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Thinking ahead for Europe

Was the ECB's Comprehensive Assessment up to standard?

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Key points

- The Comprehensive Assessment carried out by the European Central Bank (ECB) has enhanced the transparency of euro-area banks considerably. Among the most notable improvements compared to the previous stress-test exercises are the harmonisation of the definition of non-performing loans and the uncovering of hidden losses.
- Only 14 of the 130 scrutinised banks, representing 4% of total assets, failed the Comprehensive Assessment falling € 9.5 billion short in total, which suggests that the large majority of the euro-area banks have improved their financial position sufficiently, and are no longer constrained from financing the economy.
- Our estimations based on the detailed results, however, provide a more nuanced picture, with approximately 23 banks failing to meet the minimum total regulatory capital ratio (i.e. Tier 1 and Tier 2 capital), under the adverse stress test scenario. The banks representing 5% of total assets registered a €12.1 billion shortfall.
- After taking into account the CET1 (Common Equity Tier 1 capital ratio) following full implementation of the Basel 3 standards in Europe and the leverage ratio that is likely to become binding in 2018, a total of 47 banks, representing 15% of total assets, failed to meet the future minimum threshold, falling short by €44.5 billion.

Recommendations

- Continue harmonising the reporting, with a particular focus on the variety in accounting practices across different countries in the EU.
- Repeat the disclosure exercise at least annually to allow monitoring of developments over time.
- Improve the transparency on the liability and own funds structure of the banks to allow for evaluation of alternative regulatory ratios and funding structure.
- Use a set of regulatory ratios to determine the soundness of the euro-area banking sector, instead of only the common equity tier 1 ratio.

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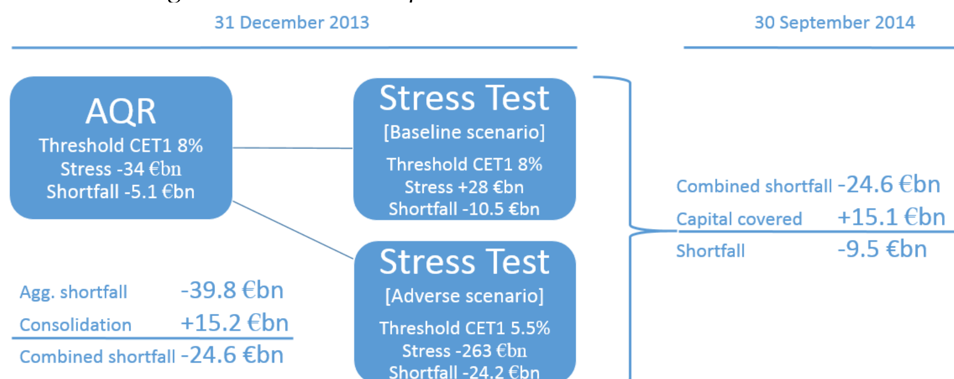
Abstract

The Comprehensive Assessment conducted by the European Central Bank (ECB) represents a considerable step forward in enhancing transparency in euro-area banks' balance sheets. The most notable progress since the previous European stress test has been the harmonisation of the definition of non-performing loans and other concepts as well as uncovering hidden losses,[1] which resulted in a €34 billion aggregate capital-charge net of tax. Despite this tightening, most banks were able to meet the 5.5% common equity tier 1 (CET1) threshold applied in the test, which suggests that the large majority of the euro-area banks have improved their financial position sufficiently to no longer constrain them in financing the economy. Our own estimation based on the detailed results, however, provide a more nuanced picture, with a large number of the banks still highly leveraged and in many cases unable to meet the regulatory capital requirements that will be introduced in the coming years under the adverse stress test scenario.

The asset quality review and stress test results

The ECB Comprehensive Assessment results published on Sunday, October 26th, show that 25 of the 130 banks subject to the combined asset quality review (AQR) and stress test failed.[2] Figure 1 shows the applied thresholds and the total impact of the stresses on the buffers of all scrutinised banks as well as the consequential shortfalls per element and at aggregate. The banks with a shortfall are mainly located in southern Europe, nine of which are Italian, while Cyprus and Greece are each home to three banks, Belgium and Slovenia two, and Austria, France, Germany, Ireland, Portugal, and Spain one. The net capital raised in 2014 has already covered the shortfalls of twelve of the banks that failed the assessment. The remaining 13 banks suffered a total shortfall of almost €9.5 billion as a result of the fairness assessment and hypothetical macroeconomic stress scenarios on their 2013 balance sheet. Five of these banks will be able to repair their balance sheets (almost) completely following the restructuring plans agreed with the European Commission. Only eight banks will have to raise in total €6 billion capital in the upcoming six to nine months.

Figure 1. Results Comprehensive Assessment in a nutshell



Source: Author's own calculations based on ECB Comprehensive Assessment 2014.

[1] The non-performing exposure increased by €136 billion in total, i.e. €55 billion due to harmonisation of definitions and €81 billion as a consequence of the credit file review.

[2] See De Groen & Lannoo (2014) for the overlap between the banks subject to the Comprehensive Assessment, direct supervision under the Single Supervisory Mechanism and the EBA stress test.

Weakness of the Comprehensive Assessment

With only a few small banks failing the exercises, the question remains whether the Comprehensive Assessment followed a sufficiently high standard. The weakness in this respect is that the ECB focused purely on CET1 ratio, which is based on risk-weighted assets, which do not necessarily reflect the inherent risks of the underlying assets.[3] The flexibility in risk weights under internal valuation models or with no or too low weights for certain assets under the standards approach leads, for instance, to no significant or even a reverse relationship between the average risk weights and distance to default for some types of banks.[4] Moreover, the risk-weighted asset-based capital ratios have also not been particular good predictors of bank failures. In order to remove the weaknesses of the risk-weighted assets-based capital ratios, some analysts have advocated the strengthening of existing measures and the introduction of new ones[5] – measures that have been endorsed by policy-makers at the highest institutional levels.

