

Have European Banks Become Safer?

Diane Pierret, HEC-University of Lausanne and Swiss Finance Institute¹
Sascha Steffen, Frankfurt School of Finance & Management²

November 2, 2018

Abstract

European banks have become safer since the last stress test of the European Banking Authority (EBA) in 2016. Important risk measures related to capital adequacy, liquidity and asset quality have improved; market-to-book ratios have also increased but they are still well below one. A further drop in profitability is worrisome particularly when the economy might enter a downturn and banks need to provide for possible elevated loan losses. While banks have broadly added capital buffers in excess of their regulatory capital requirement, our market-based estimates of capital shortfalls during a financial crisis show that these buffers accumulate on the balance sheet of safer banks, as both regulatory (e.g. due to required buffers under Basel III) as well as discretionary buffers rely on risk-weighted assets that are still decoupled from the market's assessment of bank risk.

Motivation

The global financial crisis, that started about 10 years ago, almost led to the collapse of the global financial system. Since then, banks across the globe had to adapt to a myriad of regulatory changes, monetary policy interventions and – more recently – had to face a number of other, geo-political issues. The overall economic environment has been challenging and a broad European bank stock index lost about 12% of market value in 2018 alone (Figure 1). Commentators have raised the issue whether the global economy is heading for a new economic downturn (maybe sooner than previously anticipated) which leads us to the question whether banks are in good shape to navigate through more turbulent times.

In our previous work, we documented large capital shortfalls of European banks as of June 2016, which had substantially increased since the start of the European Banking Union in November 2014 (Acharya, Pierret and Steffen, 2016).

We document that the banking system has become safer on various dimensions even though possible shortfalls based on market measures of risk are still large and profitability still eludes many banks in Europe. Some banks accumulated substantial capital buffers while others hold less capital. Does this mean the latter are less risky and thus need lower capital buffers? What determines why banks hold more capital than regulatory requirements suggest? And is this consistent with larger expected capital shortfalls in a financial crisis?

¹ Assistant Professor of Finance, University of Lausanne, HEC, Extranef building, 1015 Lausanne, email: diane.pierret@unil.ch, phone: +41 21 692 6128.

² Professor of Finance, Frankfurt School of Finance & Management, Adickesallee 32-34, 60322 Frankfurt, email: s.steffen@fs.de, phone: +49 69 154008-794.

On November 2, 2018, the EBA is going to release the results of the 2018 stress test. In this paper, we use our own measures and tests, and investigate the risks in the banking sector using the most recent bank data in Europe to find answers to those questions.

Book capitalization, liquidity and asset quality

The EBA has published a list of 48 European banks that will be part of the 2018 stress test that comprise about 70% of the banking sector in each country. 33 of these banks are publicly listed. Balance sheet information and market data are collected from SNL Financial. We use market data as of 30 June 2018 as well as 30 June 2016 (most recent market data before the 2016 stress test) for comparison. Book data are the most recent available data before June 2018 and June 2016.

Panel A of Table 1 shows that the banks in our sample represent €26 trillion in total assets. Table 1 also provides an overview of all banks at the country level, showing key risk indicators related to (a) capital adequacy, (b) asset quality, (c) profitability and (d) liquidity. There is substantial cross-sectional heterogeneity in terms of Basel risk-weighted assets (RWA) among European banks, ranging from 20% of total assets (Sweden) to more than 65% (Poland). While Deutsche Bank AG (one of the largest bank in the stress test) reports a RWA/Asset ratio of 23%, several large publicly listed banks have RWA/Asset ratios below 20%, namely Credit Agricole, Handelsbanken and Swedbank (Table 1 and Appendix 1).

On average, European banks seem well capitalized with Common Equity Tier 1 (CET 1) ratios above 16%, equity-to-asset ratios of 6.9%, and the newly introduced liquidity coverage ratio (LCR) is well above 150%. These ratios have improved over the last two years (Panel B of Table 1).

Problem loans-to-loan ratios are down, on average, by 1.3 percentage points (pp). However, there is substantial variation across European banks. The problem loan ratio is over 20% and thus almost 4 to 5 times larger among Italian banks compared to the European average, and about 12% among Irish banks.

ROAE (i.e. profitability) of European banks has somewhat decreased, on average (by 10 basis points (bps), as shown in Panel B of Table 1). Profitability varies substantially across banks. Banks in Italy, Germany and the UK are the least profitable ones followed by French and Spanish banks (Appendix 1).

Market Measures

We use market equity to total assets (Market Equity/Assets) as market capital ratio. The total market capitalization of the 33 publicly listed banks is €972 billion, the average Market Equity / Assets ratio is 6.21%. The banks with the lowest market capital ratios are located in Germany (1.78%), France (2.51%), and in Italy (3.44%). On a bank level basis, Deutsche Bank has the lowest Market Equity/Assets ratio (1.29%) followed by Banca Monte dei Paschi (2.02%) and Commerzbank (2.27%).

Further, the average market-to-book ratio (ratio of Market Equity to Book Equity) of 0.85 suggests that the market is (w.r.t some banks even heavily) discounting banks' assets portfolios (Table 3), at least in part due to the relatively high risk of some of the "riskless" assets relative to the markdowns taken by banks on these assets against their book equity values. Notably, German banks have the lowest market-to-book ratios (0.31), followed by French (0.46) and Italian banks (0.47). The banks with the lowest market-to-book ratios are Banca Monte dei Paschi (0.27), Deutsche Bank (0.28), Credit Agricole (0.30) and Commerzbank (0.34).

Market-based risk measures, however, have substantially improved over the last 24 months. The average Market Equity/Assets ratio, for example, increased from 5.2% to 6.2%. Market-to-book ratios increased from 0.7 to 0.85 consistent with a substantial reduction in non-performing assets that might decrease bank profitability going forward.

Capital Shortfalls

To assess capital adequacy of banks, we employ different measures of capitalization and capital requirements.

1. **Book Capital Shortfall:** Using all regulatory measures of capitalization, we define the capital requirement and consequent capital shortfall/excess of banks according to the Basel III regulatory capital definitions, and capital requirements used to assess capital adequacy of U.S. banks in the annual Comprehensive Capital Analysis and Review (CCAR) exercises.
 - a. Capital requirements (*Cap req*): Every bank is subject to four capital requirements, based on four different capital ratios (Common Tier 1 capital ratio, Tier 1 capital ratio, Total capital ratio, and Tier 1 leverage ratio). To derive the capital requirement of a bank, it is important to recognize that banks have to comply with all of them at the same time, and to consider the most stringent requirement. To do so, after some accounting manipulation, we equivalently express all of them in a form where Tier 1 capital over the leverage ratio exposure does not exceed a threshold – which is the most stringent (i.e. the maximum) of the four requirements. The threshold (*Cap req*) is bank specific, and reflects the fact that banks have different risk weights, and a different composition of capital (Common Tier 1 capital, Tier 1 capital, and Total Capital).³

The *Cap req* therefore accounts for the fact that banks are subject to different requirements on different capitalization measures (4.5% on the Common Tier 1 capital ratio, 6% on the Tier 1 capital ratio, 8% on the Total

³ We derive the capital requirement for the bank's Tier 1 leverage ratio based on Pierret and Steri (2018). Such requirement can be backed out by recognizing that the Tier 1 capital requirement for an average exposure of a bank is given by: $Cap\ req = \max[(0.045 - (CET1 - T1)/RWA) * (RWA/TA), 0.06 * (RWA/TA), (0.08 - (TotalC - T1)/RWA) * (RWA/TA), 0.04]$, where CET1 is the Common Tier 1 capital, T1 is the Tier 1 capital, TotalC is the Total capital, RWA are the risk weighted assets, and TA are the Total leverage ratio exposures of the bank.

capital ratio, and 4% on the Tier 1 leverage ratio in the U.S.).⁴ After translating the requirements on other capitalization measures into a requirement for the Tier 1 leverage ratio, we select the maximum requirement, i.e. the most stringent one. Intuitively, for banks with low risk-weighted assets, the 4% requirement will be most stringent. For banks with larger risk-weighted assets, other risk-sensitive requirements can translate into a larger than 4% requirement on the Tier 1 leverage ratio.

- b. Banks that hold extra buffer of capital, on top of the capital requirement defined above, are less likely to suffer capital shortfalls under a stress scenario. In addition, if the capital requirement binds; the bank has to raise additional capital. We assess the probability for a bank to have to raise additional capital by taking the “distance” from its capital requirement

$$\text{Distance} = \text{Leverage ratio} - \text{Cap req}$$

The *Distance* can be positive when (i) banks have to hold additional regulatory buffers of capital, for example, as a result of Basel III requirements (e.g., countercyclical capital buffer, capital buffer for SIFIs, etc.), (ii) banks decide to hold extra buffers of capital (discretionary capital buffers) on top of all regulatory capital requirements.

