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Cover picture depicts the national motif on the Slovenian 5 cent  
coin: A sower.

# Bank of Finland's Financial Stability Report

A soundly functioning financial system is essential for ensuring the balanced development of the economy overall. A stable financial system is able to carry out its fundamental tasks, such as financial intermediation and transfer of payments, reliably and efficiently and ensure the effective pricing and distribution of risks throughout the financial markets. The stability of the financial system also means that the risk bearing capacity and operational readiness as well as the reliability of financial market participants and the infrastructure must all be sufficient to withstand even major disruptions stemming from the operating environment.

The tasks of the Bank of Finland include promoting the stability, reliability and efficiency of the Finnish financial system and participating in its development. The Bank's efforts are essentially integrated with the objectives of the European System of Central Banks and its work also requires close cooperation with domestic and foreign authorities and market participants.

One of the Bank of Finland's core tasks is to analyse financial stability and any cyclical and structural systemic risks that may threaten it. In particular, the Bank's task is to monitor macroprudential risks that build up in the operating environment of financial

institutions and within the financial system and to evaluate the risk-bearing capacity of the domestic banking and insurance sectors. It also monitors the reliability and efficiency of payment and settlement systems critical to Finland and puts forward necessary measures designed to prevent risks and strengthen the financial system.

This issue of the Bank of Finland Bulletin, publishing the Bank's Financial Stability Report, is intended for financial market participants, the general public and other authorities to provide information and promote discussion on financial stability. The objective is to ensure that these parties take the current condition and future outlook of the financial system into consideration in their operations. The analysis of the risks to the financial system presented in this publication focuses more strongly on the macroprudential approach to financial stability. In addition to the stability analysis, the publication features an article focusing on the use of the new macroprudential instrument – the counter-cyclical capital buffer requirement in Finland.

The Bank of Finland publishes its assessment of financial stability twice a year. Information presented in this report is based on data available on 9 May 2014.

# Preface

Euro area financial markets have continued to stabilise and the availability of funding has improved in early 2014. This has eased the management of the sovereign debt crisis and facilitated banks' access to funding.

Coinciding with these developments, several decisions have been taken on regulatory and supervisory initiatives to foster financial stability in the long term, with the decisions on the key building blocks of the European banking union being the most important.

In Finland, the risk resilience of the banking sector – and more widely, the financial sector overall – has been solid amidst the crisis. Therefore, the additional measures required by the new regulations and the related potential cost effects will not be as severe in Finland as in several other countries.

Whilst the market situation has improved globally, the outlook for the real economy in Finland has deteriorated markedly, with the situation in Russia and the Ukraine presenting an additional risk factor. Given the fragile economic growth, due consideration must be given to the vulnerabilities inherent in the domestic financial system.

Considering the uncertainty surrounding economic expectations, sources of potential threat to financial stability include 1) declining housing prices and household indebtedness, 2) the increasing risk appetite in a low interest rate environment and the over-optimistic pricing of risks and, 3) the malfunctioning of banks' lending, particularly corporate lending.

The moderation of price developments in the housing market and household indebtedness is positive news, but given the elevated level of prices and debts the situation is vulnerable overall.

Notwithstanding this, housing markets and households still do not pose an immediate threat to the stability of banks, despite having consequences for the real economy. Negative economic surprises, in conjunction with a decline in housing prices would, however, be reflected in household spending behaviour and, consequently, further depress the fragile economic development in Finland. An increase in interest rates would also reduce household spending, although the resilience of households is assessed as good. An additional factor underlying the high interest rate risk of households is the housing loans being linked to market interest rates.

In the securities markets, the low level of interest rates and ample liquidity has been reflected in share prices and bond yields. This change has been surprisingly fast. If sustained, this situation is likely to create distortions in financial markets, including deepening search for yield and underestimation of risk, asset price bubbles and misallocation of resources. The increase in potential risks warrants particularly close monitoring.

Banks' and non-financial corporations' access to market funding has improved considerably. Nonetheless, also in Finland critical views are still being expressed about banks' capacity and willingness to grant credit. This criticism is above all pointed to banks' lending to SMEs and to the tightening of the collateral requirements for these loans. In fact, the rate of growth in bank lending has slowed in Finland. Still, the criticism about the malfunctioning of lending is surprising, as the banks' balance sheets are strong enough to sustain even a steep increase in lending. According to the lending surveys regularly conducted, the approval rate for loan applications has

remained more or less unchanged. The subdued economic growth and the moderate investment needs are natural explanations of the decline in lending demand.

In Finland, changes in banks' structures and the reshuffle of business priorities have been reflected in the competition between banks and the availability of credit and other bank services. Healthy competition is a fundamental condition of an efficient financial system. The increase in non-bank financial intermediation – a phenomenon which is already clearly visible internationally – is also likely to make its way to Finland.

