M E M O R A N D U M

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Finansinspektionen's stress tests of major Swedish banks

Summary

Stress tests are one of the tools employed by FI in its supervision of banks. FI carries out ongoing tests to assess the banks' ability to withstand various negative scenarios. FI's most recently published the results of the stress tests in November 2013.

Finansinspektionen's (FI's) internal stress test carried out in the third quarter 2014 confirms that the major Swedish banks are well equipped to face high credit losses even in a scenario in which there is a sharp economic downturn. The results of the stress test show that three banks would have to use the so called capital conservation buffer[1]. Fi:s view is that the banks in question would be able to return to acceptable capital levels quickly due to good underlying earnings. For further information about banks capitalization please see the section on stress tests and in the risk report.

In order to be prepared, the banks are also required to be able to implement measures which can improve the capital adequacy when needed. FI believes that the major Swedish banks currently possess this level of preparedness.

This memorandum presents the methodology and results of the most recent stress test that was carried out on the major banks (Nordea, SEB, Handelsbanken and Swedbank). FI uses a simplified, standardized method that is different than the methods the banks use when conducting their own stress tests. The scenario does not make any assumptions about a specific macro scenario. Instead the intention is to illustrate the effects of a sharp decline in the economy and thereby demonstrate the conditions for the banks' profitability. Weaker results in the scenario are primarily caused by large credit losses within all segments of the banks' lending.

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[1] Capital requirements for Swedish banks
http://www.fi.se/upload/90_English/20_Publications/20_Miscellanous/2014/kapitalkrav-svenska-banker-140910enNY.pdf

General methodology

FI's method differs from the stress tests conducted by e.g. the EBA and the banks themselves in one important aspect. FI conducts its stress tests on public information and does not take into account bank-specific characteristics, such as earnings stability or credit quality in a certain segment. In short, FI assumes a certain drop in earnings and a certain development in credit losses in various segments and markets and simulates the effect of these changes on the banks' financial positions. The advantage of such a standardised method is that it is easier to draw comparisons between the banks. The disadvantage, naturally, is that a standardized test does not contain any specific information regarding, for example, the quality of an individual bank's credit portfolio or the measures a bank can take as needed to improve its capitalization.

The banks' resilience is observed using a three-year scenario. The Scenario assumes that the banks experience lower earnings and higher credit losses. The scenario also assumes that lending increases by 5 per cent during the first year (no new lending in the following years) and that the capital requirement for credit risk calculated using internal models increases by 7,5 per cent (on average) during the first and second year due to negative migration (higher risk weights). When risk-weighted assets are adjusted to reflect the Swedish floor on risk weights for Swedish mortgages the portfolio that is covered by the floor is excluded from the assumptions regarding migration. The banks are assumed to pay dividends of 40 per cent of their net profit during the three years given that their Common Equity Tier 1 (CET1) capital ratio is higher than the Common Equity Tier 1 requirement, including pillar 2 add on and buffer-requirements as of Q3 2014. If the Common Equity Tier 1 capital ratio is lower than the CET1 requirement, no dividend payout is assumed.

The stress test assesses the ability of the four major banks to handle a very negative economic scenario. The test focuses on the banks' credit risks. 85 per cent of the capital requirements for the major Swedish banks are due to credit risks. The capital requirement for market risks and operational risks are assumed to remain unchanged during the period of the scenario.

Information about the banks' credit portfolios is based on the banks' published quarterly reports for the third quarter of 2014. FI then divided the banks' credit portfolio into 41 different exposure classes and assigned different credit loss levels to each class. No differences were attributed to the credit losses of the banks within each exposure class. This means that differences in credit losses for the four banks in the scenario can be entirely traced back to differences in the composition of the loan portfolios.

The assumption regarding earnings is based on actual results for the three first quarters 2014 and SME Direkt's consensus estimate for each bank for the fourth quarter 2014. For the stress test period, a deduction of 10 per cent was drawn from expected earnings before credit losses for full year 2014.

