FINANSINSPEKTIONEN

Supervision of the banks

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Summary

The role of banks is key for the economy to function well, because they mediate payments, accept deposits and provide loans. At the same time, the banks fund long-term lending with shorter-term debt, which makes them sensitive to disruptions. The overall objective of Finansinspektionen's (FI's) supervision, and the reason for why the banking sector is regulated, is therefore to ensure a reasonable balance between risks and capital, to avoid jeopardising the stability of the financial system and depositors' money.

This supervision report describes, at an overarching level, the Swedish banking system, how FI works with supervision and a number of topical risk areas currently in focus.[1] The Swedish banking system is extensive, and dominated by the four closely interconnected major banks Handelsbanken, Nordea, SEB and Swedbank. The domestic banking market also consists of a great number of medium-sized and smaller banks with greatly diverging business models, such as securities firms, as well as retail banks, consumer credit institutions and savings banks geared more towards private customers. FI's supervision is risk-based and varies depending on the banks' size and business models. Supervision is devised based on four different supervision classes; Category 1 consists of the largest systemically important banks and Category 4 consists of the smallest banks.

One of FI's most important supervisory processes is the supervisory review and evaluation process (SREP), which is a framework with which FI can uniformly assess risks in all banks. The outcome of this assessment forms the basis of FI's positions on the individual banks' capital levels, liquidity status and risk management.

The banks can obtain authorisation from FI to use internal models to calculate their capital requirements. FI also supervises these models to ensure that they accurately depict the banks' risks. In the past year, FI has tightened the method that the banks need to use for calculating the long-term default risks in their models. FI is currently of the view that most banks do not yet follow this stricter method, and therefore sets requirements for the banks to hold extra capital until they have duly adapted their internal models. In its supervision, FI is currently following up to ensure that the banks are appropriately adapting their models.

In the banking sector, and indeed in society at large, increasing digitalisation and the escalating threat of cyber attacks place growing demands on the information security of banks. FI finds it important for the banks' boards and executive management to be involved in the work on information security, and to help create and sustain great awareness about these issues. Adequate information security is fun-

1 Matters that concern the supervision of conduct (i.e. the relationship between banks and consumers), and matters of particular relevance to financial imbalances at the macroeconomic level, are addressed in more detail in FI's consumer and stability reports, respectively.

damental to maintaining the confidence on which the banks rely, not least in line with the digitalisation of the services of an increasing number of banks.

FI's supervision concerns many areas, but any deficiencies and problems at the banks almost always originate from inadequate risk management, governance and control. Deficiencies in these areas can lead to both financial losses and operational disruption, which can ultimately threaten the banks' stability and their ability to sustain their critical functions. In 2014, FI clarified the requirements regarding how the banks are expected to govern and organise their business, and how they are to manage risks and control their operations. In many respects, the banks fulfil these requirements, although much work remains to be done. For instance, in its supervision FI has noted that, in many cases, the banks' overall risk frameworks are not adapted to the business in practice, and neither are they sufficiently rooted in the organisation somtimes. There are also indications that the risk framework at many banks does not form an integral part of the business, that the risk culture is weak, and that work with risk and control is not sufficiently effective.

The Swedish banking system

One of the cornerstones of a modern economy is a well-functioning financial system. In this system, core functions are carried out – mediating effective payments, converting savings into financing, and offering risk management. It is therefore in the interest of society for financial institutions to be resilient to shocks, so that they can maintain critical functions even in stressed market conditions. FI's supervision of banks is an important part of the preventive work with financial stability. FI currently supervises 124 banks, credit market companies and other credit institutions.[2] The Swedish banking system is currently dominated by four major banks which, due their systemic importance, have a major impact on financial stability. The large banks are therefore subject to intense supervision.

The financial system largely consists of banks. The banking system is sensitive to shocks because the liabilities of a bank are often highly liquid, while at the same time the asset side of the balance sheet – mainly lending – is more illiquid. Also, the various participants in the financial system are closely interconnected, so problems at one bank can quickly spread to other parts of the financial system. The close interconnection is partly due to the banks conducting a large volume of interbank transactions each day, and partly because there are indirect links between the various entities. Such an indirect link could arise because, for instance, the banks own bonds issued by other banks. The interconnection between the financial market participants poses a great risk to financial stability and can lead to a deterioration in the functioning of the financial system in market stress. This can in turn lead to high costs for the economy.

A key part of FI's task is to ensure that the banks are resilient to different types of shocks that can arise in the financial system, for example through the close interconnections. FI therefore imposes stringent requirements on the individual banks having sound control of their risks, on their compliance with rules and requirements to which they are subject, and on their ability to fulfil their obligations. FI works with ongoing supervision, and with specific initiatives, such as investigations, to evaluate how well the banks meet these requirements.

FI's supervisory responsibility and overall mandate primarily come from the Government's instructions ordinance for FI.[3] According thereto, FI's task is to safeguard the stability of the financial system and ensure that it is characterised by a high level of confidence, with well-functioning markets that meet the needs of households and corporations for financial services, and that provide comprehensive con-

2 In this report banks, credit market companies and other credit institutions are hereinafter referred to using the umbrella term "banks". The difference between a bank and credit market company, and other institutions, is that a bank is included in payment mediation through general payment systems, such as RIX and Bankgirot.

3 http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-200993-med-instruktion-for_sfs-2009-93

sumer protection.[4] FI cooperates with the Riksbank and the Swedish National Debt Office, which also have areas of responsibility of significance to the work with financial stability.

Besides supervising the banks, FI is also responsible for granting authorisation to the banks, encompassing both basic authorisations to operate, as well as a great number of other authorisations, such as for conducting business abroad and for using internal models for calculating capital requirements.[5] FI also assesses the suitability of owners and executives at the banks. This is done partly in connection with an application to operate, and partly if a bank switches owners or certain executives.

FI's banking supervision currently covers 124 banks, credit market companies and other credit institutions. There are currently 89 banks in Sweden, including 47 savings banks and 2 members' banks, as well as 34 credit market companies. In addition to these, there are around 30 branches of foreign banks and credit market companies that conduct business in Sweden. The largest and most systemically important foreign branches in Sweden are Danske Bank and DNB Bank, which have their parent companies in Denmark and Norway, respectively.