With the Finnish economy facing both structural and cyclical problems, it is important to ensure that the financial system operates efficiently and creates the conditions for economic recovery, while at the same time making sure that the risk resilience of the financial system is sufficient to withstand even a weaker-than-expected economic development.

Considering the cross-border integration of financial markets, it must be ensured that the Finnish authorities are fully equipped – and have the powers – to deploy sufficient and internationally comparable instruments to address systemic risks posing a threat to the financial system. Such instruments are needed against both indigenous and external risks. We welcome the immediate enforcement of the government bill with a proposal for a new Credit Institutions Act. The toolkit provided for in the government bill, however, needs an addition in the form of a systemic risk buffer requirement. Although the instruments may not be activated immediately, it is important that the authorities can access them rapidly to address systemic risks and to put the

operating conditions of the financial sector on a level playing field with other countries.

Agreement has now been reached on the main pillars of the banking union. The EU crisis resolution legislation and the laws on the Single Resolution Mechanism of the banking union have been adopted. There has been a structural weakness in the markets in that banks have been allowed to operate – and, indeed, have operated – across national borders, whereas the supervision and crisis resolution of banks has been confined to the competence of national authorities. This weakness will be remedied by the Single Resolution Mechanism.

The new major tools for the management of banking crises are now in place. The financial sector culture is about to change. The previous public bail-out scheme financed by the taxpayers will be replaced by the new Single Resolution Mechanism, which provides for consistent implementation of the bail-in approach in the crisis resolution of failed banks.

The banking union will take supervision and crisis resolution of banks to the cross-border level, to match the level of actual operation of financial institutions. This marks a major step forward, with the conditions now in place for the efficient functioning of supervision and crisis resolution in practice.

Helsinki, 15 May 2014



Pentti Hakkarainen  
Deputy Governor,  
Bank of Finland

Box 1.

## Weak real economic outlook is the major risk factor facing financial stability

The state of the Finnish financial system is illustrated by the ‘financial stability map’ presented in the ‘cobweb chart’ below, which reviews the trends in relevant key indicators over the past two years. In the chart, the further the pentagon is from the origin, the gloomier the macroeconomic outlook, the weaker the banking sector’s risk resilience and the higher the systemic risks. The grey zone portrays the two middle quarters of the indicator’s previous values.<sup>1</sup>

The upper angle of the financial stability map illustrates the state of the real economy in Finland based on the forecast GDP growth. The country’s

weak real economic development may put a strain on the financial system, for example, by increasing loan losses. Due to subdued economic growth, macroeconomic risks have been higher than before throughout the review period. Near-term growth is also expected to remain slow when compared with the longer-term history, and this currently makes real economic developments one of the most significant risks to the stability of Finnish financial markets.

The angles on the right side of the map illustrate threats to financial stability piling up in the Finnish housing and credit markets. Housing prices relative to wage and salary earnings, which are used as an indicator of the level of housing valuation, have remained unchanged throughout the review period, reflecting the

weak development of the real economy. Notwithstanding this, the relative level of housing prices is still fairly high in comparison with the long-term average.

Debt accumulation is measured as the trend deviation of the ratio of private-sector debt to GDP. The level of indebtedness in the private sector has remained nearly the same during the past few years and is still quite considerable.

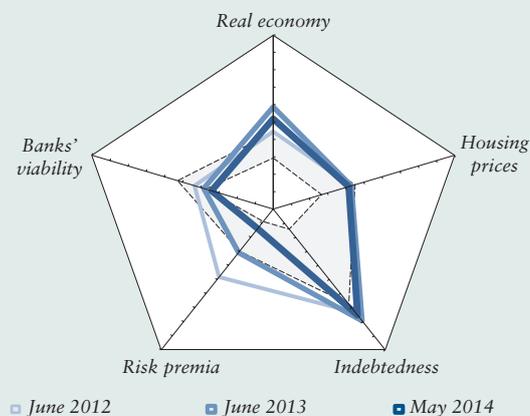
The indicator positioned in the lower angle on the left portrays the availability of international market funding, which is measured by yield spreads between AAA and BBB rated corporate bonds. The risk premia have been steadily declining during the past two years ever since the market disruptions witnessed in summer 2012 and are already rather low. If these developments continue, there may be a danger of risk premia narrowing too much relative to the debt servicing capacity of non-financial corporations.

The upper angle on the left side illustrates the risk resilience of the Finnish banking sector. The relevant indicator has been derived from banks’ share prices and income statement and balance sheet data. According to the indicator, the Finnish banking sector is on a sound footing, and improved steadily over the review period.<sup>2</sup>

<sup>1</sup> For details on the indicators and the technical design of the chart, see Kaukoranta, I (2010) *Rahoitusmarkkinoiden vakauden visualisointi* (‘Visualising financial stability’). BoF Online 8/2010 (in Finnish only).

Chart.