Stress testing for other regulatory capital ratios

The impact of the AQR and the stress test on other capital ratios, however, was not assessed by the ECB. Using the data disclosed by the Comprehensive Assessment, the cumulative impact of the AQR and the stress test was estimated on the following indicators:

- *CET1 ratio*: the purest form of capital (i.e. common equity tier 1 – CET1) as a share of total risk weighted assets.
- *Fully loaded CET1 ratio*: the purest form of capital (i.e. common equity tier 1 – CET1) as a share of total risk-weighted assets adjusted for full implementation of Basel 3 in Europe (i.e. CRDIV/CRR).
- *Tier 1 capital ratio*: going concern capital (i.e. CET1 plus additional Tier 1 capital) as a share of total risk-weighted assets.
- *Total regulatory capital ratio*: Going concern capital plus gone concern capital (i.e. Tier 1 and Tier 2 capital) as a share of total risk-weighted assets.
- *Leverage ratio*: Tier 1 capital as a share of total on- and off-balance sheet exposures.[6]
- *MREL*: Own funds and eligible liabilities for burden-sharing in case of resolution as a share of total liabilities including own funds.

The estimations are prepared for the amounts reported at end 2013 and the results at the end of September 2014, taking into account the AQR-adjustment, net capital raised up to September 2014, and the three-year cumulative impact of the adverse scenario. The total impact of the Comprehensive Assessment on the capital position of the banks is estimated at €-221 billion when the CET1 5.5% threshold is applied, as the ECB did in its assessment. The stress test's adverse scenario has the greatest negative impact with €-228 billion, followed by the net capital raised, fines and litigation cost (€+45 billion) and the asset quality review adjustment (€-38 billion). Since part of the capital impact of the exercises is due to a change in risk-weighted assets, the aggregate cumulative impact varies across different thresholds of CET1-, Tier 1- and Total regulatory capital ratios. The calculations for these capital ratios are also further adjusted for surcharges on global systemically important banks (G-SIBs) that will apply from 2016 onwards. The sum of the net capital raised with a conversion rate above the estimated threshold is included to give a better insight into the situation as of September 2014. Moreover, the impact of the full transition to the new

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[3] See for example De Groen (2011), which describes the case of Dexia, which failed shortly after passing the EBA stress test in 2011).

[4] See chapter 5 of Ayadi & De Groen (2014).

[5] See for example Acharya, V.V. and S. Steffen (2014).

[6] The average leverage exposure as a share of total assets is 105%, but it varies between 4% and 137% due to a number of adjustments, for example, for off-balance sheet- and derivative exposures.

capital requirements is only published for CET1, and therefore assessed exclusively for the CET1 ratio. The leverage and MREL (minimum requirements for own funds and eligible liabilities) are not risk adjusted and are therefore also not adjusted for the RWA change under the AQR and adverse stress test scenario and all capital issued is assumed to be eligible. See Annex 1 to 11 for a more comprehensive overview of the methodology and the estimation results for different thresholds and across countries.

Tier 1 capital ratios

The results of the broadened stress test suggests that the shortfalls for all the capital ratios are larger than the shortfalls estimated on the **CET1 ratio** applied in the Comprehensive Assessment. In total, 10 banks, representing 3% of total assets, would not be able to meet the regulatory minimum CET1 ratio of 4.5% under the adverse scenario. Their total shortfall would be around €6 billion. Some 14 banks would fail if the ECB threshold of 5.5% were to be applied –one more than indicated in the list of the ECB, because Deutsche Bank Malta dove below the threshold after the cut-off date of the Comprehensive Assessment due to a €2.2 capital repayment in 2014. To meet the broader defined minimum **Tier 1 capital ratio**, several more banks would fail. More specifically, 17 banks would need €11 billion to reach the regulatory minimum of 6%. Another eight banks would fail to meet the regulatory minimum **Total regulatory capital ratio** of 8%, which includes Tier 1 and Tier 2 capital instruments. Despite a larger number of failing banks, the aggregated shortfall of €15 billion is still low when only the regulatory minimum is assessed. The shortfalls, however, rise sharply when the capital buffers that will be gradually introduced in the coming years and the full transition to the new capital definitions are also taken into account.[7] When the fully-loaded CET1 ratios are assessed, the number of failing banks rises substantially. For the regulatory minimum of 4.5%, the number of failing banks almost doubles to 17 and the shortfall increases by a factor five to €30 billion.

Leverage ratios

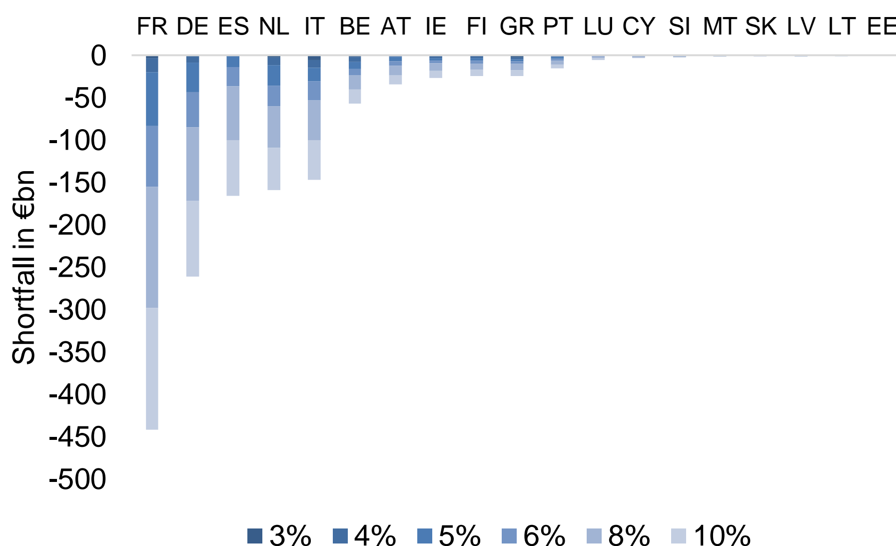
Furthermore, the non-risk adjusted capital ratio must provide a backstop measure to limit the build-up of leverage under the risk-weighted ratios. The leverage ratio is currently being monitored with a view to making it binding as of 1 January 2018. Based on estimations for banks subject to the Comprehensive Assessment, 34 banks would require almost €21 billion in total to meet the threshold of 3% minimum leverage ratio under the adverse scenario (see Figure 2 for the shortfalls for different thresholds ranging from 3-10%). This seems a modest sum compared to the €2,430 billion in assets owned by these institutions, but it is more than the €18 billion aggregated net income from calendar year 2013. Moreover, unlike CET1, Tier 1 and Total regulatory capital, a larger share of the underperforming banks have their headquarters in northern Europe, with five banks based in Germany, four banks each in Belgium and France, and three banks in the Netherlands failing to meet the threshold under the adverse scenario. This situation could be even worse if a higher leverage ratio is introduced, as is proposed in the Netherlands and will be the case in Canada, the United Kingdom and the United States.[8] An increase in the minimum leverage ratio to 4 or

