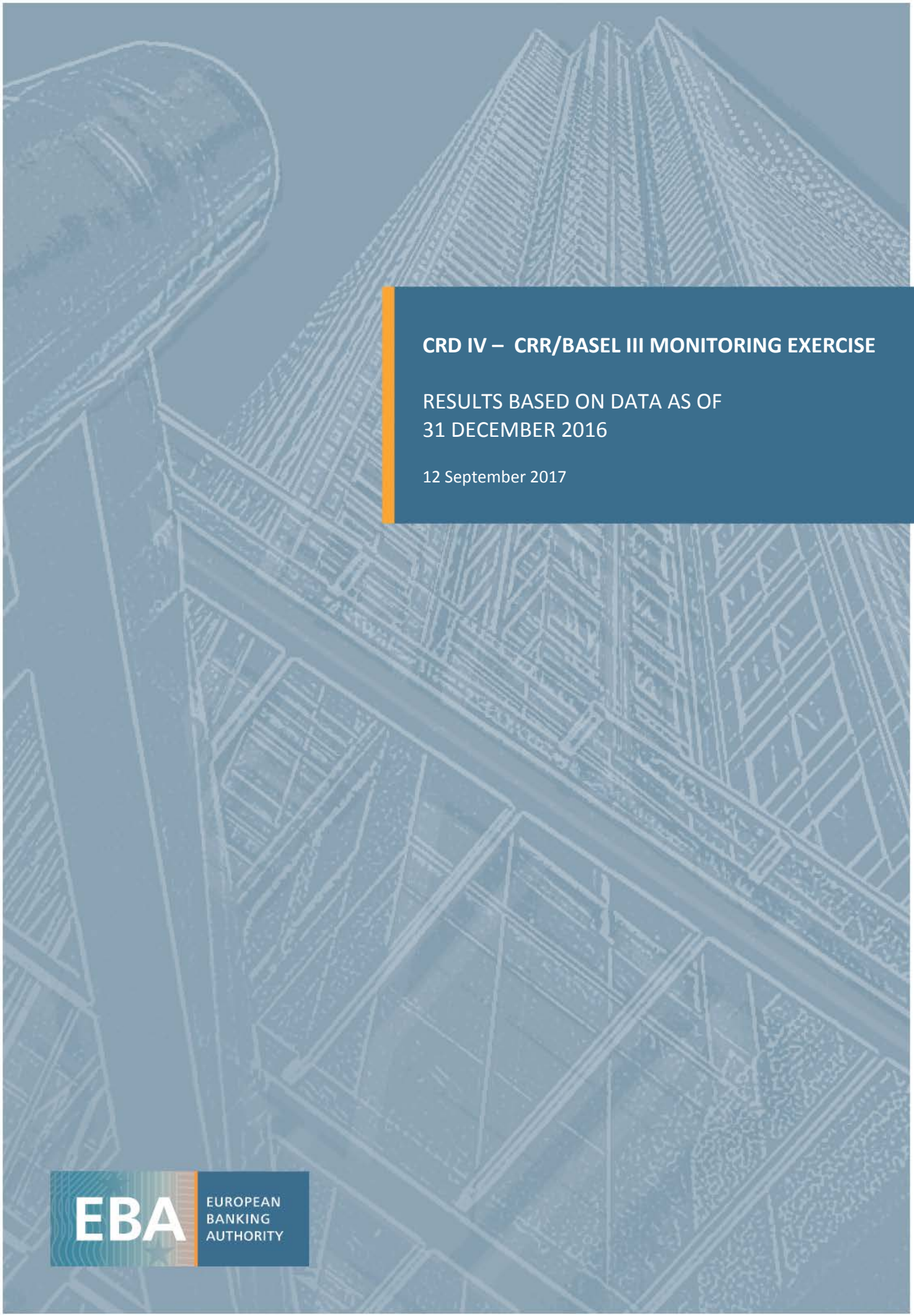

CRD IV – CRR/BASEL III MONITORING EXERCISE

RESULTS BASED ON DATA AS OF 31 DECEMBER 2016

12 September 2017

EBA EUROPEAN BANKING AUTHORITY

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Abbreviations

ASF	Available stable funding
BCBS	Basel Committee on Banking Supervision
CCB	Capital conservation buffer
CEM	Current exposure method
CET1	Common equity tier 1
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
CVA	Credit value adjustment
DR	Delegated Regulation
EBA	European Banking Authority
G-SII	Global systemically important institution
HQLA	High-quality liquid assets
LCR	Liquidity coverage ratio
LR	Leverage ratio
NSFR	Net stable funding ratio
O-SII	Other systemically important institution
RWA	Risk-weighted assets
RSF	Required stable funding

Executive summary

Since its publication in December 2010,[1] the impact of the new global banking regulatory framework (Basel III) is being monitored semi-annually by the Basel Committee on Banking Supervision (BCBS) at the global level, and by the European Banking Authority (EBA) at the European level, using data provided by banks on a voluntary and confidential basis. The relevant set of regulatory requirements in the EU comprises Capital Requirements Directive IV (CRD IV) and the Capital Requirements Regulation (CRR) (CRD IV-CRR), which have applied since 1 January 2014.[2] It is noteworthy that current implementation of the CRD IV-CRR differs from the full implementation of the CRD IV-CRR because of a set of transitional arrangements.

Three parts of this report (on risk-based and non-risk-based capital ratios and the liquidity coverage ratio (LCR)) assess compliance with the current EU definitions,[3] while one part (on net stable funding ratio (NSFR)), in the absence of a finalised EU definition, monitors compliance with the current Basel III standards.

The report does not reflect any BCBS standards agreed since the beginning of 2016, or other measures currently under consideration by the BCBS. For an analysis of market risk framework, please see the EBA Response to the European Commission's Call for Advice on standardised approach for counterparty credit risk and own funds requirements for market risk.[4]

This report is the 12th publication of the monitoring exercise and summarises the results at the EU level using data as of 31 December 2016.[5] Included in this exercise are a sample of 164 banks, comprising 45 Group 1 banks and 119 Group 2 banks.[6] Among EU Member States,

[1] BCBS, Basel III: International framework for liquidity risk measurement, standards and monitoring, December 2010; BCBS, Basel III: A global framework for more resilient banks and banking systems, December 2010, revised June 2011.

[2] Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012; Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC.

[3] The EU definition of leverage ratio (LR; non-risk-based capital ratio) has not yet become an EU binding requirement. On 3 August 2016, the EBA published a report on the impact assessment and calibration of the LR recommending the introduction of an LR minimum requirement in the EU to mitigate the risk of excessive leverage (see https://www.eba.europa.eu/-/eba-recommends-introducing-the-leverage-ratio-in-the-eu for further details). The report informs the work of the European Commission on legislative proposals on LR (for the first proposal, see http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2016:0850:FIN).

[4] See https://www.eba.europa.eu/documents/10180/1648752/Report+on+SA+CCR+and+FRTB+implementation+%28EBA-Op-2016-19%29.pdf.

[5] Previous reports are available on the EBA website (http://www.eba.europa.eu/risk-analysis-and-data/quantitative-impact-study/basel-iii-monitoring-exercise).

[6] Group 1 banks are banks with Tier 1 capital in excess of EUR 3 billion that are internationally active. All other banks are categorised as Group 2 banks. This report has classified Group 2 banks into subgroups: large Group 2 banks have Tier 1 capital in excess of EUR 3 billion without being international active; medium-sized Group 2 banks have Tier 1

coverage of the banking system was notably high for Group 1 banks, reaching 100% in many jurisdictions (aggregate coverage in terms of CRD IV-CRR risk-weighted assets (RWA) 96.0%), while for Group 2 banks it was lower, with more variation across jurisdictions (aggregate coverage 23.7%).

Further, for the second time, the analysis focuses on the joint sample of global systemically important institutions (G-SIIs) and other systemically important institutions (O-SIIs). The sample of O-SIIs contains banks from both Group 1 and Group 2 samples that have been characterised as O-SIIs by the national competent authorities (see footnote 13).

Capital requirements and shortfalls

On average, assuming full implementation of the CRD IV-CRR (i.e. without taking into account transitional arrangements), the risk-based capital ratios for Group 1 and Group 2 banks are as follows: common equity Tier 1 (CET1) ratio, 13.2% and 14.0%, respectively; Tier 1 ratio, 14.1% and 14.3%, respectively; and total capital ratio, 17.0% and 16.0%, respectively (Table ES 1).

Table ES 1: Overall results assuming full implementation of CRD IV-CRR/Basel III (%)

Bank Group	CET1	Tier 1	Total	LR	LCR	NSFR
Group 1	**13.2**	**14.1**	**17.0**	**4.9**	**134.2**	**108.4**
Group 2	**14.0**	**14.3**	**16.0**	**5.6**	**170.1**	**126.9**
Large Group 2	13.6	13.9	15.7	5.6	169.5	111.8
Medium Group 2	15.0	15.1	16.7	6.4	174.8	178.5
Small Group 2	15.1	15.3	16.9	4.8	167.7	120.2
All banks	**13.4**	**14.1**	**16.8**	**5.0**	**139.5**	**112.0**
G-SIIs and O-SIIs	13.3	14.1	16.9	5.0	135.5	108.8

Source: EBA Quantitative Impact Study (QIS) data (December 2016)

The average leverage ratios (LRs) for the same sample of banks are 4.9% (Group 1) and 5.6% (Group 2). On average, European banks largely fulfil an LR minimum regulatory capital requirement of 3%, with only a very small number of banks exhibiting potential capital shortfalls.

The shortfall amounts constitute only a very minor fraction of the amounts observed at the beginning of the monitoring period (mid-2011), and the difference between the current and full implementation capital ratios has been shrinking continuously, although recently this trend has been slowing. The present monitoring exercise report takes into account the definition of LR as set out in the relevant EU Regulation (EU Delegated Regulation[7] (DR)) for the purpose of the capital analysis. Conceptually, the LR (non-risk-based ratio) has been developed to serve as a backstop

capital below or equal to EUR 3 billion but above EUR 1.5 billion; and small Group 2 banks have Tier 1 capital below or equal to EUR 1.5 billion.

[7] Commission Delegated Regulation (EU) 2015/62 of 10 October 2014 amending Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to the leverage ratio (http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2015.011.01.0037.01.ENG).

against unduly low capital levels, not captured in the risk-based ratio, and to prevent the excessive build-up of leverage, both over the financial cycle and across credit institutions. The analysis contained in this report indicates that the LR is indeed constraining for a significant proportion of institutions in the sample.

Liquidity requirements and shortfalls

The monitoring exercise presents, for the fourth time, the results of the LCR analysis in accordance with the European Commission Delegated Regulation (EU) No 2015/61 (the LCR DR), which specifies the general requirement set out in Article 412(1) of the CRR.[8] As defined in Article 38 of the LCR DR, and in accordance with Article 460(2) of the CRR, the minimum requirement was set at 60% from 1 October 2015 and will be gradually increased, reaching 100% in January 2018 (i.e. EU regulation requires a minimum of 100% 1 year before the Basel standard comes into force). Since the NSFR has not yet been finalised at the EU level, the calculations in this report are based on the revised Basel III NSFR framework, published in October 2014.[9]

With regard to the LCR, the average ratio for data as of the end of December 2016 is 134.2% and 170.1% for Group 1 and Group 2 banks, respectively. In the total sample, 99.2% of the banks show an LCR above 100%, while all banks have an LCR above the 70% minimum requirement of January 2016. The overall shortfall of high-quality liquid assets (HQLA) in relation to the 100% threshold is EUR 0.1 billion. There has been an increase in banks' LCR over time, which can be attributed to structural adjustments (both an increase in HQLA and a decrease in net outflows), as well as to the recalibration of the LCR framework as published in January 2013. The change in the previous periods is also driven by the first application of the LCR DR, whereas the Basel III LCR framework has been used for reference dates prior to that — that is, until December 2014. With respect to the NSFR, Group 1 and Group 2 banks show average ratios of 108.4% and 126.9%, respectively, with an overall shortfall in stable funding of EUR 116.1 billion. The majority (87.5%) of participating banks already meet the minimum NSFR requirement of 100%.[10] Since June 2011, the NSFR has been constantly increasing, and has been above the 100% minimum requirement since June 2012. This rise has been less pronounced in recent periods.

[8] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:2015:011:TOC.

[9] http://www.bis.org/bcbs/publ/d295.pdf.

[10] Please note that, throughout the report, the net stable funding ratio (NSFR) analysis refers to the Basel III standard.

