Basel III – effects on the Swedish banks and Sweden

The new regulations for banks, Basel III, are now for the most part completed. The Riksbank has analysed how well the major Swedish banks comply with the requirements of the new banking regulations. The analysis shows that the Swedish banks already comply with the new capital requirements, but not completely with the new liquidity regulations. Among other consequences, the banks' non-compliance with the requirements of the liquidity regulations means that they will need to extend the maturity of their funding. In order to gain an understanding of the effects of Basel III, the Riksbank has estimated these in the same manner as international studies – on the basis of a hypothetical increase of the capital ratio by 1 percentage point or, alternatively, a hypothetical increase of the holding of liquid assets by 25 per cent. These increases only lead to minor increases of the lending spreads and decreases of lending volumes. The extent of these effects for Sweden is in line with the findings of international studies. The Riksbank has with the same method also estimated the effects on the basis of the Swedish banks' compliance with the requirements of Basel III. According to the Riksbank's calculations, lending rates may increase by up to 10 basis points when the banks increase their holdings of liquid assets in order to comply with the impending liquidity regulations. It should be added that one of the assumptions done in these calculations is that the banks will transfer all cost increases deriving from Basel III to their borrowers. If the banks instead decrease dividend payments to their shareholders, the increase in lending rates will not be so extensive. The overall assessment is that Basel III will only have a marginal effect on Sweden.

The new Basel III framework

The financial crisis has demonstrated that the present regulatory framework for the banks, Basel II, is not satisfactorily capturing the risks for the banks.[B10] Consequently, the Basel Committee has developed a new comprehensive framework, Basel III. The overall purpose of the new regulatory framework is to strengthen the banks' ability to withstand losses and reduce the probability of new financial crises. Basel III will mean that the banks will have to hold more capital of better quality and that entirely new requirements will be imposed regarding banks' liquidity. The different parts of Basel III will be introduced step by step over the coming years, starting in 2013 (see Table B1). However, for market reasons, the banks may be forced to comply with the new rules earlier.

The banks need more and better capital in Basel III

Basel III imposes stricter requirements on the banks' capital in the following ways:

- Raising the common equity component of Tier 1 capital (CETI) in the minimum capital in comparison with Basel II (see Chart B6)
- The rules for what may be counted as capital are more stringent. For example, innovative hybrids will be phased out over a ten-year period from the start of 2013
- Capital will be adjusted, to a much greater extent, for assets with unreliable valuation or for assets whose value in a stress situation may be questioned. In Basel III, these adjustments shall be done in CET1. In the current regulation these adjustments is done in Tier 1 and Tier 2. In addition, the share of investments in financial institutions that may be included in CET1 will be limited.
- The rules for calculating risk-weighted assets are being tightened

In addition to the minimum capital requirement for conducting banking activities, Basel III includes the requirement for a capital conservation buffer of a further 2.5 percentage points. Altogether the banks will need to hold 7 per cent CET1 in relation to risk-weighted assets (see Chart B6). If a bank's capital falls below

B10 See also Sveriges Riksbank (2010), "Monetary Policy Report, 2010", October, a section on Basel III.

Table B1. Timetable for implementation of Basel III.

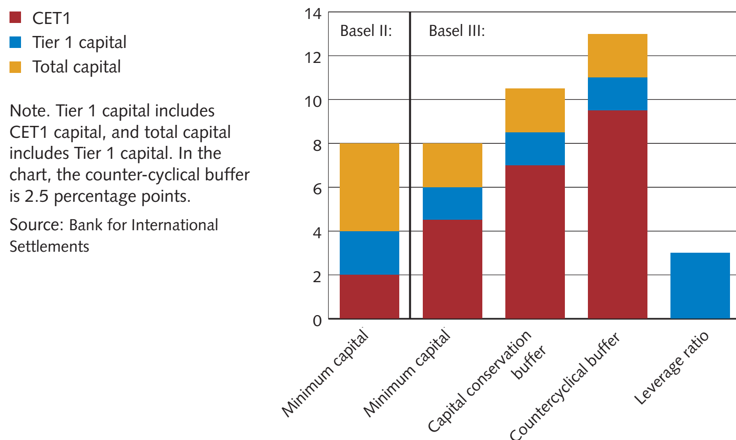
	2013	2014	2015	2016	2017	2018	2019
CET1 requirement	Gradual implementation 3.5%	Gradual implementation 4%	Final implementation 4,5%				
Tier 1 capital	Gradual implementation 4.5%	Gradual implementation 5.5%	Final implementation 6,0%				
Total capital requirement	Final implementation 8,0%						
Capital conservation buffer				Gradual implementation 0.625 %	Gradual implementation 1.25%	Gradual implementation 1.875%	Final implementation 2.5%
Phasing in of new deductions from capital base		Gradual implementation 20%	Gradual implementation 40%	Gradual implementation 60%	Gradual mplementation 80%	Final implementation 100%	
Leverage ratio	Observation	Observation	Publication			Final implementation	
Liquidity coverage ratio	Observation	Observation	Final implementation				
Net stable funding ratio	Observation	Observation	Observation	Observation	Observation	Final implementation	