- c. The capital shortfall of a bank using the four capitalization measures requirements above (i.e., based on *Cap req*) is

$$\text{Shortfall} = \max(0, \text{Cap req} * \text{Total leverage ratio exposure} - \text{Tier 1 capital}).$$

2. **SRISK or Capital Shortfall in a Systemic Crisis:** We assume a systemic financial crisis with a global stock market decline of 40%. *SRISK* is our measure for a bank’s capital shortfall in this scenario, assuming a 5.5% prudential capital ratio with losses estimated using the VLAB methodology to estimate the downside risk of bank stock returns.⁵ While this scenario and the resulting *SRISK* measure uses market data and market equity (instead of book equity) in determining leverage, the approach is conceptually similar to that of the EU stress tests, which is to estimate losses in a stress scenario and determine the capital shortfall between a prudential capital requirement and the remaining equity after losses.

⁴ In addition, U.S. banks using their advanced approaches to derive regulatory risk weights in the 2018 CCAR were subject to a 3% supplementary leverage ratio requirement (not considered in our definition of *Cap req* for European banks).

⁵ This capital shortfall measure has been implemented based on Acharya et al. (2012) and Brownlees and Engle (2016) and. The data are provided by New York University’s VLAB (<http://vlab.stern.nyu.edu/welcome/risk/>). The theoretical motivation for the measure can be found in Acharya et al. (2010). *SRISK* has been documented to be a comprehensive measure that includes losses due to both a bank’s investments in assets and its exposure to fragile liabilities, which in the current European context relate, respectively, to holdings of peripheral sovereign bonds and (short-term) funding risk such as U.S. money market fund withdrawals and other wholesale investors.

Book vs. market capital shortfalls

1. Using the capital requirement *Cap req* described above on the banks' exposures reported in the EBA transparency exercise as of June 2017, the aggregate capital shortfall of European banks is 7.8 EUR bn. The capital requirements and shortfalls are reported in Table 4. We find capital shortfalls in the Netherlands (N.V. Bank Nederlandse Gemeenten, ABN AMRO Group N.V.), and Germany (Norddeutsche Landesbank Girozentrale, Bayerische Landesbank, Deutsche Bank AG). For the other banks, the aggregate excess of capital (or capital buffer) is 302.8 EUR bn.
2. On average, the Tier 1 leverage ratio of European banks is 5.7% (as of June 2017), and the extra capital buffer ("*Distance*") of banks is 1.7% of their total leverage ratio exposures. Danske Bank, BNP Paribas SA, Société Générale SA, Svenska Handelsbanken, and Deutsche Zentral-Genossenschaftsbank AG have capital buffers below 0.5% of their total leverage ratio exposures.
3. The 4% Tier 1 leverage requirement is the most stringent capital requirement for all banks, except for two Polish banks. The two Polish banks (Powszechna Kasa Oszczędności Bank Polski SA and Bank Polska Kasa Opieki SA) have larger Tier 1 capital requirements of 4.57% and 4.95%, partly because of their higher average "risk weights" (63.9% and 61.8%, respectively). This result contrasts with the *Cap req* of U.S. banks, where risk-sensitive capital requirements are more often more stringent than the 4% requirement on the Tier 1 leverage ratio, and is plausibly due to the lower "risk weights" observed for European banks.
4. When we replace the 4% Tier 1 leverage requirement (applied in the U.S.) by a 3% Tier 1 leverage requirement (recommended in Basel III), there is no capital shortfall for the banks considered in this sample, the average *Distance* is 2.6%, and the aggregate capital excess is 549.1 EUR bn. The capital requirements and shortfalls based on a 3% Tier 1 leverage requirement are reported in Table 5.
5. SRISK (i.e. the market-based capital shortfall in a financial crisis) is largest for French banks, followed by British and German banks (Panel A of Figure 2).
6. Comparing capital shortfalls in June 2016 and June 2018 shows that:
 - a. Consistent with our book and market risk indicators, SRISK has also substantially declined since June 2016 across banks in all countries, particularly in the UK. Aggregate SRISK has declined by about €294 bn or 32% over this period to a €625 bn capital shortfall for our sample of publicly listed banks (Panel B of Figure 2).
 - b. Capital shortfalls and market-to-book ratios from June 2016 predict capital shortfalls as of June 2018. Banks in countries with very low market-to-book ratios or high capital shortfalls as of June 2016 have large capital shortfalls today (Figure 3). The rank correlation between SRISK in June 2018 and the market-to-book ratio in June 2016 is -0.85 at the country level.
 - c. Similarly, banks that had a lower market capitalization relative to their book equity in 2016 than other banks still have low market-to-book ratios today

(Figure 4). The rank correlation between both market-to-book ratios is 0.93 at the country level.

Which banks hold larger capital buffers?

1. To define extra capital buffers, banks and regulators continue to rely on regulatory risk weights. The capital buffers (“*Distance*”) of European banks are correlated to their regulatory risk weights (rank correlation of 0.85). We show the correlation between capital buffers and regulatory risk weights in Figure 5 (Panel A).
2. Importantly, the market-based capital shortfalls SRISK is negatively correlated to the regulatory risk weights (rank correlation of -0.34). Banks with low extra buffers of capital are the banks with low regulatory risk weights, but large market-based capital shortfalls. In particular, we identify in Figure 5 (Panel B) BNP Paribas, Deutsche Bank, Crédit Agricole SA, Société Générale, and Barclays as the bank with the largest SRISK but low regulatory risk weights. Since banks and regulators define the extra buffers of capital based on regulatory risk weights, the banks with low extra buffers of capital also have the largest market-implied capital shortfall SRISK (rank correlation of -0.60).
3. Comparing *Distance* between December 2015 and December 2017:
 - a. On average, *Distance* has increased by 0.2% between December 2015 and December 2017, implying that banks hold larger buffers of capital than before. We report the two-year evolution of the capitalization of European banks in Table 6, using the data reported by the banks and available from SNL Financial.
 - b. We find a reduction in the capital buffers for 13 banks: NORD/LB, Royal Bank of Scotland Group, Bank Pekao SA, Bayerische Landesbank, NRW.BANK, Landesbank Baden-Württemberg, Barclays, Danske Bank, CaixaBank, KBC Group, UBI Banca, Banco Santander, and Crédit Agricole Group. Consistent with the reliance of capital buffer targets on regulatory risk weights, the average reduction of regulatory risk weights is -3.15% for the 13 banks that reduced their capital buffers.

Implications

1. The risk of the financial sector is lower than assessed at the time of the last stress test in 2016. Important risk indicators with respect to capital adequacy, liquidity and asset quality have substantially improved. SRISK, i.e. a capital shortfall in a financial crisis scenario, has also declined across banks in all countries.
2. More worrisome is the significant decline in profitability for some banks. A necessary increase in provisions for non-performing exposures during an economic downturn might quickly erode bank capital.
3. A large number of banks hold capital in excess of the regulatory requirement – both discretionary as well as due to additional required capital buffers under Basel III.

The size of the capital buffer, however, is highly and positively correlated with Basel risk weights. Worse, the capital buffers are negatively correlated with SRISK, i.e. banks that do not hold large regulatory capital buffers have larger expected shortfalls in a financial crisis. In particular, BNP Paribas, Deutsche Bank, Crédit Agricole SA, Société Générale, and Barclays are large banks with large SRISK but low regulatory risk weights. As shown in previous studies (Beltratti and Paladino (2013), Behn et al. (2016), Begley et al. (2017), and Plosser and Santos (2018)), regulatory risk weights do not always reflect asset risk, and the banks' average risk weight can even be negatively correlated to the market assessment of banks' risk (Acharya et al. (2014, 2016)). In other words, risk weights do not always accurately reflect asset risk and banks with low regulatory risk weights might hold insufficient capital buffers.