THE BANKING SYSTEM IN SWEDEN

The Swedish banking system is dominated by the four major banks: Nordea, Handelsbanken, SEB and Swedbank. Since the mid-1990s, these four banks have developed into large financial groups with cross-border business covering mainly the Nordics and Baltics. The major banks have similar business models, and are usually described as "universal banks", meaning that they have a broad offering of financial services in banking, insurance and savings for both corporations and households. Saving in particular, such as life insurance and fund management, has become increasingly important for the major banks in the past 20 years. Another common factor for the major banks is that lending to households and non-financial corporations makes up the majority of the banks' total assets.

In order to illustrate the different types of business models that occur in the Swedish banking system, the banks can be divided into a number of broad groups based on their primary business. The breakdown is simplified, because some banks could fit into several groups, while at the same time the banks in each group differ. The breakdown is nevertheless useful for illustrating the differences that exist between the Swedish banks' business models, as well as risks and vulnerabilities to which the banks could potentially become exposed.

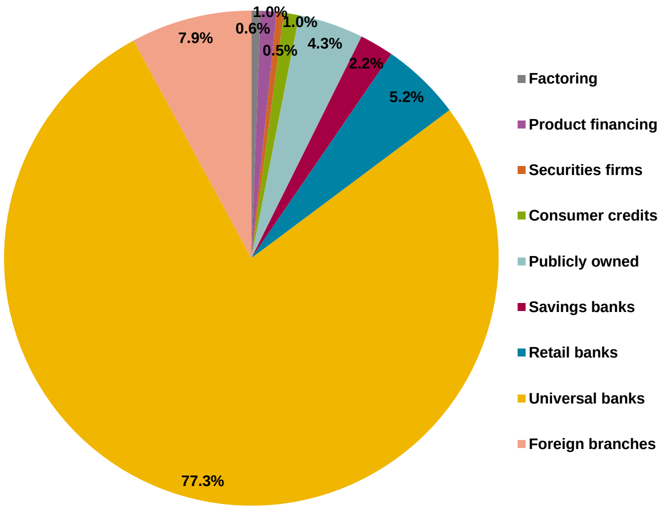
Chart 1 shows the distribution of assets depending on business model. According to the chart, universal banks accounted for around 77% of

4 http://www.esv.se/statsliggaren/regleringsbrev/?RBID=17708

5 For more information about all authorisations in banking business for which FI is responsible, go to http://www.fi.se/sv/bank/sok-tillstand/bank--eller-finansieringsrorelse/

the banking system's total assets in Sweden and internationally at the end of 2016.

CHART 1. The breakdown of total assets between Swedish banks' business models (%, 2016 Q 4)



Source: FI

Note. For Swedish banks, total assets in Sweden and internationally are covered, excluding insurance business. For foreign banks' branches in Sweden, the branches' total assets in Sweden are covered, excluding insurance business.

Länsförsäkringar Bank, SBAB Bank, Landshypotek Bank and Skandiabanken are banks that are geared to households and SMEs. This group, hereinafter called "retail banks", accounts for just over 5% of the total assets of the Swedish banking system. Retail banks also operate primarily in Sweden, unlike the universal banks, which have cross-border business. Another group consists of Kommuninvest and Svensk Exportkredit, which are municipally and government-owned banks, respectively; they contribute in different ways to promoting and supporting the Swedish economy (hereinafter called "publicly owned banks"). The core business of securities firms Avanza Bank and Nordnet Bank consists of mediating saving and investment products to private individuals through digital channels, in the form of e.g. shares and funds.

There are also a great number of smaller banks in Sweden. These include savings banks, investment banks, different types of finance companies and firms focusing on fintech[6], which are credit institutions in some cases. Although these banks make up a relatively small share of the entire Swedish financial system, on the whole they can carry out functions that are critical for society. Also, at the aggregate level, lending and savings volumes for the smaller banks make up substantial amounts. This makes it important, not least from a consumer protection perspective, for these banks to be stable as well, and conduct

6 Fintech is a relatively new term and there are as yet several definitions of the term. In its report "EBA Consumer Trends report 2016", the European Banking Authority (EBA) writes:
" Although no definition of the concept exists so far, they are commonly described as start-up companies that use software – often in an innovative way - to provide financial services."

their operations soundly. At the end of 2016, the aggregate assets of the small banks made up 6% of the total assets in the Swedish banking system.

Table 1 on the following page shows some of the features and examples of risks and vulnerabilities that can be associated with the various business models.

Table 1. Business models in the Swedish banking sector

	Examples of characteristics	Examples of risks and vulnerabilities*	Examples of banks
Universal banks (major banks)	• Broad offering of financial services for households and corporations. • Large share of market funding. • High degree of systemic importance, they carry out many critical functions for society.	• Exposed to the real estate market. • Vulnerable to unexpected shocks on their funding markets.	The four major banks: Nordea, Handelsbanken, SEB and Swedbank.
Retail banks	• Core business focused on secured loans. • Revenues are driven by net interest income. • Obtain funding through deposits from the general public and market funding.	• Exposed to the real estate market. • Concentrations in assets and sources of income.	Skandiabanken, SBAB Bank, Länsförsäkringar Bank and Landshypotek Bank.
Savings banks	• Their overall objective is to promote the local economy and industry. • Offer traditional banking services within a given geographic area. • Revenues are driven by net interest income.	• Vulnerable to a negative economic trend in their geographic area. • Lack financially strong owners because savings banks are controlled by foundations.	Sparbanken Nord, Westra Wermlands Sparbank, etc.
Consumer credit institutions	• The core business is focused on unsecured loans and different types of payment services. • Several banks in this group are profiled to fintech. • Many of the institutions are web-based.	• Vulnerable to a negative economic trend with poorer credit quality.	Klarna AB, Marginalen Bank AB, Svea Ekonomi AB, etc.
Securities firms	• Provide financial services such as trading in securities for private individuals or corporations, as well as fund and asset management. • Revenues are driven by net commission income. • Most of the banks are online.	• Concentration in sources of income. • Vulnerable to changes in securities markets.	Avanza Bank, Carnegie Investment Bank, Nordnet Bank, etc.
Publicly owned banks	• The purpose of the business is to provide financing through alternative sources or with better terms than those that can be offered by private entities. • Owned by the national or local government. • Funding through the issuance of different types of debt instruments.	• Vulnerable to counterparty risk and other market risks.	Kommuninvest and Svensk exportkredit.
Product financing	• The core business is focused on product and sales financing. • The majority of these banks are subsidiaries of large non-financial corporations. • They offer financing to the group's customers, when purchasing their products, such as cars or other capital goods.	• Vulnerable to developments in the business of the group.	Volvofinans bank, BMW Financial Services Scandinavia, etc.
Factoring	• Makes up a small part of the banking system. • Banks that offer invoice discounting and invoice purchasing, as well as banks whose business features the acquisition of receivables and recovery of non-performing loans.	• Risk of erroneous valuation of acquired receivables. • Risk of erroneous forecasts for the recovery of acquired receivables.	Aros kapital AB, Avida finans, Hoist Kredit, etc.