Note. The introduction of the counter-cyclical capital buffer and the phasing-out of innovative hybrids are not included in the table. CET1 is the common equity component of Tier 1 capital.
Source: Bank for International Settlements

the 7 per cent mark, among others, the bank's right to distribute dividends is restricted. The idea is to force the banks to accumulate part or all of their profits as capital, thereby building a buffer. In addition to the capital conservation buffer, national authorities can choose to add a counter-cyclical buffer. The size of the buffer can be between 0 and 2.5 percentage points.

A leverage ratio has been introduced in Basel III, in addition to the risk-weighted capital requirement. This says that the banks must have Tier 1 capital in excess of 3 per cent of the total of the bank's assets and off-balance sheet commitments. Unlike the traditional capital requirements, the leverage ratio does not take the differences in risk-weighting between different assets into account. A limit is thereby set for how great a part of the banks' balance sheets may be debt funded. The leverage ratio will probably be introduced in 2018, and, from 2015, the banks will be obliged to publish their leverage ratio.

Chart B6. Capital requirement as a percentage of risk-weighted assets and leverage ratio in relation to the total assets and off-balance sheet commitments
Per cent



Note. Tier 1 capital includes CET1 capital, and total capital includes Tier 1 capital. In the chart, the counter-cyclical buffer is 2.5 percentage points.

Source: Bank for International Settlements

The new liquidity rules in Basel III

Basel III contains two new quantitative liquidity requirements. The first requirement, the Liquidity Coverage Ratio (LCR), says that a bank's liquidity buffer must be at least as great as the net outflow of money over 30 days in a stressed scenario. Among other things, the liquidity buffer in the LCR may consist of government bonds and a maximum of 40 per cent mortgage bonds and corporate bonds. The size of the net outflow is based, for example, on an estimated

percentage of deposits that are withdrawn in a stressed situation and on the percentage of different types of funding that it will not be possible to renew.

The second requirement, the Net Stable Funding Ratio, NSFR, says that the bank's stable funding must be greater than the bank's need for stable funding. The NSFR specifies the percentage of different types of debt that are considered to be stable and the percentage of the various assets that are considered to need stable funding. For example, securities issues with a maturity of more than one year and deposits with a maturity of more than one year are classified as 100 per cent stable funding, while loans from financial firms maturing in less than one year are not considered to provide any stable funding at all. For example, regarding assets, cash is not considered to need any stable funding at all, while certain bonds with long maturity, high rating, and are traded on liquid markets require 20 per cent stable funding and loans to companies with a maturity of more than one year must be covered by 100 per cent stable funding.

The effects of Basel III on the Swedish banks

The Riksbank has analysed how the four major Swedish banks (Handelsbanken, Nordea, SEB and Swedbank) will manage the new bank regulations. For capital adequacy, this analysis was made on the basis of forecasts of the banks' income statements and balance sheets for the years 2011–2016. These forecasts are based on, among other, market expectations, the average of banks historical growth and the Riksbank's growth forecast and dividend payments by the banks equivalent to 40 per cent of their profits.[B11]

The outcome of the Riksbank's analyses shows that the major Swedish banks already have sufficient CET1 to fulfil the new capital requirements, including the capital conservation buffer and the counter-cyclical capital buffer of 2.5 percentage points (see Chart B7). The new capital requirements will not be binding on the banks and the banks will be able to further improve the capital through the coming year's profits. The increase of CET1 shown in Chart B7 is a consequence of the assumptions we have made. In reality, this would be affected by the banks' strategic choices. For example, the banks may choose another dividend policy than assumed in the model.