### Financial stability map for Finland



The outer values reflect higher risks.  
Sources: NASDAQ OMX Helsinki, banks, Statistics Finland and Bank of Finland.

<sup>2</sup> For details of the real economy, financial intermediation, debt accumulation and housing prices, see the chapter ‘Risks related to economic and credit cycles’, and for the state and resilience of the Finnish banking sector, see the chapter ‘Structural risks’.

# Risks related to economic and credit cycles

The most significant risks threatening the stability of the European financial system continue to stem from the euro area's real economy and banking sector. Market risks have grown and signs of overheating are discernible in the high-yield bond market, in particular. The most significant political risks are currently associated with the implementation of economic policy reforms, an appropriate stance and timing of monetary policy at the global level, the liberalisation of the Chinese financial system and geopolitical uncertainty.

In Finland, the most significant risks are related to the weakness of international and domestic economic activity. The debt-servicing capacity of both non-financial corporations and households has remained good thus far, but the subdued economic outlook increases domestic credit risks. A recent deceleration in household debt accumulation and a levelling off of housing prices are positive phenomena. However, negative economic surprises, in combination with falling housing prices, would further impair the already fragile performance of the Finnish economy through household consumption behaviour.

The state of the real economy is gradually improving in Europe, but recovery from the crisis is slow and the growth outlook is still moderate. According to the forecast published by the Bank of Finland in March 2014, GDP for the EU21 region is expected to grow by an annual average of 1.5% in the next three years. The United States will witness faster economic growth, predicted to stabilise at around 3%. In

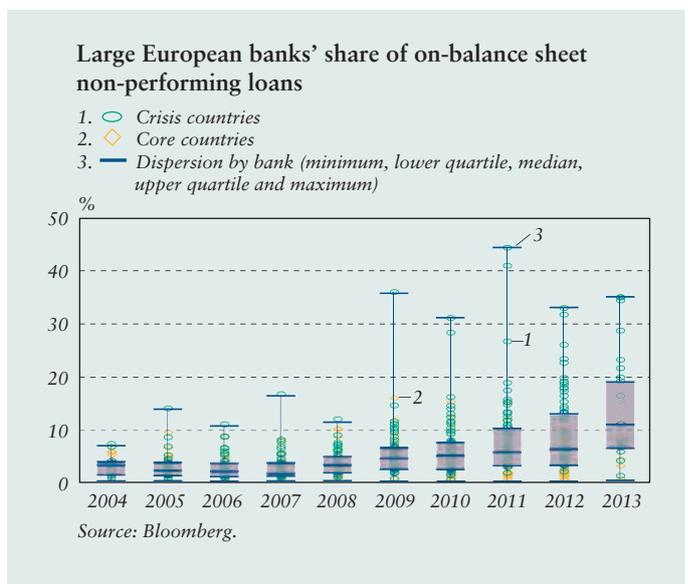
contrast, growth in emerging economies in the immediate years ahead is estimated to remain pronouncedly lower than pre-crisis.

Despite its positive direction, the weak and uneven performance of the euro area real economy continues to pose one of the most significant risks for the stability of the European financial system. Protracted tepid economic growth, a considerable degree of unemployment, low interest rates and the private sector's high debt burden present a very challenging operating environment for the already vulnerable banking sector.

Another important risk from the perspective of the stability of the European financial system is the banking sector's poor profitability. Loan losses and the low level of interest rates put a strain on bank profitability, and the proportion of non-performing loans to total loans has continued to grow, especially at banks in crisis-hit countries (Chart 1). Moreover, some euro area banks still have significant amounts of domestically issued sovereign debt on their balance sheets. This may expose banks to losses for holding these assets if interest rates are to increase abruptly.

Sluggish economic growth, weak profitability and regulatory reforms have encouraged banks to repair their balance sheets. In recent years, European banks have strengthened their capital positions and reduced their risk-weighted assets and dependence on short-term market funding, in particular, which has increased the share of more stable sources of finance, for example retail deposits, in funding.

Chart 1.



The need for banks to bolster their balance sheets has weakened the availability of credit for high-risk borrowers and widened margins on new lending. Restoring the banking sector to a sound basis is necessary, although this may have negative implications for economic growth over the short term.

A lower supply of bank credit can also move traditional banking to other financial sectors, for example insurance companies, private equity and investment funds or other financial institutions. A diversification of financing opportunities is positive in a situation where bank lending contracts. Even so, there is a risk that financial intermediation migrates to the sphere of less strictly supervised actors that have limited experience with lending and are not very transparent in their operations.

Despite balance sheet adjustments, there are still uncertainties associated with the quality of bank assets.

Consequently, in 2014 the ECB's comprehensive assessment of bank balance sheets and EU-wide bank stress tests developed jointly by the European Banking Authority (EBA) and the ECB will play a key role in restoring confidence in the European banking sector.