2. General remarks

2.1 Sample of participating banks

Table 1: Number of banks included in this monitoring exercise

Country	Group 1	Group 2	Large Group 2	Medium Group 2	Small Group 2	G-SIIs and O-SIIs	Total
Austria	2	6	1	1	4	4	8
Belgium	2	10	0	2	8	6	12
Czech Republic	0	7	0	1	6	0	7
Denmark	1	3	2	0	1	4	4
France	5	2	1	0	1	6	7
Germany	7	29	6	5	18	10	36
Greece	4	0	0	0	0	4	4
Hungary	1	1	0	0	1	1	2
Ireland	3	5	0	3	2	4	8
Italy	2	20	6	7	7	3	22
Luxembourg	0	3	0	2	1	1	3
Malta	0	3	0	0	3	2	3
Netherlands	4	6	1	3	2	5	10
Norway	1	1	0	1	0	1	2
Poland	0	5	1	0	4	3	5
Portugal	2	3	0	1	2	4	5
Spain	2	9	7	2	0	6	11
Sweden	4	1	0	0	1	4	5
United Kingdom	5	5	1	3	1	6	10
Total	**45**	**119**	**26**	**31**	**62**	**74**	**164**

Source: EBA QIS data (December 2016)

Table 1 shows the participation by jurisdiction and bank group. This report includes an analysis of data submitted by 164 banks in 18 EU Member States and in 1 country (Norway) from the European Economic Area (EEA). This sample consists of 45 Group 1 banks from 15 countries and 119 Group 2 banks from 18 countries.[11] Group 1 banks in this report are defined as banks with Tier 1 capital in excess of EUR 3 billion that are internationally active. All other banks are classified as Group 2. Coverage of the banking sector is high, reaching 100% of Group 1 banks in many countries (aggregate coverage in terms of Capital Requirements Directive IV (CRD IV) and Capital Requirements Regulation (CRR) (CRD IV-CRR) risk-weighted assets (RWA) 96.0%). Coverage of Group 2 banks is lower and varies across countries (aggregate coverage 23.7%).

[11] In one Member State (Greece), all participating banks are classified as Group 1 based on their size and activity.

For the purposes of a more differentiated analysis, the joint sample of global systemically important institutions (G-SIIs)[12] and other systemically important institutions (O-SIIs) has been analysed separately from the total sample. To analyse the driving forces behind aggregate Group 2 results in more detail, in this report Group 2 banks are classified into three subgroups: large Group 2 banks have Tier 1 capital in excess of EUR 3 billion; medium-sized Group 2 banks have Tier 1 capital below or equal to EUR 3 billion but above EUR 1.5 billion; and small Group 2 banks have Tier 1 capital below or equal to EUR 1.5 billion. In total, 26 large, 31 medium-sized and 61 small Group 2 banks are included in the current analysis. Pursuant to Article 131(3) of the CRD IV, the identification of O-SIIs started in 2015. Authorities can set higher loss absorbency requirements for those institutions, in addition to the obligatory common equity Tier 1 (CET1) capital buffer of up to 2%. The additional measures for O-SIIs aim to reduce market distortions triggered by their possible negative externalities. For the analysis as of December 2016,[13] 73 banks are jointly recognised to be monitored as O-SIIs and G-SIIs.[14]

Not all banks provided data for all parts of the reporting template of this monitoring exercise. Accordingly, a certain number of banks are excluded from some sections of this monitoring analysis because the data they provided were incomplete. In each section, comparisons with previous periods are based on a consistent sample of banks, that is, the analyses include only those banks that have consistently reported the required data for all reference dates. This allows comparisons between one reference date and another, and time series analyses within each section. Similarly, the analyses relating to the interactions between, and combined effects of, various regulatory ratios have been based on consistent samples of banks.

2.2 Methodology

'Composite bank' weighting scheme

Average amounts in this analysis have been calculated by creating a composite bank at the relevant sample level — i.e. the relevant sample averages are implicitly weighted. For example, the average CET1 capital ratio is the sum of the CET1 capital of all banks included in the relevant sample divided by the sum of the RWA of all banks included in the relevant sample. Similarly, the average Tier 1 LR is the sum of the Tier 1 capital of all banks included in the relevant sample divided by the sum of the LR exposure measure of all banks included in the relevant sample. By using this weighting scheme, the results of this analysis can implicitly be considered more representative of the European banking sector as a whole than unweighted averages.

[12] See also BCBS, Global systemically important banks — updated assessment methodology and the higher loss absorbency requirement, 2013; EBA, Final draft RTS on the methodology for the identification of global systemically important institutions, 2014; FSB, 2015 update of list of G-SIBs, November 2015. The term 'G-SIB' in Bank for International Settlements (BIS) and Financial Stability Board (FSB) documentation corresponds to 'G-SII' in European Banking Authority (EBA) documentation.

[13] The O-SII buffer refers to the first list of O-SII references as of April 2016 (https://www.eba.europa.eu/-/eba-discloses-first-list-of-o-siis-in-the--1).

[14] The subcategory of O-SIIs also includes banks that have been nominated as G-SIIs.

Box plots illustrating the distribution of results

To present more detailed results while at the same time ensuring data confidentiality, some charts show box plots that give an indication of the distribution of the results among the participating banks. The features of the box plots are defined as follows:

Thick red line	Minimum requirement
Dashed red line	Minimum requirement plus the capital conservation buffer (CCB) (capital)
Thin line crossing the interquartile range box	Median value (50% of the observations are below this value, 50% are above this value)
'x'	Mean (weighted average)
Box	25th and 75th percentile values. A percentile is the value of a variable below which a certain percentage of observations fall. For example, the 25th percentile is the value below which 25% of the observations are found
Black vertical lines ('whiskers')	The vertical line represents the 1.5 interquartile range

2.3 Interpretation of results

This quantitative impact study aims to monitor the convergence of EU banks with the regulatory requirements under the assumption of full implementation of CRD IV-CRR/Basel III.

The full implementation of the CRD IV-CRR package does not consider the transitional arrangements relating to the phase-in of deductions and to the grandfathering of capital instruments.[15] This implies that the CRD IV-CRR capital amounts shown in this report assume that all common equity deductions are fully phased in, and all non-qualifying capital instruments are fully phased out. As a result, these amounts underestimate the amount of regulatory capital held by banks, as they do not recognise the gradual phase-in of common equity deductions and the non-qualifying instruments that are actually phased out over multiple-year time horizons.

For the calculation of results referred to as 'current rules', the report uses figures based on the current CRD IV-CRR framework, that is, on the current state of implementation, being mindful of the fact that this framework is changing over time. This means that, for the current reference date (December 2016), the figures under the current rules refer to the state of implementation of

[15] For details on the transitional arrangements, see in particular Part 10 of the CRR and, in addition, paragraphs 94 and 95 of the Basel III framework (BCBS, *Basel III — A global regulatory framework for more resilient banks and banking systems*, December 2010, revised June 2011).

the CRD IV-CRR framework as of December 2016. Therefore, the difference between the fully phased-in results and the results under the current rules in the risk-sensitive capital ratio and RWA analysis is solely due to the remaining transitional arrangements from December 2016 until the full implementation date.

The treatment of deductions and non-qualifying capital instruments under the assumption of full implementation of the CRD IV-CRR similarly affects the figures reported in the LR analysis. The potential underestimation of Tier 1 capital is becoming less of an issue as the implementation date for the LR approaches. In other words, in 2016, the capital amounts, based on the CRD IV-CRR capital requirements in place on the reference date, include the amount of non-qualifying capital instruments at that point in time.

It is important to note that this monitoring exercise is based on the assumption of a static balance sheet. Planned, but not implemented, bank measures to increase capital or decrease RWA are not taken into account. This allows the identification of effective changes in banks' capital rather than relying on anticipated changes based on underlying behavioural and modelling assumptions. As a consequence, these monitoring results are different from industry estimates, as the latter usually include assumptions on banks' future profitability, planned capital and/or management actions to mitigate the impact of the CRD IV-CRR framework.

2.4 Data quality

The banks included in this monitoring exercise submitted comprehensive and detailed non-public, confidential data on a best-effort voluntary basis. Supervisors have been working closely with banks to ensure that the data are high quality, complete and consistent with the reporting instructions. For each of the analyses below, banks are included in the sample only if they provided data of sufficient quality to conduct the analysis in question.

For the risk-based capital ratio and RWA analyses, data from supervisory reporting systems have been used wherever possible to reduce recourse to banks. Data quality has improved significantly since the beginning of the monitoring exercise.

3. Overall impact on regulatory capital ratios and estimated capital shortfall

3.1 Capital ratios

One of the main objectives of the CRD IV-CRR/Basel III framework is to increase the resilience of the banking sector by strengthening both the quantity and quality of regulatory capital. For this purpose, the framework sets higher quantitative minimum requirements and stricter rules for the definition of capital and for the calculation of RWA. The regulatory capital requirements consist of risk-based (capital ratios in relation to RWA) and non-risk-based (leverage ratio (LR)) measures.

The risk-based ratios refer to the capital definitions of CET1, Tier 1 and total capital, decreasing in their degree of loss absorbency in relation to RWA. At the date of full implementation, the CRD IV-CRR/Basel III standard requires a regulatory CET1 ratio of 7% (minimum plus 2.5% conservation buffer), a Tier 1 ratio of 8.5% (including the CET1 conservation buffer) and a total capital ratio of 10.5% (including the CET1 conservation buffer). Figures related to capital shortfalls also reflect the bank-specific CET1 G-SII/O-SII buffer. For time series analysis, the evolution of the capital shortfall is calculated by using the most recent G-SII/O-SII surcharges throughout the whole time series. For G-SIIs, the maximum between the G-SII buffer and the O-SII buffer is taken into account. Additional capital requirements depending on macroprudential considerations (systemic risk and countercyclical buffers), or based on supervisory judgement (Pillar II add-ons), are not included in the analysis below.

The non-risk-based capital requirement — the LR — is defined in terms of Tier 1 capital in relation to a comprehensive (on- and off-balance-sheet) exposure measure. The CRD IV-CRR/Basel III standard is preliminarily set at the 3% minimum requirement. This monitoring exercise considers the LR as defined in EU legislation for the purpose of capital analysis.

As this exercise envisages full implementation of CRD IV-CRR (without accounting for any transitional arrangements), in most parts it compares banks' actual capital ratios with the capital ratios that banks would have exhibited had the set of rules of the CRD IV package been fully implemented at the reference date. The results under 'current rules' are based on the state of regulatory implementation at the reference date. In this context, it is important to elaborate on the implications of full implementation of the CRD IV package for the monitoring results. These amounts may underestimate the amount of capital actually held by banks, as they do not take into account any non-qualifying instruments that will be phased out, or any deductions to common equity that will be phased in during the transitional period.

Table 2 shows the difference between banks' risk-based capital ratios and LRs, calculated in accordance with the rules current as of 31 December 2016, and the levels that would result if the CRD IV-CRR requirements were already fully implemented.

For Group 1 banks, full implementation would result in a reduction in the CET1 ratio from 13.8% under the current rules (i.e. taking into account the transitional arrangements applying in 2016) to 13.2%, while the average Tier 1 and total capital ratios would decline under the full implementation regime from 15.0% to 14.1% and from 18.0% to 17.0%, respectively. Assuming that the LR is implemented at reference date as defined in EU legislation, the average LR of Group 1 banks stands at 5.2%. Under full implementation of the CRD IV-CRR, the LR would decrease to 4.9%.

Under full implementation of the risk-sensitive capital requirements for banks, the CET1 ratio of Group 2 banks would, on average, drop from 14.7% to 14.0%, while the Tier 1 ratio would fall from 14.9% to 14.3% and the total capital ratio from 16.8% to 16.0%. The LR of Group 2 banks would drop from the current 5.9% to 5.6% under full implementation. The greatest difference in risk-based capital requirements between the current state and full implementation is exhibited by large Group 2 banks, while small Group 2 banks show the greatest difference in terms of LR requirement.

Comparing Group 1 and Group 2 banks, the distance from current to full implementation of CET1 regulatory capital requirement appears smaller for Group 1 banks, while Group 2 banks show a smaller distance between current and full implementation in terms of Tier 1 and total capital ratio. However, the difference between current and full implementation of LR remains the same between the groups.

The joint G-SIIs/O-SIIs[16] sample shows very similar results for capital requirements (in relation to RWA and LR) to the Group 1 banks sample.

Figure 1 presents basic descriptive statistics[17] on risk-based capital ratios and the LR (non-risk-based) for Group 1 and Group 2 banks' current and full implementation of the CRD IV-CRR. It shows that the large majority (approximated by the 95th percentile) of banks — in both Group 1 and Group 2 — have capital ratios above the current regulatory minimum requirements with respect to risk-based measures. This result holds true when the capital conservation buffer (CCB) is included. The median and average values of current CET1 and Tier 1 ratios, as well as the LR, are generally slightly higher for Group 2 than for Group 1 banks. The results indicate a wider dispersion of extreme capital ratios (approximated by the 5th and 95th percentiles) for Group 2 banks than for Group 1 banks' capital ratios. An implication of the wider dispersion is that capital ratios in Group 2 banks are less concentrated around the mean and median values of the distribution (less concentration in the interquartile range).