References

1. Acharya, V., R. Engle, and M. Richardson (2012). Capital Shortfall: A New Approach to Ranking and Regulating Systemic Risks. *American Economic Review Papers & Proceedings* 102:3, 59–64.
2. Acharya, V., R. Engle, D. Pierret (2014). Testing macroprudential stress tests: The risk of regulatory risk weights. *Journal of Monetary Economics* 65, 36–53.
3. Acharya, V., Pierret D., and S. Steffen (2016). Capital Shortfalls of European Banks since the Start of the Banking Union. Working Paper.
4. Begley, T., A. Purnanandam, and K. Zheng, 2017, The strategic underreporting of bank risk, *Review of Financial Studies*, 30(10), 3376-3415.
5. Behn, M., R. Haselmann, and V. Vig, 2016, The limits of model-based regulation, Working paper.
6. Beltratti, A., and G. Paladino, 2013, Why do banks optimize risk weights? The relevance of the cost of equity capital, Working paper.
7. Brownlees, C., and R. Engle (2017). SRISK: A Conditional Capital Shortfall Measure of Systemic Risk, *Review of Financial Studies*, 30(1), 48–79.
8. Pierret, D., and R. Steri (2018). Stressed Banks, SFI Working Paper.
9. Plosser, M., and J. Santos, 2018, Banks' incentives and inconsistent risk models, *Review of Financial Studies*, 31(6), 2080-2112.

Figure 1. Euro Stoxx Banks

This figure shows the evolution of the Euro Stoxx Banks index (based on 30 largest banks in the EU) from 1 January 2017 until 30 June 2018.

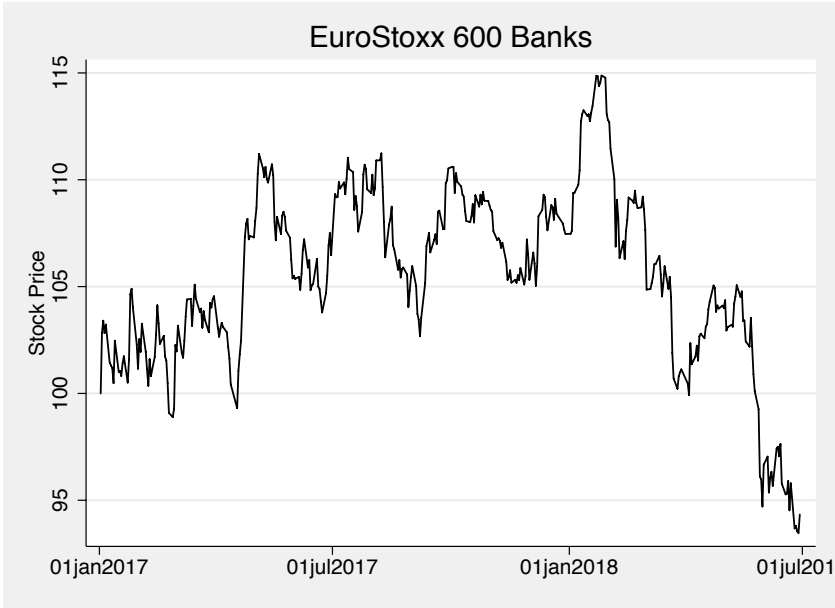
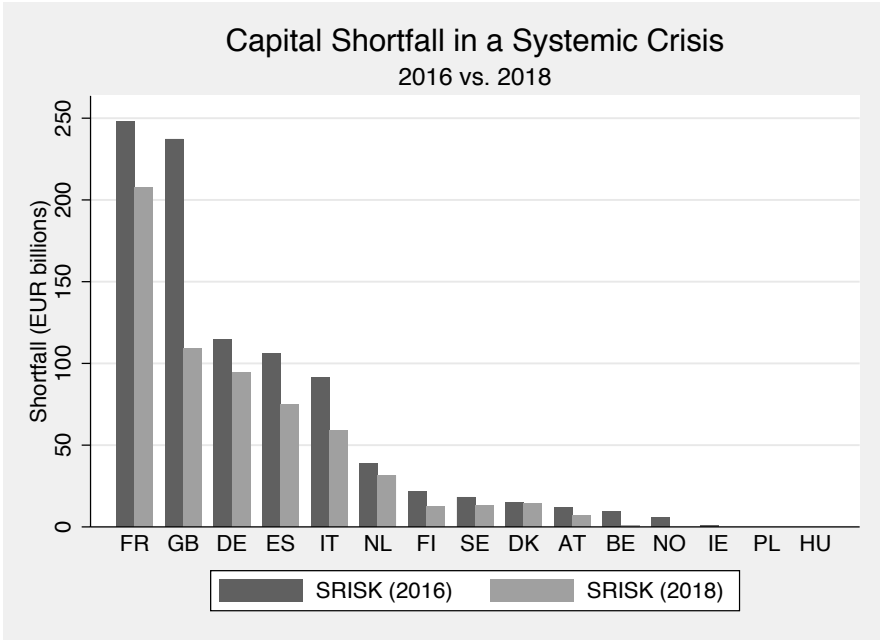


Figure 2. Capital Shortfall in a Systemic Crisis: 2016 versus 2018

This figure shows the evolution of the estimated capital shortfall measure *SRISK* by country between June 2016 and June 2018. *SRISK* represents the expected capital shortfall of a bank in the scenario where the market index drops by 40% over six months. *SRISK* by country is summed over all public banks participating in the 2018 EBA stress test in each country.

Panel A. SRISK by country



Panel B. Comparing aggregate SRISK

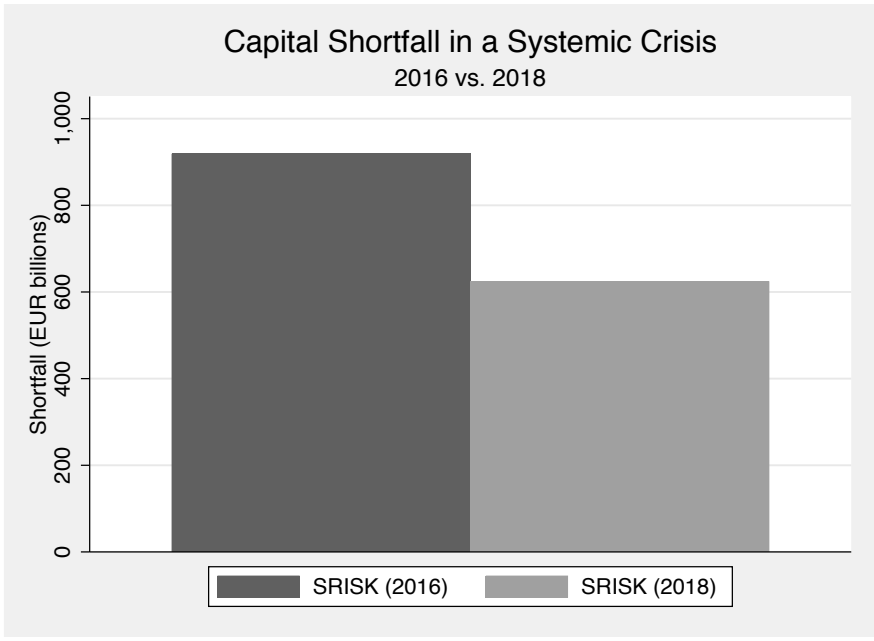
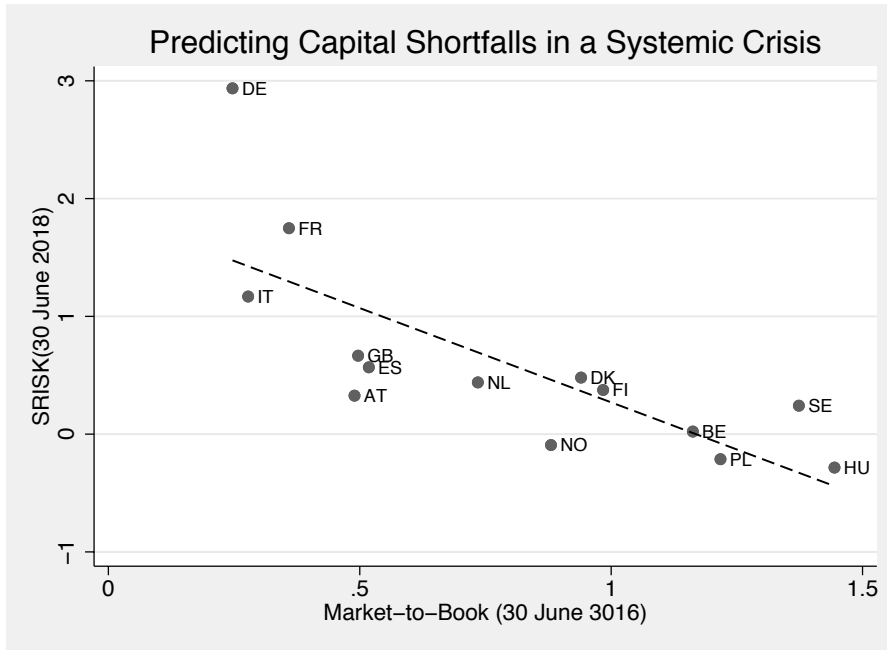


Figure 3. Predicting Capital Shortfalls in a Systemic Crisis

This figure shows the correlation between *SRISK* in June 2018 and bank characteristics measured in June 2016. Panel A: correlation between the ratio of country total *SRISK* to country total banks' market equity in June 2018 and the average market-to-book ratio of banks of the country in June 2016. Panel B: correlation between the ratio of country total *SRISK* to country total banks' market equity in June 2018 and the same ratio measured in June 2016.