The ECB's comprehensive assessment includes a supervisory risk assessment of banks and an asset quality review, of which the latter is currently underway. To conclude the comprehensive assessment, stress tests on banks will be conducted in cooperation with EBA.<sup>1</sup>

At the end of April 2014, EBA published a scenario indicating markedly weaker economic developments than forecast to assess banks' risk resilience in the stress tests. The scenario was developed on the basis of systemic risks identified by the European Systemic Risk Board (ESRB).

Under this scenario, investors would change their views on the valuations of long-term bonds notably in the United States, which results in a broad-based fall in stock and bond prices. The destabilisation of the financial markets is reflected in the real economies of EU countries through world economic effects. The shocks will cause EU countries' GDP in 2014–2016 to remain cumulatively an average of 7.0 percentage points lower than forecast. In addition, unemployment will increase, residential and commercial real estate prices will decline, bank funding will become more difficult and the exchange rates of some

<sup>1</sup> For more information on the asset quality review, see Box 8.

Central and Eastern European countries will depreciate markedly.

*Re-pricing risks on securities markets have increased*

Subdued economic prospects in emerging economies and an improved economic outlook in advanced economies have led to changes in international capital flows. Investment flows have turned back to the euro area, which has eased the availability of market-based funding for sovereigns, in particular, but also for banks and other non-financial corporations and reduced the cost of funding (Chart 2).

Although better risk sentiment and stronger demand for securities have had a favourable impact on the economy that is recovering from the crisis in both Europe and the United States, securities markets performance also involves risks.

In addition to changing expectations of economic growth, investment flows are also affected by the long-sustained low level of interest rates, which has spurred investors to seek yields from increasingly risky alternatives. There is a danger that growing demand will raise prices for assets, for example shares and housing, and decrease bond yields in such a way that the markets become overheated and the prices no longer correctly reflect the risks inherent in securities and other assets.

Recently, for example, yields on high-risk corporate bonds have fallen to very low levels in both Europe and the United States, and the yield spread between low and high-risk corporate bonds has become very narrow. At the

Chart 2.

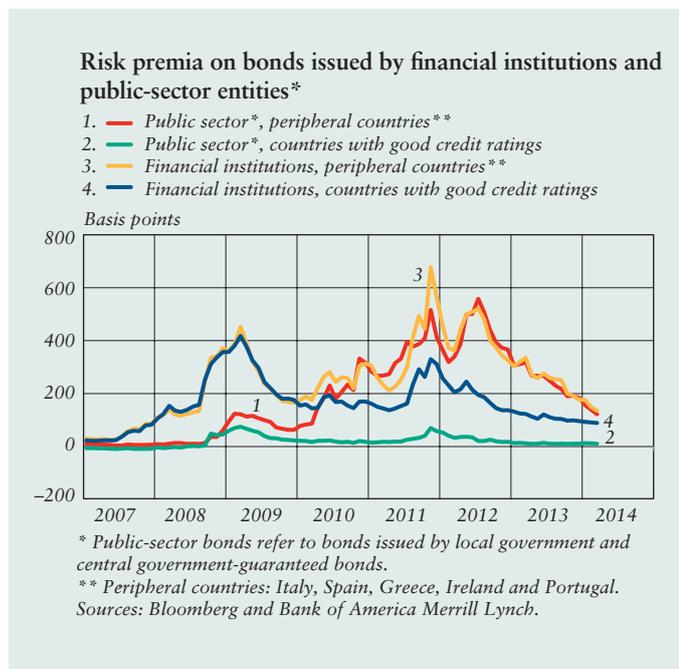
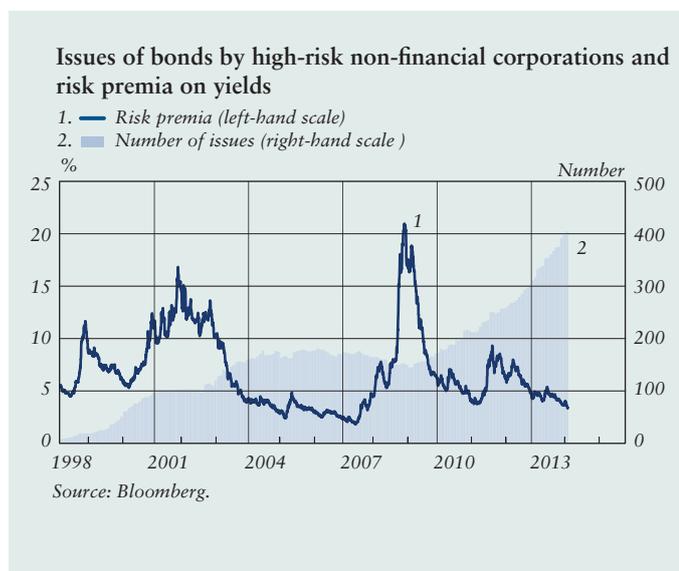


Chart 3.



same time, issues of high-yield bonds have increased at a very rapid pace (Chart 3).