[7] The countercyclical capital buffer and capital conservation buffer can each add up to 2.5% CET1 on top of the regulatory capital ratios. The minimum countercyclical buffer should support building-up of extra capital buffers in prosperous times, to absorb losses in downturns. The countercyclical buffer should thus be low in times of systemic distress as assessed in the stress test exercise. The implications of breaching the capital conservation buffer are further relatively limited. It will constraint the bank in the distribution of its own funds. Though, banks and investors might want to keep full control, also in times of distress. In total, 87 banks, representing 75% of total assets, would have to beef up their capital by about €196 billion to reach the necessary 5% surplus over the total regulatory capital.

[8] The Dutch parliament is discussing a proposal by the government and the central bank to increase the leverage ratio to 4%, and in Canada, the United Kingdom and the United States banks will need to comply with leverage

5% for all scrutinised banks would require an increase in Tier 1 capital by €80 and €256 billion, respectively, under the adverse scenario and still meet the minimum leverage ratio.[9]

Figure 2. Shortfalls for different levels of leverage ratios under adverse scenario, 3 to 10%



Note: The figure shows the shortfall of the 130 banks subject to the Comprehensive Assessment grouped by country. The shortfall is estimated based on a leverage ratio, which is defined as Tier 1 capital including the AQR adjustment, stress test adverse scenario up to 2016, and net of tax and net capital raised between January and September 2014 as a share of the total leverage exposure minus the AQR adjustment. The total leverage exposure for Dexia was not reported and has been proxied by the total assets, which are on average similar to the total leverage exposure.

Source: Author's own estimations based on ECB Comprehensive Assessment 2014.

Minimum requirement for own funds and eligible liabilities

The MREL must ensure that there are sufficient private funds available when a bank is restructured or bailed-out. Although the minimum requirement of 8% of total liabilities and own funds does not need to be met by equity instruments exclusively, banks and supervisors could prefer to cover the MREL using equity and junior liability instruments with a long maturity to prevent bank runs in periods of severe stress. The data disclosed as part of the Comprehensive Assessment do not provide additional information on such items. Based on the available capital data, banks would need to raise another €643 billion to withstand the adverse scenario without falling below the MREL. In particular, 107 of the 130 scrutinised banks, including all G-SIBs would fail to meet this strict interpretation of the MREL under the adverse stress test scenario.

Combined capital ratios

Given the limited restrictiveness on capital, the combined results are analysed with and without the MREL (see Annex 8 to 11 for the detailed results). In total, 12 banks failed to meet the new regulatory capital

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ratios up to 5%. For the Netherlands the 4% leverage ratio would imply a shortfall of €11.8 billion, including three of the four largest retail banks in the country (i.e. ABN Amro, ING Bank and SNS Bank).

[9] In a nutshell, a €256 billion Tier 1 capital increase would be equivalent to almost a 25% increase for all tested banks. The higher leverage ratio would force 95 banks to strengthen their capital position, including eight of the nine euro-area based G-SIBs (namely BNP Paribas, Deutsche Bank, Groupe BPCE, Groupe Crédit Agricole, ING Bank, Santander, Société Générale and UniCredit).

requirements based on the figures they reported at the end of 2013. Excluding the MREL, the main obstacle for those banks was the leverage ratio of 3%, for which 11 of the relatively small banks took approximately €5 billion in aggregate shortfalls. When AQR adjustment (-), the impact of the adverse stress test scenario (-), impact of full transition to new regulatory standards on CET1 (-) and net capital raised (+) also are taken into account, the number of banks that fail to meet the four capital ratios grows to 47, representing than one-third of the banks, including among others Banca Monte dei Paschi di Siena, Belfius, Dexia, HSBC France, LCH Clearnet, and RZB. The impact of the full transition of CET1 in combination with the leverage ratio is the main driver behind the aggregated shortfall of €45 billion. This is a fairly large amount for this group of primarily small- and medium- sized banks, which reported a negative aggregate net income of €10 billion in 2013 and have this year only been able to raise €12 billion in net capital.

What lies ahead?

The main value of the Comprehensive Assessment is the disclosure of more comparable bank-level information, as was also shown by similar exercises of the EBA (European Banking Authority) and its predecessor CEBS (Committee of European Banking Supervisors). [10] Enhanced transparency contributes to market discipline, reduces uncertainty in the market and helps to reduce adverse selection in the interbank market. Notwithstanding these valuable improvements, there is still some work to be done. Accounting standards are not sufficiently harmonised and even the application of the most commonly used IFRS standards differs across countries. The Comprehensive Assessment results also revealed some blind spots in the assessment methodology. For example, historical data to monitor the development of exposures over time are not provided, which could be solved by repeating the transparency exercise annually. Moreover, the limited disclosure of banks' own funds and liability structure impeded the estimation of the impact on the different regulatory capital ratios. Hence, the information disclosed by the ECB was insufficient to calculate the impact of the new capital regulations on the capital ratios and to determine which own funds and debt instruments would be eligible for the MREL.

