



**Finansinspektionen**  
Box 7821  
SE-103 97 Stockholm  
[Brunnsgatan 3]  
Tel +46 8 787 80 00  
Fax +46 8 24 13 35  
finansinspektionen@fi.se  
www.fi.se

## FI's capital assessment method for securitisation within Pillar 2

### Summary

Finansinspektionen (FI) has noted that several banks<sup>1</sup> are working actively with different initiatives, for example with their balance sheet structures, to reduce their capital requirements. The securitisation of credit risk can be an effective tool for banks to reduce their capital requirements and is common in many other countries.

Securitisation allows banks to transfer credit risk to external investors without affecting the relationship with their customers. Banks can thus reduce their capital requirements provided that the securitisation transaction meets the regulatory requirements that a significant portion of the credit risk has been transferred from the bank's balance sheet to investors. This type of transaction may be used for a number of different purposes, and is structured differently depending on the specific purpose. The regulations distinguish between traditional and synthetic securitisation. Traditional securitisation is when credit risk is transferred by the bank selling a credit portfolio to a special purpose vehicle, which in turn issues securities to external investors, whose return and risk is derived from the original credit portfolio. Synthetic securitisation is when a portfolio's credit risk is instead transferred to investors through different types of derivatives and guarantees, without the loans leaving the bank's balance sheet. Traditional securitisation is primarily used as a source of funding while synthetic securitisation is primarily used to reduce the bank's credit risk and its capital requirements.

Securitisation historically has not been very common in Sweden, but the tightening of capital requirements in recent years may contribute to the development of a more significant securitisation market in Sweden. The design of the capital requirements themselves may also have a considerable impact on incentives to turn to securitisation. The incentives that Swedish banks are facing to engage in securitisation may also be enhanced if capital requirements that are not as risk-sensitive become the binding capital restriction. Fundamentally, FI believes that there may be benefits to a development in which the Swedish demand for credit can be met by a more diversified base of capital and funding sources and not just the banking system. More diversification and wider distribution of the banking sector's funding sources and credit risk can lead to both efficiency gains and lower systemic risks to the extent that they contribute to a more stable and resilient supply of credit.

---

<sup>1</sup> In this memorandum, the term "banks" is used for all institutions (banks, credit market companies and securities companies) that are subject to the capital adequacy regulations.

However, securitisation can also pose risks for banks and society that are not considered in current regulation. FI is tasked in its supervision and regulations with taking a holistic approach to the risks associated with the banks' operations, including risks that may be associated with securitisation. This means that FI must take into consideration risks that are transferred to third parties, risks that remain with the banks and any new risks that may arise. FI must also take into consideration systemic and macroeconomic risks that arise outside the banks and affect the economy at large. FI therefore believes that there is cause to take a position in its supervisory capital assessment on whether the consequences of securitisation on the capital requirements under current regulation are reasonable. FI also believes there is cause to assess whether securitisation may give rise to new risks for the individual bank in question or the financial system as a whole.

It is FI's assessment that serious risks may arise if large amounts of credit risk are securitised in situations when the market for securitisation has closed for new issues. In such a situation, banks are left with the choice of either renewing the underlying loans and thus having the credit risk flow back to their balance sheets, subsequently increasing their capital need, or denying borrowers new or extended loans. In the first option, a new type of risk arises which this memorandum calls "*flowback risk*", i.e. the risk that the credit risk and thus the capital requirements may "flow back" from investors to the bank. In the second option, financial stability risks related to the total credit supply may arise or be amplified, which may result in a greater contraction in the credit supply than would otherwise have been the case.

Securitisation can thus have serious consequences from both a micro and a macro perspective<sup>2</sup>. In a generally unstable market, traditional market funding via, for example, covered bonds can also give rise to similar consequences for lending (as those described for securitisation) due to the dependence on this funding source by market participants. However, from a stability perspective, the financial strain on the securitisation market represents a greater risk. This is because of the reduction in the capital requirements that follows from a securitisation and the significantly higher risk that investors take on in capital requirement-reducing securitisation transactions. It is also reasonable to assume that during market turmoil the market for securitisation will close before the market for traditional bank bonds.

In this memorandum, FI describes its view of securitisation and the risks (primarily flowback) that FI sees and that are not taken into consideration in the banks' current capital requirements. The memorandum also describes the capital assessment approach that FI intends to apply to assess banks' Pillar 2 capital requirements for flowback risks during securitisation.

---

<sup>2</sup> "Micro" and "macro" are terms commonly used in the supervision of banks. There are no exact definitions, but "micro matters" normally refer to matters that affect the idiosyncratic behaviour and risk of individual banks while "macro matters" refer to their collective behaviour and risks, including the risks that banks' actions introduce for third parties and the economy at large.

The following is a bullet-point overview of FI's general positions and proposed exemptions:

- FI intends to assess the banks' eventual Pillar 2 capital requirements for flowback risk based on the assumption that the loans which have been securitised will be renewed at maturity, however no securitisation transactions can be completed. As such, the credit risk associated with the loans will return to the banks' balance sheet. This would realise the flowback risk and weaken the bank's capital ratios.
- FI intends to calculate a capital requirement only if the flowback risk is judged to have a significant impact on the bank's capital ratio or, for systemically important banks, if the securitised exposure volume constitutes a significant portion of a systemically important activity.
- FI intends to exempt from the capital requirement banks that meet the following two conditions: 1) the impairment of the bank's total capital ratio arising as a result of the increase in the risk-weighted exposure amount is less than a certain cut-off point, and 2) the nominal value of the securitised exposure volume is less than a certain per cent of the bank's total lending to the exposure class in a national market in which the bank is judged to have a systemically important role.
- In order for banks that are considered to be systemically important to be exempted from FI's capital requirement for securitisation, they must meet both of the above conditions. Banks that are not systemically important must only fulfil the first condition. A more detailed specification of the cut-off points is provided in the memorandum.
- The Pillar 2 capital requirement for flowback risk is calculated to be equivalent to the sum of the total capital ratio impairment in excess of the cut-off point. If a systemically important bank fulfils Condition 1 but not Condition 2, FI will calculate a capital requirement based on the excess portion's percentage of the total reduction in capital requirement that results from the bank's securitisations.
- FI intends to exempt the same type of exposures that are exempted from the floor for the maturity assumptions<sup>3</sup>. FI is also considering whether to allow exemptions, or reduce the capital requirement, for certain transactions that due to their structure result in a low flowback risk. FI welcomes feedback on the design of such a proposal.

FI intends to apply this capital assessment approach to institutions in Supervision Categories 1 and 2 in conjunction with the SREP starting in 2017.<sup>4</sup>

---

<sup>3</sup> See FI's memorandum, "Pillar 2 capital requirements for maturity assumptions", FI Ref. 16-2703 ([http://www.fi.se/upload/43\\_Utredningar/40\\_Skrivelser/2016/pm-loptid-2016-05-24.pdf](http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2016/pm-loptid-2016-05-24.pdf)).

<sup>4</sup> See FI's memorandum, "Categorisation of Swedish credit institutions according to the OSII model for 2017 (in Swedish), FI Ref. 16-13939 ([http://www.fi.se/upload/43\\_Utredningar/40\\_Skrivelser/2016/osii\\_kategorisering2017\\_20160926.pdf](http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2016/osii_kategorisering2017_20160926.pdf)).

Any feedback on these positions and proposed exemptions must be submitted to FI no later than 26 January 2017.

## Table of Contents

1	Introduction .....	6
1.1	Background.....	6
1.2	Purpose .....	7
1.3	Securitisation .....	9
1.3.1	Traditional and synthetic securitisation.....	9
1.3.2	Transfer of significant credit risk .....	10
1.3.3	Requirements on risk retention .....	11
1.4	The securitisation market.....	11
2	Financial incentives for securitisation.....	14
3	Legal basis.....	15
3.1	Legal basis for FI's Pillar 2 assessments .....	15
3.2	Capital requirements for flowback risk within Pillar 2 .....	16
3.3	Legal basis for securitisation .....	17
3.4	Scope and entry into force .....	17
3.5	Preparation.....	18
4	Description of the problem.....	18
4.1	Securitisation's inherent time-limitation .....	18
4.2	Risk analysis .....	18
4.2.1	Refinancing of securitisation following financial stress .....	18
4.2.2	Borrowers' expectations and society's need for a stable supply of credit .....	19
4.2.3	Flowback risk .....	20
4.2.4	Consequences of unmanaged flowback risk .....	21
5	Capital assessment method.....	22
5.1	Fundamental assumptions for the assessment .....	22
5.1.1	FI's position.....	22
5.1.2	Reasons for FI's position.....	22
5.2	Method for assessing capital requirements.....	22
5.2.1	FI's position.....	22
5.2.2	Reasons for FI's position.....	23

5.3	Type of capital .....	25
5.3.1	FI's position.....	25
5.3.2	Reasons for FI's position.....	25
5.4	Scope .....	25
5.4.1	FI's position.....	25
5.4.2	Reasons for FI's position.....	26
5.5	Exemptions from the capital requirement .....	26
5.5.1	Proposed exemptions.....	26
5.5.2	Reasons for why exemptions are needed .....	27
5.6	Potential future development of the method.....	27
6	Data collection.....	28
7	Impact analysis .....	28
7.1	Consequences for banks .....	28
7.2	Consequences for competition in the market .....	29
7.3	Implications for Finansinspektionen .....	30
8	Concluding remarks .....	30
Appendix 1. Information to be submitted to FI for the SRT (Significant Risk Transfer) assessment .....		32
Appendix 2. Information to be submitted to FI for the flowback risk assessment .....		34
Appendix 3. Financial incentives for securitisation .....		35

# 1 Introduction

## 1.1 Background

Today's risk-sensitive capital requirements mean that the riskier the banks' exposures, the more capital they must hold against these assets<sup>5</sup>. The aim of these requirements is to give banks incentives to have sound lending practices while at the same time ensuring that they have sufficient capital to bear any losses without forcing creditors or taxpayers to carry this cost.

In their efforts to improve profitability, banks face incentives to find different methods for reducing their capital requirement. If banks are able to reduce their capital requirements by restructuring their balance sheets or reducing their credit risks (and thus the amount of capital they must hold against these risks), without experiencing an equivalent reduction in their net income, their return on equity and dividend capacity rises. Risk-sensitive capital requirements otherwise reduce in general the possibilities for banks to lower their capital requirements without at the same time lowering to the same extent the risk in the operations.

One method that the banks can use to reduce their capital requirement and at the same time keep a significant part of the economic profitability in their operations is to securitise assets, i.e. claims on parties who have borrowed money from the bank. Securitisation entails transferring the credit risk in a portfolio to investors via securities, often after the risk has been divided into different tranches. Normally, the relationship between the borrower and the bank is preserved even though the borrower's credit risk has been transferred to various investors on the capital market. In some cases, the borrower is not even aware that the credit risk has been transferred. According to securitisation regulations, the bank that initiated the transaction is allowed to reduce its total capital requirement through securitisation on the condition that a significant portion of the credit risk can be considered to have been transferred to investors. The reduction in the capital requirement occurs through a reduction in the risk-weighted exposure amounts. Securitisation thus enables the bank to free up capital. More capital is freed up when the capital requirements (as a per cent) are high than when they are low since the requirements are calculated using the risk-weighted exposures amounts for the securitised exposures. This is particularly the case when significant portions of the capital requirements cover risks other than direct exposure risks, which is the case in Sweden.