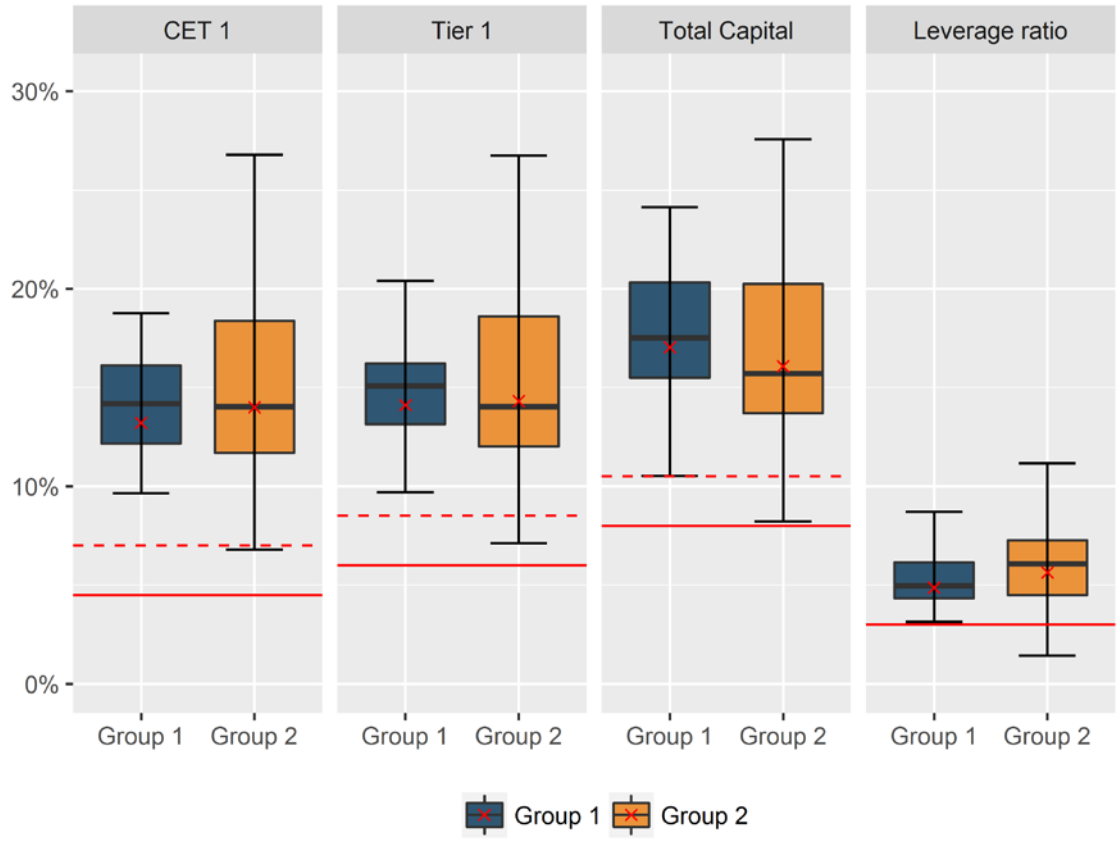
[16] Note that, in this context, G-SIIs/O-SIIs are subject to additional capital requirements based on their systemic importance.
[17] For the methodology underlying the development of these box plots, refer to section 1.2 of this report.

Table 2: Comparison of risk-based capital ratios and leverage ratio under alternative states of implementation (%)

Bank Group	Number of banks	CET1		Tier 1		Leverage ratio		Total capital	
		Current	2024	Current	2024	Current	2024	Current	2024
Group 1	**39**	**13.8**	**13.2**	**15.0**	**14.1**	**5.2**	**4.9**	**18.0**	**17.0**
Group 2	**90**	**14.7**	**14.0**	**14.9**	**14.3**	**5.9**	**5.6**	**16.8**	**16.0**
Large Group 2	25	14.4	13.6	14.7	13.9	5.9	5.6	16.5	15.7
Medium Group 2	23	15.1	15.0	15.6	15.1	6.5	6.4	17.5	16.7
Small Group 2	42	15.5	15.1	15.8	15.3	4.9	4.8	17.7	16.9
All banks	**129**	**14.0**	**13.4**	**15.0**	**14.1**	**5.3**	**5.0**	**17.7**	**16.8**
G-SIIs and O-SIIs	64	13.9	13.3	15.1	14.1	5.3	5.0	17.8	16.9

Source: EBA QIS data (December 2016)

Figure 1: Distribution of CET1, Tier 1, total capital ratios and leverage ratio per bank group under full implementation of CRD IV-CRR



Source: EBA QIS data (December 2016)

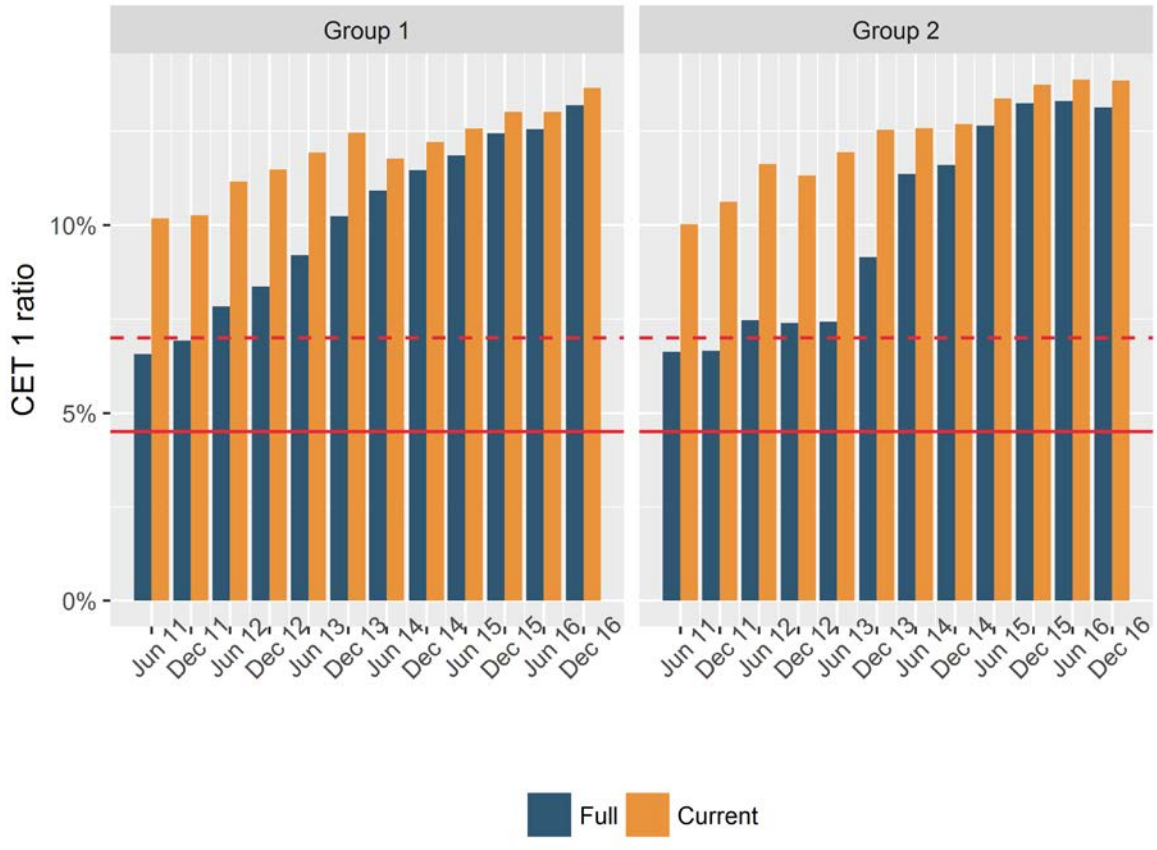
Figure 2 shows the trend in the current and full implementation CET1 ratio for the period from June 2011 to December 2016 for the consistent sample (in other words, the banks that have

consistently submitted data for all reference dates). The CET1 ratio for Group 1 banks under full implementation of the CRD IV-CRR package increased constantly over the observation period, with an overall CET1 increase since June 2011 of around 660 basis points (bps) and a slower growth rate in recent periods. The reduction observed in June 2014 can be explained by the introduction of the CRD IV-CRR in January 2014, which is reflected for the first time in the monitoring exercise for reporting date June 2014.

Similarly, for Group 2 banks, the average CET1 capital ratios, in accordance with fully implemented European regulatory requirements, have increased steadily since June 2011 (by around 6.5 percentage points). The stagnation of CET1 ratios since June 2016 for Group 2 banks is driven by a few larger banks in the sample. However, the results are very heterogeneous among participating banks.

In December 2016, the full implementation CET1 capital ratio of Group 2 banks was at 14.0%, while the corresponding ratio under current rules was 14.7%. As expected, the difference between the CET1 ratio under the current rules and that under full implementation decreased markedly over the observation period for both groups of banks.

Figure 2: Evolution of CET1 ratios over time

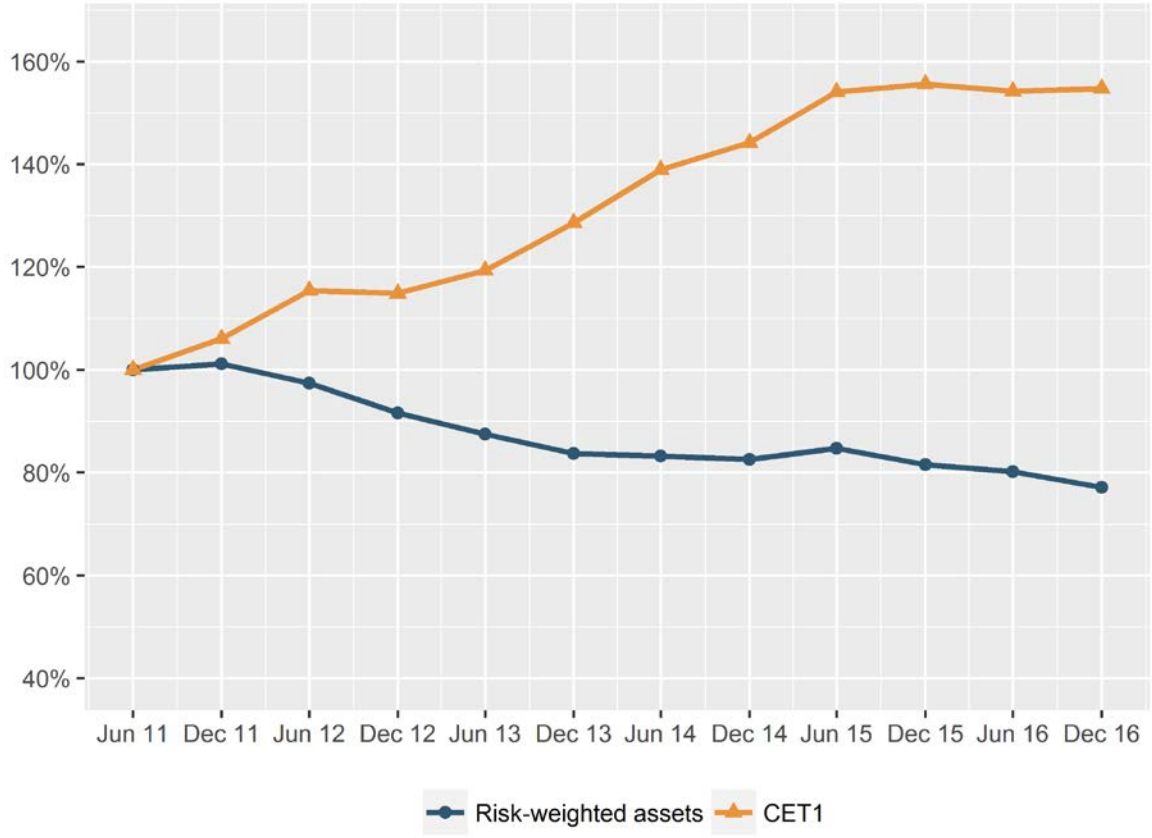


Source: EBA QIS data (December 2016)

The historical upward trend in the CET1 ratio under full implementation of the CRD IV-CRR for Group 1 banks is mainly explained by the increase in CET1 capital (by around 55%), and to a lesser extent by the decrease in RWA (slightly above 20%, as shown in Figure 3). This trend has been observed relatively continuously since June 2011; however, both CET1 and RWA have shown signs of stabilisation at the last three reference dates.