Panel A. SRISK June 2018 versus Market-to-Book June 2016



Panel B. SRISK June 2018 versus SRISK June 2016

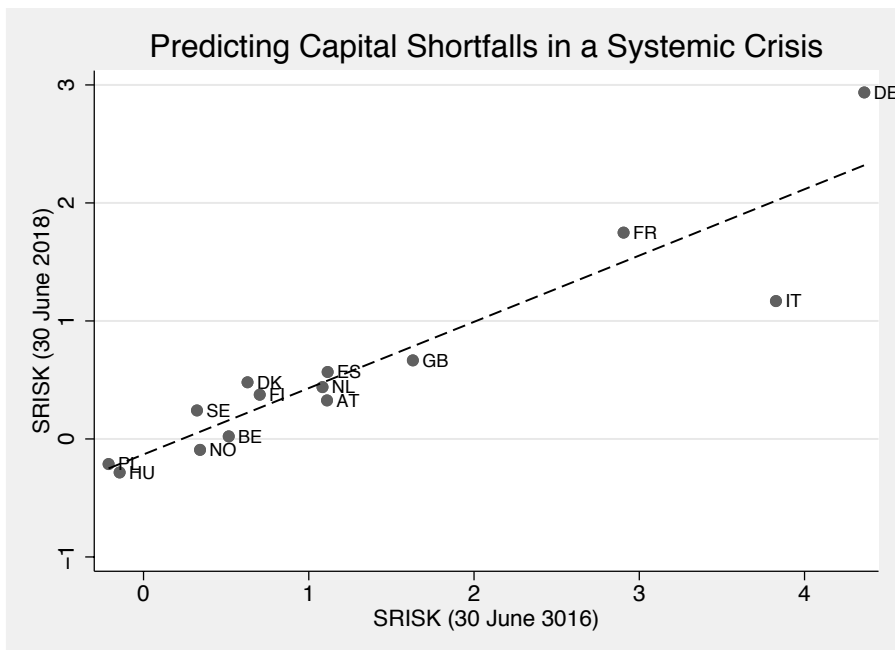


Figure 4. Predicting Market-to-Book Ratios

This figure shows the correlation between the average market-to-book ratio of banks located in a country in June 2018 and the same ratio measured in June 2016.

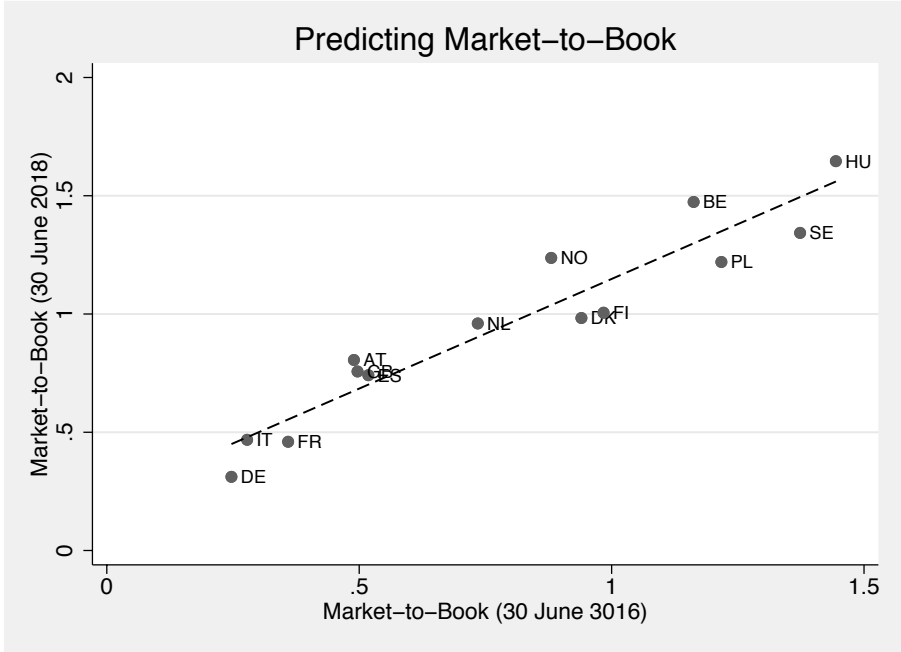
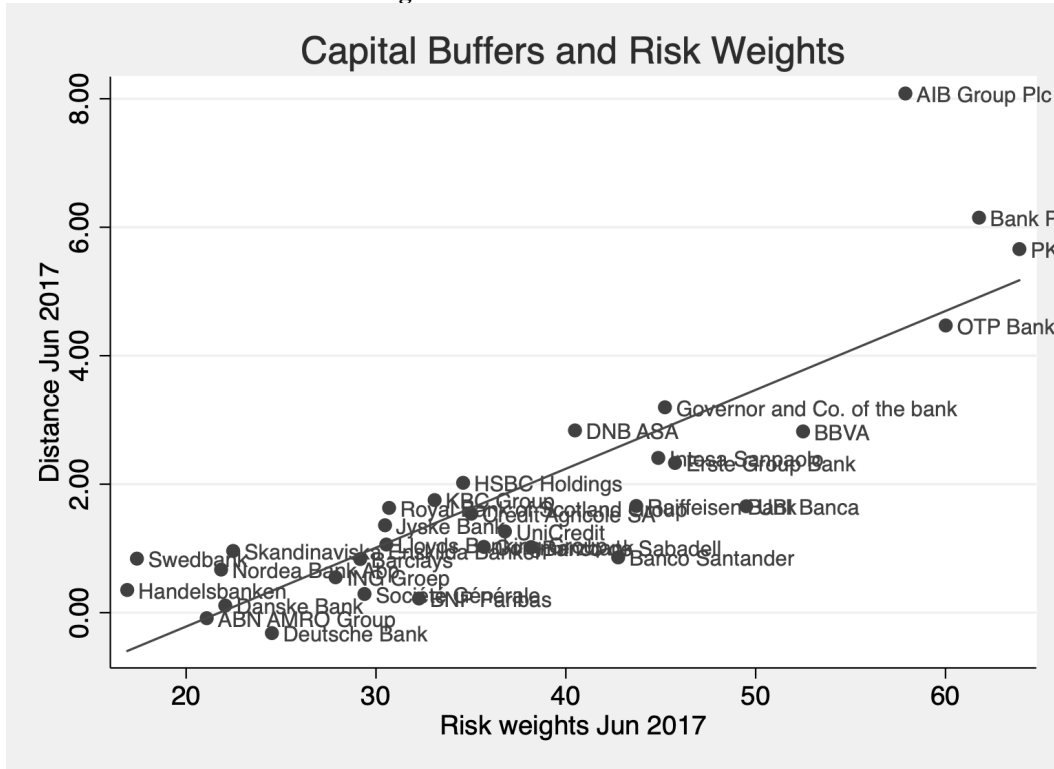


Figure 5. Capital Buffers and Risk Weights Correlations

This figure shows the correlation between the ratio of the Total risk exposure amount to Total leverage ratio exposures (“Risk Weights”) to the Tier 1 capital buffer (“Distance”) in percentage of the bank’s total leverage ratio exposure (Panel A), and the market-based capital shortfall SRISK (Panel B). SRISK is the capital shortfall (in USD mln) of a bank under the scenario where the MSCI World Index drops by 40% over six months.