The fundamental economic driver behind securitisation is that capital can be freed up at a lower cost than what serves as a basis for the banks' pricing. Securitisation is common in many countries, but to date has been a relatively rare occurrence in Sweden. Swedish banks have instead used covered bonds to generate funding as well as guarantees and other measures for managing and reducing their credit risk. As described in section 2 and appendix 3, however, the interplay between banks'

---

<sup>5</sup> In this memorandum, the term "banks" is used for all institutions (banks, credit market companies and securities companies) that are subject to the capital adequacy rules.

business models and capital adequacy regulations could create major financial incentives to use securitisation, particularly in Sweden as a result of the tightened capital requirements on Swedish banks in recent years. Furthermore, international regulation is moving toward capital requirements that are not as risk-sensitive. If such capital requirements were to become key factors for determining banks' capital needs, Swedish banks would face greater incentives to turn to securitisation.

To the extent that securitisation actually reduces all of the risks that the capital requirements aim to cover, and assuming that no new risks arise through the securitisation, this can be considered to be a desirable development. As described in this memorandum, however, this does not always fully apply in Sweden.

## 1.2 Purpose

Securitisation is an important source of funding and risk management in many international markets, even if securitisation volumes have decreased since the most recent financial crisis. In many countries, and in particular in Europe, the banking system has not yet recovered from the financial crisis. This has a significant impact on the supply of credit and the economy in these countries. Several initiatives have therefore been taken after the financial crisis at the international level to restore the market's confidence in securitisation. One example is the European framework for simple, transparent and standardised securitisation which has been proposed within the framework of the EU initiative to strengthen the capital market union, with the aim of stimulating lending to corporates and households.

Finansinspektionen (FI) takes a fundamentally positive stance towards developments that introduce more capital and funding sources and thus improve the distribution of risk for Swedish banks. However, FI sees potential stability risks associated with these types of transactions. Extensive use of securitisation can make both the financial system and the supply of credit in the economy more volatile and vulnerable. In contrast to many countries in Europe, Sweden has not experienced insufficient lending to the real economy. In terms of mortgages, in fact, the opposite problem exists. FI currently makes the assessment that a reduction in the capital requirement would be the Swedish banks' primary purpose for securitisation.

The main cause behind the stability risks associated with securitisation is that the capital-reduction effect that can arise from securitisation is limited to the duration of the securitisation. However, from a stability perspective, society has a need for a stable, resilient supply of credit that should be viewed as perpetual. Furthermore, borrowers for certain types of loans that mature either during the duration of the securitisation or at the same time as the securitisation matures may both need and expect to extend their loans. In an unstable market where securitisations cannot be refinanced, FI sees a situation where banks may be forced to choose between two options, both of which are problematic.



The first is that the banks may choose to renew the loans in question, which contributes to a stable, resilient credit supply. However, in a situation where outstanding securitisations cannot be refinanced, the consequence of this option is a higher capital requirement for the banks since the loans “flow back” to the banks’ capital requirements at their full risk weight. This type of risk is called *flowback risk* in this memorandum. A sudden increase in their capital requirement could mean that banks experience difficulties meeting their requirements. If the market confidence in the banks is adversely affected, it could have consequences for stability. The banks may also need to suddenly reduce other lending or even be forced to wind down parts of their operations in order to comply with the new capital requirements. Because FI is responsible for macroprudential supervision and must monitor that the economy’s need for credit is fulfilled over time, part of FI’s assignment is to consider flowback risks in its supervision activities.

The second is that the bank may choose not to renew the securitised exposures, which means that borrowers will find themselves without financing. This could have serious consequences for a borrower if there is a strong need for continued financing and it is reasonable to expect an extension of the loan. In the event the borrower’s need for and purpose of the loan extends beyond the original contractual maturity, and if alternative financing is not available, stability in the credit supply may be negatively affected for the economy as a whole. If a large part of the Swedish credit market is affected by these types of time-limited transactions, there may be a sharply elevated risk of a serious contraction in the credit supply in Sweden. It is exactly this situation that FI wants to avoid by ensuring that banks instead are well-equipped to manage flowback risk.

The current regulations governing securitisation only take into consideration the banks’ own credit risks during a securitisation. The Capital Requirements Regulation<sup>6</sup>, which contains the provisions on capital requirements that apply to banks, does not address systemic or macroeconomic risks that may remain, arise or be amplified by securitisation. These risks are described later in this memorandum. As stated in the background, the high capital requirements in Sweden may strengthen the banks’ incentives to turn to securitisation, and the development could therefore progress even more rapidly in Sweden, with even greater consequences for the total supply of credit. This argumentation is developed in more detail in section 2 and appendix 3. Future capital requirements that are less risk-sensitive may also contribute to such a development.

Given this background, FI makes the assessment that it is necessary to ensure that banks are able to manage flowback risk even during periods of economic downturns in order to avoid or reduce risks from a stability perspective. This memorandum describes the approach that FI intends to apply within the framework of its Pillar 2 supervisory capital assessment for securitisation. The

---

<sup>6</sup> Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012.



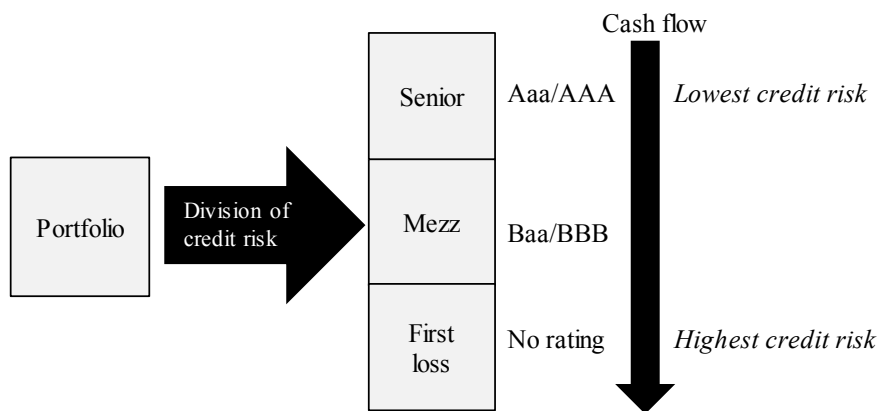
approach does not limit the banks’ possibilities to carry out securitisations, but limits the incentives related to capital requirement reductions in the event banks would choose to securitise significant portions of their loans and structure these transactions in such a manner that may be considered inappropriate based on a financial stability perspective. This approach thus has a clear link to FI’s macroprudential supervision assignment, which assigns FI the responsibility for reducing the risk of imbalances in the credit supply.

### 1.3 Securitisation

#### 1.3.1 Traditional and synthetic securitisation

A securitisation transaction is normally structured by dividing the credit risk into tranches with different priorities in terms of entitlement to the securitised portfolio’s cash flows. This order of priority in turn affects the risk level and return for investors as well as the tranches’ credit rating (if applicable). This is exemplified below in Figure 1. Investors holding senior positions have the highest priority, carrying the lowest risk of default and receiving the lowest return, while investors holding the lowest position – the first-loss tranche – bear the highest risk and receive the highest return. A transaction can also include intermediate (mezzanine) positions, which absorb losses after the first-loss tranche.

Figure 1. Example showing how credit risk is divided during securitisation



However, securitisations can be used to achieve many different objectives and thus can be structured in many different ways. A securitisation transaction is normally structured as follows:

In a traditional securitisation, a bank (the originator<sup>7</sup>) packages and sells a portfolio that consists of risk exposures (e.g. loans) from its balance sheet. These

<sup>7</sup> Article 4(13) of the Capital Requirements Regulation defines originator as “an entity which: a) itself or through related entities, directly or indirectly, was involved in the original agreement which created the obligations or potential obligations of the debtor or potential debtor giving rise

are typically sold to a *Special Purpose Entity (SPE)*, the only purpose of which is to finance the purchase of the portfolio by issuing *Asset-Backed Securities (ABS)* to investors on the financial markets. The total credit risk in these securities normally corresponds to the credit risk in the underlying loans. Credit losses up to a certain (expected) level or delayed payments during the period of the transaction can be covered by a credit or liquidity facility from the bank or a third party. These types of facilities introduce separate capital requirements for the guarantor (often the originator).

In a synthetic securitisation, the bank normally keeps the loans on its balance sheet and instead transfers the credit risk to the counterparty, (i.e. the seller of credit risk protection) through different types of funded or unfunded credit risk protection, such as derivatives, guarantees and cash collateral. Synthetic securitisations also often utilise an SPE as the direct counterparty for the bank with the investors as the end risk-takers. The counterparty risk is often managed by the investors placing cash collateral and cash equivalents with the SPE.

Both traditional and synthetic securitisation can be used to reduce banks' credit risk and thus their capital requirements. However, traditional securitisation is primarily used as a source of funding in that the position that has the highest nominal value and the lowest credit risk is sold, i.e. the majority of the transaction in question except the position with the highest credit risk. In contrast, synthetic securitisation does not generate funding for a bank, but rather is used primarily to reduce the capital requirement. This is done by selling to investors the position that has the highest credit risk. This position has a relatively low nominal value (the opposite of a traditional securitisation) since it has the largest effect on the capital requirement.

### **1.3.2 Transfer of significant credit risk**

Securitisation is governed by the Capital Requirements Regulation<sup>8</sup> and guidelines from EBA. According to EBA's guidelines regarding significant transfer of credit risk<sup>9</sup>, if banks engage in securitisation transactions that the banks assert will result in a significant risk transfer (SRT), and thus a reduction in their capital requirement, the banks are obligated to notify FI about these transactions. The information that FI requests from the banks is provided in Appendix 1. As part of its supervision, FI is responsible for assessing whether the securitisation transactions reported by the banks meet the requirements set out in the Capital Requirements Regulation and EBA's guidelines regarding SRT. This assessment takes into account, for example, the structure of the transaction, the credit risk of the underlying loans and other factors that affect the transfer of credit risk. Only if

---

to the exposure being securitised; or b) purchases a third party's exposures for its own account and then securitises them".

<sup>8</sup> Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012.

<sup>9</sup> Guidelines on Significant Credit Risk Transfer relating to Articles 243 and Article 244 of Regulation (EU) No 575/2013, EBA/GL/2014/05.

these conditions can be considered to be met will the bank have a lower capital requirement.