Results

In the stress test's scenario, the aggregate credit losses of the four major banks are estimated to total approximately SEK 256 billion. The risk-weighted assets are assumed to grow in the scenario, so the overall effect would equal deterioration in the CET1 capital ratios of at the most between 1,1 to 2,5 percentage points per bank. This is slightly higher than last year, which is due to increased lending to corporates, which is a segment that is assumed to have higher credit losses than mortgages. In addition to that the assumption of credit loss levels is adjusted.

In the scenario, the credit losses are high in all industries and regions. Even if the levels of credit losses are generally high compared to current levels, they are not as high as the levels reached during the Swedish crisis of the 1990's or in the Baltic countries during the financial crisis 2008/2009.

The scenario entails relatively high credit losses linked to mortgages, as this is a major part of the banks' lending. Fi has not used a specific macro scenario, but it is reasonable to assume an increase in mortgage credit losses in a sharp decline in the economy, as it would affect the development in disposable income and unemployment. However, even in the event of this kind of scenario, the majority of the banks' credit losses are attributable to lending to corporates and real estate firms.

Tabell 1. Credit loss levels

Credit loss levels	2014E	2015	2016	2017	Total
Nordea	0,16%	1,49%	1,13%	0,77%	3,60%
Handelsbanken	0,08%	1,17%	0,89%	0,61%	2,80%
Swedbank	0,03%	1,18%	0,91%	0,64%	2,79%
SEB	0,10%	1,48%	1,15%	0,81%	3,58%
Total (average)	**0,09%**	**1,33%**	**1,02%**	**0,71%**	**3,19%**

Table 2. Profit/loss with change in equity

| Million SEK, 2015-2017	Nordea	Handelsbanken	Swedbank	SEB
Profit before credit losses	120 501	56 967	59 330	58 539
Credit losses	113 895	48 803	37 686	47 385
Tax	3 575	2 288	4 762	2 634
Profit after tax expense	**3 031**	**5 876**	**16 882**	**8 519**
Dividend	0	3 245	6 753	0
Change in equity	**3 031**	**2 631**	**10 129**	**8 519**

Common Equity Tier 1 capital ratios

The results of the stress test show that three banks would have to use the so called capital conservation buffer.

Diagram 1. Stress test scenarios Common Equity Tier 1 (CET1) according to CRR/CRD IV
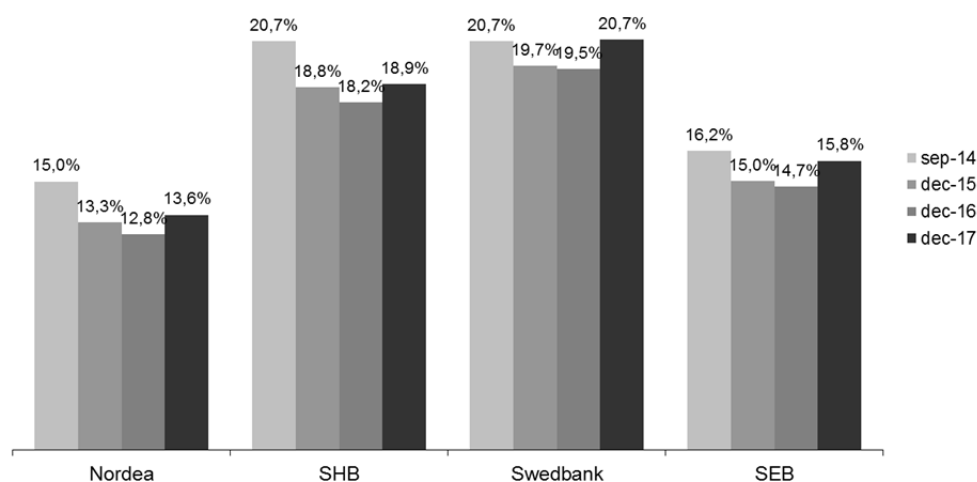
The effect on CET1 ratios varies between the banks from 1,1 percentage points to 2,5 percentage points at most, measured from top-to-bottom through the scenario. Since the migrations decreases to 0 in 2017, the risk weighted exposure amount decreases this year, leading to that the Common Equity Tier 1 ratio increases for all banks in 2017.