The Comprehensive Assessment provides a limited sense of security based on the stress test of today's common equity tier 1 ratio. Euro-area banks' balance sheets have indeed improved, but they are not yet restored to sound health. The testing of other regulatory capital ratios show that a large number of primarily small- and medium-sized banks still have to raise their capital levels just to comply with the ratios that will be or are very likely to be binding as a result of the implementation of the new capital requirements, on top of the levels they should already have accumulated to enhance their resilience. The adjustments to CET1 and leverage ratio continue to be the main obstacles. Current low profitability of most banks will persist in limiting market access and thereby hamper the attempt to further improve their capital position.

[10] See Ayadi & De Groen (2015) for an assessment of the market impact of the previous CEBS and EBA stress tests, capital exercises and transparency exercise. The results suggest that announcements of the exercise, methodology and results are informative, although the market did not make a distinction between banks that record a shortfall and those that did not.

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Annex 1. Methodology for estimations of bail-in, leverage ratios and regulatory capital

Capital requirement	Numerator	Denominator	Regulatory minimum	Binding	Adjustments							Comments
					AQR – Tier 1 impact	AQR –RWA impact	Basel 3 adjustment	Stress Test Adverse 2016 – Tier 1 impact	Stress Test Adverse 2016 –RWA impact	Net CET1 raised Jan-Sept 2014[a]	Other add. Tier 1 capital raised in 2014 (below threshold)	
CET1 ratio	Common equity tier 1	Total risk exposure (RWA)	4.5% + add on G-SIBs (up to 3.5%)[b]	2015	X	X		X	X	X	X	The capital conservation- (2.5% CET1), countercyclical capital- (0-2.5% CET1), and systemic risk buffer (>1% risk-weight) are omitted from the analyses of the regulatory capital ratios since they are either not binding or the exact rates are still unknown.
Fully loaded CET1 ratio	Common equity tier 1 adjusted for full CRDIV/CRR implementation	Total risk exposure (RWA)	4.5% + add on G-SIBs (up to 3.5%)[b]	2018	X	X	X	X	X	X	X	
Tier 1 capital ratio	Tier 1 capital incl. common equity tier 1	Total risk exposure (RWA)	6% + add on G-SIBs (up to 3.5%)[b]	2015	X	X		X	X	X	X	
Total regulatory capital ratio	Tier 1 + Tier 2 capital	Total risk exposure (RWA)	8% + add on G-SIBs (up to 3.5%)[b]	2015	X	X		X	X	X		

Annex 1. Methodology for estimations of bail-in, leverage ratios and regulatory capital (cont.)

Capital requirement	Numerator	Denominator	Regulatory minimum	Binding	Adjustments						Comments
					AQR – Tier 1 impact	AQR –RWA impact	Stress Test Adverse 2016 – Tier 1 impact	Stress Test Adverse 2016 –RWA impact	Net CET1 raised Jan-Sept 2014[a]	Other add. Tier 1 capital raised in 2014 (below threshold)	
Leverage ratio	Tier 1 capital	Total exposure measured according to Article 429 CRR	3%	2018	X		X		X	X (ALL)	When the Tier 1 capital or Total exposures were not reported, it has been replaced by respectively CET1 or Total assets.
MREL	Own funds and eligible liabilities (proxy: Tier 1 + Tier 2 capital)	Total liabilities including own funds	8%	2016	X		X		X	X (ALL)	When the Tier 1 capital was not reported, CET1 has been used. Moreover, Tier 2 capital is adjusted for transition requirements.

[a] The fines/litigation costs (net of provisions) are deducted from the capital raised.

[b] G-SIBS add-on on Euro-area head-quartered banking groups will apply from 2016 onwards: BBVA (+1.0%), BNP Paribas (+2.0%), Deutsche Bank (+2.0%), Groupe BPCE (+1.0%), Group Crédit Agricole (+1.5%), ING Bank (+1.0%), Santander (+1.0%), Société Générale (+1.0%) and Unicredit Group (+1.0%). An additional buffer up to 2% will also apply to Other Systemically Important Institutions (O-SIIs), the identification process for these banks will be published only in 2015.

Source: Author.

Annex 2. Shortfalls in Common Equity Tier 1 capital ratios

Country	*Shortfalls in €bn*						*Shortfalls by number of banks*					
	Reported	**Adverse scenario**					**Reported**	**Adverse scenario**				
	2013	**4.5%**	**5.5%**	**7.0%**	**9.5%**	**10.5%**	**2013**	**4.5%**	**5.5%**	**7.0%**	**9.5%**	**10.5%**
AT	..	-0.6	-0.9	-1.2	-6.5	-9.2	..	1	1	1	5	5
BE	..	..	-0.3	-1.5	-6.6	-9.0	..	..	1	2	4	4
CY	-0.7	-0.1	-0.2	-0.5	-1.2	-1.6	1	1	1	2	3	3
DE	..	..	..	-0.5	-18.3	-28.2	..	..	..	4	16	17
EE	..	..	..	..	..	..	..	..	..	..	..	..
ES	..	..	..	..	-19.1	-22.7	..	..	..	..	11	12
FI	..	..	..	..	-0.5	-1.0	..	..	..	..	1	2
FR	..	..	..	-4.0	-56.0	-57.3	..	..	..	3	7	8
GR	..	-1.8	-2.7	-4.7	-9.1	-11.2	..	2	2	3	4	4
IE	..	-0.7	-0.9	-1.5	-4.8	-7.0	..	1	1	3	4	5
IT	..	-2.0	-3.4	-11.4	-34.9	-43.0	..	2	4	10	15	15
LT	..	..	..	..	..	..	..	..	..	..	..	..
LU	..	..	..	..	-0.1	-0.3	..	..	..	..	1	2
LV	..	..	..	..	0.0	0.0	..	..	..	..	1	1
MT	..	-0.05	-0.1	-0.1	-0.2	-0.3	..	1	1	1	3	3
NL	..	..	..	-0.04	-10.2	-14.3	..	..	..	1	5	5
PT	..	-0.7	-1.1	-2.4	-5.5	-6.8	..	1	1	2	3	3
SI	..	-0.003	-0.1	-0.2	-0.4	-0.5	..	1	2	2	2	2
SK	..	..	..	..	..	..	..	..	..	..	..	..
Total	-0.7	-5.9	-9.6	-28.1	-173.4	-212.3	1	10	14	34	85	91