### 1.3.3 Requirements on risk retention

The Capital Requirements Regulation contains a retention requirement under which an institution that is subject to the regulation may only invest in securitisations in which the originator has retained an economic interest of no less than 5 per cent of the securitisation.<sup>10</sup> One of the aims of this requirement is to ensure that institutions that must meet capital requirements only have exposures to securitisations where the originator retains some incentives for risk control both when issuing the loan and during the term of the loan. The risk retention requirement is usually described as indirect in that it targets the investor and not the originator. It therefore does not apply to investors who are not subject to the Capital Requirements Regulation, such as portfolio managers. However, many investors often demand that originators still retain significant risk in the securitised exposures. The risk retention requirement and the requirement on significant credit risk transfer are applied in tandem; the retention requirement shall ensure that there are incentives for the originator to take responsibility, while the significant credit risk transfer requirement shall ensure that credit risk is actually transferred for the part of the exposure risk that is not being retained.

## 1.4 The securitisation market

Securitisation has been used for several decades and has, with varying degrees of success, been common primarily in the USA but also in European countries such as the UK and France. In general, it can be said that the experiences related to issues of securitised exposures have been significantly better, not in the least from a stability perspective, in Europe, where the volumes have been much lower than in the USA where volumes have been and continue to be much larger. It is worth noting that the US securitisation market is affected by conditions that are largely not present in Europe.

Risk management techniques that are based on securitisation have changed over time. At the beginning of the 2000s, they became much more complex and difficult to analyse. Some of the more complex techniques are considered to have been major contributors to the most recent financial crisis and one of the reasons the problems were so widespread. Under the *originate-to-distribute* business model, banks or other lenders grant loans with the objective of selling them to a third party. This model is associated in particular with the securitisation of subprime loans<sup>11</sup> in the USA during the most recent financial crisis, which resulted in a short-term focus on profit as well as sub-standard credit assessments

<sup>10</sup> Article 405 of the Capital Requirements Regulation defines five different alternatives for how the bank can retain an economic interest of no less than five per cent.

<sup>11</sup> In terms of mortgages, subprime loans refer to borrowers with relatively poor creditworthiness, where the loan's risk to a significantly larger extent refers to the underlying collateral, i.e. the home, than what is the case with normal mortgages (prime loans), where the borrower has good creditworthiness.

of a large number of borrowers<sup>12</sup>. Even though subprime loans are estimated to have accounted for less than 10 per cent of all securitised mortgages in the USA<sup>13</sup>, they accounted for more than 30 per cent of new lending in the USA in the years leading up to the financial crisis. An additional 20 per cent of the mortgages were classified as neither subprime loans nor prime loans (loans where the borrower has good creditworthiness)<sup>14</sup>. Lending in both of these categories can have been facilitated by securitisation, but at the very least securitisation made it possible for lending to reach such a large proportion. Securitisation in general, and *originate-to-distribute models* specifically, still have a significant presence on the US financial market.

After the crisis, activity on the global securitisation market decreased. Even though the US market has showed some recovery, the issue volumes in Europe continue to be low compared to the years before the crisis, and even then the volumes in Europe were significantly lower than in the USA. This is illustrated below in Diagram 1. Since 2008, the majority of issued positions for securitisation in Europe were held by the issuers themselves, largely to use them as collateral for loans at the European Central Bank (ECB).<sup>15</sup>

---

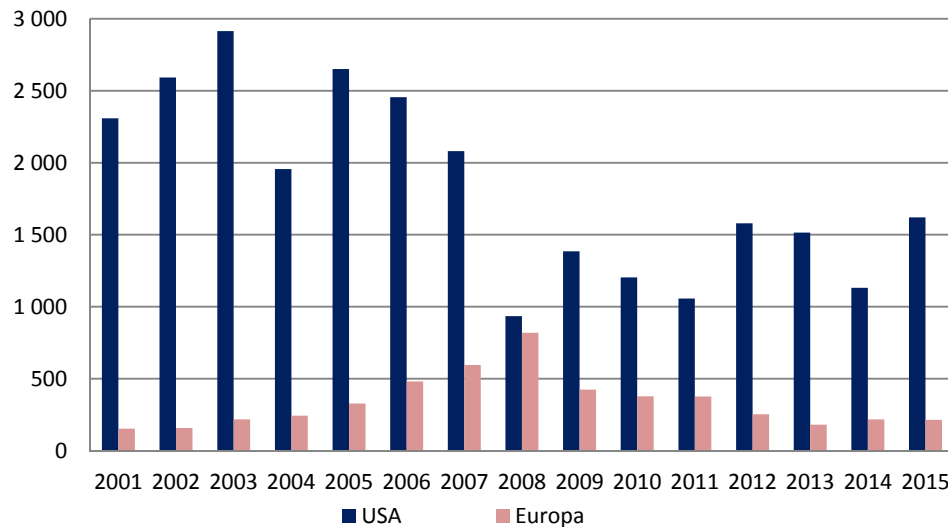
<sup>12</sup> See, for example, Securitization: Lessons Learned and the Road Ahead, Segoviano, M., Jones, B., Lindner, P. and Blankenheim, J., IMF Staff Discussion Note, published January 2015 (<https://www.imf.org/external/pubs/ft/sdn/2015/sdn1501.pdf>).

<sup>13</sup> See, for example, Outlook for the Securitisation Market, Blommestein, H.J., Keskinler, A. and Lucas, C., OECD Journal, published 2011 ( <http://www.oecd.org/finance/financial-markets/48620405.pdf>).

<sup>14</sup> Mortgages that are not classified as subprime loans or prime loans include mortgages that are classified as “Alt-A”, which means there is a lack of information about the borrower or relatively low collateral values as a share of the loan’s size (i.e. high loan-to-value ratios). See, for example, Subprime lending and the housing bubble: Tail wags dog?, M Coleman, IV., LaCour-Little, M., Vandell, K.D., Journal of Housing Economics 17, published September 2008 (<http://www.econ.wayne.edu/agoodman/7500/meltdown/kl-lv.pdf>).

<sup>15</sup> See, for example, EBA Report on Qualifying Securitisation, European Banking Authority, published July 2015. (<https://www.eba.europa.eu/documents/10180/950548/EBA+report+on+qualifying+securitisation.pdf>).

Diagram 1. Issue volumes for traditional securitisation in the USA and Europe (EUR billion)



Source: The Association for Financial Markets in Europe (AFME)

The above diagram shows primarily the market for traditional securitisation. It is more difficult to gain an overview of the scope of the market for synthetic securitisation because there is no available information, in part because synthetic transactions are often conducted bilaterally or with a smaller number of counterparties and with less standardised contracts.

Over the past few years several changes have been made to the international regulations for securitisation. The Basel Committee has revised its securitisation framework with the aim of rectifying deficiencies that came to light during and after the financial crisis.<sup>16</sup> The Basel Agreement on these matters enters into force in 2018 and will also be implemented within the EU. Furthermore, both the EBA and the Basel Committee, together with the International Organization of Securities Commissions (IOSCO), have proposed frameworks for simple and transparent securitisations. Provided that certain conditions are met, these frameworks would entail a lower capital requirement for holdings of securitised positions. The aim of the framework is promote the development of relatively simpler and more standardised securitisation, and thus improve lending to the real economy, particularly to small and medium-sized companies.

Interest among Swedish banks to securitise their loans has to date been limited. However, future regulations for both general capital requirements and specific capital requirements for securitisation could change this position. For Swedish banks, covered bonds have so far been an important source of funding. However, there are major differences between funding derived from securitisation and funding derived from covered bonds. One important difference is that banks keep the credit risk for the loans when issuing covered bonds. They also retain the

<sup>16</sup> Basel Committee on Banking Supervision, Revisions to the Securitisation Framework, December 2014 (<http://www.bis.org/bcbs/publ/d303.pdf>).

payment liability if the collateral for the bonds is insufficient. This is the main reason why funding via covered bonds does not entail any type of capital requirement relief for the issuer.

## 2 Financial incentives for securitisation

Securitisation can be beneficial for the economy in that it facilitates the distribution of risks and expands the possibilities for banks to secure funding and manage their risks. These benefits must be weighed against potential economic risks, such as the higher dependence of banks on the financial markets. These economic benefits and risks will be described in more detail in an analysis FI intends to publish at the beginning of 2017.

The capital adequacy regulations and the banks' business models also create different economic incentives, which are not necessarily in line with society's interests. Banks' incentives could amplify the economic risks. The fundamental economic driver behind securitisation in Sweden today is that it can free up capital at a lower cost than that the banks use when pricing their exposures. This incentive can be broken down into the following three components:

- If the capital requirement for certain exposures exceeds investors' assessments of the exposure risk, a bank can free up more capital than the exposure risk investors are using when pricing a securitisation. A *capital requirement-based profit* is thus generated for the bank.
- If the bank has priced an exposure, for example interest rates for mortgages or corporate loans, using a higher required rate of return than what investors are using when pricing a securitisation, a *return requirement-related profit* is generated for the bank.
- If the risk-weighted exposure amount that the capital requirement is based on more cautious (higher) exposure risk assumptions than investors' expectations for exposure risk during the duration of the securitisation, a *cycle-related profit* is generated for the bank. In extremely difficult economic situations, the reverse situation is also conceivable, i.e. the exposure risk can be higher than what was taken into account in the risk-weighted exposure amounts. This can also be the case if the risk-weighted exposure amounts are improperly calculated.

The first two components, the capital requirement- and return requirement-based profits, can be viewed as structural and stable over time. Figure 2a shows the incentives for securitisation that arise from capital requirement- and return requirement-based profits for corporate loans, and Figure 2b shows the corresponding incentives for Swedish mortgages. These two components are explained in more detail in Appendix 3. The surface area in the figures corresponds to total revenue and cost, and the difference between the two (the L-shaped, light blue field) corresponds to the originator's profit, i.e. revenue from the exposures minus costs for the securitisation.

