,895	38,625	55,171	73,992	86,340	86,959	31%	19,889	15,393	94,949
	5019	158,274	798,871	537,134	182,216	34%	9	238,079	317,884	531,034	584,824	586,102	677,514	738,193	5%	191,525	147,985	914,084
	5020	23,291	545,929	272,815	182,862	67%	11	43,196	63,101	150,933	245,229	384,429	544,692	545,311	44%	177,788	-104,392	606,760
	5021	0	29,195	13,652	9,026	66%	9	668	1,335	9,396	15,199	17,561	21,597	25,396	30%	9,856	-1,520	37,905
	5022	55,297	239,456	157,955	71,997	46%	10	64,716	74,136	92,179	172,314	214,280	239,373	239,415	40%	56,375	55,259	280,759
	5023	15,021	153,486	72,955	63,640	87%	7	15,184	15,346	21,669	32,405	133,218	147,561	150,524	72%	113,552	-156,913	297,293
	5024	0	25,851	13,343	9,635	72%	9	2,123	4,246	6,318	11,473	22,397	25,666	25,759	56%	11,698	-2,035	44,757
	5025	5,328	74,376	29,855	23,531	79%	10	5,431	5,533	10,592	22,497	44,046	58,577	66,477	61%	23,335	-4,532	88,809
	5026	0	5,793	1,011	2,061	204%	10	0	0	0	0	362	4,026	4,910	100%	5,858	-11,216	12,215
	5027	26,477	222,981	121,459	68,945	57%	9	35,928	45,379	55,260	122,436	164,165	209,851	216,416	50%	69,016	-50,587	225,475
Credit Spread	5028	33,375	68,239	43,935	12,459	28%	7	33,650	33,924	34,527	41,255	47,811	57,610	62,925	16%	13,891	17,316	72,880
	5029	12,057	60,351	33,441	16,267	49%	9	14,649	17,241	24,988	25,674	44,490	54,619	57,485	28%	35,584	-35,023	107,313
	5030	0	598,274	240,777	287,852	120%	5	2,953	5,906	14,764	84,945	505,904	561,326	579,800	94%	275,459	-419,829	682,008
	5031	35,520	616,451	278,095	189,749	68%	9	51,999	68,478	169,430	281,164	310,118	533,083	574,767	29%	212,064	-169,010	679,247
	5032	233,749	561,957	445,236	123,169	28%	8	259,027	284,305	386,419	467,103	555,710	559,003	560,480	18%	123,605	190,259	684,677
	5033	283,473	580,022	418,820	112,458	27%	8	292,969	302,464	317,832	405,540	521,941	540,687	560,354	24%	124,950	206,493	706,293
	5034	19,902	577,584	270,186	234,393	87%	10	32,012	44,122	72,502	173,526	527,094	576,663	577,124	76%	212,900	-45,080	806,518
	5501	9,519	156,800	45,295	46,999	104%	10	9,578	9,637	14,073	27,785	50,754	100,471	128,635	57%	164,089	-291,497	364,859
	5502	41,080	68,829	49,964	7,637	15%	10	42,122	43,164	45,459	49,367	51,514	54,292	61,561	6%	10,419	30,768	72,443
	5503	74,746	156,217	108,646	28,107	26%	10	74,801	74,856	88,329	103,934	128,857	143,350	149,783	19%	36,238	13,335	158,287
	5504	16,272	173,289	65,096	62,378	96%	9	16,450	16,627	21,463	33,853	99,813	160,098	166,693	65%	169,958	-294,967	384,865
	5505	10	86,171	34,583	24,587	71%	10	2,419	4,828	21,241	36,124	44,836	51,505	68,838	36%	23,153	-2,980	89,633
	5506	266,868	863,182	536,373	214,208	40%	9	286,268	305,669	318,578	534,875	623,282	817,692	840,437	32%	204,128	213,984	1,030,495