The Swedish banks currently have leverage ratios that exceed the 3 per cent requirement of Basel III (see Chart B8). Swedish banks own assets with relatively low risk weightings, such as mortgage loans. The ratio of the risk-weighted assets to the value of the total assets will thus be low for the Swedish banks. Consequently the Swedish banks have a great deal of capital in relation to risk-weighted assets, but less capital in relation to total assets.

Analysing the effects of the new Basel III liquidity rules is considerably more difficult than analysing the effects of the capital adequacy rules. This is partly because all the details of the banks' liquidity situation are not specified in the annual reports, and partly because liquidity is continually changing on the basis of the daily decisions of the banks in their business operations. However, the Riksbank's analysis shows that some of the banks do not, at present, fulfil the LCR. Up to the introduction in 2015, those banks that currently do not do this must either strengthen their liquidity buffers, for example by buying more government bonds, or reduce their 30-day stressed net outflow.

None of the major Swedish banks currently fulfil the NSFR. However, NSFR has not yet been finalized and may be amended before introduction in 2018. The banks can improve their NSFR in several ways, for example by changing the conditions for deposit accounts, reducing their commitments and assets requiring stable funding, and by extending short-term

B11 The assumption that the banks will pay out 40 per cent of their profits as dividends is in line with the banks' previous dividends policy.

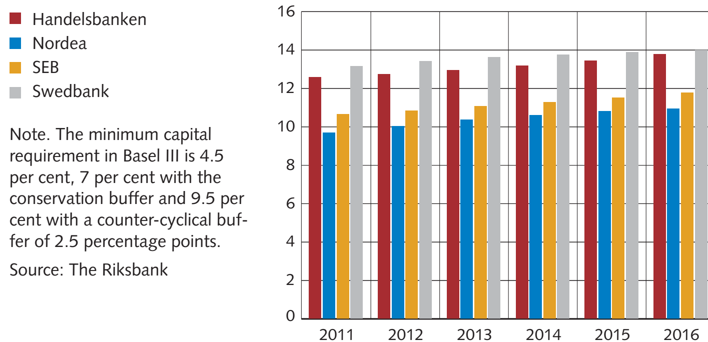
funding to long-term funding. Swedish banks have at present issued securities maturing within three months of nearly SEK 1,000 billion. A large part of this must be converted into long-term funding to comply with the NSFR.

Effects of Basel III in Sweden

If the banks do not decide to make changes in their operations, the costs will increase for banks that do not comply with Basel III. The increased costs will arise if the banks need:[B12]

- more CET1, since that it is more expensive for banks compared with other forms of capital.
- a greater liquidity buffer, since this usually generates a lower return than other assets.
- to increase the maturity of their funding, which means that the banks must pay higher interest rates for their borrowing. However, some of the increased cost of extending funding is offset by a lower general funding cost for the banks, as Basel III will make the banks more stable.

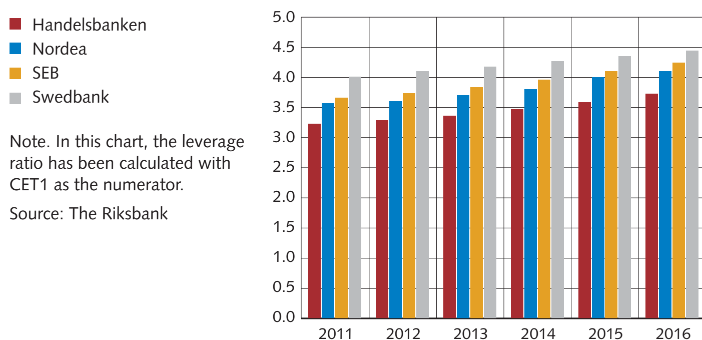
Chart B7. CET1 ratio per bank for the period 2011–2016
Per cent (CET1/risk weighted assets)



Note. The minimum capital requirement in Basel III is 4.5 per cent, 7 per cent with the conservation buffer and 9.5 per cent with a counter-cyclical buffer of 2.5 percentage points.

Source: The Riksbank

Chart B8. Leverage ratio per bank for the period 2011–2016, where 3 per cent is the requirement
Per cent



Note. In this chart, the leverage ratio has been calculated with CET1 as the numerator.