Figure 2: **Capital requirements, return requirements and financial profit relating to securitisation**

Figure 2a: **Corporate loans**

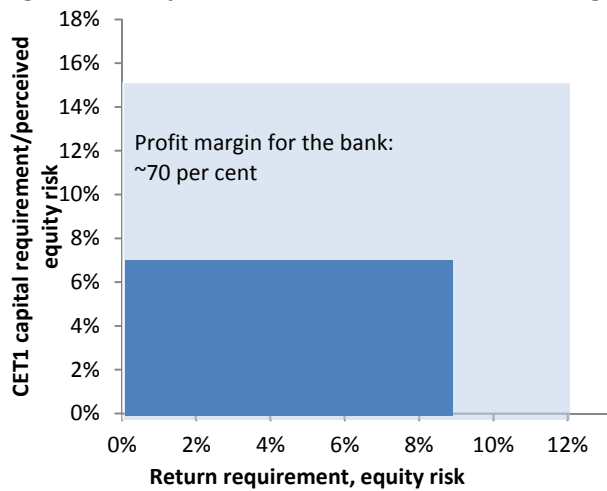
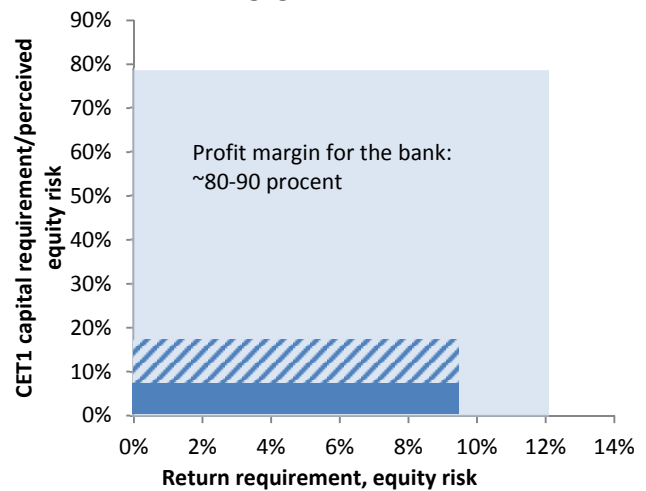


Figure 2b: **Swedish mortgages**



■ The bank's **revenue** (large rectangle) is assumed to be based on capital requirements being met in full and the bank's own return requirement. The bank's **profit** from securitisation corresponds to the difference between revenue and cost (the light blue, L-shaped field)

■ The bank's **cost** for securitisation (small rectangle) is assumed to be based on exposure risk, using minimum capital requirements under the IRB approach, and the market's return requirement for normal equity risk

▨ **Other cost** for the bank if investors judge the exposure risk in the mortgage to be in line with FI's assessment, i.e. 15 per cent risk weight

The third component, the cycle-related profit, is normally positive and is in addition to the description in Figure 2 above. Unlike the first two components, the cycle-related profit changes over time and can enhance the macroprudential risks that FI considers to be associated with securitisation. This is described in more detail in Appendix 3.

### 3 Legal basis

#### 3.1 Legal basis for FI's Pillar 2 assessments

The provisions of the Capital Requirements Directive<sup>17</sup> grant national supervisory authorities the right to decide within the framework of Pillar 2 whether an institution shall have more own funds than what is set out in the Capital Requirements Regulation. Pillar 2 is the umbrella term for the rules governing banks' internal capital adequacy assessment processes and FI's supervisory

<sup>17</sup> Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2009/49/EC.



review and evaluation process, of which the total capital assessment constitutes an important part. The rules for Pillar 2 can be found in Articles 73–110 of the Capital Requirements Directive. The total capital assessment is the assessment that FI conducts of each individual bank's risks and capital requirements and takes into account both risks that are included in the Capital Requirements Regulation (Pillar 1) and risks that are not.

The provisions of the Capital Requirements Directive regarding Pillar 1 have been implemented into Swedish law through Chapter 2 of the Special Supervision of Credit Institutions and Investment Firms Act (2014:968) (the Supervision Act). Chapter 2, section 1 of the Supervision Act states that FI has the right to decide that an institution shall have more own funds than what is set out in the Capital Requirements Regulation, an additional own funds requirement. A decision for an additional own funds requirement targets an individual institution is always preceded by an assessment by FI. However, some risks that are not covered by Pillar 1 are common to all banks with a certain type of exposure, such as the risks that have been identified as being associated with securitisation. When this is the case, FI considers there to be benefits to announcing in advance the methods that will serve as a basis for how it will assess each institution's capital need.

FI has already expressed in the Capital Requirement Memorandum<sup>18</sup> that it aims to standardise and publish the methods for assessing additional types of risks that are included in the total capital assessment. By developing methods and a general practice for this assessment, FI ensures that the banks are being treated equally. In its preparatory works for the Supervision Act (see Bill 2013/14:228 p. 229), the Government has also emphasised the importance of the Pillar 2 process being clear and transparent. Section 3, point 3 of Special Supervision and Capital Buffers Ordinance (2014:993) also states that FI, on its website, shall provide the general criteria and methods that are applied to the supervisory review and evaluation process. It is FI's ambition to remit and publish the assessment methods that are used during the Pillar 2 process. FI has previously published memorandums detailing methodologies for three types of risks.<sup>19</sup>

FI is submitting this memorandum for consultation on the authority's capital assessment method for flowback risk that in FI's view is associated with securitisation against the background of the previous information that FI has published.

### **3.2 Capital requirements for flowback risk within Pillar 2**

This memorandum describes several of the risks that FI has identified as relevant in a securitisation. The objective of FI's assessment methodology is to ensure that

---

<sup>18</sup> See FI Memorandum, Capital Requirements for Swedish Banks, FI Ref 14-6258. ([http://www.fi.se/upload/43\\_Utredningar/40\\_Skrivelser/2014/kapitalkrav-svenska-banker-140910ny.pdf](http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2014/kapitalkrav-svenska-banker-140910ny.pdf)).

<sup>19</sup> See FI Memorandum, FI's methods for assessing individual types of Pillar 2 risks, FI Ref. 14-414. ([http://www.fi.se/upload/43\\_Utredningar/40\\_Skrivelser/2015/pelare2-metoddokument-2015-05-08.pdf](http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2015/pelare2-metoddokument-2015-05-08.pdf)).

banks that engage in securitisation are able to manage a specific risk associated with this activity, flowback risk, even during difficult market conditions. The overall objective of the methodology is to reduce the risk of financial instability. FI has support in the capital adequacy regulation to introduce a capital requirement for flowback risk within the framework of its Pillar 2 assessment.

Chapter 2, section 1, first paragraph, point 2 of the Supervision Act also grants FI the right to decide on an additional own funds requirement if FI, in conjunction with its supervisory review and evaluation process, sees a need to cover risks to which the institution is or could become exposed, and risks that the institution poses to the financial system.

FI's assessment of securitisation transactions assumes that the authority is able to obtain specific information about the transactions from the banks. This is prescribed by, for example, Chapter 13, section 3 of the Banking and Financing Business Act (2004:297) and Chapter 6, section 1 of the Supervision Act.

### **3.3 Legal basis for securitisation**

Securitisation is defined in Article 4(1)(61) of the Capital Requirements Regulation. The provisions regarding the criteria a securitisation shall fulfil, the calculation of risk-weighted exposure amounts and provisions regarding external credit ratings are set out primarily in Articles 242–270 of the same regulation. The Capital Requirements Regulation distinguishes between two types of securitisation: traditional, which is defined in Article 242(10), and synthetic, which is defined in Article 242(11).

The handling of the securitised exposures when calculating risk-weighted exposure amounts, and where applicable expected loss amounts for the securitised exposures, is regulated primarily by Article 243 (traditional securitisation) and 244 (synthetic securitisation) of the Capital Requirements Regulation. In order for the originator institution to achieve a reduced capital requirement, a significant credit risk shall be considered to have been transferred to third parties. In terms of synthetic securitisation, the requirement is that the transfer occurs through funded or unfunded credit risk protection. If the conditions for capital requirement reduction are not met, the originator must apply a risk weight of 1,250 per cent to all positions it holds in the securitisation or deduct these securitisation positions from its Common Equity Tier 1 capital in accordance with Article 36(1)(k).

In addition to the above-mentioned provisions in the Capital Requirements Regulation, EBA has issued guidelines<sup>20</sup> on the transfer of significant credit risk according to Articles 243 and 244 of the Capital Requirements Regulation.

### **3.4 Scope and entry into force**

---

<sup>20</sup> EBA/GL/2014/05 Guidelines on Significant Credit Risk Transfer relating to Articles 243 and Article 244 of Regulation (EU) No 575/2013.

FI intends to apply this capital assessment method to institutions in Supervision Categories 1 and 2 in conjunction with its total capital assessment in SREP starting in 2017.<sup>21</sup> FI will closely follow the developments on the securitisation market in Sweden and in the future may also apply the method to institutions other than the current eleven largest banks.

### 3.5 Preparation

FI consulted with the Swedish Bankers' Association while drawing up a capital assessment method within Pillar 2 for securitisation transactions.

## 4 Description of the problem

### 4.1 Securitisation's inherent time-limitation

When a bank securitises exposures, the capital requirement for the bank applies to the portion of the securitised portfolio for which the bank still bears the credit risk<sup>22</sup>. This assumes that a significant portion of the credit risk can be considered to have been transferred to third parties. Credit risk which duration of the securitisation is taken over by investors on the capital market can therefore to varying extents reduce the bank's total risk level and thus its capital requirements. The reduction effect it has on the bank's total capital requirement, however, is limited to the actual period during which the exposures are securitised, i.e. the duration of the securitisation. Because borrowers have a need for and expect extension of certain types of loans and society has a need for a stable supply of credit, the securitisation's inherent time-limitation introduces risks for both the individual bank and the financial system as a whole.

### 4.2 Risk analysis

#### 4.2.1 *Refinancing of securitisation following financial stress*

If a bank is dependent on regularly refinancing transactions on the financial markets, it is vulnerable to financial stress. General market uncertainty as a rule raises the level of risk aversion and unwillingness of market participants to take on risk. Investors may then decide not to renew their positions, and potential new investors may choose to wait and see how the market develops. A securitisation transaction, in other words, may need to be renewed at a point in time when market liquidity is contracting or has disappeared completely.

---

<sup>21</sup> For the 2017 calendar year, Nordea, Svenska Handelsbanken, Swedbank and Skandinaviska Enskilda Banken belong to Category 1 and SBAB Bank, Svensk Exportkredit, Kommuninvest, Länsförsäkringar Bank, Landshypotek, Skandiabanken and Nordnet belong to Category 2. For more information, see FI's memorandum Categorisation of Swedish credit institutions according to the OSII model for 2017 (in Swedish), FI Ref. 16-13939 ([http://www.fi.se/upload/43\\_Utredningar/40\\_Skrivelser/2016/osii\\_kategorisering2017\\_20160926.pdf](http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2016/osii_kategorisering2017_20160926.pdf)).

<sup>22</sup> Additional capital requirements may arise, for example, due to foreign exchange risks.

The above reasoning applies to both traditional market funding as well as other financial instruments such as securities and credit derivatives that are used in securitisation. From a stability perspective, however, financial stress on the securitisation market represents a greater risk due to the reduction in capital requirements that banks can achieve from securitisation transactions. The most recent financial crisis showed that there is also a possibility that market uncertainty can arise in the securitisation market earlier than in other markets.

The disruptions in the securitisation market in the USA and Europe during the most recent financial crisis are well documented. At the beginning of 2007, special purpose vehicles, banks with links to special purpose vehicles and funds with exposures to securitised exposures suffered extensive losses. General uncertainty spread in the market, which made funding via securitisation noticeably difficult. This was one of the major reasons why Lehman Brothers investment bank applied for bankruptcy in September 2008, which fanned the flames of uncertainty and fear in the market. During 2009 and subsequent years, the situation in the financial market continued to be stressed and highly dependent on the central banks' and governments' measures to support the market. For financial stability reasons, the US Government provided direct support to the securitisation market through the Troubled Asset Relief Program.<sup>23</sup>

#### ***4.2.2 Borrowers' expectations and society's need for a stable supply of credit***

As described in FI's memorandum, *Pillar 2 capital requirements for maturity assumptions*<sup>24</sup>, borrowers in many cases may expect and need to extend their loans once the contractual term has expired, which can entail that the actual maturity exceeds the contractual maturity. The extent to which this occurs is largely dependent on the borrower's objective for the loan. For example, the objective of many corporate loans is long-term financing of operations and the borrower thus expects continued financing even when the loan's contractual maturity is short. The actual maturity can also exceed the agreed maturity when the borrower's financial situation is weakened and the bank is not able to demand repayment upon expiration of the loan without increasing its risk of default and credit losses.