	5507	73,620	171,708	119,758	29,353	25%	9	77,198	80,777	112,369	121,266	135,282	145,217	158,462	9%	39,118	39,425	195,897
	5508	239,459	950,774	619,945	222,803	36%	10	257,518	275,576	586,665	627,138	753,406	840,070	895,422	12%	178,993	238,909	954,881
	5509	0	20,806	5,690	6,048	106%	10	197	394	1,490	5,005	6,869	9,256	15,031	64%	15,872	-25,215	38,271
	5510	0	78,076	20,211	30,969	153%	8	69	137	654	6,095	22,318	66,115	72,096	94%	48,670	-79,290	115,389
	5511	21,045	169,498	94,427	49,755	53%	9	32,679	44,313	60,847	88,956	142,089	153,592	161,545	40%	49,968	-19,837	180,036
	5512	2,762	35,537	19,698	10,016	51%	10	4,792	6,822	13,250	22,040	24,957	29,646	32,591	31%	10,940	1,847	45,605
	5513	7,484	167,994	62,862	62,800	100%	9	8,298	9,112	21,463	33,853	99,813	159,039	163,516	65%	166,203	-281,877	382,934
	5514	0	85,484	35,293	30,792	87%	11	776	1,551	3,759	30,977	58,171	73,418	79,451	88%	27,010	-5,785	102,255
	5515	11,095	141,800	52,853	44,238	84%	8	11,110	11,124	15,318	47,100	71,700	97,436	119,618	65%	45,258	-25,977	155,053
	5516	17,896	44,835	29,457	9,695	33%	8	18,815	19,734	24,088	26,586	34,226	43,189	44,012	17%	15,272	-3,095	57,991
	5517	20,521	144,933	71,254	49,228	69%	8	24,355	28,188	41,496	47,100	104,177	143,399	144,166	43%	43,429	-10,371	163,343
	5518	0	85,484	35,293	30,792	87%	11	776	1,551	3,759	30,977	58,171	73,418	79,451	88%	27,010	-5,785	102,255
	5519	34,871	428,466	213,923	137,236	64%	9	42,441	50,011	138,522	194,023	337,407	377,492	402,979	42%	121,480	-29,904	456,017
	5520	33,375	86,060	51,208	19,129	37%	7	33,650	33,924	37,773	46,719	58,378	74,727	80,393	21%	23,048	3,556	95,749
	5521	8,415	144,609	46,500	49,451	106%	7	9,469	10,523	12,218	23,285	62,379	101,310	122,960	67%	50,555	-53,075	149,146
	5522	7,258	30,490	21,307	7,459	35%	8	9,755	12,252	17,778	24,101	25,572	27,119	28,804	18%	13,900	-3,700	51,901
	6001																	
	6002																	
	6003																	
	6004																	
	6005																	
	6006																	
CTP	6007																	
	6008																	
	6009																	
	6010																	
	6601																	
	6602																	
	6603																	
	6604																	
	6605																	
ALL-IN no CTP	10000	602,723	1,442,922	904,704	305,561	34%	8	617,548	632,372	679,578	825,402	1,016,531	1,325,014	1,383,968	20%	392,511	127,653	1,697,697
Equity Cumulative	11000																	
IR Cumulative	12000						3											
FX Cumulative	13000																	
Commodity Cumulative	14000																	
CS Cumulative	15000	423,970	905,851	684,019	153,793	22%	9	458,363	492,756	634,574	690,556	769,184	866,061	885,956	10%	152,549	414,802	1,024,996
CTP Cumulative	16000																	