Source: Author's own estimations based on ECB Comprehensive Assessment 2014.

Annex 3. Shortfalls in fully loaded Common Equity Tier 1 capital ratios

Country	*Shortfalls in €bn*					*Shortfalls by number of banks*				
	Adverse scenario					**Adverse scenario**				
	4.5%	**5.5%**	**7.0%**	**9.5%**	**10.5%**	**4.5%**	**5.5%**	**7.0%**	**9.5%**	**10.5%**
AT	-2.1	-3.5	-5.7	-12.5	-15.2	3	3	4	5	5
BE	..	-0.3	-3.0	-9.0	-11.3	..	2	4	4	4
CY	-0.2	-0.2	-0.5	-1.3	-1.6	1	1	2	3	3
DE	..	-0.3	-5.5	-38.9	-49.1	..	2	9	17	17
EE	..	..	..	..	..	..	..	..	..	..
ES	..	..	-4.4	-35.3	-41.2	..	..	4	12	13
FI	..	..	..	-0.8	-1.4	..	..	..	1	2
FR	..	..	-13.7	-67.0	-68.3	..	..	4	7	8
GR	-14.3	-16.3	-19.5	-24.7	-26.8	4	4	4	4	4
IE	-7.6	-9.0	-11.6	-16.1	-18.1	3	3	4	4	5
IT	-5.2	-6.8	-16.7	-42.5	-50.6	3	6	11	15	15
LT	..	..	..	..	..	..	..	..	..	..
LU	..	..	..	-0.2	-0.3	..	..	..	1	2
LV	..	..	..	-0.03	-0.05	..	..	..	1	1
MT	-0.05	-0.06	-0.1	-0.2	-0.3	1	1	1	3	3
NL	..	-0.1	-0.4	-15.91	-20.1	..	1	1	5	5
PT	-2.2	-3.0	-4.9	-8.2	-9.6	1	2	3	3	3
SI	-0.02	-0.1	-0.2	-0.5	-0.6	1	2	2	2	2
SK	..	..	..	..	..	..	..	..	..	..
Total	-31.6	-39.8	-86.2	-273.0	-314.4	17	27	53	87	92

Source: Author's own estimations based on ECB Comprehensive Assessment 2014.

Annex 4. Shortfalls in Tier 1 capital ratio

Country	*Shortfalls in €bn*						*Shortfalls by number of banks*					
	Reported	Adverse scenario					Reported	Adverse scenario				
	2013	6.0%	7.0%	8.5%	11.0%	12.0%	2013	6.0%	7.0%	8.5%	11.0%	12.0%
AT	..	-1.1	-1.6	-4.0	-11.2	-14.0	..	1	3	6	6	6
BE	..	..	-0.1	-0.3	-4.3	-6.7	..	..	1	1	4	4
CY	-1.0	-0.1	-0.3	-0.8	-1.7	-2.1	1	1	2	3	3	4
DE	..	..	-0.1	-0.7	-10.4	-19.4	..	..	2	4	14	16
EE	..	..	..	-0.3	0.0	0.0	..	..	..	3	1	1
ES	..	..	..	..	-29.3	-32.7	..	..	..	..	11	12
FI	..	-0.01	-0.5	-1.1	-2.3	-3.3	..	1	1	1	1	2
FR	-0.01	..	..	-0.6	-45.5	-46.8	1	..	..	1	7	9
GR	..	-2.7	-4.0	-6.4	-11.3	-13.4	..	2	3	3	4	4
IE	..	-0.9	-2.0	-3.9	-8.0	-10.2	..	1	3	3	5	5
IT	-0.04	-4.4	-10.7	-22.2	-51.3	-59.4	1	7	10	13	15	15
LT	..	..	..	..	..	..	..	..	..	..	..	..
LU	..	..	..	-0.1	-0.4	-0.6	..	..	..	1	2	2
LV	..	..	0.00	0.0	-0.1	-0.1	..	..	1	1	1	2
MT	..	-0.07	-0.1	-0.1	-0.3	-0.4	..	1	1	2	3	3
NL	..	..	..	-0.14	-3.6	-5.6	..	..	..	1	3	4
PT	..	-1.1	-1.7	-3.3	-6.5	-7.8	..	1	2	2	3	3
SI	..	-0.31	-0.4	-0.6	-0.9	-1.0	..	2	3	3	3	3
SK	..	..	..	..	..	0.0	..	..	..	..	..	1
Total	-1.0	-10.6	-21.5	-44.6	-187.0	-223.4	3	17	32	48	86	96

Source: Author's own estimations based on ECB Comprehensive Assessment 2014.