Panel A. Distance versus Risk Weights



Panel B. SRISK versus Risk Weights

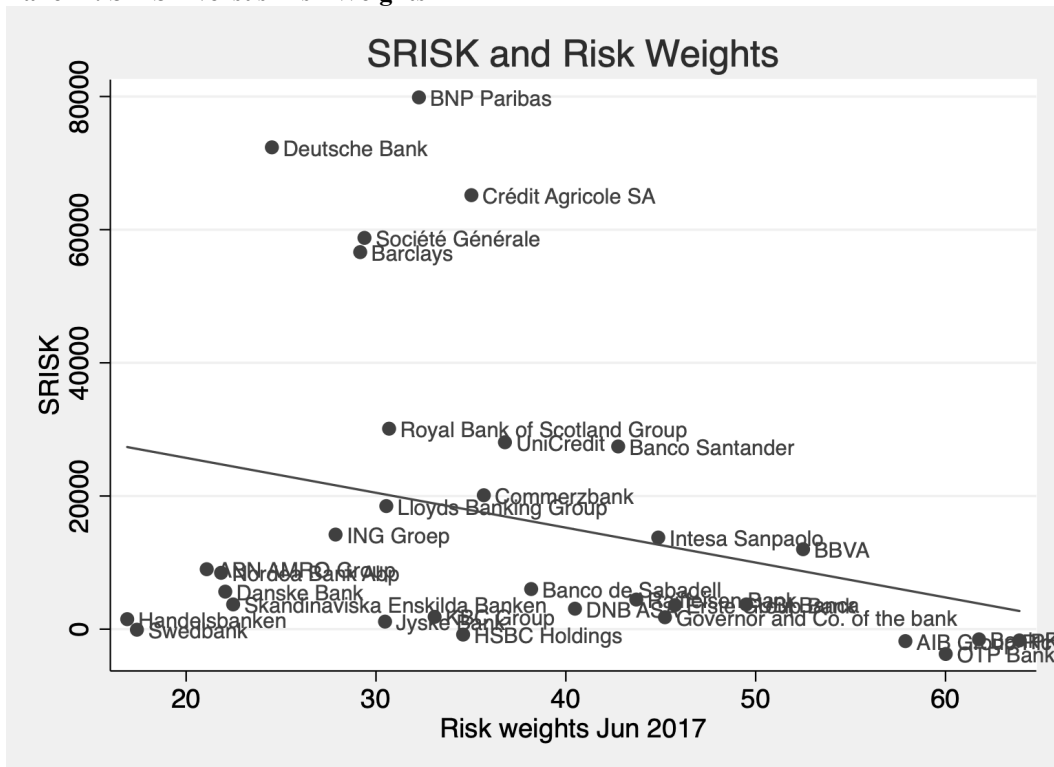


Table 1**Descriptive Statistics: Book Capitalization**

This table reports descriptive statistics of the banks participating in the EU-wide stress test conducted by the European Banking Authority (EBA) in 2018. Panel A: descriptive statistics by country as of December 2017. Panel B: Comparison of average capital ratios as of December 2015 and December 2017. CET1 Ratio is the Common Tier 1 ratio and is the ratio of Common Tier 1 Capital divided by Risk-Weighted Assets (RWA). Equity/Assets is book equity over total assets. RWA/Assets is RWA divided by total assets. Problem Loans/Loans is the amount of problem loans over total loans of the bank. Assets are total assets and measured in million euros. Banks are the number of banks per country participating in the EBA stress test and for which data are available.

Panel A. Descriptive statistics by country as of December 2017

Country	Number of Banks	Total Assets	CET1 Ratio	Equity/Assets	RWA/Assets	Problem Loans/Loans	ROAE	LCR
Austria	2	355,806	13.13%	8.30%	51.53%	4.86%	10.77%	142%
Belgium	2	460,301	16.27%	6.05%	30.80%	4.15%	10.38%	134%
Denmark	3	747,265	18.22%	5.36%	25.45%	2.32%	10.94%	248%
Finland	2	718,854	20.80%	6.92%	27.11%	1.28%	8.77%	135%
France	6	7,303,074	14.01%	5.52%	30.02%	4.03%	6.16%	131%
Germany	8	3,354,844	17.98%	6.02%	29.74%	2.82%	2.42%	171%
Hungary	1	42,480	12.67%	12.43%	63.61%	9.59%	18.64%	229%
Ireland	2	212,648	18.33%	11.11%	47.06%	12.20%	7.98%	134%
Italy	4	1,900,612	13.33%	7.42%	43.67%	20.20%	-4.40%	168%
Netherlands	4	1,982,403	19.63%	5.39%	26.20%	2.22%	9.68%	158%
Norway	1	274,518	16.68%	8.04%	38.07%	1.52%	10.38%	117%
Poland	2	115,464	16.29%	12.38%	65.28%	5.51%	10.00%	129%
Spain	4	2,738,898	12.52%	6.88%	42.11%	5.23%	7.42%	148%
Sweden	3	766,762	22.24%	5.56%	20.25%	0.45%	13.00%	152%
United Kingdom	4	5,120,671	14.43%	6.59%	28.84%	2.01%	3.73%	140%
	48	26,094,600	16.42%	6.86%	34.66%	4.75%	6.65%	157%

Panel B. Comparison December 2015 and December 2017 (country averages)

Capital Measure	Obs	2015	2017
CET1 Ratio	15	15.21%	16.42%
Equity/Assets	15	6.53%	6.86%
RWA/Assets	15	35.86%	34.66%
Problem Loans/Loans	15	6.08%	4.75%
ROAE	15	6.75%	6.65%
LCR	15	141	157

Table 2
Descriptive Statistics: Market Capitalization

This table reports descriptive statistics of market-based measures of capitalization on a country level. Panel A: descriptive statistics by country as of June 30, 2018. Panel B: Comparison of average market-based measures as of June 30, 2016 and June 30, 2018. LRMES is the negative expected six-month return of a bank in the scenario where the MSCI World Index drops by 40% over six months. Std. Dev. is the annualized standard deviation of the bank equity return. Beta is the beta of the bank with respect to the MSCI World Index. Correlation is the correlation of the bank stock return with respect to the MSCI World Index return. Market-to-Book is market value over book value of equity. Market Equity/Assets is a market leverage ratio defined as market equity divided by asset minus book equity plus market equity. Assets are total assets measured in million euros. Market Cap is the market value of equity measured in million euros. Number of banks is the number of public banks participating in the EBA stress test in each country.

Panel A. Descriptive statistics by country as of June 2018

Country	LRMES	Std. Dev.	Beta	Correlation	Market-to-Book	Market Equity / Assets	Assets	MarketCap	Number of banks
Austria	0.46	2.24%	1.26	0.36	0.81	6.69%	355,806	24,039	2
Belgium	0.39	1.41%	0.96	0.44	1.47	9.48%	292,342	27,708	1
Denmark	0.38	1.41%	0.92	0.32	0.98	5.14%	555,632	28,239	2
Finland	0.39	1.73%	0.97	0.34	1.01	5.76%	581,612	33,490	1
France	0.43	1.41%	1.10	0.44	0.46	2.51%	4,998,549	128,363	3
Germany	0.52	2.45%	1.43	0.49	0.31	1.78%	1,927,245	29,375	2
Hungary	0.43	2.00%	1.10	0.37	1.65	20.47%	42,480	8,695	1
Ireland	NA	NA	NA	NA	NA	NA	212,648	14,929	1
Italy	0.42	2.65%	1.05	0.32	0.47	3.44%	1,900,612	77,980	4
Netherlands	0.38	1.41%	0.94	0.45	0.96	5.50%	1,239,387	68,936	2
Norway	0.33	1.41%	0.79	0.32	1.24	9.94%	274,518	27,296	1
Poland	0.42	2.00%	1.08	0.31	1.22	15.10%	115,464	17,381	2
Spain	0.45	2.00%	1.16	0.46	0.74	5.11%	2,738,898	144,999	4
Sweden	0.41	1.41%	1.04	0.45	1.34	7.51%	766,762	56,736	3
United Kingdom	0.40	1.73%	1.02	0.44	0.76	5.08%	5,120,671	283,593	4
	0.42	2.00%	1.08	0.40	0.85	6.21%	21,122,626	971,759	33

Note:

- a) Irish banks not covered by data from NYU Vlab (since 2017)

Panel B. Comparison June 2016 and June 2018 (country averages)

Capital Measure	Obs	2016	2018
LRMES	15	0.61	0.42
Std. Dev.	15	6.93%	2.00%
Beta	15	1.99	1.08
Correlation	15	0.61	0.40
Market-to-Book	15	0.70	0.85
Market Equity / Market Assets	15	5.23%	6.21%

Table 3
SRISK or Capital Shortfall in a Systemic Crisis

This table reports the banks' capital shortfall derived from different capital requirement rules based on the market capitalization of banks in the scenario where the market index drops by 40% over six months. Sample: 32 publicly listed banks participating in the 2018 EBA stress test (Irish banks are excluded due to missing SRISK data). *MarketCap* is the total market capitalization as of 30 June 2018 in million euros. *LRMES* is the expected six-month return of a bank in the scenario where the MSCI World Index drops by 40% over six months. *LRMES*MarketCap* is the absolute market value loss in a systemic financial crisis in million euros. *SRISK* is the expected shortfall of a bank in a systemic crisis over a six-month period considering both *LRMES* and market leverage. By default, *SRISK* is calculated assuming a 5.5% prudential capital ratio (which is the measure available on the NYU Stern Vlab website).