The increase in full implementation CET1 capital over the observation period indicates that banks are already trying to meet market expectations well in advance of the legislative date for the full implementation of the CRD IV-CRR/Basel III framework.[18]

Figure 3: Evolution of CET1 capital versus RWA over time (for Group 1 banks) under full implementation of CRD IV-CRR



Source: EBA QIS data (December 2016)

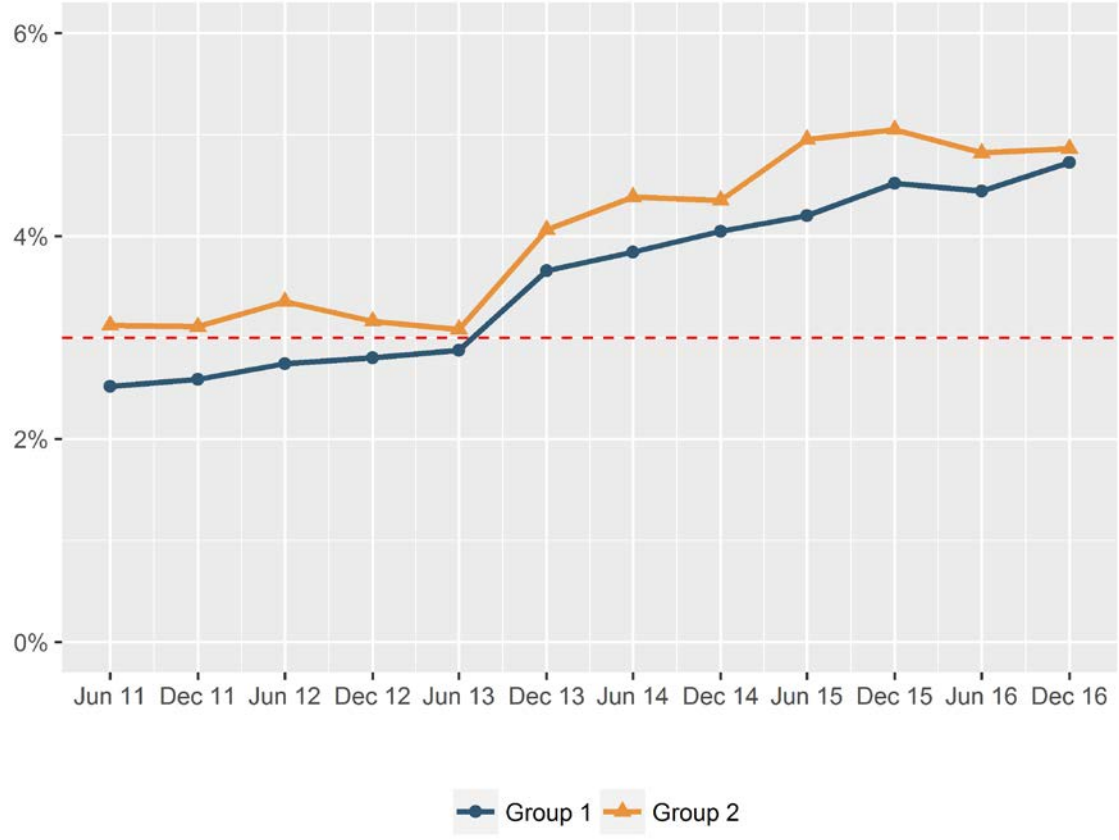
The increase in the level of capital is also generally reflected in the LR. Taking a consistent sample of banks, between June 2013 and December 2013 there was a significant increase in banks' LRs (see Figure 4). However, this increase can be partly attributed to the recalibration of the LR exposure in January 2014, with the first application being as of reporting date December 2013. It is therefore important to keep in mind that the data reflect the calculation methodology at each

[18] The trend of improving capital positions of European banks is consistent with the findings of the EBA's reports on transparency and risks and vulnerabilities of the European banking sector (EBA, *2016 EU-wide transparency exercise*, December 2016; EBA, *Risk Assessment of the European banking system*, December 2016).

reference date. The increase also continued for the period from December 2013 to December 2015 for both groups of banks. Overall, until mid-2013, Group 1 and Group 2 banks, on average, showed LRs very close to the target ratio (3%), and since then have increased their capital beyond the minimum requirement. In contrast with the previous trends, the period between December 2015 and June 2016 shows a slight decline in the LR for both groups. However, the last reporting period (until December 2016) shows an upward trend for Group 1 banks (+0.3%) and no significant change for Group 2 banks.

Over the observation period, Group 2 banks have exhibited consistently higher average LRs than Group 1 banks. Despite this, at the last reporting date (December 2016) the difference in LR requirement between Group 1 and Group 2 reached its smallest size (0.1%) since June 2013.

Figure 4: Evolution of leverage ratio by bank group over time (%) under full implementation of CRD IV-CRR



Source: EBA QIS data (December 2016)

3.2 Capital shortfall

Table 3 provides estimates of the additional amount of capital that Group 1 and Group 2 banks would need to meet the target risk-sensitive capital ratios (including G-SII/O-SII buffer) and the LR under the CRD IV package. These estimates assume fully phased-in target requirements and deductions. In this analysis, the capital shortfall is calculated as the difference between capital requirements and eligible capital held at the bank level, and represents the capital needs assuming that capital requirements had to be met to achieve successively higher quality capital layers.[19]

For Group 1 banks, the CET1 capital shortfall is EUR 1.4 billion when compared with the minimum requirement of 4.5% (not shown in Table 3) and with the target level of 7%,[20] that is, the minimum requirement plus the CCB. The total shortfall of Tier 1 capital to meet both the risk-based capital ratio and the LR is EUR 2.2 billion for Group 1 banks. The total capital shortfall necessary to fulfil the risk-based requirements (7% CET1, 8.5% Tier 1 and 10.5% total capital) and the LR requirement (3% Tier 1 capital) is EUR 3.4 billion. For Group 1 banks, shortfalls arise solely from the risk-based capital requirements rather than from the requirements based on the LR.

Table 3: Capital shortfall by bank group (in EUR billion) under full implementation of CRD IV-CRR

Bank Group	Number of banks	CET1	Tier 1			Total capital	
			Tier1 8.5%	LR 3%	Tier 1 8.5% and LR 3%	Tier 1 CAR* met	Tier 1 CAR* and LR
Group 1	**39**	**1.4**	**2.2**	**0.0**	**2.2**	**3.4**	**3.4**
Group 2	**90**	**0.3**	**1.4**	**2.8**	**3.1**	**1.6**	**3.4**
Large Group 2	25	0.3	1.1	1.4	1.4	1.1	1.4
Medium Group 2	23	0.0	0.2	0.0	0.2	0.2	0.2
Small Group 2	42	0.0	0.1	1.4	1.5	0.3	1.7
All banks	**129**	**1.7**	**3.6**	**2.8**	**5.3**	**5.1**	**6.8**
G-SIIs and O-SIIs	64	1.7	3.4	1.4	3.8	4.8	5.2

**capital adequacy ratio*

Source: EBA QIS data (December 2016)

Compared with the June 2016 reporting date, at which the CET1 capital shortfall was zero, the total shortfall of Tier 1 capital to meet both the risk-based capital ratio and the LR increased by EUR 2 billion, while the total capital shortfall has shown an increase equal to EUR 1.9 billion.

Group 2 banks have only a marginal CET1 shortfall at the 7% level, of EUR 0.3 billion. Nevertheless, they would need a more significant amount of additional capital, totalling EUR 3.1 billion, to meet the target Tier 1 capital requirements (risk-based and based on LR), and

[19] Note that the total Tier 1 capital shortfall for a bank represents the maximum of the Tier 1 capital shortfall for risk-based Tier 1 capital ratio and the Tier 1 shortfall for the LR.

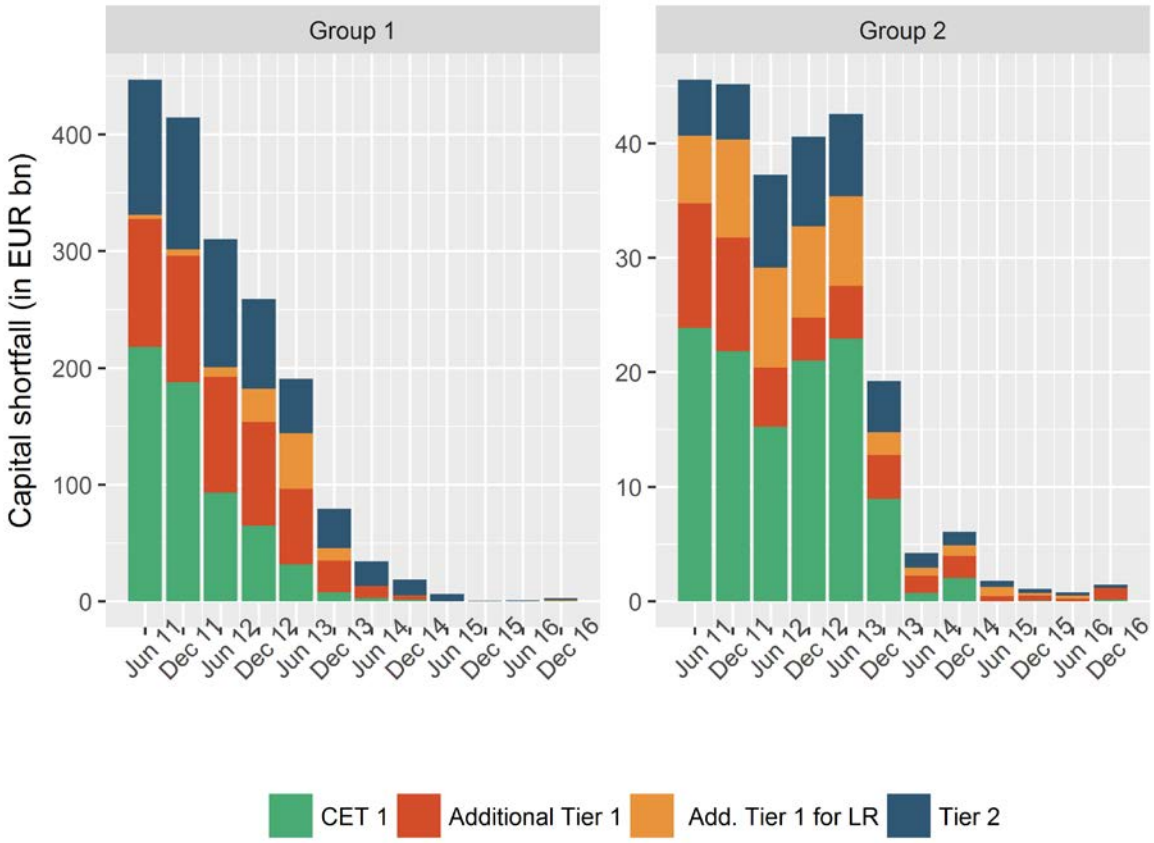
[20] The calculation method applied in this report may overstate the actual shortfall for those banks affected by the 10% and 15% threshold deductions, because the decline in deductions due to higher thresholds is not taken into account.

an additional EUR 3.4 billion to comply with total capital requirements under full implementation. The capital shortfall in the Group 2 sample can be mainly attributed to LR capital requirements of small and large banks.

The joint G-SIIs/O-SIIs sample exhibits EUR 1.7 billion capital shortfalls at the 7% CET1 level. G-SIIs/O-SIIs require EUR 3.8 billion to meet the Tier 1 (risk-based and LR) requirements and EUR 5.2 billion to comply with total capital requirements under full implementation.

The significant reduction in capital shortfalls over time (due to full implementation) can be analysed in more detail, as shown in Figure 5. At the beginning of the observation period (June 2011), banks (Group 1 and Group 2) lacked more than EUR 400 billion of total capital (half of which was CET1); by December 2016, the total shortfall was only a very minor fraction of this amount (EUR 4.9 billion).[21] However, the large decrease of capital shortfall for Group 2 banks between June 2013 and June 2014 is largely attributable to two larger Group 2 banks, which significantly built up capital in this period.

Figure 5: Evolution of capital shortfall by type of capital under full implementation over time



Source: EBA QIS data (December 2016)

[21] The shortfall for Group 1 banks has been reverted after December 2016.

Table 4 presents a particular aspect of the interaction between the LR and the risk-based Tier 1 capital ratio requirements.[22] More concretely, it analyses which of the capital ratios — risk-based or LR (non-risk-based) — represents the stricter (constraint) requirement for banks. Regardless of whether a bank is non-compliant or bound by the capital requirements, the LR, rather than the risk-based Tier 1 capital ratio, is said to be a constraint if the bank needs more Tier 1 capital to meet the LR requirement than to meet the risk-based Tier 1 capital requirement. Mathematically, LR is deemed to be a constraint when the minimum required LR Tier 1 capital, that is, 3% of the LR exposure measure, exceeds the minimum required Tier 1 capital, that is 6% or 8.5% (when CCB is included) of the bank's RWA.

In December 2016, all Group 1 banks were compliant with the 3% minimum Tier 1 LR requirement, and only three Group 2 banks were non-compliant. The LR capital shortfall is limited to EUR 2.8 billion, which consists solely of Group 2 banks' contribution.

The constraining power of the risk-based Tier 1 capital requirements increases if CCB and G-SII/O-SII buffers (8.5% plus G-SII/O-SII buffer) are included in the calculation. Thus, capital shortfall due to the unchanged LR requirement decreases. However, even under the more conservative scenario of the risk-based Tier 1 requirements, 35.9% of Group 1 banks and 35.6% of Group 2 banks are constrained by the LR.