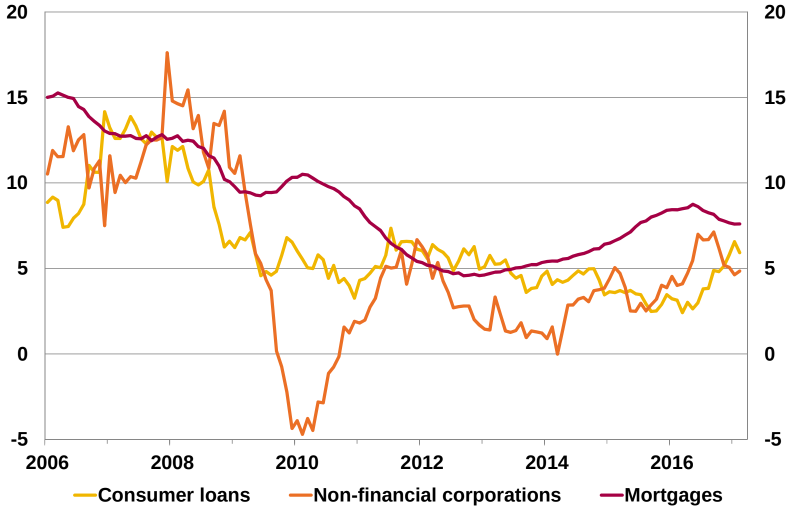
*It should be noted that the table shows examples of risks and vulnerabilities potentially associated with each group. This therefore does not mean that individual banks in each group are exposed to all the risks and vulnerabilities given as examples.

Banks' lending to the public

In Sweden, the banks are the primary source of credit supply for the economy. Since the 2008 financial crisis, the total lending of Swedish banks has steadily grown, in line with relatively high growth in the economy. At the end of Q4 2016, Swedish banks' lending to the general public in Sweden was almost SEK 6,000 billion and the year-on-year growth rate was just over 6%.[7]

Around SEK 3,500 billion of lending to the general public consisted of loans to Swedish households, and out of that amount almost SEK 3,000 billion consisted of mortgages. Mortgages have increased by around 8% year-on-year on average in the past 12 months (Chart 2). Mortgage growth has slowed down somewhat since FI introduced amortisation requirements on 1 June 2016, while at the same time the rate of increase in consumer loans has risen somewhat.

CHART 2. Lending growth, Swedish households and non-financial corporations
(annual percentage change)



Source: Statistics Sweden

Note: Refers to lending from Swedish monetary financial institutions (MFI).

Since the 2008 financial crisis, lending to non-financial corporations has increased slower than lending to households. At the end of 2016, the banks had lent around SEK 2,000 billion to Swedish non-financial corporations. The annual growth in lending has been around 5% on average in the past year (Chart 2).

The growth in lending that has occurred in the past few years has created good conditions for all business models on the banking market.

7 Lending from Swedish monetary institutions according to Statistics Sweden's financial market statistics. The general public includes Swedish households, non-financial corporations and the public sector.

The health and resilience of the Swedish banking sector

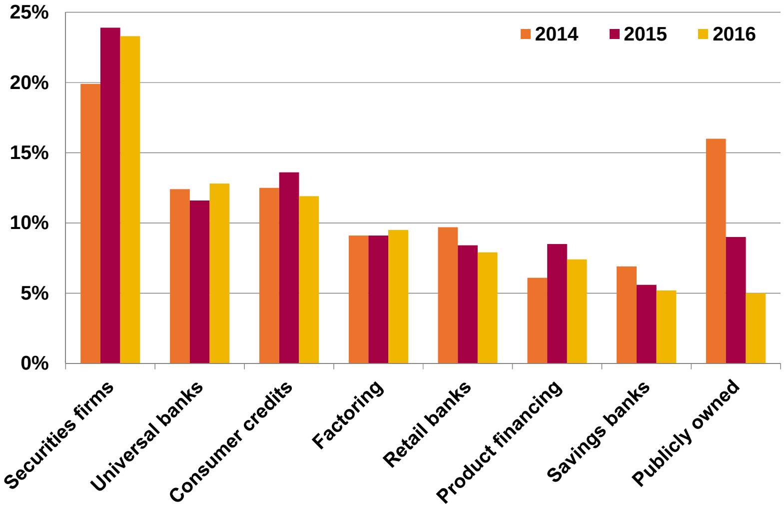
On the whole, profitability in the Swedish banking sector is relatively good. Return on equity has been stable since the economy recovered after the financial crisis. In FI's opinion, sustainable business models with stable profitability are crucial to financial stability because this helps strengthen the banks' ability to build up own funds, obtain funding on good terms and hence strengthen their resilience to shocks in the financial system.

The average return on equity of the major banks has been relatively stable at around 12–13% in the past three years (Chart 3). The consumer credit institutions have been more or less equally profitable, while the retail banks have had somewhat lower return (8–10%). The profitability of the savings banks, which has been somewhat lower, decreased somewhat between 2014 and 2016. This is partially a reflection of the fact that the legal form of the savings banks is not primarily aimed at maximising return.