Country	MarketCap	LRMES	LRMES x MarketCap	SRISK	LRMES x MarketCap (2016)	SRISK (2016)	Change in LRMES x MarketCap	Change in SRISK
Austria	24,039	46.30%	10,417	6,972	6,786	11,803	53.50%	-40.93%
Belgium	27,708	38.79%	10,749	613	13,639	9,480	-21.19%	-93.53%
Denmark	28,239	37.52%	10,891	14,380	12,043	14,900	-9.57%	-3.49%
Finland	33,490	39.17%	13,119	12,558	14,645	21,479	-10.42%	-41.54%
France	128,363	42.96%	55,755	207,562	66,960	248,029	-16.73%	-16.32%
Germany	29,375	51.85%	15,342	94,343	15,278	114,503	0.41%	-17.61%
Hungary	8,695	42.99%	3,738	0	2,970	0	25.86%	0.00%
Italy	77,980	41.55%	33,100	59,128	34,089	91,425	-2.90%	-35.33%
Netherlands	68,936	37.92%	27,868	31,475	27,479	38,576	1.42%	-18.41%
Norway	27,296	33.07%	9,025	0	8,225	5,957	9.73%	-100.00%
Poland	17,381	42.34%	7,469	0	5,920	0	26.16%	0.00%
Spain	144,999	44.53%	69,051	75,106	68,282	106,092	1.13%	-29.21%
Sweden	56,736	41.13%	23,304	13,214	28,857	18,301	-19.24%	-27.80%
United Kingdom	283,593	40.12%	101,727	109,358	125,786	237,300	-19.13%	-53.92%
	956,831	41.97%	391,555	624,708	441,007	923,177	-11.21%	-32.33%

Table 4**Capital Shortfalls as of June 2017, using a 4% Leverage ratio requirement**

This table reports capitalization measures of European banks as disclosed in the EBA Transparency Exercise. The Leverage ratio is the ratio of Tier 1 capital to Total leverage ratio exposures, “Risk weights” is the ratio of the Total risk exposure amount to Total leverage ratio exposures, Cap req is the maximum Tier 1 leverage requirement accounting for requirements on other capitalization measures, Distance is the difference between the Leverage ratio and Cap req, and Shortfall/Excess is the Tier 1 capital shortfall/excess based on Cap req. Cap req is based on a 4% requirement for the Tier 1 leverage ratio, a 4.5% Common Tier 1 capita ratio requirement, a 6% Tier 1 capital ratio requirement, and a 8% Total capital ratio requirement.

In %, EUR mln		June 2017					
		4% Leverage ratio requirement					
Bank name	Country	Leverage ratio (%)	Risk weights (%)	Cap req (%)	Distance (%)	Shortfall	Excess
N.V. Bank Nederlandse Gemeenten	NL	3.3	9.3	4	-0.7	840	-
Norddeutsche Landesbank Girozentrale	DE	3.5	28.6	4	-0.5	944	-
Bayerische Landesbank	DE	3.6	26.9	4	-0.4	991	-
Deutsche Bank AG	DE	3.7	24.5	4	-0.3	4'599	-
ABN AMRO Group N.V.	NL	3.9	21.1	4	-0.1	425	-
Danske Bank	DK	4.1	22.1	4	0.1	-	532
BNP Paribas SA	FR	4.2	32.3	4	0.2	-	4'274
Société Générale SA	FR	4.3	29.4	4	0.3	-	3'478
Svenska Handelsbanken – group	SE	4.4	16.9	4	0.4	-	1'090
Deutsche Zentral-Genossenschaftsbank AG	DE	4.4	30.3	4	0.4	-	1'602
La Banque Postale	FR	4.5	30.2	4	0.5	-	996
ING Groep N.V.	NL	4.6	27.9	4	0.6	-	6'129
Landesbank Hessen-Thüringen Girozentrale	DE	4.7	29.0	4	0.7	-	1'147
Nordea Bank – group	SE	4.7	21.8	4	0.7	-	3'994
Landesbank Baden-Württemberg	DE	4.7	27.4	4	0.7	-	1'948
Barclays Plc	UK	4.8	29.2	4	0.8	-	10'639
Swedbank – group	SE	4.8	17.4	4	0.8	-	2'045
Banco Santander SA	ES	4.9	42.8	4	0.9	-	12'691
Skandinaviska Enskilda Banken - group	SE	5.0	22.5	4	1.0	-	2'721
Banco de Sabadell, SA	ES	5.0	38.2	4	1.0	-	2'229
Groupe BPCE	FR	5.0	33.9	4	1.0	-	11'748
Commerzbank AG	DE	5.0	35.7	4	1.0	-	5'130
Banco BPM S.p.A.	IT	5.1	44.6	4	1.1	-	1'825
Lloyds Banking Group Plc	UK	5.1	30.5	4	1.1	-	8'623
Nykredit Realkredit	DK	5.1	23.0	4	1.1	-	2'128
UniCredit SpA	IT	5.3	36.8	4	1.3	-	12'121
Jyske Bank	DK	5.4	30.5	4	1.4	-	1'108
Belfius Banque SA	BE	5.4	33.0	4	1.4	-	2'023
Groupe Crédit Agricole	FR	5.5	35.0	4	1.5	-	22'849
The Royal Bank of Scotland Group Public Ltd	UK	5.6	30.7	4	1.6	-	12'997
Unione di Banche Italiane SCpA	IT	5.7	49.5	4	1.7	-	2'315
Raiffeisen Bank International AG	AT	5.7	43.7	4	1.7	-	2'620
KBC Group NV	BE	5.8	33.1	4	1.8	-	4'822
Coöperatieve Rabobank U.A.	NL	5.8	32.1	4	1.8	-	11'612
HSBC Holdings Plc	UK	6.0	34.6	4	2.0	-	44'846
Crédit Mutuel Group	FR	6.1	36.6	4	2.1	-	14'998
Erste Group Bank AG	AT	6.3	45.8	4	2.3	-	5'436
Intesa Sanpaolo SpA	IT	6.4	44.9	4	2.4	-	16'190
Banco Bilbao Vizcaya Argentaria, SA	ES	6.8	52.5	4	2.8	-	20'043
DNB Bank ASA	NO	6.8	40.5	4	2.8	-	7'763
The Governor and Company of the Bank of Ireland	IE	7.2	45.2	4	3.2	-	3'452
OP Financial group	FI	7.8	40.5	4	3.8	-	4'657
OTP Bank Nyrt.	HU	8.5	60.0	4	4.5	-	1'845
Powszechna Kasa Oszczędności Bank Polski SA	PL	10.2	63.9	4.57	5.7	-	3'962
Bank Polska Kasa Opieki SA	PL	11.1	61.8	4.94	6.1	-	2'650
NRW.Bank	DE	11.8	28.4	4	7.8	-	12'074
Allied Irish Banks, Plc	IE	12.1	57.9	4	8.1	-	7'473
Average, sum (last two columns)		5.7	34.7	4.0	1.7	7'799	302'824

Table 5**Capital Shortfalls as of June 2017, using a 3% Leverage ratio requirement**

This table reports capitalization measures of European banks as disclosed in the EBA Transparency Exercise. The Leverage ratio is the ratio of Tier 1 capital to Total leverage ratio exposures, “Risk weights” is the ratio of the Total risk exposure amount to Total leverage ratio exposures, Cap req is the maximum Tier 1 leverage requirement accounting for requirements on other capitalization measures, Distance is the difference between the Leverage ratio and Cap req, and Shortfall/Excess is the Tier 1 capital shortfall/excess based on Cap req. Cap req is based on a 3% requirement for the Tier 1 leverage ratio, a 4.5% Common Tier 1 capita ratio requirement, a 6% Tier 1 capital ratio requirement, and a 8% Total capital ratio requirement.