Annex 5. Shortfalls in Total regulatory capital ratio

Country	*Shortfalls in €bn*						*Shortfalls by number of banks*					
	Reported	Adverse scenario					Reported	Adverse scenario				
	2013	8.0%	9.0%	10.5%	13.0%	14.0%	2013	8.0%	9.0%	10.5%	13.0%	14.0%
AT	..	-0.4	-0.7	-1.3	-5.7	-8.6	..	1	1	2	6	6
BE	..	-0.04	-0.1	-1.4	-5.2	-7.6	..	1	1	3	4	4
CY	-1.2	-0.5	-0.9	-1.4	-2.4	-2.7	1	3	3	3	3	3
DE	..	-0.1	-0.2	-1.9	-11.0	-17.3	..	1	2	7	11	14
EE	..	..	..	..	-0.01	-0.02	..	..	..	..	1	1
ES	..	..	-0.2	-6.9	-39.2	-44.1	..	..	2	8	13	14
FI	..	..	-0.4	-1.1	-3.1	-4.2	..	..	1	1	2	2
FR	..	-0.4	-0.8	-10.4	-57.4	-59.0	..	1	1	3	9	9
GR	..	-5.1	-6.6	-9.5	-14.7	-16.8	..	3	3	4	4	4
IE	..	-1.2	-2.2	-4.1	-8.3	-10.1	..	2	3	3	4	4
IT	..	-2.2	-5.0	-13.7	-38.7	-46.1	..	6	10	11	14	14
LT	..	..	..	..	-0.02	0.0	..	..	..	..	1	2
LU	..	..	..	-0.1	-0.4	-0.7	..	..	..	1	2	3
LV	..	..	..	..	0.0	-0.1	..	..	..	..	2	2
MT	..	-0.1	-0.1	-0.1	-0.3	-0.3	..	1	1	1	3	3
NL	..	..	-0.2	-0.44	-1.6	-1.8	..	..	1	1	2	2
PT	..	-1.6	-2.6	-4.6	-7.8	-9.2	..	1	3	3	3	3
SI	..	-0.5	-0.6	-0.8	-1.1	-1.2	..	3	3	3	3	3
SK	..	..	..	..	..	-0.1	..	..	..	..	..	2
Total	-1.2	-12.1	-20.7	-57.8	-196.9	-229.8	1	23	35	54	87	95

Source: Author's own estimations based on ECB Comprehensive Assessment 2014.

Annex 6. Shortfalls in the leverage ratio

Country	*Shortfalls in €bn*						*Shortfalls by number of banks*					
	Reported	**Adverse scenario**					**Reported**	**Adverse scenario**				
	2013	**3.0%**	**4.0%**	**5.0%**	**6.0%**	**10.0%**	**2013**	**3.0%**	**4.0%**	**5.0%**	**6.0%**	**10.0%**
AT	..	-1.2	-2.1	-7.2	-12.6	-34.5	..	2	3	6	6	6
BE	-0.01	-2.0	-7.7	-15.8	-24.0	-56.8	1	4	6	6	6	6
CY	-0.9	-0.04	-0.1	-0.5	-1.1	-3.6	1	1	1	4	4	4
DE	-0.4	-0.7	-9.0	-43.1	-84.7	-261.2	3	5	12	18	20	24
EE	..	..	..	..	..	..	..	..	..	..	..	..
ES	..	-0.2	-1.1	-13.7	-36.9	-165.8	..	1	2	10	12	15
FI	..	-0.5	-3.1	-6.6	-10.1	-24.7	..	1	2	2	2	3
FR	-1.9	-3.3	-20.0	-83.6	-155.2	-441.8	3	4	7	10	10	12
GR	..	-2.6	-4.5	-7.3	-10.2	-24.6	..	2	2	3	3	4
IE	..	-1.3	-3.2	-6.3	-9.6	-26.7	..	1	3	3	4	5
IT	-0.1	-5.5	-14.4	-30.5	-53.4	-147.3	1	5	10	14	14	15
LT	..	..	..	..	..	-0.3	..	..	..	..	..	2
LU	..	..	-0.2	-0.7	-1.5	-5.5	..	..	1	3	4	5
LV	..	..	-0.02	-0.1	-0.1	-0.3	..	..	1	1	1	2
MT	..	-0.1	-0.1	-0.2	-0.3	-1.0	..	1	1	3	3	3
NL	-1.2	-2.5	-11.8	-35.8	-60.1	-158.9	2	3	5	6	6	7
PT	..	-0.9	-1.7	-3.9	-6.3	-15.8	..	1	1	3	3	3
SI	..	-0.4	-0.7	-0.9	-1.2	-2.2	..	3	3	3	3	3
SK	..	..	..	..	-0.03	-1.0	..	..	..	..	1	3
Total	-4.5	-21.1	-79.6	-256.3	-467.2	-1,372.0	11	34	60	95	102	122

Source: Author's own estimations based on ECB Comprehensive Assessment 2014.

Annex 7. Shortfalls in minimum requirement for own funds and eligible liabilities (MREL)

Country	*Shortfalls in €bn*						*Shortfalls by number of banks*					
	Reported	Adverse scenario					Reported	Adverse scenario				
	2013	8.0%	9.0%	10.0%	11.0%	15.0%	2013	8.0%	9.0%	10.0%	11.0%	15.0%
AT	..	-7.7	-12.6	-17.5	-22.4	-41.9	..	6	6	6	6	6
BE	-17.4	-30.5	-38.1	-45.6	-53.1	-83.1	6	6	6	6	6	6
CY	-2.1	-2.2	-2.8	-3.4	-4.0	-6.4	2	4	4	4	4	4
DE	-111.7	-129.4	-172.9	-216.9	-260.9	-437.0	21	21	23	23	23	23
EE	..	..	..	..	-0.01	-0.03	..	..	..	..	1	1
ES	-48.5	-64.6	-92.4	-121.0	-152.1	-276.7	14	14	14	15	15	15
FI	-15.6	-19.4	-23.3	-27.4	-31.6	-48.4	2	2	2	3	3	3
FR	-193.8	-216.2	-282.2	-348.6	-415.2	-681.6	10	10	10	12	12	12
GR	-3.8	-15.8	-19.3	-22.8	-26.3	-40.4	2	4	4	4	4	4
IE	-15.9	-25.6	-31.5	-37.5	-43.6	-67.8	3	4	5	5	5	5
IT	-24.7	-54.5	-77.3	-100.1	-122.8	-213.9	12	15	15	15	15	15
LT	..	..	0.0	-0.1	-0.2	-0.6	..	..	1	2	2	2
LU	-3.8	-4.2	-5.5	-6.9	-8.3	-13.8	6	5	6	6	6	6
LV	-0.02	-0.1	-0.13	-0.2	-0.3	-0.6	1	1	2	2	2	2
MT	-0.1	-0.4	-0.6	-0.7	-0.9	-1.5	2	3	3	3	3	3
NL	-50.1	-62.0	-83.3	-104.9	-126.4	-212.6	6	6	7	7	7	7
PT	-0.3	-8.6	-10.9	-13.1	-15.4	-24.3	1	3	3	3	3	3
SI	-0.1	-1.3	-1.5	-1.8	-2.0	-2.8	1	3	3	3	3	3
SK	..	..	0.0	-0.2	-0.5	-1.8	..	..	1	2	3	3
Total	-487.9	-642.7	-854.3	-1,068.6	-1,285.9	-2,155.4	89	107	115	121	123	123