Figure 20: Comparison between IMV and truncated STD deviation method to select outliers for risk measures

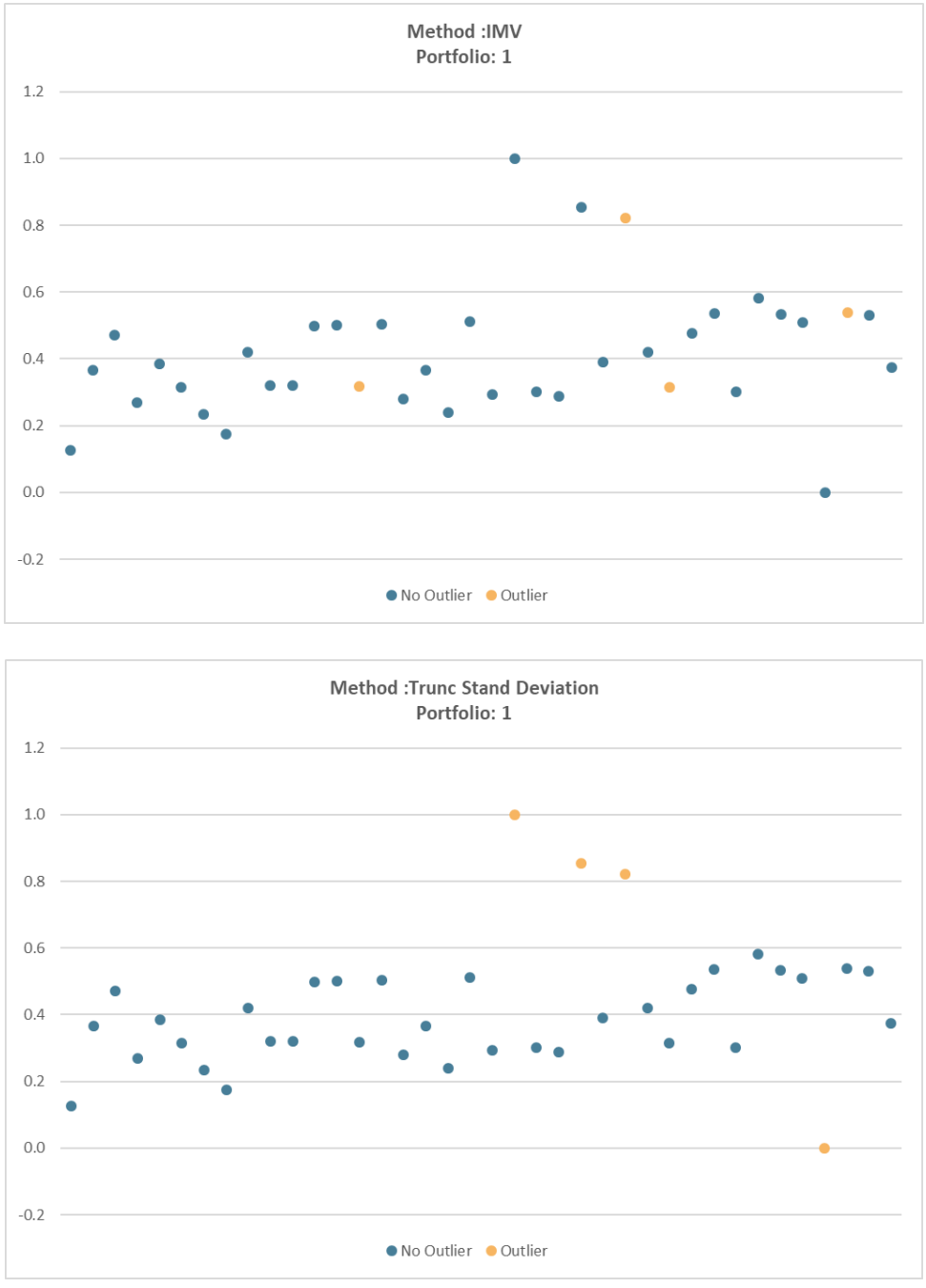


Figure 26. Example of dispersion in VaR submission for portfolio 1. Above the chart, marked in yellow: the portfolios which would have been excluded based on the IMV methodology outlier, which was used in 2019 (and before) to detect outliers among risk measures. Below the chart: the same submission, but marked in yellow, indicating the submissions that have been excluded in VaR and benchmarking statistics in the 2020 exercise (and onward) based on the +/- two times truncated standard deviation of the sample.