The securities firms have been the most profitable in the past three years, with return on equity at just over 20% on average for the group. The two banks in the group which are owned by the public sector have had deteriorating profitability. Between 2014 and 2016, return on equity for Kommuninvest and Svensk Exportkredit declined on average from just over 15% to 5%.

CHART 3. Return on equity by business model

(%, weighted averages)



Note: The chart shows the size-weighted average of return on equity by business model. The size of the individual institution is according to the balance sheet total.

Source: FI

FI and supervision

Supervision is one of FI's most important tools, with the purpose of ensuring a sound balance between risks and resilience in the form of liquidity and capital. Part of FI's supervision of banks is about managing incidents and different types of events at individual banks. The primary task, however, is to prevent problems, especially for the financial system as a whole. FI's supervision is conducted on the basis that the greater impact a bank could have on the economy, the more comprehensive the regulation and supervision applied to it.

FI'S SUPERVISION STRATEGY

The ongoing supervision covers all banks authorised by FI to conduct their business. That means that FI continually monitors the banks' risk-taking and financial position, and performs follow-up to ensure that they fulfil the set regulatory requirements. For instance, it could be a case of the bank following the capital adequacy rules and not having prohibited large exposures.

Another part of FI's supervision consists of in-depth analyses and investigations. For example, it could be a case of investigations into specific risk areas, or analyses of particular matters related to the bank's governance and risk management. A third type of supervision is the event-driven kind, which manages unforeseen events or materialised risks. An example of event-driven supervision is if a bank changes the focus of its operations or is acquired by another firm, thus leading to a change in the conditions for its authorisation and supervision. A more drastic situation is if a bank falls into acute difficulties that require direct and immediate measures.

FI's supervision is risk-based

FI's supervisory work is founded on risk-based prioritisations, meaning that the supervision is adapted to the individual banks' business and risk level. In practice, this means that the greater the risk an individual bank poses to financial stability, the more comprehensive and frequent FI's supervision will be. Conversely, with risk-based supervision, FI's supervisory activities are less comprehensive for the banks considered to be of less importance to the stability of the financial system.

FI annually categorises all banks under supervision into four different supervision categories.[8] Category 1 consists of the most systemically important banks that are subject to the most intense supervision. In practice, there is often a close relationship between the degree of systemic importance and the scope of assets and operations. In the 2017 classification, Category 1 consists of the four major banks which ac-

8 For more information, go to http://www.fi.se/sv/publicerat/nyheter/2017/uppdaterad-kategorisering-av-svenska-kreditinstitut/ and http://www.fi.se/sv/publicerat/nyheter/2016/kategorisering-av-svenska-kreditinstitut-2017/

count for about 80% of the assets in the Swedish banking system (Chart 1). Category 2 consists of the medium-sized banks which make up around 9% of the assets. Although the latter are clearly smaller than the major banks, FI finds that they are significant to the economy in various ways. This group includes Kommuninvest, Landshypotek Bank, Länsförsäkringar Bank, SBAB Bank, Skandiabanken, Svensk Exportkredit, Nordnet Bank and Avanza Bank. Category 3 includes about ten sizeable savings banks – such as Sparbanken Skåne – and other specialist banks, such as Volvofinans Bank. Category 4 includes the 100 smallest banks.

FI's risk-based approach is also consistent with the principle that supervision shall be conducted proportionately, i.e. adapted to the nature, scope and complexity of the business. By applying proportionality in regulation and supervision, FI can ultimately help promote competition and enhance efficiency on the markets.

FI'S SUPERVISORY REVIEW AND EVALUATION PROCESS

In light of the lessons learned from the global financial crisis of 2008, and because several banks operate in many countries of the European Union (EU), developments are headed towards increasingly harmonised supervision within the European Union. An example is the EU-wide supervisory review and evaluation process (SREP), which aims to establish a uniform framework for the ongoing assessment of the risks to which a bank is or could become exposed. The outcome of this assessment forms the basis of the supervisory authorities' positions on the individual banks' capital levels, liquidity status and risk management.

SREP essentially consists of three stages:

- *gathering information*, in which FI determines which information is needed to access to perform a comprehensive risk assessment of the bank in question.
- *risk assessment*, in which FI performs an assessment of the bank's business model, internal governance and control processes, risk exposure, risk management, capitalisation and liquidity status.
- *overall assessment*, in which FI, based on the individual risk assessments, takes a position on whether the bank's own funds and liquidity resources adequately cover the risks to which the bank is or could become exposed.

When FI has conducted the risk assessment and completed the overall assessment, the bank is informed thereof, as well as the need for any measures. The bank then has the opportunity to provide feedback on this. When FI has received the bank's statement, a final assessment is made. The final assessment is communicated to the bank in the form of a closing letter. For the banks with subsidiaries and/or substantial branch operations in other EU/EEA countries, the closing letter is subject to a joint decision between FI and the supervisory authorities of those countries. In 2016 FI performed SREP for around 20 banks.

FI's assessment of the capital need

The basis for the capital requirements for banks is that they shall observe all material risks posed by their business, both for the individual banks (in the form of losses), and for the rest of the financial system (in the form of costs to the economy). Consequently, another important aspect of this is that the capital requirements shall be risk-based; the higher the risk posed by an asset, the more capital a bank must hold. Hence, differences in business models shall affect the level of the capital requirement, insofar that the risk level differs.