Source: Author's own estimations based on ECB Comprehensive Assessment 2014.

Annex 8. Shortfalls based on reported capital amounts in 2013 (Threshold=regulatory minimum)

Country	*Shortfalls in €bn*							*Shortfalls by number of banks*						
	CET1 4.5%	**Tier1 6.0%**	**Total 8.0%**	**Leverage 3.0%**	**MREL 8.0%**	**Comb.**	**Comb. (excl. MREL)**	**CET1 4.5%**	**Tier1 6.0%**	**Total 8.0%**	**Leverage 3.0%**	**MREL 8.0%**	**Comb.**	**Comb. (excl. MREL)**
AT	..	..	..	..	..	..	..	..	..	..	..	..	..	..
BE	..	..	..	-0.01	-17.4	-17.4	-0.01	..	..	..	1	6	6	1
CY	-0.7	-1.0	-1.2	-0.9	-2.1	-2.1	-1.2	1	1	1	1	2	2	1
DE	..	..	..	-0.4	-111.7	-111.7	-0.4	..	..	..	3	21	21	3
EE	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ES	..	..	..	..	-48.5	-48.5	..	..	..	..	..	14	14	..
FI	..	..	..	..	-15.6	-15.6	..	..	..	..	..	2	2	..
FR	..	-0.01	..	-1.9	-193.8	-193.8	-1.9	..	1	..	3	10	10	3
GR	..	..	..	..	-3.8	-3.8	..	..	..	..	..	2	2	..
IE	..	..	..	..	-15.9	-15.9	..	..	..	..	..	3	3	..
IT	..	-0.04	..	-0.1	-24.7	-24.7	-0.2	..	1	..	1	12	12	2
LT	..	..	..	..	..	..	..	..	..	..	..	..	..	..
LU	..	..	..	..	-3.8	-3.8	..	..	..	..	..	6	6	..
LV	..	..	..	..	-0.02	-0.02	..	..	..	..	..	1	1	..
MT	..	..	..	..	-0.1	-0.1	..	..	..	..	..	2	2	..
NL	..	..	..	-1.2	-50.1	-50.1	-1.2	..	..	..	2	6	6	2
PT	..	..	..	..	-0.3	-0.3	..	..	..	..	..	1	1	..
SI	..	..	..	..	-0.1	-0.1	..	..	..	..	..	1	1	..
SK	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	-0.7	-1.0	-1.2	-4.5	-487.9	-487.9	-4.8	1	3	1	11	89	89	12

Source: Author's own estimations based on ECB Comprehensive Assessment 2014.

Annex 9. Shortfalls based on asset quality review and net capital issued in 2014 adjusted (threshold=regulatory minimum)

Country	*Shortfalls in €bn*							*Shortfalls by number of banks*						
	CET1 4.5%	Tier1 6.0%	Total 8.0%	Leverage 3.0%	MREL 8.0%	Comb.	Comb. (excl. MREL)	CET1 4.5%	Tier1 6.0%	Total 8.0%	Leverage 3.0%	MREL 8.0%	Comb.	Comb. (excl. MREL)
AT	..	..	..	..	-0.9	-0.9	..	..	..	..	..	2	2	..
BE	..	..	..	..	-18.6	-18.6	..	..	..	..	..	6	6	..
CY	..	..	..	..	-0.6	-0.6	..	..	..	..	..	2	2	..
DE	..	..	..	-0.02	-104.3	-104.3	-0.02	..	..	..	1	20	20	1
EE	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ES	..	..	..	..	-48.8	-48.8	..	..	..	..	..	14	14	..
FI	..	..	..	..	-17.1	-17.1	..	..	..	..	..	2	2	..
FR	..	..	..	-1.7	-185.7	-185.7	-1.7	..	..	..	4	10	10	4
GR	..	..	..	..	-1.5	-1.5	..	..	..	..	..	2	2	..
IE	..	..	..	..	-16.3	-16.3	..	..	..	..	..	3	3	..
IT	..	..	..	-0.2	-23.1	-23.1	-0.2	..	..	..	1	10	10	1
LT	..	..	..	..	..	..	..	..	..	..	..	..	..	..
LU	..	..	..	..	-3.6	-3.6	..	..	..	..	..	5	5	..
LV	..	..	..	..	-0.03	-0.03	..	..	..	..	..	2	2	..
MT	-0.01	-0.02	-0.04	-0.1	-0.4	-0.4	-0.1	1	1	1	1	3	3	1
NL	..	..	..	-1.4	-53.0	-53.0	-1.4	..	..	..	2	6	6	2
PT	..	..	..	..	-1.9	-1.9	..	..	..	..	..	3	3	..
SI	..	..	..	..	-0.2	-0.2	..	..	..	..	..	3	3	..
SK	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	-0.01	-0.02	-0.04	-3.4	-476.0	-476.0	-3.4	1	1	1	9	93	93	9

Source: Author's own estimations based on ECB Comprehensive Assessment 2014.