In %, EUR mln		June 2017					
Bank name	Country	Leverage ratio (%)	Risk weights (%)	3% Leverage ratio requirement			
				Cap req (%)	Distance (%)	Shortfall	Excess
N.V. Bank Nederlandse Gemeenten	NL	3.3	9.3	3	0.3	-	437
Norddeutsche Landesbank Girozentrale	DE	3.5	28.6	3	0.5	-	916
Bayerische Landesbank	DE	3.6	26.9	3	0.6	-	1'377
Deutsche Bank AG	DE	3.7	24.5	3	0.7	-	9'830
ABN AMRO Group N.V.	NL	3.9	21.1	3	0.9	-	4'496
Danske Bank	DK	4.1	22.1	3	1.1	-	5'278
BNP Paribas SA	FR	4.2	32.3	3	1.2	-	24'061
Société Générale SA	FR	4.3	29.4	3	1.3	-	15'417
Svenska Handelsbanken – group	SE	4.4	16.9	3	1.4	-	4'186
Deutsche Zentral-Genossenschaftsbank AG	DE	4.4	30.3	3	1.4	-	6'016
La Banque Postale	FR	4.5	30.2	3	1.5	-	3'079
ING Groep N.V.	NL	4.6	27.9	3	1.6	-	17'263
Landesbank Hessen-Thüringen Girozentrale	DE	4.7	29.0	3	1.7	-	2'874
Nordea Bank – group	SE	4.7	21.8	3	1.7	-	9'932
Landesbank Baden-Württemberg	DE	4.7	27.4	3	1.7	-	4'722
Barclays Plc	UK	4.8	29.2	3	1.8	-	23'400
Swedbank – group	SE	4.8	17.4	3	1.8	-	4'468
Banco Santander SA	ES	4.9	42.8	3	1.9	-	27'427
Skandinaviska Enskilda Banken - group	SE	5.0	22.5	3	2.0	-	5'566
Banco de Sabadell, SA	ES	5.0	38.2	3	2.0	-	4'414
Groupe BPCE	FR	5.0	33.9	3	2.0	-	23'276
Commerzbank AG	DE	5.0	35.7	3	2.0	-	10'142
Banco BPM S.p.A.	IT	5.1	44.6	3	2.1	-	3'565
Lloyds Banking Group Plc	UK	5.1	30.5	3	2.1	-	16'732
Nykredit Realkredit	DK	5.1	23.0	3	2.1	-	4'108
UniCredit SpA	IT	5.3	36.8	3	2.3	-	21'706
Jyske Bank	DK	5.4	30.5	3	2.4	-	1'922
Belfius Banque SA	BE	5.4	33.0	3	2.4	-	3'476
Groupe Crédit Agricole	FR	5.5	35.0	3	2.5	-	37'691
The Royal Bank of Scotland Group Public Ltd	UK	5.6	30.7	3	2.6	-	20'979
Unione di Banche Italiane SCpA	IT	5.7	49.5	3	2.7	-	3'713
Raiffeisen Bank International AG	AT	5.7	43.7	3	2.7	-	4'199
KBC Group NV	BE	5.8	33.1	3	2.8	-	7'576
Coöperatieve Rabobank U.A.	NL	5.8	32.1	3	2.8	-	18'079
HSBC Holdings Plc	UK	6.0	34.6	3	3.0	-	67'041
Crédit Mutuel Group	FR	6.1	36.6	3	3.1	-	21'990
Erste Group Bank AG	AT	6.3	45.8	3	3.3	-	7'770
Intesa Sanpaolo SpA	IT	6.4	44.9	3	3.4	-	22'914
Banco Bilbao Vizcaya Argentaria, SA	ES	6.8	52.5	3.15	3.7	-	26'088
DNB Bank ASA	NO	6.8	40.5	3	3.8	-	10'500
The Governor and Company of the Bank of Ireland	IE	7.2	45.2	3	4.2	-	4'532
OP Financial group	FI	7.8	40.5	3	4.8	-	5'883
OTP Bank Nyrt.	HU	8.5	60.0	3.60	4.9	-	2'010
Powszechna Kasa Oszczędności Bank Polski SA	PL	10.2	63.9	4.57	5.7	-	3'962
Bank Polska Kasa Opieki SA	PL	11.1	61.8	4.94	6.1	-	2'650
NRW.Bank	DE	11.8	28.4	3	8.8	-	13'625
Allied Irish Banks, Plc	IE	12.1	57.9	3.59	8.5	-	7'856
Average, sum (last two columns)		5.7	34.7	3.1	2.6	-	549'142

Table 6**Evolution of the distance to the capital requirement since 2015**

This table reports the evolution of capitalization measures of European banks between December 2015 and December 2017, using SNL data. The Leverage ratio is the ratio of Tier 1 capital to Total leverage ratio exposures, “Risk weights” is the ratio of Total risk-weighted assets to Total leverage ratio exposures, Distance is the difference between the Leverage ratio and Cap req. Cap req is based on a 4% requirement for the Tier 1 leverage ratio, a 4.5% Common Tier 1 capita ratio requirement, a 6% Tier 1 capital ratio requirement, and a 8% Total capital ratio requirement.

In %, EUR mln		December 2017			December 2015			2017-2015
Bank Name	Country	Leverage ratio (%)	Risk weights (%)	4% Distance	Leverage ratio (%)	Risk weights (%)	4% Distance	Distance
NORD/LB	DE	3.4	25.7	-0.6	4.4	33.0	0.4	-1.0
BNG Bank NV	NL	3.5	9.5	-0.5	2.6	9.8	-1.4	0.9
ABN AMRO Group	NL	4.0	21.8	0.0	3.9	23.2	-0.1	0.1
Bayerische Landesbank AöR	DE	4.0	26.4	0.0	4.7	30.2	0.7	-0.6
Deutsche Bank	DE	4.1	24.6	0.1	4.2	28.5	0.2	0.0
Société Générale	FR	4.3	30.7	0.3	4.2	29.9	0.2	0.1
Danske Bank	DK	4.4	22.0	0.4	4.7	25.5	0.7	-0.3
La Banque Postale	FR	4.5	31.7	0.5	3.5	23.8	-0.5	1.0
Handelsbanken	SE	4.6	18.3	0.6	4.4	18.6	0.4	0.2
DZ BANK AG	DE	4.6	30.4	0.6	4.5	29.0	0.5	0.1
ING Groep	NL	4.7	28.6	0.7	4.3	29.9	0.3	0.3
BNP Paribas	FR	4.7	35.5	0.7	4.2	34.3	0.2	0.5
Barclays	GB	4.8	27.8	0.8	5.1	34.9	1.1	-0.3
Nykredit Realkredit	DK	4.8	22.0	0.8	4.4	21.4	0.4	0.4
Landesbank Hessen-Thüringen	DE	4.9	29.7	0.9	4.5	30.5	0.5	0.3
Landesbank Baden-Württemberg	DE	5.0	29.4	1.0	5.3	30.7	1.3	-0.4
Banco de Sabadell	ES	5.0	34.7	1.0	4.9	42.2	0.9	0.1
Groupe BPCE	FR	5.1	32.8	1.1	4.7	35.0	0.7	0.4
Lloyds Banking Group	GB	5.1	29.7	1.1	5.1	31.3	1.1	0.0
Nordea Bank Abp	FI	5.2	23.4	1.2	4.6	24.9	0.6	0.6
Skandinaviska Enskilda Banken	SE	5.2	24.2	1.2	4.9	23.2	0.9	0.3
Swedbank	SE	5.2	19.2	1.2	5.0	18.5	1.0	0.3
Banco Santander	ES	5.3	41.4	1.3	5.4	43.1	1.4	-0.1
Jyske Bank	DK	5.4	30.0	1.4	5.3	32.0	1.3	0.1
Commerzbank	DE	5.5	36.4	1.5	5.2	37.5	1.2	0.4
CaixaBank	ES	5.6	43.4	1.6	5.8	45.0	1.8	-0.2
Belfius Banque	BE	5.6	34.8	1.6	5.3	33.5	1.3	0.3
Crédit Agricole Group	FR	5.6	34.8	1.6	5.7	37.3	1.7	-0.1
UniCredit	IT	5.7	37.3	1.7	4.6	40.3	0.6	1.1
Royal Bank of Scotland Group	GB	5.8	29.6	1.8	6.6	34.5	2.6	-0.8
UBI Banca	IT	5.9	50.6	1.9	6.0	49.7	2.0	-0.2
HSBC Holdings	GB	5.9	34.1	1.9	5.5	39.5	1.5	0.4
Rabobank	NL	6.0	32.1	2.0	5.1	31.1	1.1	0.9
KBC Group	BE	6.1	33.8	2.1	6.3	37.4	2.3	-0.2
Raiffeisen Bank	AT	6.1	44.7	2.1	5.6	46.5	1.6	0.5
Erste Group Bank	AT	6.6	46.9	2.6	5.8	46.7	1.8	0.8
Crédit Mutuel Group	FR	6.6	36.8	2.6	6.4	39.1	2.4	0.2
BBVA	ES	6.6	51.1	2.6	6.3	52.4	2.3	0.3
Governor and Co. of the bank	IE	7.1	41.9	3.1	6.7	45.3	2.7	0.4
DNB ASA	NO	7.2	39.4	3.2	6.9	40.3	2.9	0.3
OTP Bank	HU	7.6	59.9	3.6	7.5	56.6	3.5	0.1
OP Financial Group	FI	7.9	35.2	3.9	7.2	36.4	3.2	0.6
Bank Pekao SA	PL	9.6	59.7	5.4	11.3	63.8	6.2	-0.7
PKO Bank Polski	PL	10.5	63.8	6.0	9.2	69.1	4.6	1.4
NRW.BANK	DE	11.4	27.6	7.4	11.8	27.8	7.8	-0.4
AIB Group Plc	IE	12.2	57.1	8.2	9.4	56.4	5.4	2.8
Intesa Sanpaolo	IT	6.1			6.8	49.2	2.8	
Banca Monte dei Paschi	IT	5.73			5.2	40.7	1.2	
Average		5.8	34.4	1.8	5.6	36.2	1.6	0.2

Appendix I

This table is a list of all banks participating in the 2018 stress tests and for which data are available from SNL Financial as of Q4 2017.