FI's overall capital assessments, which thus form an important part of SREP, are based on an analysis of the bank that shall be as comprehensive as possible. In the assessment, FI decides whether extra capital is needed to cover risks that are not sufficiently covered by the regulatory minimum requirements (Pillar 1). Risks that are not covered at all by Pillar 1, and for which FI, in its ongoing supervision, assesses additional capital requirements, are for example interest rate risk in the banking book, credit-related concentration risks and pension risks. Finally, FI calculates the extent to which the bank needs to maintain a "capital planning buffer", which has the purpose of enabling the bank to fulfil its total capital requirement in stressed conditions. When assessing the capital planning buffer for the banks, FI uses a specific stress test method.[9]

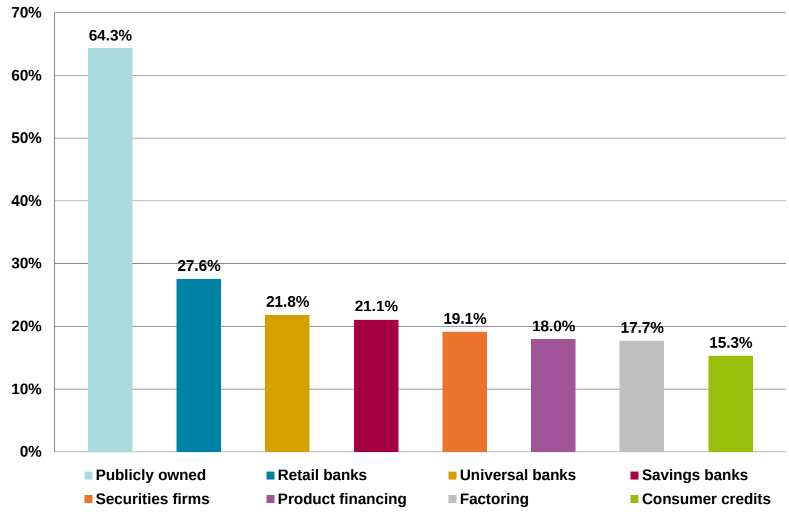
FI's assessment is that the Swedish banks are generally well-capitalised. According to the risk-based measure of the capital adequacy rules, the banks' capital levels are higher than the average levels for European banks. This is mainly because Swedish banks generally have a large proportion of low-risk assets, which give low risk weights, and because they follow the high buffer requirements imposed by FI. Chart 4 shows Swedish banks' risk-weighted capital ratios at the end of 2016 for different business models.

FI strives for transparency and clarity in how the capital requirements are determined, and how the banks meet the requirements. The capital requirement methods used by FI in supervision are published on FI's website and have undergone consultation. Each quarter, FI publishes the level and composition of the capital requirements for the large and medium-sized banks (Categories 1 and 2).

Chart 4 shows that the four universal banks and retail banks have common equity Tier 1 capital ratios of around 20–25%. However, the highest capital ratios are found among the publicly owned banks. This is because lending geared to municipalities or corporate lending with eligible guarantees from the public sector gives low risk weights and hence lower capital requirements.

9 http://www.fi.se/sv/publicerat/nyheter/2016/stresstestmetod-for-bedomning-av-kapitalplaneringsbuffert/

CHART 4. CET1 capital ratio by business model (% of risk-weighted assets).

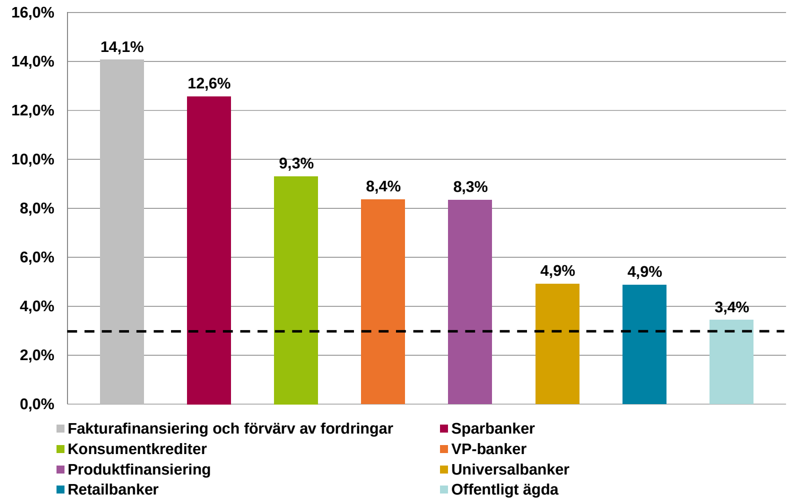


Source: FI.

If no consideration is given to the risk level of different bank assets, the capital levels of the Swedish banks are more in line with the European average (Chart 5). This is because Swedish banks generally have a higher proportion of low-risk assets on their balance sheets, compared with the European average.

The non-risk-weighted measure, leverage ratio, is not yet a binding minimum requirement, either in Sweden, in EU regulation or in global standards. However, as of 1 January 2018 a harmonised minimum level of 3% is proposed to apply.[10]

CHART 5. Leverage ratio (% of total assets, Q 4 2016)



Source: FI.

10 For more information about the leverage ratio requirement, see FI Analysis 7: Leverage ratio as a minimum requirement reduces banks' buffers: http://www.fi.se/contentassets/aaac9785a6f44ece8913f48d021c1e4e/fi-analys-7-eng.pdf

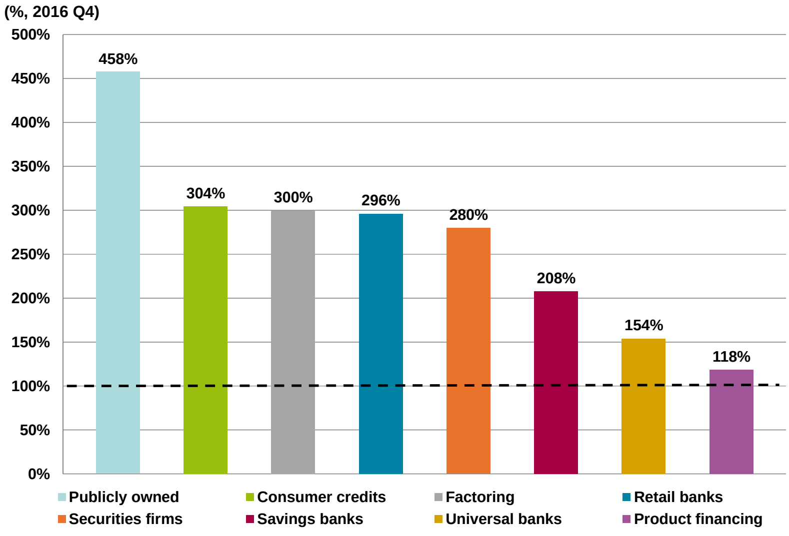
FI's assessment of liquidity

FI currently finds that the banks' liquidity and funding situation is sufficient to cover the inherent liquidity risks that the banks have in their balance sheets. For certain banks, however, FI has found that the banks' own assessments of liquidity and funding risks (the internal liquidity adequacy assessment process – ILAAP) should be improved. FI has also urged the banks to prepare for the forthcoming regulation of the long-term liquidity risk measure NSFR (Net Stable Funding Ratio) in cases where adaptation might be needed to fulfil the forthcoming minimum requirements.