Source: The Riksbank

The banks can choose between passing on the increased costs to their customers or to their shareholders by lowering the dividend payments.[B13] They can pass on the costs to the customers by, for example, increasing lending spreads and charging higher fees for their services.[B14] The banks can also fulfill the requirements in the new regulation, by among others, reduce the lending.

How the effects on Sweden of Basel III have been calculated

The Riksbank has estimated how much the lending spreads will increase and the lending volumes decrease in Sweden as a consequence of the new banking rules. These estimates are based on some calculations the Riksbank has carried out. In the calculations it is, for example, assumed that the banks will not change their operations, will not increase fees for their other services, and will continue to generate the same profits to shareholders, i.e. the banks will retain the same return on equity as they have done in the past. The effects presented here can thereby be seen as the upper limit of what will be the effects in the end.

The Riksbank's calculations are based on the method developed by the Macroeconomic *Assessment Group, MAG.*[B15] The MAG has estimated the effects on the lending

B12 See Sveriges Riksbank (2010), "Financial Stability Report 2010:1" for further discussion of possible effects of the new liquidity regulation.

B13 See also the article "Lägre vinster i bankerna kan bekosta stramare regler" in the daily paper DN debatt, 6 October 2010.

B14 The lending spread is defined here as the difference between the interest rate applied by the bank to lending to the public and the interest rate paid by the banks to borrow this money.

B15 The MAG (Macroeconomic Assessment Group) is a working group under the Basel Committee and Financial Stability Board (FSB). This working group is made up of central banks and other supervisory authorities in Australia, Brazil, Canada, China, France, Germany, India, Italy, Japan, Korea, Mexico, the Netherlands, Russia, Spain, the UK, the USA and the ECB and IMF. The MAG report is called "Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements". It was published in August 2010 and is available at www.bis.org.

spreads, lending volume, and GDP during the implementation of the new rules both as regards capital and liquidity. Like the MAG, the Riksbank has investigated the effects of a hypothetical increase of the capital ratio by 1 percentage point or, alternatively, a hypothetical increase of the banks' holdings of liquid assets, here cash and government bonds, by 25 per cent.[B16] These increases are made on the balance sheets of Handelsbanken, Nordea, Swedbank and SEB from the end of 2009. Note that the increase of the capital ratio here will affect lending spreads and lending volumes, as the capital ratio increase by 1 percentage point even though the banks have already fulfilled the new capital requirements in Basel III.

In order to increase the capital ratio by 1 percentage point the banks can reduce their lending, reduce the size of their risk-weighted assets and/or increase the amount of capital, that is change the composition of their balance sheets. In the method by MAG it is assumed that the Swedish banks will adapt their balance sheets to increase the capital ratio in the same way as they have done historically.[B17] Finally, in order to obtain the effect on the lending spread, the historically positive correlation between the lending spread and the amount of capital in the banks is used.

In order to investigate the effects of an increase in liquid assets, an assumption is made, in accordance with the MAG method, that the banks will increase their holdings of liquid assets by reducing lending. In reality, the banks can sell parts of their holdings in other types of bonds to increase their holdings of liquid assets. The banks are also assumed to raise the lending spreads to compensate for the decrease in their revenues, as they must cut down on lending to hold liquid assets instead. How much lending spreads will increase thus depends on the marginal cost of holding liquid assets instead of lending this money. The consequence of the assumed reduction, by the banks, of lending is that the marginal cost will be considerably higher than it would otherwise have been. These calculations thus overestimate the effects of the increase of holding of liquid assets.

The increase in the capital ratio and holdings of liquid assets were analysed separately, as they were in the report from the MAG. In order to obtain the joint effect, the outcome can be summarised. However, a summary will result in the increase in the lending spread and the decrease in the lending volume being overestimated. This is because, when the banks increase their holdings of liquid assets, they reduce the holdings of more risky assets, in this case lending. In that way, the size of the risk-weighted assets will decrease, which in turn decreases the need for capital.

Outcome of the Riksbank's calculations for Sweden

The Riksbank's calculations for the Swedish banks show that the effects on the lending spreads and lending volumes of an increase in the capital ratio of 1 percentage point are in line with the average figure for the countries included in the MAG (see Table B2). The effects of increasing holding of liquid assets by 25 per cent are also in line with those reported by the MAG, although the reduction of the lending volume is greater for Sweden. However, it should here be considered that, in reality, the banks may increase their holdings of liquid assets in other ways than the reduction of lending volumes.