It is in turn in the interests of the bank to nurture its long-term relationship with the borrower for future business opportunities. Terminated financing also increases the risk that the borrower will stop making payments and cause the bank credit losses for loans other than those that are included in the securitisation. The bank in many cases therefore may be expected to extend loans when they mature, in line with the borrowers' expectations and need for continued financing, even though the bank does not have any contractual obligation to agree to such an extension.

---

<sup>23</sup> See, for example, <https://www0.gsb.columbia.edu/faculty/fmishkin/papers/nberwp.w16609.pdf>

<sup>24</sup> See FI's memorandum, *Pillar 2 capital requirements for maturity assumptions*, FI Ref. 16-2703 ([http://www.fi.se/upload/43\\_Utredningar/40\\_Skrivelser/2016/pm-loptid-2016-05-24.pdf](http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2016/pm-loptid-2016-05-24.pdf)).

The above reasoning can also be assumed to apply to loans that are included in a securitised portfolio since the bank normally maintains its normal contact with borrowers after securitising exposures. Customers are also not even aware in many cases that their loans have been securitised. This means that the bank continues to be responsible for the administration of the loans and communication with the borrowers whose loans have been securitised and that the bank continues to sell other financial services to the same borrowers. When loans reach their contractual maturity, the bank can therefore be expected to face incentives to nurture its long-term relationship with a borrower and extend the loan in the same way as when loans are not part of a securitisation.

From a financial perspective, there are grounds for viewing the total supply of credit as perpetual since society has a need for stability and a long-term perspective in its credit supply. However, the economy is affected by fluctuations in the supply of credit. Significant negative changes in the supply of credit can amplify economic downturns and thus introduce a risk of weakened financial stability. The opposite is also true since an expansion in credit that occurs too quickly could lead to financial bubbles, i.e. uncontrolled and unsustainable increases in some asset prices, which could create serious problems for stability. As the authority responsible for macroprudential supervision, FI is tasked with following these developments and preventing such risks from arising.

#### **4.2.3 Flowback risk**

In a financially unstable market, where securitisations can no longer be completed or costs are too high to engage in new securitisation transactions, banks are forced to either terminate loans that no longer can be securitised or take back the credit risk and thus weaken their capital ratio, i.e. capital in relation to risk-weighted assets. Society's need for a stable supply of credit makes the second option relevant from the perspective of macroprudential supervision. FI uses the term *flowback risk* to refer to the risk that the capital requirements will flow back to the banks when the securitisation market closes based on an assumption of a stable credit supply.

Flowback risk materialises when new securitisation transactions cannot be completed in the market and previously securitised loans are renewed by the bank. In such a situation, the loans need to be covered in full by the banks in their capital requirements, since the reduction effect from the securitisation has been nullified. The total effect from the flowback risk on the bank's capital ratio depends on the securitised exposure volume, the risk of this volume and the securitisation transaction's structure, among other factors. The degree of flowback risk therefore can vary over time and is dependent on both the underlying loans and the terms of the securitisation as well as the rate of amortisation and any addition of new loans to the securitisation transactions.

The problems associated with flowback risk can also be amplified in that this risk can be assumed to be procyclical, i.e. it can be expected to materialise in

situations when the banks are already under financial stress due to other reasons. When a bank experiences a reduction in its available capital, this can also reduce the possibilities of the bank to manage the capital needs that arise as a result of the flowback risk. This could lead to a spiral effect in that the bank's capacity to grant new loans is also impaired. In a worst-case scenario, a higher capital need during a period of financial stress could mean a higher risk that the bank will breach the buffer and minimum capital requirements. In an extreme case, this in turn could mean the winding down of operations (or management through resolution). Banks can also be expected to be more sensitive to falls in confidence during such periods and they are thus particularly vulnerable in that their capital positions are exposed to stresses.

#### ***4.2.4 Consequences of unmanaged flowback risk***

If the bank cannot extend or chooses not to extend the securitised exposures, this means that the borrowers' financing is terminated. It would most likely be difficult for borrowers to find a new source of funding if the economy as a whole is experiencing a downturn and most lenders are in a position where they need to protect their own capital strength. In cases where the borrowers' objective or need for the loan is more long-term than the contractual maturity, and if there are no other possibilities for funding, the bank's choice not to extend the loans impairs stability of the credit supply and amplifies a credit contraction.

The four major Swedish banks are each considered to be systemically important as a result of their large market shares. They are also closely interconnected since they are jointly dependent on market conditions. Several banks can therefore suffer similar problems at the same time. Problems that individual banks may experience can thus quickly affect the financial system as a whole and the total supply of credit. The diagram on page 10 illustrates how volatile the total supply of credit can be if the banks were to become even more dependent on market funding. The most recent financial crisis required extensive support measures on the securitisation market in the USA and in other markets around the world. The crisis showed that public intervention may also be needed to support the supply of credit in the economy when banks fund themselves via the financial markets.

There will therefore be a need for FI to take measures to safeguard the total supply of credit if it becomes dependent on securitisation and is threatened by problems on the securitisation market. In addition to reducing the risk that securitisation accentuates economic downturns, FI's measures may also prevent such transactions from increasing the supply of credit at an unsustainable rate when market conditions are favourable.



## 5 Capital assessment method

### 5.1 Fundamental assumptions for the assessment

#### 5.1.1 *FI's position*

FI intends to make the following assumptions when assessing banks' Pillar 2 capital requirements:

- a) it is not possible to issue new securitisation transactions during periods of financial stress, and
- b) banks will renew exposures that have been securitised when they reach contractual maturity, with some specific exceptions.

#### 5.1.2 *Reasons for FI's position*

Two fundamental assumptions are made in this memorandum. The first is that it is not possible to issue new securitisation transactions during periods of financial stress and the second is that the borrowers behind the securitised exposures, with the exception of the loans specified in section 5.5.1, have a need for continued financing. In other words, FI assumes stable, unchanged lending for both individual banks and the financial system as a whole.

During periods of financial stress, a number of events usually occur at the same time, which means that uncertainty spreads quickly to other market participants and financial markets. The most recent financial crisis demonstrated that market liquidity can disappear completely or almost completely for a long period of time, which may make it impossible or significantly more expensive to issue new securitisations. Market uncertainty during the most recent financial crisis rose rapidly and became so widespread that almost all financial institutions were affected, not just those that bore large risks for credit losses.

### 5.2 Method for assessing capital requirements

#### 5.2.1 *FI's position*

FI intends to calculate a capital requirement for flowback risk within the framework of its Pillar 2 process. This capital requirement should correspond to the sum of the total deterioration to the capital ratio that would occur during a future 12-month period as a consequence of the flowback from all of a bank's securitised transactions.

FI intends to exempt banks from the capital requirement for flowback risk if they meet the following conditions:

1. The deterioration to the bank's total capital ratio resulting from flowback during a future 12-month period is less than 25 basis points for institutions in Supervision Category 1 and 50 basis points for institutions in Supervision Category 2.



2. The nominal value of the bank's securitised exposures is less than 15 per cent of the bank's total lending in the exposure class on a national market where the bank holds a systemically important role.

In order for banks in Supervision Category 1 that are considered to be systemically important to be exempt from the capital requirement for flowback risk, they must meet both of the above conditions. Banks in Supervision Category 2 that are not systemically important must only meet the first requirement to be exempt from the capital requirement for flowback risk.

If a systemically important bank meets the first but not the second conditions, FI intends to calculate an additional capital requirement. This capital requirement will correspond to a part of the total reduction in the capital requirement that arises from all of the bank's securitisation transactions. This part of the total reduction refers to the part (in percentage points) that exceeds the threshold set out in the second condition.

If a bank is in violation of the second condition in only one exposure class or one national market where the bank holds a systemically important role, an adjustment will be made that takes into account the contribution of the exposure class in question or the market to the bank's total exposures and risk.

### **5.2.2 Reasons for FI's position**

From a stability perspective, flowback risk rises as the volume of securitised exposures increases and the more the maturities for such transactions and securitised exposures at a bank coincide. This introduces a risk that a bank's capital positions could be significantly affected during difficult market conditions and an even greater risk that a bank will not be able to manage the flowback risk. This in turn enhances the risk that the supply of credit will be disrupted. FI's capital assessment method therefore aims to take into account both the structure and volume aspects of the banks' securitisation activities as a whole.

The capital requirement for flowback risk under Pillar 2 is calculated using the deterioration to a bank's total capital ratio above a specific threshold that arises as a result of the materialisation of flowback risk. When establishing this threshold, FI believes it is necessary to distinguish between banks that are individually considered to be systemically important and banks that collectively could be systemically important. In order to take into account that the ability of systemically important banks to manage flowback could have an impact on the supply of credit in the economy, FI intends to apply a more prudent, i.e. lower, threshold for each bank that is considered to be systemically important. FI believes that an appropriate threshold for institutions in Supervision Category 1 (currently Nordea, Svenska Handelsbanken, Swedbank and Skandinaviska Enskilda Banken) is 25 basis points and for institutions in Supervision Category 2 (currently SBAB Bank, Svensk Exportkredit, Kommuninvest, Länsförsäkringar Bank, Landshypotek, Skandiabanken and Nordnet) 50 basis points. Banks that engage in transactions for which flowback during a future 12-month period can be

expected to have an impact on the total capital ratio but remain below the stated thresholds are assessed to be able to maintain sufficient capital or in another way manage the flowback risk. In such a scenario, a capital requirement will normally not be calculated.

The deterioration to a bank's capital ratio that is regulated in the first condition takes into account an individual bank's ability to manage flowback, which affects the supply of credit in the economy. However, FI intends to also apply the second condition to systemically important banks before allowing them to be exempt from a capital requirement for flowback risk. The reason for this is that there are grounds from a stability perspective to take into consideration the consequences of a market that is unstable in the long term, where a bank's flowback during a 12-month period does not exceed the method's threshold but where the sum of all flowbacks constitutes a significant part of systemically important activity. This introduces an elevated risk for both the individual bank and for instability in the supply of credit. FI therefore believes that there is a need to also ensure that the bank's securitised lending volume for an exposure class does not exceed a certain significant percentage of the bank's total lending in the same exposure class in a country where the bank can be considered to hold a systemically important role. FI makes the assessment that an appropriate threshold is 15 per cent. This should also help reduce the risk of the emergence in Sweden of the *originate-to-distribute* business model, i.e. that lenders grant loans in order to sell them to third parties, and prevent global contagion effects in the event of credit losses in a credit portfolio.