Bank	Country	Ticker	Total Assets (€m)	CET 1 (%)	Equity/Assets (%)	RWA/Assets (%)	ROAE (%)
Erste Group Bank	Austria	EBS	220,700	13.37	8.29	49.86	9.55
Raiffeisen Bank	Austria	RBI	135,100	12.89	8.32	53.20	11.98
KBC Group	Belgium	KBC	292,300	16.45	6.43	31.46	14.22
Belfius Banque	Belgium		168,000	16.08	5.67	30.14	6.53
Danske Bank	Denmark	DANSKE	475,400	17.62	4.75	21.29	12.74
Nykredit Realkredit	Denmark		191,600	20.69	5.53	23.59	10.66
Jyske Bank	Denmark	JYSK	80,242	16.35	5.79	31.47	9.41
Nordea Bank Abp	Finland	NDA	581,600	19.49	5.73	21.63	9.55
OP Financial Group	Finland		137,200	22.12	8.10	32.59	7.99
BNP Paribas	France	BNP	1,960,000	11.88	5.47	32.68	7.76
Crédit Agricole Group	France	ACA	1,763,000	14.84	6.11	29.58	6.64
Société Générale	France	GLE	1,275,000	11.57	5.02	27.71	5.27
Groupe BPCE	France		1,260,000	15.28	5.65	30.66	5.25
Crédit Mutuel Group	France		813,200	17.44	6.52	31.32	5.90
La Banque Postale	France		231,500	13.07	4.36	28.16	8.01
Deutsche Bank	Germany	DBK	1,475,000	14.80	4.62	23.28	-1.08
DZ BANK AG	Germany		505,600	13.87	4.65	26.02	4.74
Commerzbank	Germany	CBK	452,500	14.94	6.64	37.87	0.79
Landesbank Baden-Württemberg	Germany		237,700	15.79	5.63	31.86	3.16
Bayerische Landesbank AöR	Germany		214,500	15.29	5.04	28.63	6.28
NORD/LB	Germany		163,800	12.40	3.78	28.57	2.15
Landesbank Hessen-Thüringen	Germany		158,300	15.40	5.07	31.46	3.23
NRW.BANK	Germany		147,600	41.34	12.77	30.20	0.05
OTP Bank	Hungary	OTP	42,480	12.67	12.43	63.61	18.64
Governor and Co. of the bank	Ireland	BKIR	122,600	15.84	7.10	36.68	7.64
AIB Group Plc	Ireland	AIB	90,061	20.82	15.11	57.44	8.33
UniCredit	Italy	UCG	836,800	13.73	7.20	42.56	10.36
Intesa Sanpaolo	Italy	ISP	797,300	13.27	7.12	35.97	13.79
Banca Monte dei Paschi	Italy	BMPS	139,200	14.78	7.50	43.52	-49.18
UBI Banca	Italy	UBI	127,400	11.56	7.85	52.64	7.43
ING Groep	Netherlands	INGA	846,200	14.71	6.04	36.62	9.83
Rabobank	Netherlands		603,000	15.77	6.57	32.88	6.67
ABN AMRO Group	Netherlands	ABN	393,200	17.70	5.43	27.00	13.89
BNG Bank NV	Netherlands		140,000	30.35	3.54	8.31	8.33
DNB ASA	Norway	DNB	274,500	16.68	8.04	38.07	10.38
PKO Bank Polski	Poland	PKO	71,070	16.50	12.21	65.97	9.05
Bank Pekao SA	Poland	PEO	44,394	16.07	12.55	64.58	10.95
Banco Santander	Spain	SAN	1,444,000	12.26	7.40	41.89	7.83
BBVA	Spain	BBVA	690,100	11.67	7.73	52.59	8.72
CaixaBank	Spain	CABK	383,200	12.73	6.44	38.87	7.00
Banco de Sabadell	Spain	SAB	221,300	13.43	5.97	35.08	6.15
Handelsbanken	Sweden	SHB.A	281,500	22.74	5.12	18.40	11.83
Skandinaviska Enskilda Banken	Sweden	SEB.A	260,100	19.35	5.52	23.89	11.81
Swedbank	Sweden	SWED.A	225,100	24.61	6.04	18.46	15.35
HSBC Holdings	United Kingdom	HSBA	2,100,000	14.48	7.85	34.55	6.16
Barclays	United Kingdom	BARC	1,276,000	13.28	5.83	27.62	-1.31
Lloyds Banking Group	United Kingdom	LLOY	914,100	14.06	6.05	25.97	7.22
Royal Bank of Scotland Group	United Kingdom	RBS	830,800	15.91	6.65	27.22	2.85

Appendix II

This table is a list of all publicly listed banks participating in the 2018 stress tests and for which data are available from SNL Financial as of 30 June 2018.

Bank	Country	Ticker	Market Cap (€m)	Market Equity/ Total Assets (%)	MTB	SRISK
Erste Group Bank	Austria	EBS	15,382	6.97%	0.84	3,007
Raiffeisen Bank	Austria	RBI	8,657	6.41%	0.77	3,965
KBC Group	Belgium	KBC	27,708	9.48%	1.47	613
Danske Bank	Denmark	DANSKE	24,046	5.06%	1.06	12,544
Jyske Bank	Denmark	JYSK	4,193	5.23%	0.90	1,836
Nordea Bank Abp	Finland	NDA	33,490	5.76%	1.01	12,558
BNP Paribas	France	BNP	66,499	3.39%	0.62	83,837
Crédit Agricole Group	France	ACA	32,655	1.85%	0.30	69,634
Société Générale	France	GLE	29,210	2.29%	0.46	54,091
Deutsche Bank	Germany	DBK	19,080	1.29%	0.28	73,576
Commerzbank	Germany	CBK	10,294	2.27%	0.34	20,767
OTP Bank	Hungary	OTP	8,695	20.47%	1.65	0
Intesa Sanpaolo	Italy	ISP	39,478	4.95%	0.70	20,881
UniCredit	Italy	UCG	31,917	3.81%	0.53	27,874
UBI Banca	Italy	UBI	3,771	2.96%	0.38	4,608
Banca Monte dei Paschi	Italy	BMPS	2,814	2.02%	0.27	5,765
ING Groep	Netherlands	INGA	48,026	5.68%	0.94	23,210
ABN AMRO Group	Netherlands	ABN	20,909	5.32%	0.98	8,265
DNB ASA	Norway	DNB	27,296	9.94%	1.24	0
PKO Bank Polski	Poland	PKO	10,589	14.90%	1.22	0
Bank Pekao SA	Poland	PEO	6,792	15.30%	1.22	0
Banco Santander	Spain	SAN	74,177	5.14%	0.69	42,248
BBVA	Spain	BBVA	40,545	5.88%	0.76	16,593
CaixaBank	Spain	CABK	22,191	5.79%	0.90	9,154
Banco de Sabadell	Spain	SAB	8,086	3.65%	0.61	7,110
Swedbank	Sweden	SWED.A	20,809	9.24%	1.53	1,483
Handelsbanken	Sweden	SHB.A	18,215	6.47%	1.26	5,625
Skandinaviska Enskilda Banken	Sweden	SEB.A	17,712	6.81%	1.23	6,106
HSBC Holdings	United Kingdom	HSBA	160,780	7.66%	0.98	10,350
Lloyds Banking Group	United Kingdom	LLOY	51,340	5.62%	0.93	18,227
Barclays	United Kingdom	BARC	36,603	2.87%	0.49	53,787
Royal Bank of Scotland Group	United Kingdom	RBS	34,869	4.20%	0.63	26,994