Table 4: Banks which are constrained by the leverage ratio requirement rather than the risk-adjusted capital ratio (excluding and including capital buffer) under full implementation of CRD IV-CRR

Bank Group	Number of non-compliant banks	Percentage of non-compliant banks	LR shortfall (in billion)	Tier 1 6%			Tier 1 8.5%		
				Constrained by LR (%)	Percentage of non-compliant after meeting T1 ratio	Additional capital requirement (in billion)	Constrained by LR (%)	Percentage of non-compliant after meeting T1 ratio	Additional capital requirement (in billion)
Group 1	**0**	**0.0**	**0.0**	**76.9**	**0.0**	**0.0**	**35.9**	**0.0**	**0.0**
Group 2	**3**	**3.3**	**2.8**	**66.7**	**3.3**	**2.8**	**35.6**	**3.3**	**1.7**
Large Group 2	1	4.0	1.4	72.0	4.0	1.4	40.0	4.0	0.4
Medium Group 2	0	0.0	0.0	60.9	0.0	0.0	30.4	0.0	0.0
Small Group 2	2	4.8	1.4	66.7	4.8	1.4	35.7	4.8	1.4
All banks	**3**	**2.3**	**2.8**	**69.8**	**2.3**	**2.8**	**35.7**	**2.3**	**1.7**
G-SIIs and O-SIIs	1	1.6	1.4	73.4	1.6	1.4	35.9	1.6	0.4

Source: EBA QIS data (December 2016)

[22] Please note that a common sample of banks that participated in the risk-based and LR parts of this exercise has been used to carry out the interaction analysis shown in Table 4.

3.3 Impact of phase-in arrangements

At the current implementation stage of CRD IV-CRR, banks are still subject to transitional arrangements (phase-in of deductions and capital buffers, and phase-out of capital elements). It is therefore reasonable to expect a decrease in the level of capital for both Group 1 and Group 2 banks under full implementation, mainly due to the reduction of eligible capital elements.

Table 5: Relative percentage change in CET1, Tier 1, total capital and RWA under full implementation of CRD IV-CRR (%)

	Number of banks	CET 1	Tier 1	Total capital	RWA
Group 1	**45**	**−3.3**	**−6.7**	**−10.4**	**0.0**
Group 2	**103**	**−4.2**	**−4.1**	**−4.6**	**0.5**
Large Group 2	26	−5.0	−4.4	−4.3	0.7
Medium Group 2	28	−2.0	−3.7	−5.6	0.1
Small Group 2	49	−2.9	−3.1	−4.4	0.1
All banks	**148**	**−3.5**	**−6.3**	**−9.5**	**0.1**
G-SIIs and O-SIIs	71	−3.5	−6.5	−9.8	0.0

Source: EBA QIS data (December 2016)

Note: Several banks submitted data on capital and RWA, but did not report data on the EU LR exposure measure. As Table 5 refers only to data on capital and RWA, the number of banks included is higher than in other tables in this section.

The aggregate CET1 capital of Group 1 banks shows a decrease of 3.3%, while Tier 1 and total capital decrease by 6.7% and 10.4%, respectively (Table 5). For Group 2 banks, the relative percentage change in CET1, Tier 1 and total capital is −4.2%, −4.1% and −4.6%, respectively.

3.4 Composition of capital

Figure 6 shows the composition of total capital for Group 1 and Group 2 banks under the assumption of full implementation.

Time series analysis based on a consistent sample shows that, among Group 1 banks, CET1 capital as a proportion of all capital has been, on average, decreasing between June 2012 and 2016. A reverse trend is shown in December 2016, caused by a decrease of the Tier 2 portion of the total capital. In contrast, among Group 2 banks, the proportion of total capital accounted for by CET1 has been increasing on average since June 2011. In the case of Group 1 banks, this is due to greater accumulation of additional Tier 1 capital (which has more than doubled since June 2011) and Tier 2 capital than of CET1 capital. As of December 2016, Group 1 banks' figures indicate that fully implemented CET1 capital accounts for 79.4% of total capital, while additional Tier 1 and Tier 2 capital amounts to 6.4% and 14.2% of total capital, respectively. Among Group 2 banks, CET1 capital accounts for an even higher proportion of total capital than in Group 1 banks (under the assumption of full implementation of CRD IV-CRR), being 86.4% as of December 2016.

Additional Tier 1 capital and Tier 2 capital account for correspondingly lower proportions (2.6% and 11.0%, respectively).

Figure 6: Evolution of capital structure over time under full implementation of CRD IV-CRR

Source: EBA QIS data (December 2016)

3.5 Composition of risk-weighted assets (RWA)

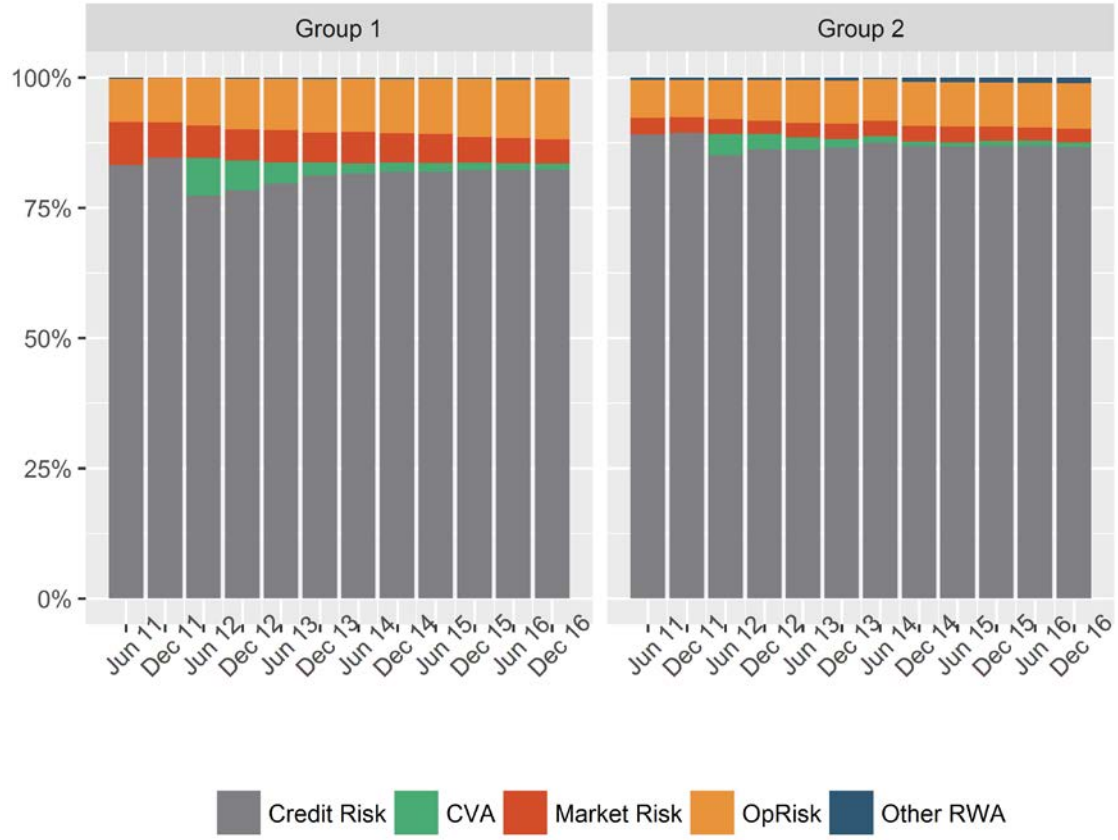
After analysing the regulatory capital, i.e. the numerator of capital ratios in the previous sections, the following subsection deals with the RWA — the denominator of risk-sensitive capital ratios.

Figure 7 shows that, under the fully phased-in CRD IV package, credit risk is the major component of RWA for both Group 1 and Group 2 banks. Credit risk accounts for 82.8% of RWA for Group 1 banks and 86.4% for Group 2 banks. After a drop in June 2012, credit risk as a proportion of RWA increased again, almost reaching the previous levels for both groups of banks.

Operational risk accounts for the second highest proportion of RWA for both groups of banks (11.2% and 8.4% for Group 1 and Group 2 banks, respectively). The proportion of RWA attributable to the market risk category is roughly twice as high for Group 1 banks as for Group 2 banks. The decline over time in the proportion of RWA attributable to credit value adjustment (CVA) suggests that the new regulatory framework has had a direct impact on bank behaviour.

Figure 7 also indicates that the introduction of the CVA capital charge resulted in portfolio adjustments and the cutting down of CVA positions, which contributed to the reduction in total RWA.[23]

Figure 7: Evolution of the composition of RWA by risk category over time under current implementation of CRD IV-CRR



Source: EBA QIS data (December 2016)

3.6 Composition of the leverage ratio (LR) exposure measure

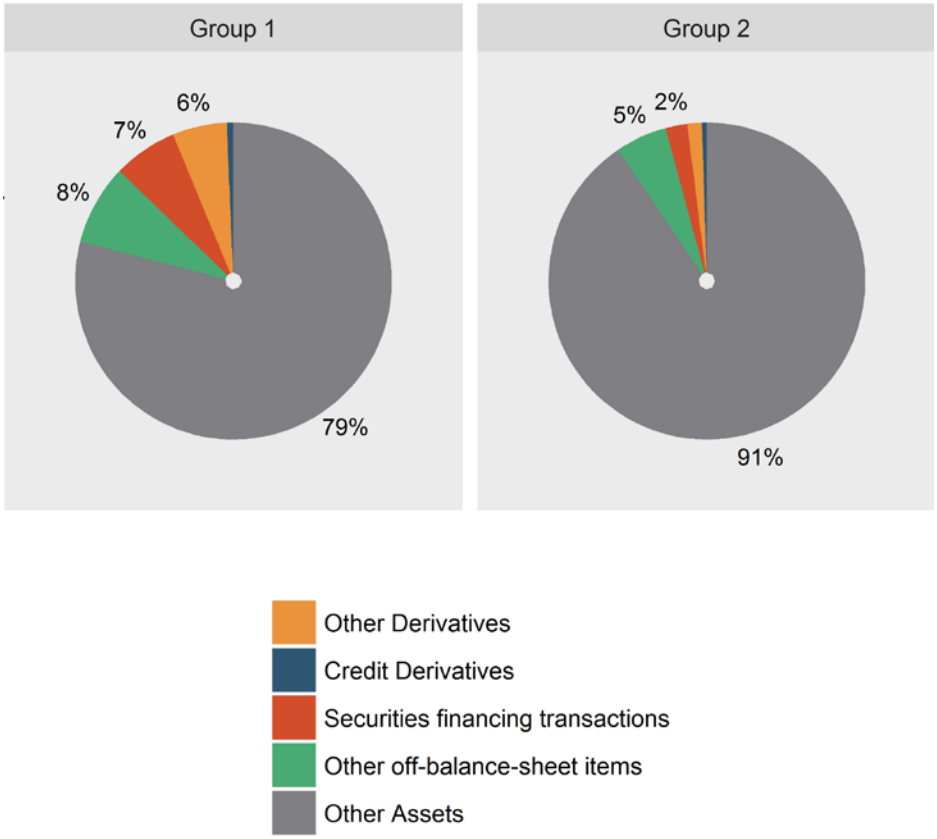
This subsection looks at the definition of the exposure measure that is used as the denominator of the LR. Figure 8 shows the composition of the LR exposure measure by asset category. For both groups of banks, 'other on-balance-sheet items' are the main component of exposures. Group 1 banks' exposures relating to derivatives, securities financing transactions and off-balance-sheet items account for around 21% of the total LR exposure, while for Group 2 banks this aggregate is lower (9%).

Note that the calculation of derivatives exposure is currently under review by the Basel Committee on Banking Supervision (BCBS). According to footnote 5 of the Basel III LR framework,

[23] The orders of magnitude of different risk categories observed in this monitoring exercise are very consistent with the results of previous transparency exercises and supervisory disclosures for the European banking sector. See also the EBA's aggregate statistics on the European banking sector (http://www.eba.europa.eu/supervisory-convergence/supervisory-disclosure/aggregate-statistical-data).

alternative approaches to the current exposure method (CEM) are taken into account. The standardised approach for measuring counterparty credit risk, which in January 2017 replaced the CEM in the risk-based framework at international level, is under review for the purpose of the LR and is expected to have more impact on Group 1 than on Group 2 banks. In addition, the European Banking Authority (EBA) is assessing whether or not a minimum Tier 1 LR of 3% is appropriate for different types of business models over a full credit cycle.[24]

Figure 8: Composition of the leverage ratio exposure measure by asset category (%)



Source: EBA QIS data (December 2016)

The development and implementation of an LR is not intended to reduce any of the positive prudential effects of the risk-based capital requirements.[25] Therefore, the interaction between the LR and risk-based capital ratios is being monitored.