On 1 January 2013, FI introduced, through its national regulations, requirements for the banks' Liquidity Coverage Ratio (LCR). The measure provides a picture of how the bank copes with a 30-day period of elevated stress on its funding markets and net outflows of liquid assets.[11] FI requires the LCR to amount to 100% in aggregate currencies, and individually for the EUR and USD, respectively.

All banks currently meet the LCR requirement (Chart 6).

CHART 6. LCR by business model, all currencies



Source: FI.

11 In practice the measure is calculated as the ratio obtained by dividing the bank's liquid assets by a forecast net cash outflow during a stressed 30-day period.

Adaptations to regulatory changes

As part of SREP, FI also follows the banks' adaptation to future regulatory changes. Many of these can be considered material on the whole. For example, there is an intention to replace IAS 39 with the new accounting standard for the valuation of financial instruments IFRS 9 as of 1 January 2018.[12] This presents a major transition in how the banks value their assets, which will also affect capital adequacy. However, many of the details about how IFRS 9 will be applied are still under negotiation.

As mentioned above, the leverage ratio regulations are expected to be decided as a global standard and implemented as a binding minimum requirement in the EU as of 1 January 2018. Although uncertainties still remain as to the exact design, for some banks FI has seen a need to assess and manage the potential effects in the forward-looking capital planning.

Next year the liquidity regulations will also be different as the EU's binding liquidity coverage ratio requirements will be fully implemented in the EU, through a delegated regulation. This means that the national regulations introduced by FI in 2013 will be repealed at the turn of 2017/2018. In light thereof, FI is evaluating the need to devise a new supervisory method for liquidity risks.

12 IFRS = International Financial Reporting Standards. IAS = International Accounting Standards.

Current areas and risks under supervision

In the past year FI has, besides its ongoing supervision, carried out a number of different supervisory activities. In this section, three risk areas are described that have been in focus in the past year – the banks' internal models for calculating capital requirements, information security risks and cyber threats, as well as governance, risk management and control.

FI'S SUPERVISION OF THE BANKS' INTERNAL MODELS

The capital requirement for credit risk is calculated based on the bank's risk-weighted assets. Each asset is multiplied by a risk weight and the sum of the risk-weighted amount of each asset gives a total risk-weighted amount. The risk weights for the various assets are initially determined using a simplified standardised approach that gives predetermined risk weights for different asset classes.

In order to calculate the capital need more fairly, there is an alternative to the standardised approaches – internal ratings-based approaches (IRB). For ten years, the banks have been able to apply for authorisation from FI to base the capital requirement on their own risk calculations for certain parameters, which are based on the IRB regulations.

An important part of FI's work to ensure the banks' resilience in the form of capital is therefore to supervise their internal models. For FI, the objective is for the capital requirements to be risk-based and fair. The best way of attaining this is to enable the banks to use internal models insofar that they give fair results. If the internal models are well-designed, they will thus provide a better picture of the bank's capital need. Also, risk-based capital requirements increase incentives for sound risk-taking and solid control of measurement, reporting and management of the risks in the balance sheet.

The drawback is that models can, for various reasons, sometimes turn out inaccurate and they also strongly incentivise the banks to use the models to push down the risk weights more than merited by the actual risk level. The average risk weights for corporate exposures decreased from around 60% to just over 30% between 2007 and 2015.[13] There are several reasons for this. A primary reason is that the banks have gradually applied for authorisation to use internal models. The rollout of IRB usually leads to lower risk weights. Another reason is that the banks have become better at obtaining and registering collateral and guarantees for granted loans. The reduction in risk weights is also due to the banks having changed their asset portfolios towards lower risks.

13 See Stability in the Financial System, FI, December 2015.
http://www.fi.se/contentassets/f5eb18dc148c48a2b0524ad93e66e3aa/stabrapp_15-2ny6.pdf

The regulations incentivise the banks to lend to counterparties with good credit ratings and high quality in their collateral.

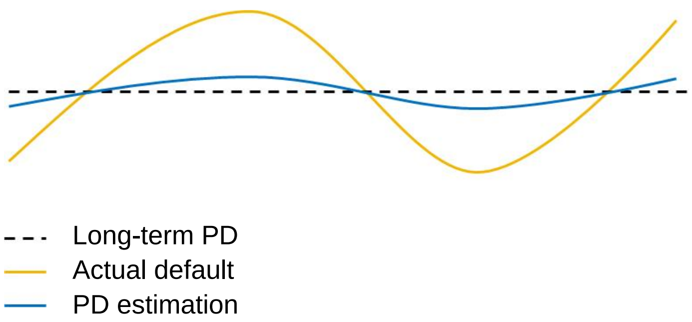
FI therefore believes that the Swedish banks' increased use of internal models has largely provided a more accurate picture of the risks in their assets. However, there are also problematic elements in the banks' application of internal models. The supervision shows that, to some extent, the banks have used the regulations on internal models to minimise their capital requirements. This phenomenon has also come to light in other countries, and the perception of several supervisory authorities today is that the regulations on internal models need tightening. Both the Basel Committee and the European Banking Authority (EBA) are therefore in the process of reviewing the present rules, although it will probably take time for any international agreement to be implemented in Swedish law.

The focus of FI's supervisory actions in this area in the past year has been the banks' estimation of the long-term risk of probability of default (PD), which is one of the parameters in the internal models. In simplified terms, "default" means a customer of the bank not repaying money on time. FI has performed reviews to ensure that the estimation of the probability of default reliably measures the risk over an entire credit cycle, i.e. both in good and bad economic conditions.