In relation to the capital requirements that FI publishes quarterly, the stress measured from the starting point in 2014-12-31 to the lowest point in the scenario, would develop as shown in the graph below:
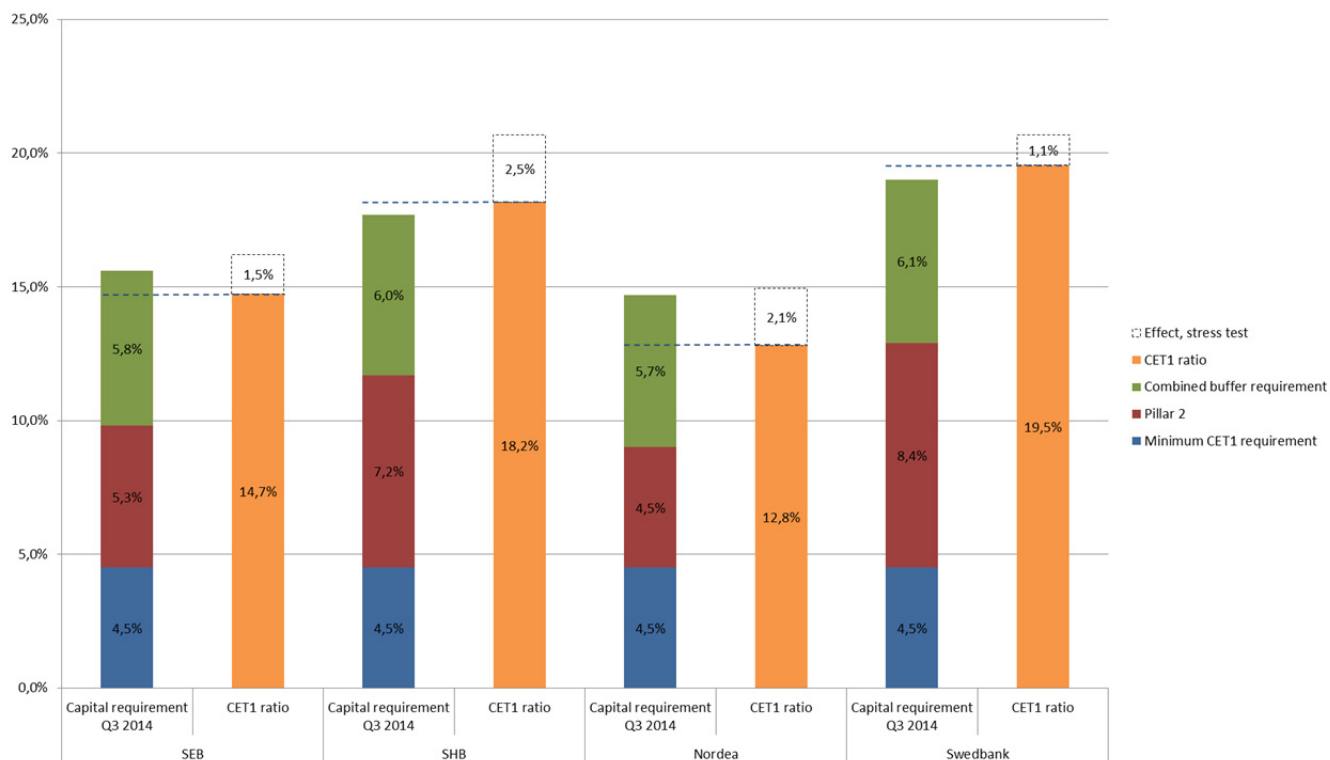
After stress the banks CET1 ratio is on the level of the blue dotted line in the graph. The left bar shows FI's capital requirement in Q3 2014. The lowest level for the CET1 ratio for all banks occurs in 2016. The assumption is that the counter cyclical capital buffer is the same for that year, as the assumption for growth in the lending portfolio is the same. With regard to the risk weight floor for Swedish and Norwegian mortgages they are assumed to be the same, which is a conservative assumption as an increased migration of mortgages would result in a decreased margin between the actual risk weights and the risk weight floor.