The European Systemic Risk Board (ESRB) has also voiced concerns about

developments on the housing markets of some European countries, and the impact that negative corrections of housing prices may have on banks in these countries will be evaluated in the summer stress tests.

Prompt corrections of asset prices and risk premia would have adverse effects, especially if the corrections were to spread in a broad-based fashion geographically and across markets, thus leading to an overall increase in uncertainty and changes in risk sentiment. Such developments could cause sizeable valuation losses to banks and insurance companies, while hampering funding access for banks and sovereigns.

Capital movements triggered by the weak economic outlook for emerging economies provoked turmoil on the financial markets of these countries earlier in the year. Some European banks have significant activity in Asia, Latin America and emerging European economies, among others. A weakening of the real economy would increase the risk of banks incurring loan losses in these regions.

The escalation of the Crimean situation at the turn of February-March has also added to uncertainty and risks, particularly with regard to the European economy and financial markets. To date, the economic impact outside Ukraine has mainly been in Russia, whose already underperforming economy is suffering from the increased uncertainty. In contrast, the implications for the financial markets have remained limited, focusing mainly on

the Ukrainian and Russian foreign exchange and stock markets.<sup>2</sup>

### *Difficult times for economic and monetary policy*

The global real economy and financial system are in the middle of a critical period following the financial crisis, where important economic and monetary policy decisions relating to the reform of the financial system and the normalisation of the economy may, if unsuccessful, have destabilising effects on the financial markets.

Improving real economic trends in advanced economies will lead to a need for monetary tightening, sooner or later. As well as price stability, an appropriate tightening of monetary policy and its timing will also be of utmost importance for maintaining financial stability. At the global level, an overly rapid contraction in liquidity can change investment flows and cause disruptions on the financial markets, whereas an overly slow response will increase risks from excessive liquidity.

The near-term political risks facing the euro area continue to include structural economic reforms, which are still pending in many countries. The low level of interest rates on government debt will ease the countries' debt-servicing burden, but may weaken market pressure for carrying through the necessary structural reforms in the economy.

Given the large size of China's financial markets, the country's efforts to liberalise these markets present

<sup>2</sup> For more information on the impact of the situation concerning Ukraine and Russia, see Box 4.

another challenge for the stability of global financial markets. In particular, the Chinese shadow banking sector's major role in financial intermediation causes concern. Problems in the shadow banking sector can expose banks to losses via counterparty risks and, at worst, bring instability to the financial markets.

### **The weak performance of the domestic economy increases the importance of endogenous risks on financial markets**

In Finland, the probability of risks to financial stability materialising has increased amid subdued economic growth. GDP performance at the end of 2013 turned out to be even weaker than forecast, and growth in 2014 is remaining lower than predicted in the Bank of Finland's December 2013 forecast. Growth in the next few years is also envisaged as remaining sluggish, when seen in a historical perspective.

In the immediate years ahead, the economy will face an abundance of challenges. The downtrend in exports has continued for a long time, and export performance has lagged behind world trade growth. The difficult situation for exports is further impaired by waning economic activity in Russia, amongst other factors. In addition to weakness in exports, industrial output performance has long been exceptionally poor. Industrial output is already declining for the second year in a row. The decline has been broad-based, since production has contracted in all main industries.

The poor growth outlook has kept domestic investment needs at low levels.

Nor has investment allocation underpinned output: in recent years, investment growth has been driven by construction investment, while the share of equipment investment of GDP has remained smaller in Finland than in the EU on average.

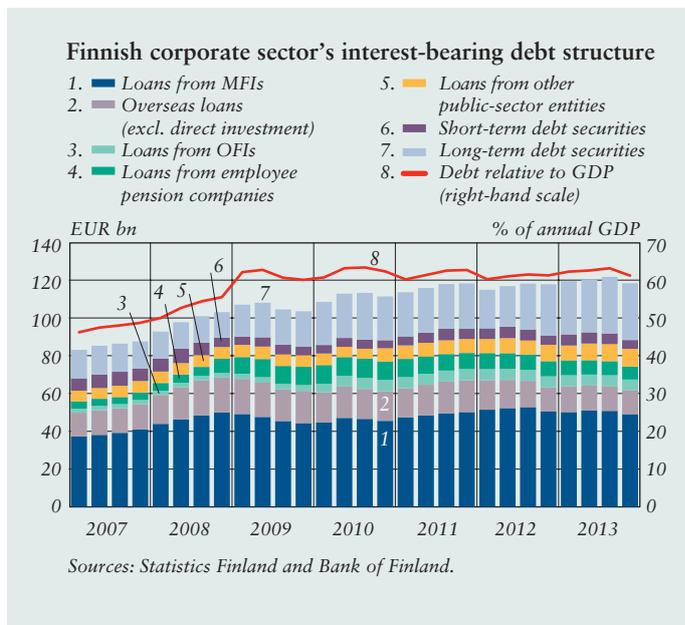
It is of great importance for household solvency how the employment situation evolves. It is predicted as remaining weak in 2014, but decelerating consumer price inflation will buttress the evolution of consumers' purchasing power. So far, consumer confidence in economic activity has remained surprisingly stable, despite muted developments in the real economy.