The ambition is for the PD estimations – which affect the size of the capital requirement – to be unaffected by economic fluctuations, so that the capital requirement does not decline in good times and increase in bad times. This is something that could occur if the estimation of the risk does not take account of the fact that actual defaults may vary sharply over a credit cycle. That would mean that the banks could reduce their capital in an upbeat economic climate, and that it would therefore also be cheaper for the banks to lend during such times, which could cause unhealthy lending practices – and at worst the build-up of a credit bubble. When a turnaround in the economy then occurs, there is a risk of the banks, for several reasons, encountering difficulty in their capital adequacy. In part, the banks have an excessively low capital level to start with, and in part the banks risk suffering credit losses due to a general economic downturn. At worst, they sustain such major losses that they are forced to use their capital buffers. In addition, the capital requirement will increase at the same time, because of the PD estimations' sensitivity to economic fluctuations. Such a turn of events could cause such major financial stress for a bank that it might not be able to continue lending money, and ultimately the bank ends up in breach of the requirements for continuing to conduct its business.

This is why FI attaches great importance to the stability of the banks' PD estimations over time. At the same time, it is important for the internal models to take account of changes in the underlying risk in a certain asset portfolio. If the risk in a certain industry increases for structural reasons, such as increased competition in the industry, the PD estimations shall also increase in that case. In the same way, a bank that starts lending to riskier segments shall be subject to higher capital requirements, as a direct consequence of higher PD estimations. It is not always that simple to determine whether a change to the actual defaults are cyclical or structural, i.e. whether it depends on a short-term effect of the economic trend, or a long-term change to the underlying risk. In practice, this tricky balance often leads to PD estimations stabilising over time, albeit not being entirely constant.

Chart 9: Stylised illustration of the Probability of Default (PD) estimate over time



Source: FI.

In May 2016 FI published a memorandum[14] describing how FI assesses this topic in supervision. In the memorandum, FI takes a position on one of the bases for calculating PD estimations. Therein, it is stated that the calculation of the long-term PD estimation must be done on the assumption that every fifth year at least is a “bad” year. In other words, in their estimations, the banks cannot assume that there will be as many good years going forward as there have been in recent times in Sweden. This basis for assessment helps stabilise the capital requirement.

FI finds that most banks currently do not yet follow the described method for PD estimations. For this reason, FI has imposed an additional capital requirement on the banks in Pillar 2, until the internal models have been adapted. As part of FI’s investigative activities, FI follows up to ensure that the banks are appropriately adapting their models.

THE BANKS’ MANAGEMENT OF INFORMATION SECURITY RISKS AND CYBER THREATS

Increasing digitalisation, and the growing threat of cyber attacks in the banking sector, and in society at large, place increased demands on the banks’ security. Attaining adequate information security is a complex process that spans the bank’s entire operations. FI finds it important for the banks’ boards and management to be involved in the banks’ work with information security, and to help create and sustain a high level of awareness about these matters. At the same time, adequate information security is fundamental to maintaining the confidence on

14 FI Ref. 15-13020 http://www.fi.se/contentassets/93166963a40e49fcaca8670e3ad2d3e7/pm-riskvikter-2016-05-24.pdf

which the banks rely, not least in line with the increasing digitalisation of banking services.

Cyber threats to the banks have increased.

FI sees that cyber attacks on banks' IT systems pose a growing threat to the banks and the financial system. The dependence on IT systems, and their interconnection, make the system vulnerable to cyber attacks. Also, the potential effects of cyber attacks are considerable. For an individual bank, the consequences of data breaches, fraud or operational disruptions can be very extensive indeed.[15] Ultimately, recurrent intrusion or adverse consequences of cyber attacks can threaten confidence in the payment system and financial markets.

In the past few years, cyber attacks against banks have become more frequent, while at the same time the perpetrators use increasingly sophisticated methods and have, in certain cases, demonstrated great perseverance. Current threats can be categorised into three groups.

- attacks on the banks' digital customer channels, such as internet banks and mobile banks, and which result in fraud,
- denial of services attacks aimed at temporarily making the banks' digital channels and supporting systems unavailable, and
- intrusion into the banks' IT systems with the purpose of carrying out fraud, blackmail or sabotage.

FI notes that several banks are making considerable efforts in the area, but that many have not yet adapted their information security work to the changed conditions. FI finds it important for the banks to establish a well-functioning ability to continuously analyse and assess current cyber threats, and the actors behind them, so that they may continually adapt their risk management in the area. Forums for operational information sharing, and improved forms of cooperation between the banks and other stakeholders, could also bolster this work. Furthermore, it is crucial for the banks to strengthen their incident management procedures, and continually adapt their protective measures and their continuity management[16] with respect to cyber attacks. Training and activities to boost awareness among the banks' staff and customers are other significant activities. FI therefore finds that the banks must further intensify their work with information security.

FI's view on management and coordination of information security

In order to ensure that the banks maintain adequate information security, FI requires there to be a designated person to manage and coordi-

15 The cyber attack on the central bank of Bangladesh (initially USD 101 million), the CEO fraud against Crelan Bank of Belgium (EUR 70 million) and the fraud against 9,000 customers of Tesco Bank of the UK (GBP 2.5 million) are examples that have generated media attention in the past few years, illustrating both the banks' vulnerability to, and the consequences of, cyber attacks.

16 Continuity management comprises measures and initiatives in a business aimed at ensuring the business can be sustained in the event of a disturbance or major operational disruption.

nate the work. The purpose of this is for information security efforts to be given sufficient focus, and so that it is clear who bears the overall responsibility for managing and coordinating the work at the bank. The person responsible for this work should have sufficient resources and powers, as well as a clearly defined responsibility. The person should also have sufficient seniority, and a senior-level executive position in the bank's organisation for taking measures and making requisite decisions effectively.

In order to verify how risks are managed, which also includes information security-related risks, FI requires the banks to have independent risk control and compliance functions. "Independent" means that the functions shall be organisationally separate from the parts of the business that are monitored and controlled. The staff of a control function may not perform any duties that form part of the monitored operations either.