8. Annex 2 – Legal background

185. European legislators have acknowledged the need to ensure consistency in the calculation of RWA for equivalent portfolios, and the CRR and CRD include several mandates for the EBA to deliver technical standards, guidelines and reports with the aim of reducing uncertainty and differences in the calculation of capital requirements.

186. In this regard, Article 78 of the CRD requires the EBA to produce a benchmarking study on both credit and market risk to assist CAs in the assessment of internal models. The study should highlight potential divergences among banks or areas in which internal approaches might have the potential to underestimate their own funds requirements that are not attributable to differences in the underlying risk profiles. CAs are required to share this evidence within colleges of supervisors as appropriate and take appropriate corrective actions to overcome these drawbacks when deemed necessary. Directive (EU) 2019/878 [20] of the European Parliament and of the Council of 20 May 2019 amending Capital Requirements Directive IV (CRD V) has not changed this mandate.

187. The EBA has devoted significant effort to the analysis of the consistency of outcomes in RWA, to understand the causes of possible inconsistencies and to inform the regulatory repair process. The EBA's ongoing work on benchmarking, supervisory consistency and transparency is fundamental to restoring trust in internal models and the ways in which banks calculate asset risks.

188. The use of internal models gives banks the opportunity to model their risks according to their business models and the risks faced by the bank itself. The introduction of a benchmarking exercise does not change this objective; rather, it helps to identify the non-risk-based variability drivers observed across institutions.

189. This MR benchmarking exercise is an MRWA variability assessment performed over a large sample of banks (43 banks at the highest level of consolidation across 13 jurisdictions within the EU). The banks participating in this exercise are those that have been granted permission to calculate their own funds requirements using internal models for one or more of the following risk categories:

a) general risk of equity instruments;

b) specific risk of equity instruments;

[20] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0878&from=EN

c) general risk of debt instruments;

d) specific risk of debt instruments;

e) foreign exchange risk;

f) commodities risk; and

g) correlation trading.

190. Pursuant to Article 362 of the CRR, the general risk of debt instruments should refer to interest rate risk. Similarly, the general risk of equity instruments refers to the change in the value of indices.

191. Banks that have approval only for the general risk of equity or debt instruments (in accordance with Article 363 of the CRR) may use a different definition of general risk (e.g., by including credit spread risk in the interest rate general risk) if they are able to demonstrate that this leads to higher RWA. Separate permission is required for each risk category. Many banks do not have permission for internal models for all risk categories, so the number of contributions for each hypothetical portfolio in this exercise varies across the sample.

192. Banks that have permission to use the internal model for calculating MR own funds requirements for one or more – but not all – of the risk categories in accordance with Article 363(1) of the CRR ('partial use') exclude certain risks or positions from the scope of the internal model approval. In this case, the own funds requirements for the risk categories outside the scope of the internal model are calculated according to the standardised approach.

193. In addition, as set out in Article 369(1)(c) of the CRR, banks should conduct validation exercises on hypothetical portfolios to test that the model is able to account for structural features. These portfolios should not be limited to the portfolios defined in this exercise; however, this exercise is a useful starting point for banks to meet this legislative requirement.

194. The assessed MR results, when provided and where applicable, are VaR, sVaR, IRC and APR figures for specific and aggregated trades. Moreover, a preliminary assessment of IMV was performed, primarily to ensure that the participating banks make uniform assumptions when entering the hypothetical trades.

195. In addition to these submissions, banks using an HS approach for VaR were requested to provide one year of P&L data for each of the individual and aggregated portfolios modelled. The objective of collecting this additional information was to employ the data vector to perform alternative calculations for VaR using, where possible, a consistent 1-year lookback period and controlling, as far as possible, for the different options that banks can apply within regulation.

Regulation (EU) 2019/876[21] of the European Parliament and of the Council of 20 May 2019 amending the Capital Requirements Regulation as regards the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements (CRR II) will have a significant impact on the market risk benchmarking exercise once it is fully implemented. However, for the time being the CRR framework will be applied for the purpose of the benchmark exercise in accordance with Article 78 of the CRD.

[21] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0876&from=EN

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