FI makes the assessment that banks' efforts to establish a capital buffer to manage flowback risk in accordance with the above-mentioned method should introduce good possibilities for extending previously securitised exposures in line with borrowers' expectations and society's need for a stable credit supply. A capital requirement that is only activated in the presence of significant securitisation and for transactions that are inappropriately structured from a stability perspective also mitigates the risk that securitisation in Sweden will lead in the future to excessive lending. The capital requirement thus contributes to FI's overarching aim for the capital assessment method and its macroprudential mandate, i.e. to ensure stability in the credit supply.

As an alternative to the method described above, FI believes that there could be grounds for only taking into account in the assessment of the flowback risk a limited (consecutive) period of time, for example 5 years (i.e. 60 months) during which future flowback is expected to have the greatest impact on a bank's capital ratio. The reason for this potential limitation is that a period of financial stress cannot be assumed to continue indefinitely. In such cases, FI intends to apply a ceiling to the bank's total allowable deterioration to its capital ratio. The ceiling would be more restrictive than the number of years multiplied by the annual limitation on the deterioration to a bank's capital ratio. An appropriate level for such an alternative threshold given a time limitation of, for example, 5 years would be 75 basis points for institutions in Supervision Category 1 and 150 basis points for institutions in Supervision Category 2. FI welcomes consultation

feedback regarding this alternative limitation on the period of time and ceiling for the total allowable deterioration to the capital ratio.

### 5.3 Type of capital

#### 5.3.1 *FI's position*

The capital requirement for flowback risk under Pillar 2 shall have capital coverage in accordance with the same capital distribution as the Pillar 1 capital requirement, excluding the capital requirement for the capital conservation buffer and the countercyclical capital buffer but including the buffer for Pillar 2 systemic risk.

#### 5.3.2 *Reasons for FI's position*

FI's memorandum *Capital Requirements for Swedish Banks* states that the main rule is that risks covered by Pillar 2 basic requirements shall be covered by the same capital distribution as the Pillar 1 capital requirement, but that banks may deviate from the main rule for specific types of risk.

Both the capital conservation buffer and the countercyclical buffer use different approaches to cover losses that may arise under financial stress. Given that flowback risk is assumed to arise in such critical periods - when it can be assumed that these buffers will be activated - FI believes that both the countercyclical buffer and the capital conservation buffer should be excluded from the calculation of a capital requirement for flowback risk under Pillar 2.

FI would therefore like to clarify that it believes the main rule should be disregarded when calculating a capital requirement for flowback risk under Pillar 2.

### 5.4 Scope

#### 5.4.1 *FI's position*

FI intends to apply the method to traditional and synthetic securitisation transactions that are considered to meet the conditions for transfer of significant credit risk to third parties and thus could reduce the bank's capital requirements.

On a case-by-case basis, FI may also expand the scope to include other forms of externally acquired credit risk protection that give rise to flowback risk similar to that which arises during securitisation.

### 5.4.2 *Reasons for FI's position*

Flowback risk arises primarily in conjunction with transactions that reduce the capital requirement by transferring credit risk to third parties for a limited period of time at the same time as the bank maintains its relationship with the borrowers. Transactions where a bank continues to administer the loans and is responsible for communication with borrowers are clearly different than transactions where both credit risk and administration are transferred to a third party.

The capital assessment method will therefore apply to all traditional and synthetic securitisation transactions that are considered to meet the conditions for transfer of significant credit risk to third parties and thus reduce the capital requirements. The reason for this is that traditional and synthetic securitisation transactions, both of which can reduce capital requirements, contribute to flowback risk. As described in section 2 and Appendix 3, the Swedish risk weight floor for mortgages generates particularly large incentives to securitise mortgages. These incentives only occur during traditional securitisation.

FI also believes that flowback risk could be relevant for transactions that are fundamentally similar to securitisation but are not included in the definition of securitisation in the Capital Requirements Regulation. Given this, FI may also apply the method to other forms of externally acquired credit risk protection that give rise to the same type of flowback risks. An example of this type of credit risk protection is if the bank has purchased a guarantee from an insurance undertaking that entails the transfer of the credit risk from the bank to the insurance undertaking for a credit portfolio. If the guarantee meets the requirements set out in the Capital Requirements Regulation, the bank may then assume coverage for these exposures as if the loan were made directly from the bank to the insurance undertaking. If the loans made to the insurance undertaking require a lower capital requirement than the loans made to the borrowers, the capital requirement is reduced and the same type of flowback risk arises as during a securitisation transaction. Another type of risk transfer with similar risks is *sub participations*, i.e. when a bank remains as the counterparty and lender but transfers parts of the risk to other banks or investors. This type of transaction should also be viewed in the same manner as a securitisation in FI's Pillar 2 assessment according to this memorandum, if the transaction is significant in size.

## 5.5 Exemptions from the capital requirement

### 5.5.1 *Proposed exemptions*

FI intends to exempt from the capital requirement for flowback risk the same types of exposures that are exempted from FI's floor for maturity assumptions in the IRB approaches for credit risk, if it can be assumed that there is no expectation of an extension. The credit types are

- loans for the following three specific purposes:
  - specific financing for exports of goods and services (export credit),

- bridge financing with a contractual maturity of at the most 12 months, and
- non-revolving loans secured against receivables,
  - bank guarantees that have a final termination date within two and one half years from the date of issue with no possibility for restructuring or extension,
  - construction loans, and
  - letters of credit.

FI is also considering allowing exemptions from the capital assessment method for certain types of securitisation transactions that are constructed in such a manner as to generate low flowback risk. FI is waiting to receive feedback on its consultation before assessing the need for and possibility to define such an exemption.

### ***5.5.2 Reasons for why exemptions are needed***

If a bank chooses to securitise exposures where there are neither expectations of nor a need for extension, the flowback risk can be considered to be low. This could in turn justify exemption from the capital assessment method for flowback risk.

The securitised portfolio may contain loans for which the borrowers have neither a need for nor an expectation of continued financing. Even if such exposures also contribute to the total supply of credit, it is not probable that the termination of such loans would have the same negative effects on the economy as the termination of loans that are fulfilling a more long-term need for credit among borrowers. FI considers it possible to assume that the actual (expected) and contractual maturities for such loans are the same. Since borrowers in these cases do not expect the bank to renew the loans when the transaction reaches maturity, the flowback risk can be considered to be negligible. Given this, FI intends to exempt from the capital requirement for flowback risk the same types of exposures that are exempted in FI's decision memorandum regarding maturity assumptions.

Securitisation transactions may also be structured in such a manner as to manage or limit flowback risk. For example, they may guarantee a certain number of extensions to the transaction even during periods of financial stress, during which a re-issue of the securitisation normally would not be possible. These types of transactions mean that flowback risk will materialise at a later point in time. FI therefore welcomes consultation feedback on how any potential exemptions to this type of securitisation transactions could be designed.

## **5.6 Potential future development of the method**

The capital assessment method in this memorandum assumes that the risk-weighted capital requirement is the determining factor behind a bank's capital need. However, international regulation is moving toward capital requirement models that are less sensitive to risk. For example, the Basel Committee announced a decision in January 2016 that the global standard for the leverage

ratio must be implemented as a Pillar 1 requirement as of 1 January 2018. The Basel Committee has also proposed a new, permanent risk weight floor in relation to the standardised method that applies to every exposure. It is still not clear to what extent these less risk-sensitive or non-risk-sensitive capital requirements will affect the banks' capital needs.

FI has previously expressed its concern that less risk-sensitive capital requirements could create undesired incentives if these requirements become the binding factor for banks' capital restriction. If the leverage ratio requirement, where Core Equity Tier 1 capital is set in relation to the total exposure amount, becomes the primary capital restriction, banks will face incentives to make different business decisions than if a risk-weighted system is the determining factor. For example, this could strengthen banks' incentives to securitise exposures with low risk and return and keep the credit risk for high-risk exposures since in a less risk-based system these would not lead to a higher capital requirement but the same high return. Appendix 3 illustrates the consequences of the leverage ratio requirement and risk weight floor from a perspective of incentives to securitise Swedish mortgages. The securitisation market could also strengthen the possibilities of the banks to not only sell exposures with low risk, but also take on exposures with high risk. Because the leverage ratio requirement does not consider the exposures' risk level, such business decisions would no longer result in higher capital requirements for the banks.

This would mean that the Swedish banks would face additional incentives to both sell low-risk exposures and buy high-risk exposures in order to optimise their balance sheets given the steering capital requirements. Traditional securitisation of low-risk exposures, for example mortgages, makes this possible. It is, however, more complicated to use synthetic securitisation to reduce the capital requirements related to mortgages since the risk weight floor that steers the banks' capital requirements for such exposures is based on exposure amounts that are often not affected by securitisation. Through traditional securitisation, where the exposures are removed from the balance sheet, even the exposure amounts are reduced.

## **6 Data collection**

In its assessment of flowback risk, FI intends to gather information about the banks' total securitisation activities in the form of an additional request for information as set out in Appendix 2.

## **7 Impact analysis**

### **7.1 Consequences for banks**

The Swedish market for securitisation and similar transactions is currently limited in scope. If FI's capital assessment method for securitisation were to be applied to

Swedish banks today, it would not result in any capital requirements. The method thus primarily has an impact on banks' future choices and not their current situation.

FI's capital assessment method introduces a capital requirement that neutralises the capital requirement-reducing effect from securitisations by banks where estimated flowback during a future 12-month period has a significant impact on the total capital ratio, or, for systemically important banks, where securitised exposure volumes exceed a significant portion of their total lending volume for the exposure class in a country where they hold a systemically important role. However, a slight reduction in the capital requirement may still be possible since the proposal entails that the additional capital requirement be calculated without the capital conservation buffer requirement and the countercyclical buffer requirement. As a result, Swedish banks could refrain from engaging in certain types of transactions, which would have both positive and negative effects. The emergence of a larger Swedish market for securitisation, for example, which from some aspects could be viewed as positive and desirable, could be hindered. By not selling certain types of credit risk, banks may also opt to avoid implementing risk management measures that would be positive from a stability perspective. In the long-run, the banks' management of credit risk and access to alternative funding sources could be considered to be limited.

FI's capital assessment method also allows for significant securitisation transactions without this necessarily resulting in additional Pillar 2 requirements, on the condition that the banks structure the transactions in such a manner as to prevent overly excessive effects on the capital coverage when extending the underlying loans. In other words, this method does not ban securitisation transactions, but removes the incentives for them to be overly excessive and, from a financial stability perspective, inappropriately structured.

## **7.2 Consequences for competition in the market**

The introduction of additional capital requirements for certain securitisation transactions will most likely have a slightly negative impact on the incentives that Swedish banks face to engage in large securitisation transactions solely with the aim of reducing their credit risk and thus their capital requirement. FI's capital assessment method for securitisation thus to some extent can be considered a restriction on the competition in the Swedish banking market, both in terms of international participants and unregulated participants.

Several initiatives have been taken at the international level, within both Basel-IOSCO and EBA, to stimulate the securitisation market and lending to the real economy (primarily small and mid-sized companies). The effects of FI's capital assessment method is thus not fully in line with international initiatives. FI takes a fundamentally positive stance to a well-functioning European capital market, but emphasises that Sweden, unlike many countries in Europe, does not have any major problems with low lending. The opposite is rather the case. As described in this memorandum, FI is concerned about the stability risks that would arise if a



significant portion of the credit market in the future were to be covered by this type of transaction, since it could lead to more volatility in the supply of credit.