Appendix

The assumptions made by FI with respect to the banks' earnings, credit portfolios, lending growth, credit losses and other factors that affect the results of the stress test are described in more detail below.

Exposure classes in 2014

The credit exposure of the major banks is divided into 41 different classes. A credit loss level is assigned to each class for 2015, 2016 and 2017. For exposure to Nordic corporates, it is assumed that the credit losses for each type of company will depend on the industry. The industries have been divided into low, medium and high risk in order to take this into account.

Lending segments

Segments	2015	2016	2017
Sweden household mortgage	0,5%	0,4%	0,3%
Sweden household other	2,5%	1,9%	1,3%
Sweden corporate low	0,5%	0,4%	0,3%
Sweden corporate medium	1,5%	1,1%	0,8%
Sweden corporate high	4,5%	3,4%	2,3%
Sweden commercial real estate	2,0%	1,5%	1,0%
Denmark household mortgage	0,7%	0,5%	0,4%
Denmark household other	3,5%	2,6%	1,8%
Denmark corporate low	0,7%	0,5%	0,4%
Denmark corporate medium	2,1%	1,6%	1,1%
Denmark corporate high	6,3%	4,7%	3,2%
Denmark commercial real estate	2,8%	2,1%	1,4%
Finland household mortgage	0,3%	0,2%	0,1%
Finland household other	1,3%	0,9%	0,6%
Finland corporate low	0,7%	0,5%	0,4%
Finland corporate medium	2,1%	1,6%	1,1%
Finland corporate high	6,3%	4,7%	3,2%
Finland commercial real estate	2,8%	2,1%	1,4%
Norway household mortgage	0,4%	0,3%	0,2%
Norway household other	2,0%	1,5%	1,0%
Norway corporate low	0,4%	0,3%	0,2%
Norway corporate medium	1,2%	0,9%	0,6%
Norway corporate high	3,6%	2,7%	1,8%
Norway commercial real estate	1,6%	1,2%	0,8%
Estonia – household lending	2,5%	1,9%	1,3%
- corporate	3,0%	2,3%	1,5%
- real estate	3,5%	2,6%	1,8%
Latvia – household lending	3,5%	2,6%	1,8%
- corporate	4,0%	3,0%	2,0%
- real estate	4,5%	3,4%	2,3%
Lithuania – household lending	3,5%	2,6%	1,8%
- corporate	4,0%	3,0%	2,0%
- real estate	4,5%	3,4%	2,3%
Russia/Poland	6,0%	4,5%	3,0%
Germany – household lending	0,5%	0,4%	0,3%
- corporate	2,0%	1,5%	1,0%
Ukraine	22,5%	16,9%	11,3%
UK	2,0%	1,5%	1,0%
Credit institutions	0,2%	0,2%	0,2%
Other	0,8%	0,8%	0,8%
Off balance	0,3%	0,3%	0,3%

Assumptions about earnings

The banks' earnings during the fourth quarter 2014 are based on SME Direct consensus estimate. These predictions are the average of around 20 forecasts by analysts about how the banks' profits before credit losses will develop.

In the scenario, earnings are expected to be lower than the market's expectations. This is mainly due to a lower activity level, falling asset prices and higher funding costs, which will result in a fall in net income. The lower earnings have been created using a standard simulation in which the income level before credit losses for the period 2015-2017 is set as the expected level for the full year 2014, with a deduction of 10 per cent.

Assumptions about credit losses from mortgages

In the scenario, credit losses from mortgages have been assumed to increase due to a significant drop in house prices as a result of higher unemployment combined which much more expensive loan financing. The majority of these credit losses occur in the scenario during the period 2015-2016.

Mortgages are the largest individual exposure class, amounting (in the third quarter 2014) to SEK 2000 billion, or more than 35 per cent of the major banks total lending. Assumptions about the high loss levels for mortgages will therefore have a noticeable impact on the outcome of the stress test.

Assumptions about lending growth

In addition to the size of new lending, the banks' total lending is determined at all times by the defaulted stock in the previous period. The higher the number of defaults, the lower the credit volume will be in the next period. The assumption is made in the scenario that new lending will grow by 5 per cent in the first year and be flat in the following years.