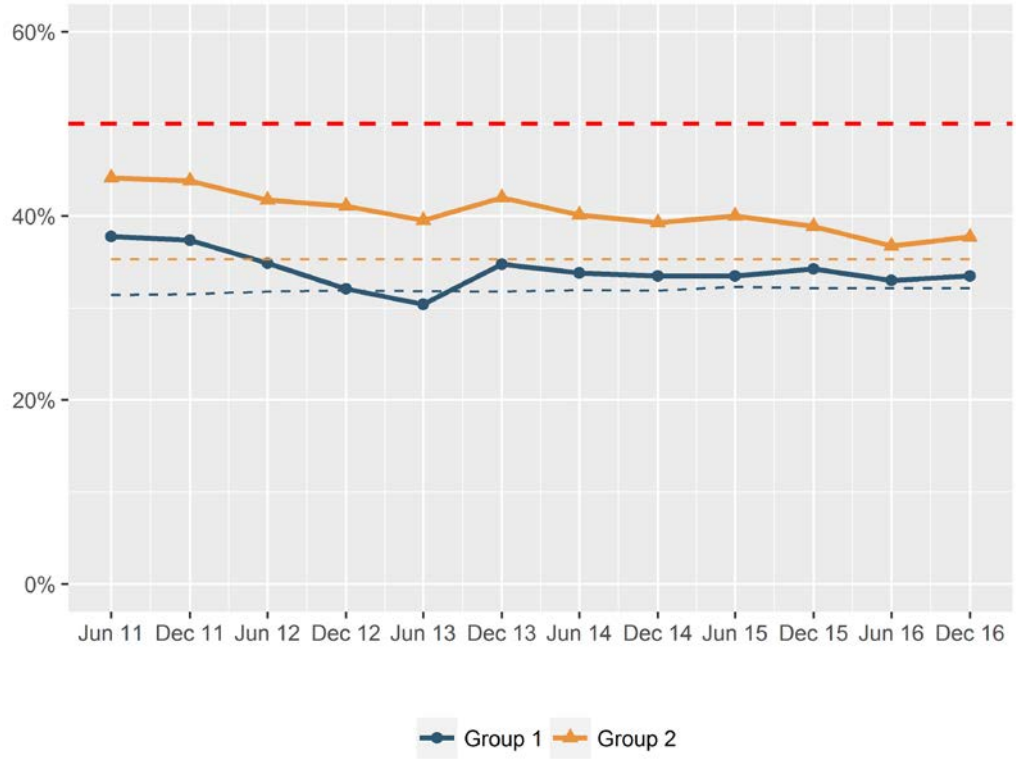
Figure 9 illustrates the development of the relationship between fully phased-in RWA and the LR exposure measure by bank group. A quotient below the dotted blue line (in the case of Group 1

[24] On 3 August 2016, the EBA published a report on the impact assessment and calibration of the LR, recommending that a requirement for a minimum LR be introduced in the EU to mitigate the risk of excessive leverage (for further details, see https://www.eba.europa.eu/-/eba-recommends-introducing-the-leverage-ratio-in-the-eu).

[25] For an argument about the benefits of the LR as a capital backstop over the financial cycle and across banks using internal models, see also BCBS, 'The regulatory framework: balancing risk sensitivity, simplicity and comparability', Working Paper, July 2013; BIS, 'The leverage ratio over the cycle', Working Paper No 471, November 2014.

banks), or the dotted yellow line (in the case of Group 2 banks),[26] implies that the main constraint is the LR rather than the risk-based Tier 1 capital ratio of 8.5% (minimum requirement plus CCB). A quotient above the dotted line implies that the risk-based Tier 1 capital ratio rather than the LR would be, on average, a constraint. The quotient was generally decreasing over the period from June 2011 to June 2013, which was caused by a decrease in RWA coupled with an increase in exposure (in the sense that, on average, banks preferred to follow a de-risking rather than a de-leveraging strategy). Between June 2013 and December 2013, the quotient increased by 440 bps for Group 1 banks and by 250 bps for Group 2 banks. This change was caused by a decrease in the LR exposure measure, partially driven by the recalibration of the exposure definition. Between the previous reference date and the current reference date (December 2016), the ratio of RWA to the LR exposure measure started to increase slightly again, by 45 bps for Group 1 banks and, to an even greater extent, by 66 bps for Group 2 banks.

Figure 9: Relation of RWA to exposure



Source: EBA QIS data (December 2016)

Figure 9 also indicates that, on average, banks are more constrained by the risk-based Tier 1 ratio than by the LR requirement, and this is particularly true for Group 2 banks. This result is in line with the findings in Table 4, which shows that the significant LR constraint falls as the calculation accounts for CCB and the G-SII/O-SII buffers.[27]

[26] Calculated as the quotient between the LR requirement (3%) and the risk-based Tier 1 capital ratio requirement (8.5%, plus the G-SII/O-SII buffer where applicable).

[27] Note also that there are methodological differences between Table 4 and Figure 9. First, Table 4 is based on a cross-sectional sample, whereas Figure 9 is based on a time series consistent sample. Second, the former shows the

4. Liquidity

4.1 Liquidity coverage ratio (LCR)

Another minimum standard in the CRD IV package is the 30-day liquidity coverage ratio (LCR) provision, which is intended to promote short-term resilience to potential liquidity disruptions. The LCR requires banks to have a sufficient level of high-quality liquid assets (HQLA) to withstand a stressful funding scenario for 30 days. The LCR defines the minimum stock of unencumbered HQLA that must be available to cover the net outflow expected to occur in a severe stress scenario.

At EU level, with the adoption of the LCR DR in October 2014, the EU LCR framework introduced several features that differ from the Basel III LCR framework. Broadly, with respect to the Basel III framework, the LCR DR:

HQLA

- modifies the requirements for instruments already captured as HQLA under Basel III, for example preferential treatment of assets representing claims on or guaranteed by the central government, the central bank, regional governments, local authorities or public sector entities of a Member State, and upgrades the liquidity quality of extremely high-quality covered bonds;
- increases the range of instruments that are not captured under Basel III, for example promotional banks' assets, covered bonds of certain credit quality, certain restricted-use committed liquidity facilities with the European Central Bank, certain asset-backed securities, shares and units in collective investment undertakings, and sight deposits that the credit institution holds with the central institution within an institutional protection scheme;
- amends the composition of the liquidity buffer by adding a new cap on liquid assets: a minimum of 30% of the overall liquidity buffer has to be held in Level 1 assets, excluding extremely high-quality covered bonds;

Outflows

- amends, within the calculation of outflows, the run-off rates of the outstanding balances of various categories or types of liabilities and off-balance-sheet commitments, for example more granular categorisation of the less stable retail deposits and corresponding run-off rates of 10-20%; and

proportions of banks constrained by capital requirements, whereas the latter presents weighted averages that are subject to offsetting effects across banks.

Inflows

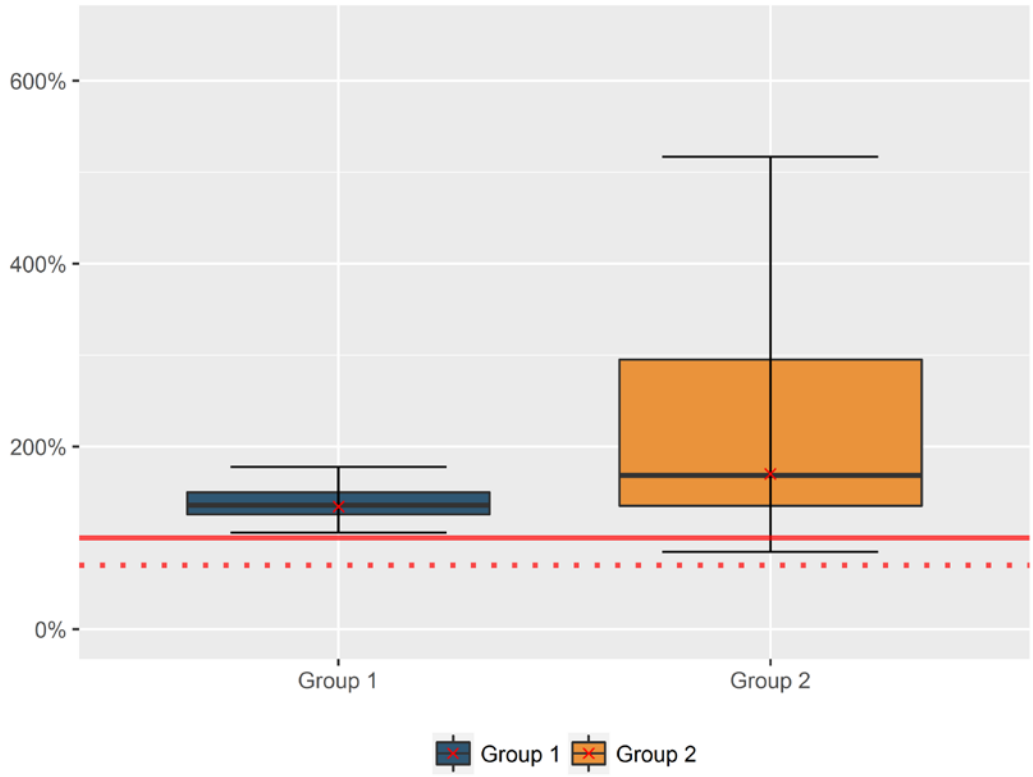
- provides, subject to prior supervisory approval, partial or full exemption for certain institutions in the application of a 75% cap on inflows in the calculation of net cash outflows.

Furthermore, as defined in Article 38 of the EU LCR Deregulated Regulation (LCR DR) and in accordance with Article 460(2) of the CRR, the minimum requirement was set at 60% from 1 October 2015 and will be gradually increased, reaching 100% by January 2018; in other words, EU regulation requires a minimum of 100% 1 year before the Basel standard.[28] This report presents EU-specific LCR analysis based on the framework of the EU LCR DR.

LCR and shortfall in liquid assets

Figure 10 provides an overview of the distribution of the LCR by bank group. As of December 2016, Group 1 banks exhibited a weighted average LCR of 134.2%, while Group 2 banks' LCR was 170.1%. No bank within Group 1 fails to meet the 100% requirement. Of the Group 2 banks, all meet the 70% minimum requirement, while one bank is non-compliant at the 100% requirement.

Figure 10: Distribution of LCR by bank group



** Dashed red line: LCR = 70%; solid red line: LCR = 100%*

Source: EBA QIS data (December 2016)

[28] For a detailed analysis of the comparison between LCR frameworks under the EU LCR DR and Basel III, see the EBA's LCR impact assessment report (2016), published under Article 509(1) of the CRR (https://www.eba.europa.eu/-/eba-sees-considerable-improvement-in-the-average-lcr-across-eu-banks).

Figure 10 also indicates that variation in the level of LCR is greater among Group 2 banks than among Group 1 banks. The value of LCR varies among Group 1 banks from 105.6% (minimum) to 275.6% (maximum), while among Group 2 banks this range is from 37.9% (minimum) to 3298.6% (maximum).

Table 6 illustrates the LCR and the LCR shortfall for various minimum ratios as defined in Article 38 of the LCR DR. The total LCR shortfall with regard to a minimum ratio of 100% is EUR 0.1 billion.