### 7.3 Implications for Finansinspektionen

Within the framework for the supervisory review and evaluation process, FI already assesses the banks' Pillar 2 risks. The introduction of a capital assessment method for securitisation would therefore not require a major change in FI's tasks. The risk analysis and the gathering of information that would serve as a basis for the assessment, however, would increase FI's work load to some extent. The extent to which this would affect the authority's use of resources is determined by future activity in the Swedish securitisation market.

## 8 Concluding remarks

This memorandum describes the capital assessment method that FI intends to apply to a specific type of securitisation risk, namely flowback risk. Securitisation can also introduce other opportunities and risks than those discussed here.

Following the most recent financial crisis, several measures were taken in both regulations and supervision in order to reduce several of the risks associated with securitised instruments that became apparent during the crisis. Because the transfer of credit risks occurs at several different levels, securitisation adds an extra level of complexity, with a greater distance between borrowers and the bearers of the credit risk and less transparency surrounding the underlying risks for investors compared to the information that is available for the original lender. This places high demands on supervisory authorities, investors and other market participants, such as banks and credit rating institutions, to correctly assess the risks. It is most likely not possible for regulation to fully prevent the additional risks that will unavoidably arise from securitisation<sup>25</sup>.

Securitisation spreads risk among multiple parties, which can be positive from a stability perspective in that this reduces the concentration risks in the financial sector. This benefit could compensate for the additional risks that arise. Securitisation makes it possible to transfer credit risk to participants in other sectors, for example pension funds, insurance undertakings and hedge funds, as well as to the economies in other countries. However, if these investors face poorer conditions for bearing credit losses, problems at one investor could spread rapidly to other parts of the financial system, including investors who may not necessarily be subject to the same supervision, capital requirements, consumer protection or possibilities for receiving liquidity support as the banking system during a financial crisis. This also restricts the possibilities for authorities and

---

<sup>25</sup> These risks are associated with, for example, asymmetric information, both between the originator and the investor and between both of these parties and the borrower, agency issues and moral hazards.

other market participants to exercise supervision and assess the risk level during normal periods.

As a supervisory authority, FI is responsible for the assessment of whether a securitisation will lead to a significant credit risk transfer and thus can justify a reduction in a bank's capital requirement according to the regulations. An incomplete transfer would introduce a risk that the bank holds too little capital given the actual risk. In its assessment, FI takes into account the different factors that could undermine the credit risk transfer itself. The risk that banks may face incentives to provide support to the securitisation transaction in addition to contractual commitments, with the aim of limiting credit losses for investors and preventing reputation risk in the market, is regulated in the Capital Requirements Regulation and the EBA's coming guidelines regarding implicit support.

As a whole, the effects from a larger Swedish securitisation market on financial stability and the economy are difficult to assess. As described earlier in this memorandum, the future development of a market for securitisation in Sweden can be affected by several different factors. The incentives the Swedish banking sector is facing to transfer credit risk to external investors, for example, may be expected to increase if the conditions for improved profitability are hindered by the market and regulation. FI plans to publish an analysis at the beginning of 2017 on the opportunities and risks associated with a large securitisation market in Sweden.

## **Appendix 1. Information to be submitted to FI for the SRT (Significant Risk Transfer) assessment**

A bank that completes a securitisation (the originator) shall provide FI with the following information for the SRT assessment in conjunction with the transaction.

When submitting notification of the securitisation transaction, the originator should submit the information requested in this Appendix to the extent possible and as a minimum in the form of a draft. When the transaction has been concluded, the final version of all documentation shall then be submitted to FI.

The information requested below does not constitute an exhaustive list, and FI may request additional information as needed to conduct its SRT assessment.

### **General information**

- The reason for the securitisation
- Relevant documentation (e.g. prospectus, contract, terms and conditions or other relevant documents)
- Presentation material for internal communication and for investors
- The articles the originator intends to apply to SRT according to Chapter 5 of the Capital Requirements Regulation

### **Parties to the transaction**

- Description of all parties and their roles in the transaction
- Payment flows between the parties to the transaction
- Any relevant links between the investors or the credit risk protection sellers and the originator, and information if the originator provides third parties with significant financing
- Credit ratings from external credit rating institutions and an analysis of their reliability

### **Structure of the transaction**

- Maturity and currencies
- Risk that is retained and fulfilment of the requirement on retained interest according to Article 405 of the Capital Requirements Regulation.
- Information about the underlying exposures (e.g. asset class, geographic market, maturity, rating, spread, collateral, risk weights, loss history and expected losses, etc.)
- Nominal value and thickness of the tranche
- Pricing and any ratings for securitised positions
- Any buy/sell/clean-up call options and replenishment periods (including approval criteria for the quality of the exposures)
- Description of any credit enhancement
- Description of any applicable excess spread
- Information about credit risk protection during synthetic securitisation, including:
  - Credit events covered
  - Premiums

- Fulfilment of the requirements for credit risk protection set out in Article 274 of the Capital Requirements Regulation.
- Any maturity and currency mismatches between the protection and the underlying exposures
- A statement on the credit risk protection's enforceability from a qualified legal representative

### **Capital adequacy**

- Risk-weighted exposure amounts before and after securitisation, and the calculation methods that were used
- Expected (EL) and unexpected losses (UL) according to the Capital Requirements Regulation and the originator's own estimates
- The stress assumptions applied to calculate the losses
- The time horizon that was applied (e.g. expected/contractual maturity, weighted average life of the assets, clean-up option) when calculating the above estimates
- Expected distribution of EL and UL per tranche
- Calculations of exposure amounts, risk weights and capital requirements before and after securitisation for each position
- Analysis of how sensitive the capital requirement is to changes in the underlying model parameters

### **Originator's own analysis of risks and SRT to third parties**

- The originator's own assessment of the transaction's risks (an account of the relevant risks and how these are considered)
- The originator's own assessment SRT (why the originator considers the capital reduction reasonable with regard to the risk that is transferred to third parties and an account of the size of the risk in per cent that the originator intends to transfer)
- The originator's costs for transferring the credit risk to a third party
- The originator's internal governance process (e.g. the committees that have approved the transaction) and internal systems/controls both for the initial assessment and ongoing monitoring that the conditions for SRT are met during the duration of the transaction

## Appendix 2. Information to be submitted to FI for the flowback risk assessment

For the flowback risk assessment, FI intends to gather the following information about banks' total securitisation activities. In addition to the information requested below, FI may request additional information as needed to conduct its flowback risk assessment in accordance with the method set out in this memorandum. For banks that are not systemically important, i.e. institutions in Supervision Category 2, only the first point applies.

1. Information about flowback for the bank's total securitisation activities, broken down by transaction and future 12-month periods.

	Year 0	Year 1	Year 2	etc.
Nominal value of the reference portfolio of which, relevant retained risk				
Maturing exposures				
Replenished exposures				
Clean-up call				
REA for reference portfolio pre-securitisation				
REA for reference portfolio post securitisation				
REA released				
Total capital ratio pre-securitisation				
Total capital ratio post-securitisation				
Total capital requirement for the reference portfolio pre-securitisation				
Total capital requirement for the reference portfolio post-securitisation				
Total capital reduction due to securitisation				
Nominal value of maturing exposures which are assumed to be renewed by the bank				
REA of maturing exposures which are assumed to be renewed by the bank				
Total capital requirement of maturing assets which are assumed to be renewed by the bank				
Total capital ratio post extension of maturing exposures				

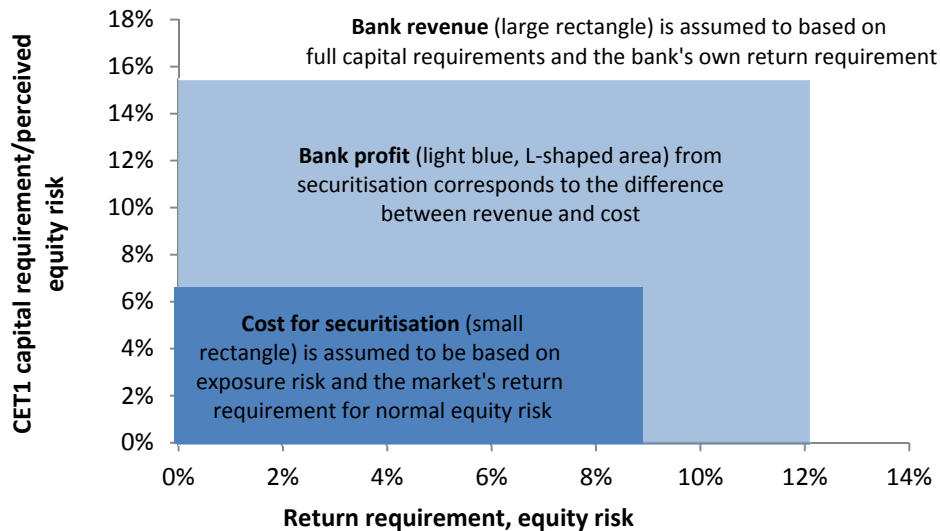
2. Information about the bank's total securitisation activities, broken down by transaction, exposure class and geographic (national) market

## Appendix 3. Financial incentives for securitisation

### Capital and return requirements

Figure 3 below outlines banks' incentives to engage in securitisation as a result of capital requirement- and return-related profits. The example refers to exposures to corporates. Figure 4 illustrates the same incentives for Swedish mortgages; this calculation is more complex and is explained separately.

Figure 3: **Capital requirements, return requirements and financial profit from securitisation: corporate loans**



The dark blue area of Figure 3 reflects the bank's assumed annual cost for a securitisation. This cost corresponds to the product of two factors. These factors are the *exposure risk* investors are assumed to use in the assessment of a securitisation (X axis) and the *market return requirements* this risk justifies (Y axis). The exposure risk is assumed in the figure to correspond to the regulation's minimum requirement for Core Equity Tier 1 capital of 4.5 percentage points plus an assumed Pillar 2 requirement of 2 percentage points, i.e. 6.5 percent of the exposures' risk-weighted exposure amounts. The assessed risk naturally can be both higher or lower than the basis of the capital requirements. The return requirement is assumed to correspond to a general return requirement for equity risk, which in this example is assumed to be 9 percentage points. The product of the two is then the annual cost for equity risk of 0.6 per cent of the exposures' risk-weighted exposure amounts. Other costs for the transaction may also be included (for example legal costs). However, these can be assumed to be limited and one-off in nature.