In response to lacklustre domestic economic growth, credit risks from both non-financial corporations and households are discernibly on the increase. Protracted sluggishness in the economy also increases sensitivity to external shocks. It is essential to take a grip on structural imbalances and weaknesses, especially in view of the public finances, in order to ensure the maintenance of the Finnish government's good credit rating on the financial markets.

### **Weak cyclical picture for the corporate sector**

Uncertainty in Finnish non-financial corporations' operating environment has continued, despite an easing of the European crisis situation. One of the main problems currently facing Finnish companies is weak product demand. From the viewpoint of foreign trade, output is failing to meet demand on

Chart 4.



international markets and, on the domestic front, the low investment ratio and subdued consumer demand are eroding growth and profitability at many companies.

*Remaining profitable poses challenges*

The profitability of Finnish non-financial corporations has been fairly strong for a long time, and the level of the whole corporate sector's indebtedness has not grown such as to cause concern. According to the national accounts statistics, the corporate sector's operating surplus declined in 2012 and 2013 by about 15% from the level seen in 2011, and is nearly half the peak witnessed in 2007 before the financial crisis. The contraction in operating surplus has led to non-financial corporations' profit share<sup>3</sup> falling annually

<sup>3</sup> Share of operating surplus in valued added.

since 2010. Despite weakening profitability, the growth in non-financial corporations' average indebtedness is modest. For example, interest-bearing corporate debt relative to GDP is slightly over 60%, and the ratio has barely changed in the past five years (Chart 4).

Many large companies, in particular, have maintained their profitability through rigorous expenditure restraint by adapting their operations to order books. This means that the relative importance of small and medium-sized companies (SMEs) in the Finnish economy is growing.<sup>4</sup> As business and industrial structures change, new and growing enterprises are becoming increasingly important for the economy, from the perspective of both the dynamics of structural change and employment. One of the key challenges facing these enterprises is the small size of the Finnish capital markets. To develop and expand, growth companies need well-functioning and versatile financial markets. The Finnish corporate finance market is changing but is still bank-centric, domestic and foreign monetary financial institutions (MFIs) account for a significant share of the provision of this finance and domestic capital markets are narrow. On top of which, there are only a limited number of private equity investors and investments to finance seed and growth-stage companies.<sup>5</sup>

<sup>4</sup> Ministry of Employment and the Economy (2013) Yrityskatsaus 2013 (Business bulletin 2013). Publications by the Ministry of Employment and the Economy 25/2013.

<sup>5</sup> Finnish Venture Capital Association.

*Small enterprises' access to finance has remained relatively good*

The Finnish corporate sector's access to finance has remained relatively stable in the context of the financial market and economic crisis compared with most euro area countries, and there have been no major problems.<sup>6</sup> However, interest margins on small bank loans have widened, although margins have stopped increasing strongly, and loan terms and conditions, eg collateral requirements, have become stricter and charges related to loans have grown (Chart 5).<sup>7</sup> The availability of bank loans for growth companies is essentially hampered by a lack of collateral; hence, channels of finance for these companies should be diversified.

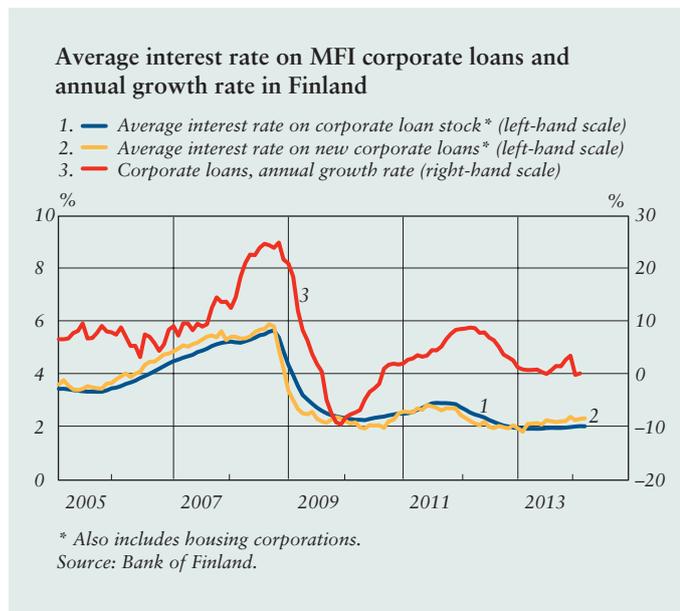
A more diversified access to finance for SMEs would also be important for the reason that changes in banking groups' business models could tighten the supply of finance to smaller enterprises. Financial intermediaries other than the traditional banking sector play a limited role as providers of finance to small enterprises in Finland.