In its supervision, FI has noted that some banks have placed the person responsible for managing and coordinating information security work in one of the control functions. FI finds this to be an inappropriate placement of this position of responsibility, because information security is part of the bank's risk management and shall hence be monitored and controlled by the control functions. Placing this position of responsibility in a control function risks limiting the independence of the function.

The banks' work with information security is a prioritised area in FI's supervision of operational risks. In its future supervision, FI plans to focus in particular on the banks' governance of information security work, and how the banks ensure sufficient capability for managing the threat of cyber attacks.

FI'S VIEW OF GOVERNANCE, RISK MANAGEMENT AND CONTROL

Sound governance, risk management and control are necessary to ensure that a bank works and runs its operations according to the business and risk strategy decided by the board of directors. Stringent requirements on capital and liquidity cannot replace sound control within the bank. Insufficient governance, risk management and control can for instance lead to the bank being exposed to excessive risks. It can also lead to the bank failing to adequately identify, manage and mitigate risks. In turn, this can result in financial losses and an underestimated capital need which, besides affecting the bank and its shareholders, also risks affecting customers of the bank and ultimately confidence in the financial system.

In many respects, the banks fulfil the governance, risk management and control, requirements, although some work remains to be done. For instance, in its supervision FI has noted that, in many cases, the banks' overall risk management frameworks are not appropriate in practice, nor are they sufficiently implemented. There are indications that the risk management framework at many banks does not form an integral part of the business, that the risk culture is weak, and that, to too great an extent, work with risk and control shows insufficient effectiveness. FI has also seen deficiencies in the banks' data quality and their ability to aggregate risk data, which impairs the conditions for effective risk management and risk control. It can also lead to the risk reporting to the management and board failing to provide reliable and current information about the risks to which the bank is exposed. In turn, this can lead to the board and management having an insufficient basis for making the right decisions, both in normal conditions and, specifically, in a stressed situation.

In 2014, FI clarified the requirements regarding how the banks are expected to govern and organise their business, and how they are to manage risks and control their operations. Since then, FI has assessed that most banks generally live up to the more fundamental formal requirements set for governance, risk management and control. Almost all banks now have internal rules decided by the correct decision-making body, a defined and decided risk appetite, and independent control functions. Although the banks have made clear progress, major challenges still persist in implementing the internal rules, procedures and processes in all parts of the organisation. The supervision also shows that the control functions sometimes demonstrate insufficient effectiveness in fulfilling the challenging requirements set out by the regulations.[17] A consequence of this could be that risks are not managed, or that deficiencies are not identified, reported and addressed. In general, the banks need to keep working to fully attain the objectives of implementing an effective and appropriate management of their risks, and satisfactory internal control. To get there, the purpose of the rules must be understood, these issues must be prioritised by the board and management, and a sound risk and regulatory culture must be in place at all levels of the bank.

A sound risk culture is crucial

Risk culture in this context refers to professional values, attitudes and conduct that are of crucial significance to how the bank manages its risks. Risk culture at a bank is not only linked to risks in the bank's business activities – it is more comprehensive than that. By and large, the bank shall conduct its operations in an ethically responsible and professional manner, and maintain a sound risk culture. FI therefore finds it very important for the banks to work systematically with establishing a sound risk culture, i.e. that there is a common approach and a sound view of risks, risk-taking and how risks are to be managed.

To achieve this, it is fundamental that the bank, through the board of directors and management, has devised, communicated and implemented a focus for and overall view of risk. The board and management have a crucial responsibility for vitalising and promoting the risk culture through both words and actions. Also, expectations and the responsibility that rests with all employees in this respect must be

17 The independent control functions include the risk control function, the compliance function and the internal audit function.

clearly defined. According to FI, a desirable state of standards, approaches and conduct should be a matter of course for the board, management and all employees of the bank.

The role of the independent control functions

Even if the risk culture is well-established, the bank shall have a framework for its risk management. The independent control functions shall identify and analyse risks, and perform controls of and monitor the bank's risk management. The control functions shall also report on risks and deficiencies to the board of directors, the risk committee (if one exists) and the managing director.[18]

In order for the control functions to be effective, it is important that they have a clear mandate and effective processes. It is also important that they have the right competence and sufficient resources. This applies irrespective of whether the bank chooses to establish in-house control functions, or if it outsources parts of the work that the control functions are expected to perform. The bank can never, through outsourcing agreements, delegate the responsibility for what the control functions are to do according to the regulations. It is still the bank that is responsible for ensuring that the outsourced work is performed effectively and line with applicable rules.

In its supervision, FI has seen examples of control functions that do not meet the aforementioned requirements. For example, FI has noted control functions with excessively narrow and unclear responsibility, and an insufficiently holistic view. FI has also observed that some control functions do not have processes that are effective, and hence appropriate, throughout. On the whole, all of this risks leading to the control functions failing to effectively identify, analyse and report risks to the board and management. This can be exemplified by the fact that the risk reporting sometimes does not have adequate forward-looking and backward-looking analyses and/or follow-up of previously reported risks and deficiencies. In turn, this can lead to the board and management not having current and relevant information in the risk reporting that can provide a sufficient basis for acting, making decisions and taking appropriate measures, and hence assuming the responsibility incumbent upon these functions with respect to governance, risk management and control.

The board of directors and managing director are expected to have systems and methods for evaluating whether the risk management and the work of the control functions are effective and appropriate. In order for this to function as desired, it is crucial that matters regarding governance, risk management and control have high priority at all levels in the bank, not least among the board of directors and management. The effectiveness of the control functions, in terms of identifying, analysing and reporting, as well as the board's and management's actions and activity in relation to the control functions and by

18 Risk committee according to FFFS 2014:1.

reason of their reports, will remain important focus issues in FI's supervision.

Having sound governance, risk management and control is fundamental to running a company in the long term, whatever the business or industry. This also applies in the case of a bank or other financial firm, but in that case not only from a strictly business point of view, but also from a point of view in which sound consumer protection and stability in the financial system are in focus.

In 2017 FI will conduct investigations into the banks' control functions, the work of the board with risk issues, and the capacity for risk data aggregation.

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