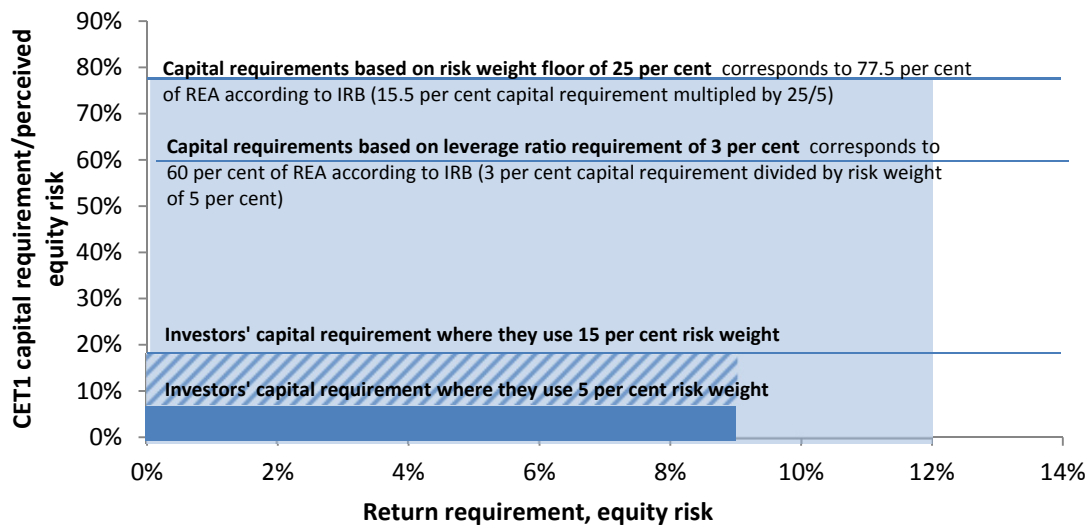
The bank's revenue for the securitised exposures is assumed to be based on the banks' full capital requirements and general return requirements, which in turn are assumed to exceed the market's return requirement since the bank prices loans to achieve an economic profit in its operations. The capital requirement expressed as a per cent of risk-weighted exposure amounts is assumed to be 15.5 percentage

points. This consists of a total minimum capital requirement, including Pillar 2, of 6.5 percentage points (the same as the exposure risk that investors are assumed to use) plus three components<sup>26</sup> in addition to the assumed exposure risk. The bank is assumed to price its exposures with a return requirement of 12 percentage points. The bank’s annual revenue for the securitised exposures is then just under 1.9 percentage points.

The bank’s profit, i.e. the difference between the revenue and cost, corresponds to the light blue area in the figure and is 1.3 percentage points. The profit margin in the example is almost 70 per cent, which may be considered to represent a very strong incentive to engage in securitisation.

Figure 4 below shows the corresponding calculation for Swedish mortgages. The analysis of a securitisation of mortgages is more difficult in that the banks’ reported risk weights for mortgages are very low (around 5 per cent of the exposure amounts) because of exceptionally low historical credit losses for this exposure class. As a result, the pending leverage ratio requirement of 3 percentage points of the total exposure amount and the risk weight floor of 25 per cent lead to higher capital requirements than the Pillar 2 regulations. Figure 4 also shows the effects of investors, in line with FI, considering exposure risk in the mortgages to be higher than what the mortgages’ reported risk weights imply.

**Figure 4: Capital requirements, return requirements and financial profit from securitisation: Swedish mortgages**



In Figure 4 above, the banks’ *cost* for securitisation of mortgages are based on the same minimum requirement of 6.5 percentage points that was used in the corporate exposures in Figure 3 above. However, Figure 4 shows the effect of two alternatives: first, in cases where investors accept the banks’ estimated risk, in line with a risk weight of 5 percentage points (solid dark blue area), and second, if

<sup>26</sup> These are a systemic risk requirement of 5 percentage points, a capital conservation capital requirement of 2.5 percentage points and a countercyclical capital requirement of 1.5 percentage points.



investors instead share FI's assessment that the exposure risk is higher, corresponding to a risk weight of 15 per cent<sup>27</sup> (lined area). The investors' assumed return requirement is the same as in Figure 3, i.e. 9 per cent for the equity market's return requirement.

With regard to the banks' *revenue* for mortgages, the analysis is even more complicated. Figure 4 shows the effect of the pending leverage ratio requirement of 3 per cent of the total exposure amount. This corresponds to 60 per cent of the reported risk-weighted exposure amount (3 per cent divided by 5 per cent). However, this is not binding as the banks' total capital requirement since the risk weight floor is 25 per cent. A capital requirement of 15.5 per cent applied to a risk-weighted exposure amount in line with the risk weight floor of 25 percentage points corresponds to 77.5 per cent of the banks' reported risk weights for mortgages (15.5 per cent capital requirement multiplied by the relationship between the risk weight floor and reported risk weight, i.e. 25/5). The banks' assumed return requirement, which they are assumed to use when pricing their mortgages, is the same as in Figure 3, i.e. 12 per cent. Even the pending leverage ratio requirement would have a significant effect on the banks' incentives; a pending capital requirement of 3 per cent of the total exposure amount corresponds to 60 per cent of the banks' reported risk-weighted exposure amounts. However, this is not binding for the mortgages of Swedish banks.

Under the above assumptions, the banks' *profit margin* for securitisation of mortgages is even larger than the profit for corporate exposures as a result of the additional effects of the risk weight floor. If investors price securitisation risk in line with the reported risk weights of 5 per cent, banks' profit margin is more than 90 per cent (revenue corresponding to  $77.5 * 12$  per cent and cost of  $6.5 * 9$  per cent). If investors share FI's view that the exposure risk is higher, the profit margin is just over 80 per cent (same revenue as above,  $77.5 * 12$  and cost of  $((6.5 * 15/5) * 9$  per cent).

### **Economic cycles**

As shown in Figure 3 above, banks are facing significant incentives only as a result of the differences between, on the one side, the banks' full capital requirements for given exposures and the exposures' assumed own (idiosyncratic) risk and, on the other side the banks' own return requirements, which they are assumed to use for pricing, and the market's assumed return requirement based on the exposures' estimated risk.

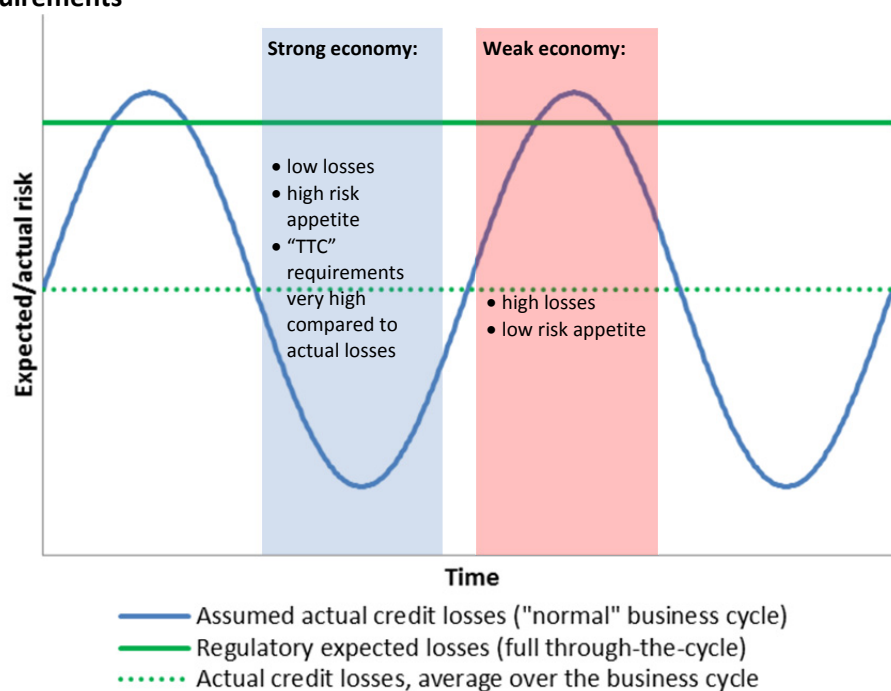
The capital requirements' construction and cautious design with regard to the effects of economic cycles create additional incentives that fluctuate considerably over time. The assumptions that lie behind the banks' risk-weighted exposures

<sup>27</sup> The risk weight floor has been raised in two stages, first to 15 per cent as a result of higher exposure risk than the basis of the Pillar 1 regulation, and then to 25 per cent taking into consideration additional macroprudential risks. See FI memorandum *Capital Requirements for Swedish Banks*, FI Ref. 14-6258 ([http://www.fi.se/upload/43\\_Utredningar/40\\_Skrivelser/2014/kapitalkrav-svenska-banker-140910ny.pdf](http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2014/kapitalkrav-svenska-banker-140910ny.pdf)).

amounts, namely, are not based on a risk outcome at one given point in time. The assumptions in the capital requirements reflect either full economic downturns (for example assumptions of *loss given default* (LGD)) or long-term average relationships over cycles (*probability of default* (PD)). For a more detailed description of the assumptions in the risk weight formula and how FI assesses reasonable PD assumptions, see the memorandum, *FI's supervision of the banks' calculations of risk weights for exposures to corporates*, FI Ref. 15-13020<sup>28</sup>.

Figure 5 below illustrates how a given portfolio's credit losses (blue line) can be expected to develop over time (two business cycles) and how expected loss, as the term is used in the calculation of the banks' risk weights, can relate to actual realised losses over time. In this case, the through-the-cycle adjustments in the calculation are assumed as a rule to be expected loss. Even if FI's assessment method introduces a significantly larger through-the-cycle perspective, this is a simplification. This illustration also ignores that the banks' risk-weighted exposure amounts are based on unexpected loss, not expected loss. Unexpected loss is a significantly more cautious term than expected loss, but both are based on the same fundamental assumptions.

Figure 5: Illustrative credit loss events compared to expected loss in capital requirements



During a strong economy (light blue area in the above figure), the difference between actual credit losses (blue line) and the assumptions that are behind the banks' risk-weighted exposures amounts and thus capital requirements (solid green line) is very large. Given the prudence of the regulations with regard to

<sup>28</sup> See FI's memorandum, *FI's supervision of the banks' calculations of risk weights for exposures to corporates*, FI Ref. 15-13020 ([http://www.fi.se/upload/43\\_Utredningar/40\\_Skrivelser/2016/pm-riskvikter-2016-05-24.pdf](http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2016/pm-riskvikter-2016-05-24.pdf)).

patterns in economic cycles, the average actual loss level (dashed green line) is also significantly lower than expected loss. This significantly enhances the fundamental incentives described above and in Figure 3. The incentive effects from economic cycles arise mainly for transactions that are expected to reach maturity or primarily during economically favourable market conditions, but the effects also arise for transactions with very long maturities, given that expected loss in the capital requirements is significantly higher than average actual loss.

It is also natural to expect that investors are risk averse to varying extents and that they use cautious assumptions about the future even when facing strong economic conditions. Even with cautious assumptions the illustration above is relevant since it describes some of the fundamental drivers for flowback risk on which this memorandum is largely based. In a weak economy, expected *actual* loss rises sharply. Even if the outcomes are not necessarily worse than the expected loss (although this could very well be the case), there is naturally a large amount of uncertainty in this respect, in particular during economic downturns. Such uncertainty enhances the already high level of risk aversion that is to be expected during economic downturns.