Non-financial corporations' chances of taking advantage of domestic bond markets expanded, as the Helsinki Stock Exchange opened a new First North marketplace for corporate bonds. The marketplace is more lightly regulated than main markets, and issuers of bonds admitted

<sup>6</sup> ECB (2014) Survey on the access to finance of small and medium-term enterprises in the euro area. April 2014.

<sup>7</sup> Bank of Finland MFI statistics, and Business Finance Survey 2013.

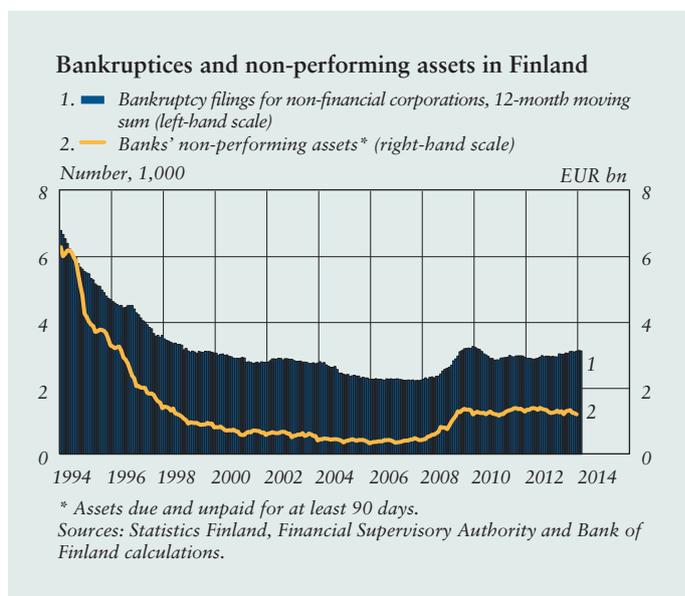
Chart 5.



to this list need not draw up financial statements according to IFRS standards, for instance. In support of the corporate bond market, the Confederation of Finnish Industries (EK) and the Advisory Board of Finnish Listed Companies jointly formulated model terms and conditions for bond issuance, with the aim of reducing the threshold for smaller companies seeking debt finance from domestic bond markets.

In the past two to three years, larger Finnish companies have diversified their sources of finance, taking advantage of investors' search for higher yields which has been driven by low interest rates. These companies have issued an abundance of new bonds during the last couple of years. Larger companies have also acquired financing by concluding a good EUR 12 billion-worth of new syndicated loan

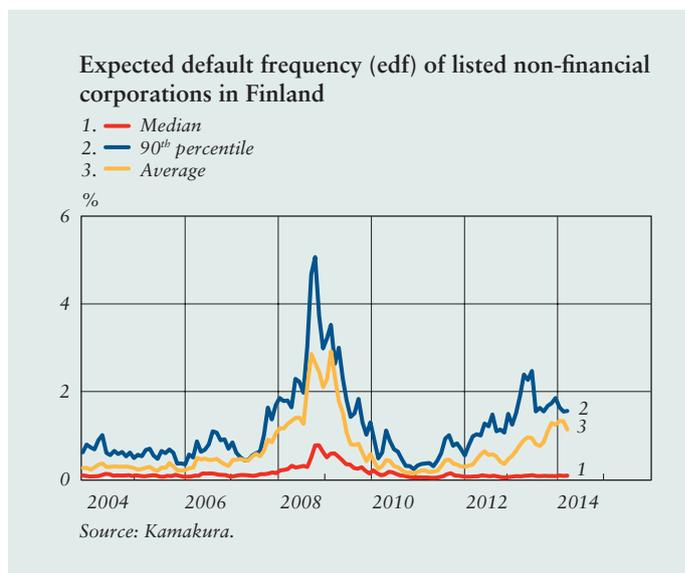
Chart 6.



### Bankruptcies on the increase

Growth in Finnish non-financial corporations' bankruptcies has been modest in recent years, but 2013 witnessed a slight increase in bankruptcies (Chart 6). The Expected Default Frequency (EDF) of listed non-financial corporations has resumed a moderate uptrend (Chart 7).<sup>9</sup> Corporate profitability is deteriorating, and in January-March 2014, for example, bankruptcies were at their highest level since 2008.<sup>10</sup> The growth rate of delayed corporate payments, signalling an increase in bankruptcies, has also accelerated. In 2013, net impairment losses incurred by banks from lending to non-financial corporations and housing corporations amounted to about EUR 178 million, representing 0.26% of the year-end stock of loans to non-financial corporations and housing corporations.<sup>11</sup>

Chart 7.