Table 6: LCR and LCR shortfall for various minimum ratios according to Article 460(2) of the CRR — Group 1

Bank Group	Number of banks	LCR (%)	LCR shortfall (EUR billion) at a minimum level of		
			70% (2016)	80% (2017)	100% (2018)
Group 1	**35**	**134.2**	**0**	**0**	**0.0**
Group 2	**99**	**170.1**	**0**	**0**	**0.1**
Large Group 2	23	169.5	0	0	0.0
Medium Group 2	25	174.8	0	0	0.0
Small Group 2	50	167.7	0	0	0.1
All banks	**134**	**139.5**	**0**	**0**	**0.1**
G-SIIs and O-SIIs	60	135.5	0	0	0.0

Source: EBA QIS data (December 2016)

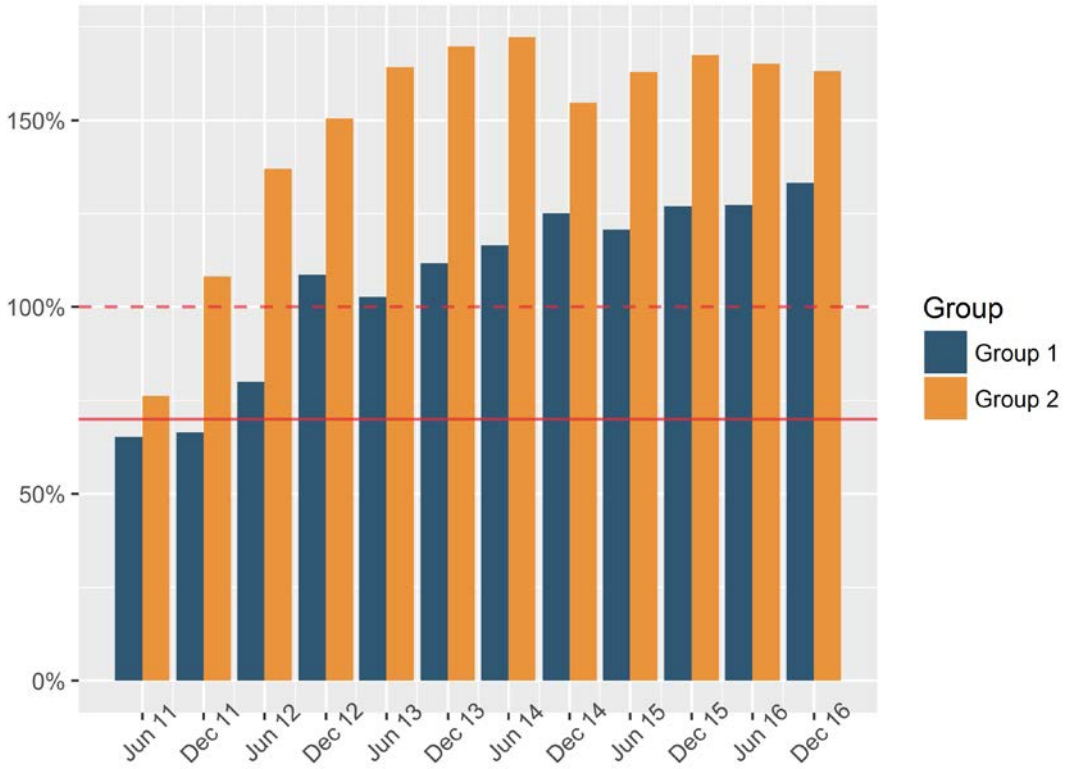
Evolution of the LCR over time

When analysing the evolution of the LCR over time, it should be noted that figures for periods before June 2015 are based on Basel III definitions, which is to say that, excluding structural changes, part of the change can also be attributed to differences between Basel III and the LCR DR.[29] Some changes in the LCR between June and December 2012 are also driven by the recalibration of the Basel III LCR framework, published in January 2013. Nevertheless, banks have, on average, put significant effort into increasing their LCRs, both by increasing their liquidity buffer and by decreasing their net cash outflows. Since June 2011, Group 1 and Group 2 banks have, on average, increased their LCRs by approximately 68 (Group 1) and 87 (Group 2) percentage points (Figure 11).

For most Group 1 banks, the main driver for the increase in the level of LCR over time is the increase in HQLA. All Group 1 banks increased their liquid asset buffers and reduced their net cash outflows at the same time, or the increase in the level of net cash outflows in HQLA buffers exceeded the increase in the level of net cash outflows — hence, the overall LCR increased.

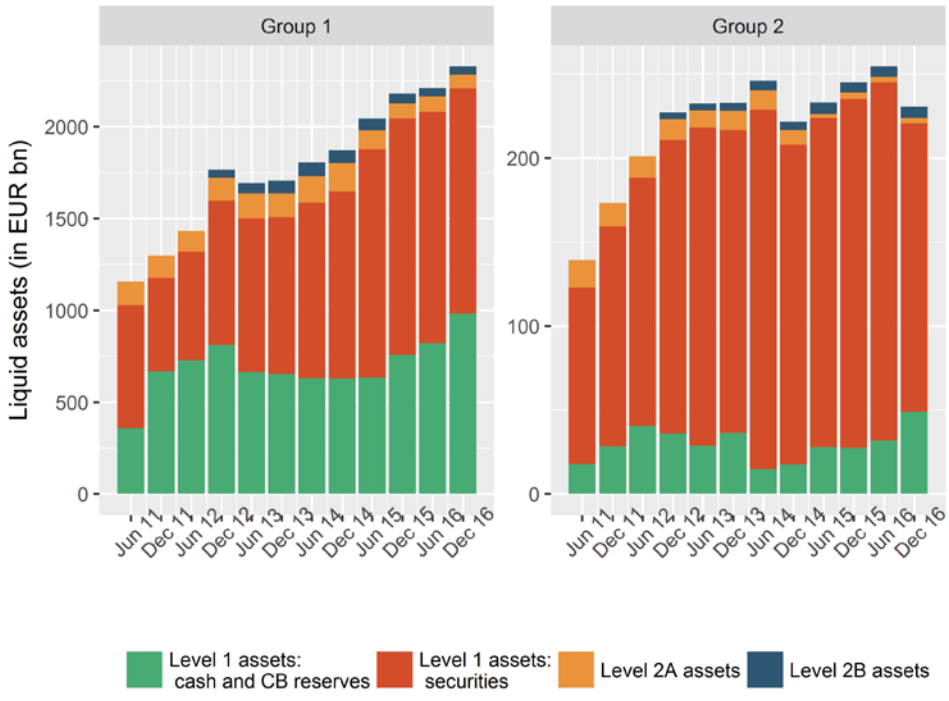
[29] For a detailed quantitative analysis on the differences between EU LCR DR and the Basel III framework, see the EBA's LCR IA report (2016), published under Article 509(1) of the CRR (https://www.eba.europa.eu/-/eba-sees-considerable-improvement-in-the-average-lcr-across-eu-banks).

Figure 11: Evolution of LCR by bank group over time (%)



Source: EBA QIS data (December 2016)

Figure 12: High-quality liquid assets (HQLA) over time (EUR billion), by group

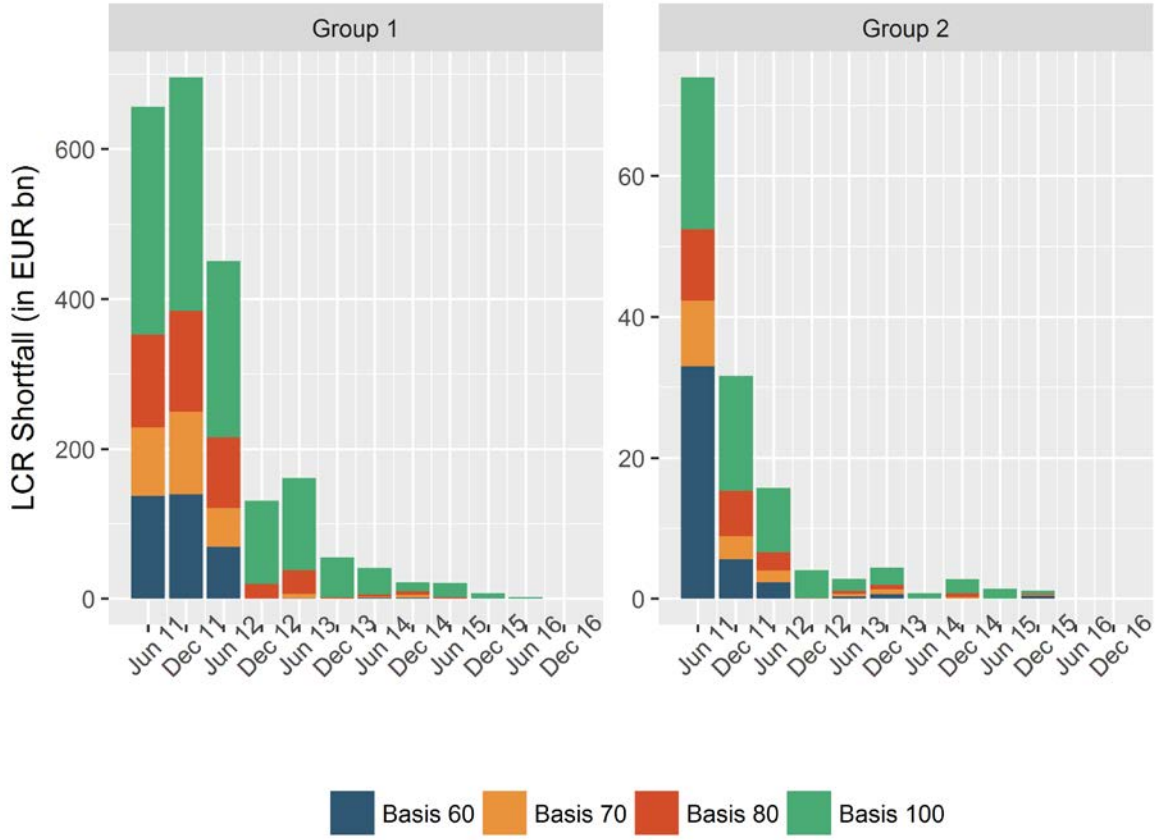


Source: EBA QIS data (December 2016)

During the period from June 2011 to December 2012, both Group 1 and Group 2 banks increased mostly cash and central bank reserves to comply with the LCR requirements, while from June 2013 to June 2015 securities were the major driver of compliance (Figure 12) among all banks. Between June 2015 and December 2016 the cash and central bank reserves component started to increase again for both Group 1 and Group 2 banks.

In line with the improvements in the LCR, the shortfall has declined significantly for both Group 1 and Group 2 banks. Figure 13 shows, for the consistent sample, the trend over time in LCR shortfall at various minimum requirements in the period from June 2011 to December 2016.

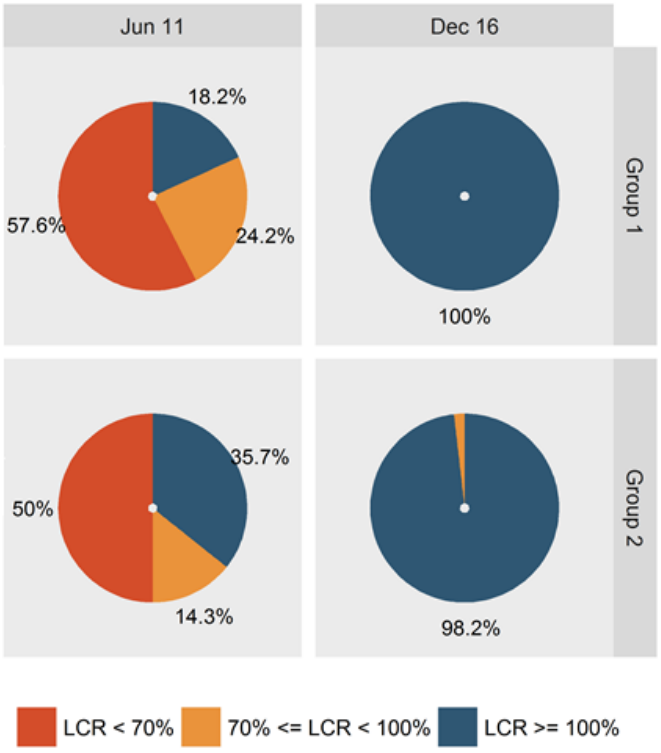
Figure 13: LCR shortfall over time (EUR billion), by group



Source: EBA QIS data (December 2016)

The positive trend in the evolution of the LCR is also reflected in the increase in the proportion of banks with an LCR above 100% (Figure 14) compared with the first data point. In June 2011, only 18.2% of Group 1 and 35.7% of Group 2 banks met the LCR minimum requirement of 100%. In contrast, 100% of Group 1 banks and 98.2% of Group 2 banks reported an LCR above 100% in December 2016.

Figure 14: Distribution of LCR ratios



Source: EBA QIS data (December 2016)

4.2 Net stable funding ratio (NSFR)

The second liquidity standard is the net stable funding ratio (NSFR), a longer term structural ratio that addresses liquidity mismatches and provides incentives for banks to use stable sources to fund their activities. The NSFR is defined as the amount of available stable funding (ASF) relative to the amount of required stable funding (RSF). From 1 January 2018, this ratio should be equal to or higher than 100%. The ASF is defined as the portion of capital and liabilities expected to be reliable over the time horizon considered by the NSFR, which extends to 1 year. The amount of RSF is a function of liquidity characteristics and residual maturities of the various assets held by a particular institution, as well as those of its off-balance-sheet exposures.