Using the same method, the Riksbank has also estimated the effects on the basis of how well the Swedish banks comply with the requirements of Basel III. As mentioned earlier, the Swedish banks currently comply with the new capital requirements, but not, however, with the new liquidity requirements. Of these, the first to be introduced will be the LCR and there is still great uncertainty as to the formulation of the NSFR. Consequently these calculations are

B16 The increase of 1 percentage point in in the capital ratios applies to an increase in CET1 and total capital in relation to the risk-weighted assets.
B17 See also Annex 2.2 of the MAG report for a description of the method.

being made on the basis of by how much the four major Swedish banks would have needed to increase their holdings of liquid assets to fulfil the LCR, had this been introduced in 2010. When these calculations are performed, it is assumed that the banks, instead of reducing their lending, will sell other assets to purchase the government bonds required to meet the LCR. This in turn will lead to the marginal costs for holding liquid assets being lower than they would have been if the banks had reduced their lending.

The result of these calculations is that the lending spread will increase by almost 10 basis points compared to a situation in which no new regulations are introduced (see Table B2). This increase will be less if the banks decide to change their operations or allow the shareholders to bear some of the cost increases by reducing dividends. Furthermore, if the banks retain more liquid assets, this will result in the banks becoming more stable, which will lead to a decrease in the banks' borrowing costs if the possible effects of the NSFR are disregarded. The Riksbank's assessment is therefore that the lending rate will increase by no more than 10 basis points as a result of the LCR.

The macroeconomic effects

The increased lending spreads and reduced lending volumes resulting from Basel III will probably have macroeconomic effects in the form of reduced GDP.[B18] According to the report from the MAG, during the implementation phase, the level of GDP will be, at most, 0.19 per cent lower when the capital ratio increases by 1 percentage point.[B19] According to the MAG, an increase of the holding of liquid assets of 25 per cent will mean that the level of GDP will be no more than 0.08 per cent lower during the period it is implemented. The Riksbank's estimates of the macroeconomic effects for Sweden of the implementation of Basel III will be presented in the spring of 2011. However, all indications are that the macroeconomic effects during the implementation will also be minor in Sweden. This as the increase of lending spreads and decrease of lending volumes for Sweden is in parity with those reported by MAG.[B20]

Apart from the MAG, the working group Long-term Economic Impact (LEI) has studied the long-term effects of the new regulations. LEI takes into account both the benefit and the cost of the new banking regulations. The benefit of new stricter banking regulations is mainly that the probability of expensive banking crises decreases. The cost is the same as before, i.e. new banking regulations lead to increased lending spreads that in turn affect the economy negatively. LEI finds that the benefit of new regulation exceeds the cost, i.e. that the new banking regulations lead to higher GDP and prosperity over the longer term.[B21] During 2011, the Riksbank will present its estimate of the long-term effects on Sweden, i.e. both the cost and the benefit of the new banking regulations.

B18 See Sveriges riksbank (2010), "Monetary Policy Report", October, for a more detailed discussion of possible macroeconomic effects of Basel III.
B19 Note that the effect of an increase in the level of capital includes an international spillover effect of 0.03 per cent
B20 It should be added that the Institute of International Finance, IIF, reported that the impact of the new banking regulations on GDP will be considerably greater than reported by the MAG. However, these results are not fully comparable, as the IIF also includes other new regulations when estimating the effects. Apart from this, there are differences between the IIF and the MAG, for example in how GDP is affected by the increase in lending spreads , how monetary policy can reduce the effects and how the banks will act when the new regulations are introduced.
B21 The report by the LEI is called "An assessment of the long-term economic impact of stronger capital and liquidity requirements" and is available at www.bis.org

Table B2. Effects of increase in capital ratio by 1 percentage point or increase of liquid assets by 25 per cent for Sweden and average for the countries included in the MAG study. The effects are in comparison with no new regulation

	For Sweden		Average in the MAG	
	Increase in lending spread	**Decrease in lending volume**	**Increase in lending spread**	**Decrease in lending volume**
Capital ratio increases by 1 percentage point	9 basis points	2%	15 basis points	1.4%
Increase in holdings of liquid assets by 25%	14 basis points	5.8%	14 basis points	3.2%
For the Swedish banks to comply with LCR	10 basis points			

Sources: The Riksbank's calculations and MAG