Annex 10. Shortfalls based on asset quality review, stress test adverse scenario up to 2016 and net capital issued in 2014 adjusted (threshold=regulatory minimum)

Country	*Shortfalls in €bn*							*Shortfalls by number of banks*						
	CET1 4.5%	**Tier1 6.0%**	**Total 8.0%**	**Leverage 3.0%**	**MREL 8.0%**	**Comb.**	**Comb. (excl. MREL)**	**CET1 4.5%**	**Tier1 6.0%**	**Total 8.0%**	**Leverage 3.0%**	**MREL 8.0%**	**Comb.**	**Comb. (excl. MREL)**
AT	-0.6	-1.1	-0.4	-1.2	-7.7	-7.7	-1.3	1	1	1	2	6	6	2
BE	..	..	-0.04	-2.0	-30.5	-30.5	-2.0	..	1	1	4	6	6	4
CY	-0.1	-0.1	-0.5	-0.04	-2.2	-2.2	-0.7	1	1	3	1	4	4	4
DE	..	..	-0.1	-0.7	-129.4	-129.4	-0.7	..	..	1	5	21	21	5
EE	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ES	..	..	..	-0.2	-64.6	-64.6	-0.2	..	..	..	1	14	14	1
FI	..	-0.01	..	-0.5	-19.4	-19.4	-0.5	..	1	..	1	2	2	1
FR	..	..	-0.4	-3.3	-216.2	-216.2	-3.3	..	..	1	4	10	10	4
GR	-1.8	-2.7	-5.1	-2.6	-15.8	-15.8	-5.1	2	2	3	2	4	4	3
IE	-0.7	-0.9	-1.2	-1.3	-25.6	-25.7	-1.4	1	1	2	1	4	5	2
IT	-2.0	-4.4	-2.2	-5.5	-54.5	-54.6	-6.9	2	7	6	5	15	15	8
LT	..	..	..	..	..	..	..	..	..	..	..	..	..	..
LU	..	..	..	..	-4.2	-4.2	..	..	..	..	..	5	5	..
LV	..	..	..	..	-0.1	-0.1	..	..	..	..	..	1	1	..
MT	-0.05	-0.1	-0.1	-0.1	-0.4	-0.4	-0.1	1	1	1	1	3	3	1
NL	..	..	..	-2.5	-62.0	-62.0	-2.5	..	..	..	3	6	6	3
PT	-0.7	-1.1	-1.6	-0.9	-8.6	-8.6	-1.6	1	1	1	1	3	3	1
SI	-0.003	-0.3	-0.5	-0.4	-1.3	-1.3	-0.5	1	2	3	3	3	3	3
SK	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	-5.9	-10.6	-12.1	-21.1	-642.7	-642.9	-26.8	10	18	23	34	107	108	42

Source: Author's own estimations based on ECB Comprehensive Assessment 2014.

Annex 11. Shortfalls based on asset quality review, stress test adverse scenario up to 2016, net capital issued in 2014 and fully loaded CET1 adjusted (threshold=regulatory minimum)

Country	*Shortfalls in €bn*							*Shortfalls by number of banks*						
	CET1 (CRDIV/CRR) 4.5%	Tier1 6.0%	Total 8.0%	Leverage 3.0%	MREL 8.0%	Comb.	Comb. (excl. MREL)	CET1 (CRDIV/CRR) 4.5%	Tier1 6.0%	Total 8.0%	Leverage 3.0%	MREL 8.0%	Comb.	Comb. (excl. MREL)
AT	-2.1	-1.1	-0.4	-1.2	-7.7	-7.7	-2.3	3	1	1	2	6	6	4
BE	..	..	-0.04	-2.0	-30.5	-30.5	-2.0	..	1	1	4	6	6	4
CY	-0.2	-0.1	-0.5	-0.04	-2.2	-2.2	-0.7	1	1	3	1	4	4	4
DE	..	..	-0.1	-0.7	-129.4	-129.4	-0.7	..	..	1	5	21	21	5
EE	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ES	..	..	..	-0.2	-64.6	-64.6	-0.2	..	..	..	1	14	14	1
FI	..	-0.01	..	-0.5	-19.4	-19.4	-0.5	..	1	..	1	2	2	1
FR	..	..	-0.4	-3.3	-216.2	-216.2	-3.3	..	..	1	4	10	10	4
GR	-14.3	-2.7	-5.1	-2.6	-15.8	-16.6	-14.3	4	2	3	2	4	4	4
IE	-7.6	-0.9	-1.2	-1.3	-25.6	-27.3	-7.7	3	1	2	1	4	5	4
IT	-5.2	-4.4	-2.2	-5.5	-54.5	-54.6	-7.4	3	7	6	5	15	15	8
LT	..	..	..	..	..	..	..	..	..	..	..	..	..	..
LU	..	..	..	..	-4.2	-4.2	..	..	..	..	..	5	5	..
LV	..	..	..	..	-0.1	-0.1	..	..	..	..	..	1	1	..
MT	-0.05	-0.1	-0.1	-0.1	-0.4	-0.4	-0.1	1	1	1	1	3	3	1
NL	..	..	..	-2.5	-62.0	-62.0	-2.5	..	..	..	3	6	6	3
PT	-2.2	-1.1	-1.6	-0.9	-8.6	-8.6	-2.2	1	1	1	1	3	3	1
SI	-0.02	-0.3	-0.5	-0.4	-1.3	-1.3	-0.5	1	2	3	3	3	3	3
SK	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	-31.6	-10.6	-12.1	-21.1	-642.7	-645.3	-44.5	17	18	23	34	107	108	47

Source: Author's own estimations based on ECB Comprehensive Assessment 2014.