Migrations in the banks' rating systems

In addition to the change in lending growth, the banks' capital requirements are also affected by potential migrations within their internal rating systems. Migrations are when exposures are moved between different risk classes, which affect the banks' capital requirements. The choice of rating methodology thereby affects the banks' capital requirements.

Change to the banks' capital requirements due to migrations

Migrations	2015	2016	2017
All banks (average)	7,5%	7,5%	0,0%

FI does not distinguish between migration assumptions between banks, but assumes migrations of 7,5 percent the first two years.

The following is a list of the factors that affect the constituent parts of capital adequacy, i.e. own funds and the capital requirement.

Affects own funds

New share issues	Depending on the quality of the capital that is collected, affects CET1 capital, Tier 1 capital and own funds
Profit after tax	Impacts retained earnings
Dividends	Affects how much of the profit goes to retained earnings
Credit losses	Affects what the profit will be

Affects the capital requirement

Lending volume	Increased lending results in an increase in the capital requirement, all else being equal
Migrations in the rating systems	A downturn in the economic climate or other changes specific to counterparties can increase the risk of a counterparty going into liquidation, which also increases the capital requirement. The effect of this depends on the through-the-cycle/point-in-time levels in the bank's rating systems.
Roll-out of portfolios	In general the capital requirement falls for portfolios in which the capital requirements calculated using internal ratings models rather than the standardised approach. Most banks still roll out portfolios. No portfolios are expected to be rolled out during the scenario.
Credit losses (default)	Exposures that have defaulted must be covered by reserves and not by capital. This means that the capital requirement falls when several exposures default, all else being equal. However, the negative effect of credit losses on own funds is greater than the positive effect on the capital requirement. This is somewhat of a simplification when banks use advanced IRB models.
Risk weight in new lending	If new lending has a lower risk weight than the risk weight in the existing portfolio and this new lending only replaces the lending that has matured, the capital requirement will fall.

Other assumptions

The banks are assumed to pay dividends of 40 per cent of their net profit (assuming a profit) to shareholders during all three years on the condition that the Common Equity Tier 1 capital ratio is higher than the Common Equity Tier 1 capital requirement. If the CET1 ratio is lower than the CET1 requirement no dividend is assumed.

Future taxes have been assumed with a tax rate of 22 per cent. Neither loss carry-forwards nor the assumption of a lower tax rate in general was taken into consideration.

Both profits and losses are assumed to have a direct effect on the bank's CET1 capital. Tier 2 capital is assumed not to have the ability to absorb losses.

It is assumed that no portfolios are rolled out during the scenario.

Table 3: Simplified profit and loss (P&L) statement

	Nordea				SHB				Swedbank				SEB			
	2014*	2015	2016	2017	2014*	2015	2016	2017	2014*	2015	2016	2017	2014*	2015	2016	2017
Profit before credit losses	44 630	40 167	40 167	40 167	21 099	18 989	18 989	18 989	21 974	19 777	19 777	19 777	21 681	19 513	19 513	19 513
Credit losses	5 074	49 810	38 245	25 841	1 414	21 226	16 418	11 159	389	16 145	12 672	8 869	1 281	20 334	15 925	11 126
Tax	8 702	-	423	3 152	4 331	0	566	1 723	4 749	799	1 563	2 400	4 488	-	789	1 845
Profit after tax expenses	30 853	-9 643	1 499	11 175	15 354	-2 237	2 006	6 107	16 836	2 833	5 542	8 508	15 912	-821	2 798	6 542
Dividend	21 051	-	-	0	10 411	0	802	2 443	12 691	1 133	2 217	3 403	11 013	-	-	0
Change in equity	**9 802**	**-9 643**	**1 499**	**11 175**	**4 943**	**-2 237**	**1 203**	**3 664**	**4 146**	**1 700**	**3 325**	**5 105**	**4 899**	**-821**	**2 798**	**6 542**

* based on reported results for Q1-Q3 and consensus estimates for Q4 2014