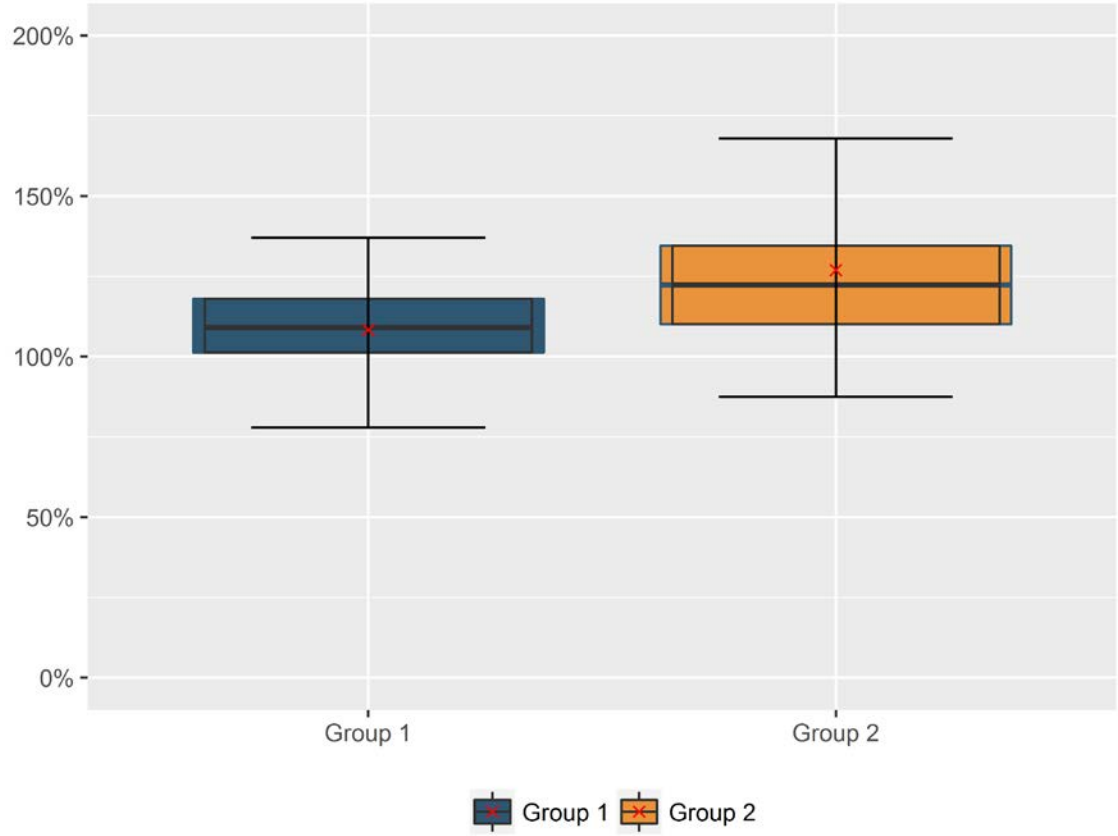
NSFR and shortfall in stable funding

Figure 15 provides an overview of the distribution of the NSFR by bank group. In December 2016, the average NSFR for Group 1 and Group 2 banks was 108.4% and 126.9%, respectively, with 79.5% of Group 1 banks and 91.0.% of Group 2 banks already fulfilling the minimum NSFR requirement of 100%. Non-compliant Group 2 banks had, on average, a higher NSFR than Group 1 banks.

The range of the NSFR across banks is narrower than that of the LCR in the overall sample. This reflects to some extent the differences in the nature and design of the two ratios, that is, the short-term nature of the LCR and the long-term nature of the NSFR, and the parameters included

in their calculations. Furthermore, as for the LCR, the range of the NSFR is wider among Group 2 banks than Group 1 banks.

Figure 15: Distribution of NSFR by bank group



Source: EBA QIS data (December 2016)

Overall, as of December 2016, banks in the sample needed additional stable funding of EUR 116.1 billion (Table 7), equivalent to 8.2% of total weighted ASF (EUR 1.4 trillion) and 4.6% of the total assets (EUR 2.5 trillion) of all non-compliant banks participating in the NSFR-related part of this exercise. The need for stable funding is estimated by aggregating only the positive differences between RSF and ASF (RSF minus ASF) — the deficit in the stable funding of banks whose NSFR is below the 100% requirement — and does not account for any surplus of stable funding observed in banks with an NFSR above the 100% requirement. Banks that do not yet meet the 100% minimum requirement are still able to take a number of measures between now and 2018 to meet the NSFR standard (e.g. lengthening their funding term or decreasing maturity mismatches in their balance sheet).

It should also be noted that the shortfalls in the LCR and the NSFR are not necessarily additive, as decreasing the shortfall on one standard may result in a similar decrease in the shortfall on the other, depending on the steps taken to decrease the shortfall.[30]

[30] For example, if a bank receives long-term (e.g. between 6-month and 1-year) stable funding (e.g. 9-month stable term deposits) and invests this in Level 1 HQLA, it increases (i) its LCR position, since the liquidity buffer increases with no impact on the outflows, and (ii) its NSFR position. The NSFR position increases because the increase in the

Table 7: NSFR and shortfall in stable funding

Bank Group	Number of banks	NSFR %	NSFR shortfall (EUR billion)
Group 1	**44**	**108.4**	**82.1**
Group 2	**100**	**126.9**	**34.0**
Large Group 2	23	111.8	29.5
Medium Group 2	28	178.5	1.6
Small Group 2	49	120.2	3.0
All banks	**144**	**112.0**	**116.1**
G-SIIs and O-SIIs	68	108.8	112.2

Source: EBA QIS data (December 2016)

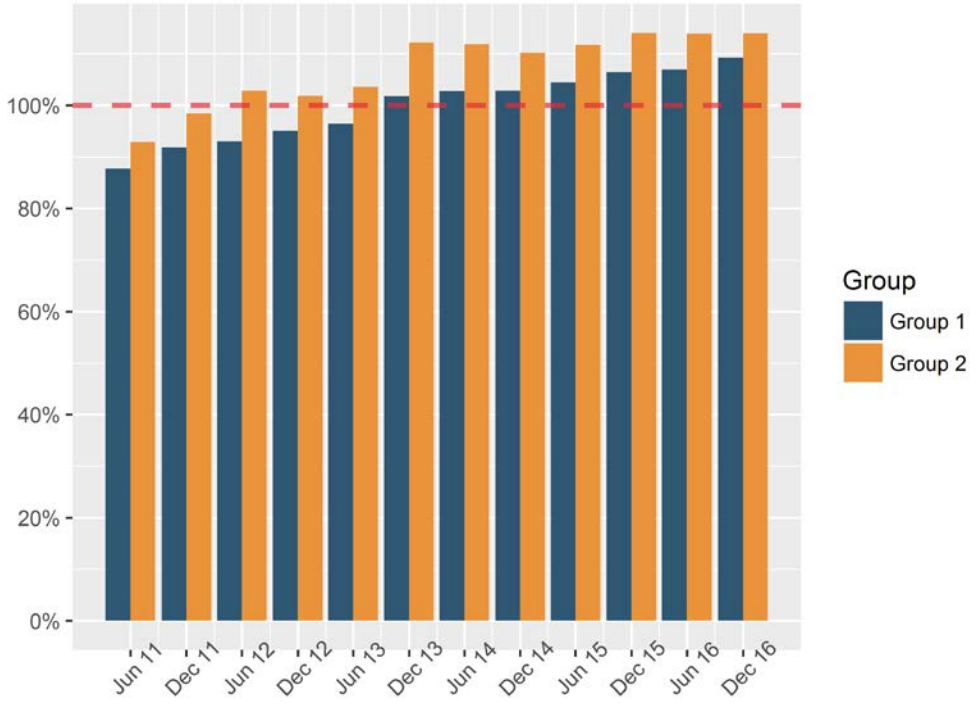
Evolution of the NSFR over time

Figure 16 illustrates the development of the NSFR over time using a consistent sample of banks. The findings show that between June 2011 and December 2016 the average NSFR for both Group 1 and Group 2 banks increased by 21%. The significant increase in banks' NSFRs in December 2013 may also have been driven by the revisions made by the BCBS, which were considered for the first time in December 2013. The NSFR during 2016 remained almost the same for Group 1 banks, while it slightly increased by around 2% for Group 2 banks.

Over the reporting period, RSF shows a fairly constant trend for Group 1 banks and a slightly decreasing trend for Group 2 banks. ASF increased continuously over the reporting period for Group 1 banks, except in the most recent period. Such a pattern is less evident for Group 2 banks.

numerator dominates the increase in the denominator. In the NSFR, the weight attributed to long-term stable funding and Level 1 liquid assets is 95% and 5%, respectively.

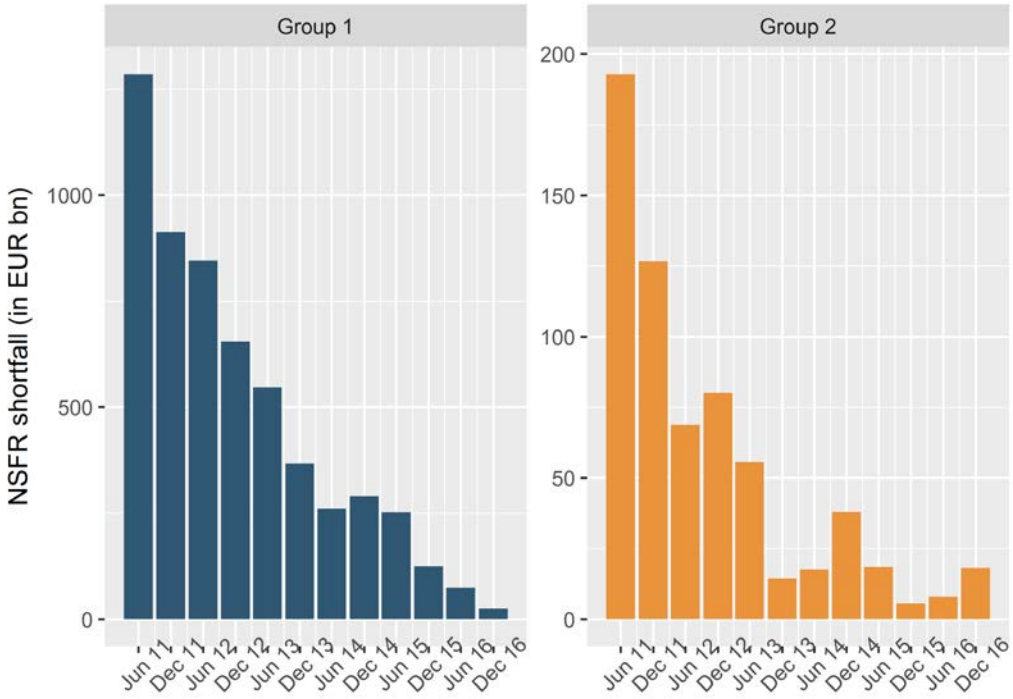
Figure 16: Evolution of NSFR by bank group over time (%)



Source: EBA QIS data (December 2016)

The overall positive trend is also reflected in the reduction in the shortfall of stable funding needed to meet the 100% ratio requirement, which (compared with June 2011) decreased by 98.0% for Group 1 banks and by 90.6% for Group 2 banks.

Figure 17: Development of the NSFR shortfall of required stable funding (RSF) over time, by group

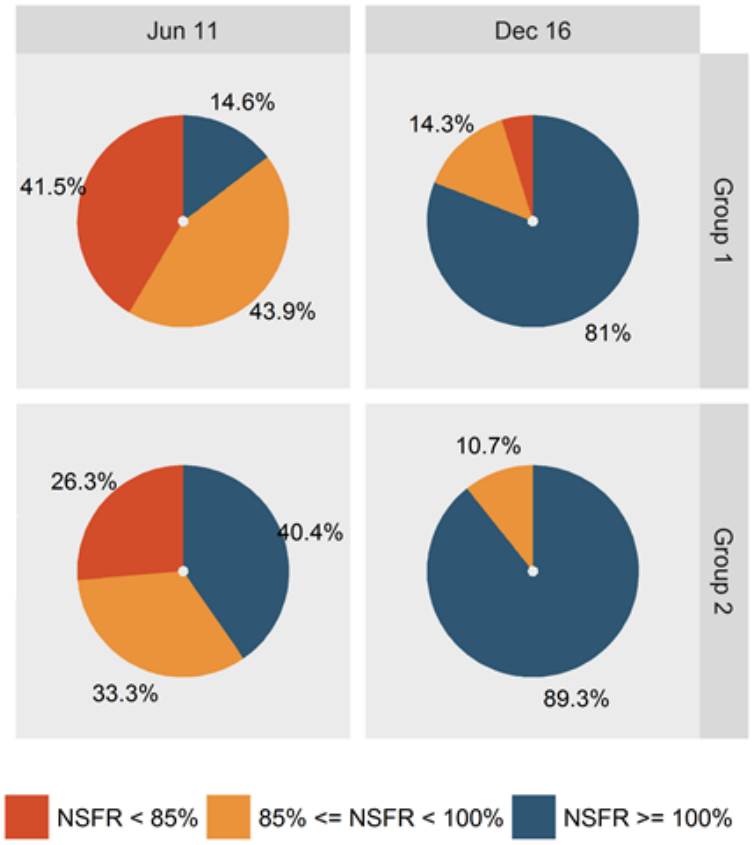


Source: EBA QIS data (December 2016)

The NSFR is less volatile than the LCR and cannot be adjusted easily in a short period of time. This is mainly because of the long-term nature of the parameters included in the calculation of the NSFR.

Therefore, there will be a special focus on those banks with a ratio below 85%.[31] As shown in Figure 18, the proportion of banks whose NSFR is below this threshold has decreased significantly since the beginning of this exercise, with only 4.7% of Group 1 banks and none of the Group 2 banks reporting an NSFR below 85% as of December 2016.

Figure 18: Distribution of NSFR ratios



Source: EBA QIS data (December 2016)

[31] Note that the arbitrary threshold of 85% is based on the distribution of the NSFR in previous monitoring exercises and does not relate to any provision in the CRR.