### Household debt accumulation levelling off

Finnish households have continued to accumulate debt, albeit at a slower pace than earlier. The household debt ratio, ie debt relative to disposable income, was 119.3% at the end of 2013 (Chart 8).<sup>12</sup> Growth in both debt and disposal income has decelerated substantially during the past twelve months.

Of total household debt (about EUR 127 billion, in all), four-fifths consists of loans granted for house or leisure-time home purchases or renovation. These also include house-

agreements in the course of the past 12 months.<sup>8</sup>

<sup>8</sup> Bloomberg.

<sup>9</sup> Kamakura.

<sup>10</sup> Statistics Finland (2014) Bankruptcies.

<sup>11</sup> FIN-FSA statistics.

<sup>12</sup> Statistics Finland financial accounts statistics.

hold-owned housing corporation loans, which have increased significantly in recent years. A fifth of household debt is granted for consumption, studies, or conduct of business.

The annual growth rate of households' housing loan stock slowed to 2.0% in March (Chart 9). Households' new drawdowns of housing loans in early 2014 were down on the year-earlier period, and the size of the housing loan stock has remained nearly unchanged since November 2013.<sup>13</sup>

Debt and risks related to debt are very unevenly distributed among households. About 46% of households have no debts at all with financial institutions (Chart 10). Every tenth household (19% of indebted households) have debts more than three times their disposable monetary income. These households account for almost half (49%) of total household debt and have an average of EUR 200,000 in debt per household.<sup>14</sup>

*Households' debt-servicing capacity has remained good*

Non-performing household loans<sup>15</sup> accounted for about 0.6% of the total amount of household bank loans and guarantees at the end of 2013, thus being at the same level as a year earlier. In 2013, net impairment losses incurred by banks from lending to households amounted to about EUR 38 million, representing only 0.03% of the

<sup>13</sup> Bank of Finland MFI statistics.

<sup>14</sup> Statistics Finland statistics on indebtedness.

<sup>15</sup> Loans, incl. guarantees and non-interest-bearing loans, which have been in arrears at least 90 days.

Chart 8.

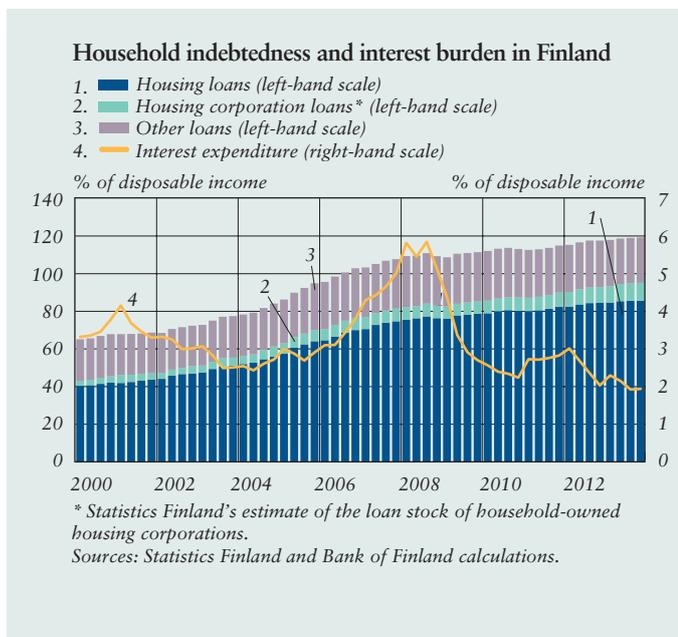
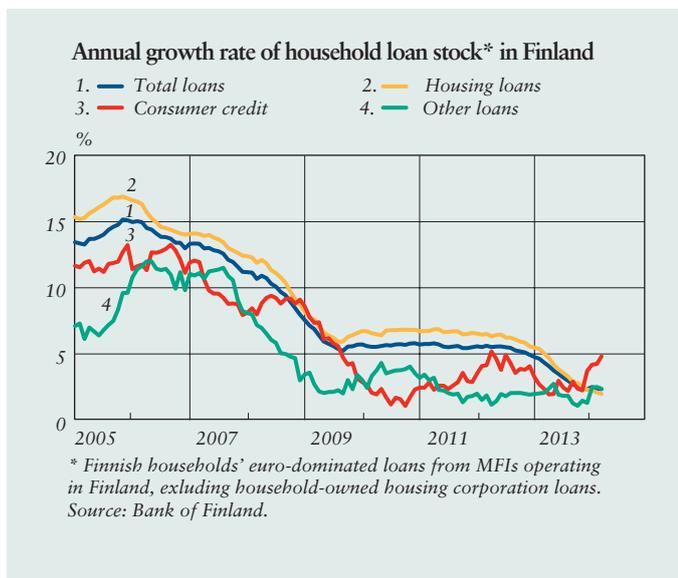


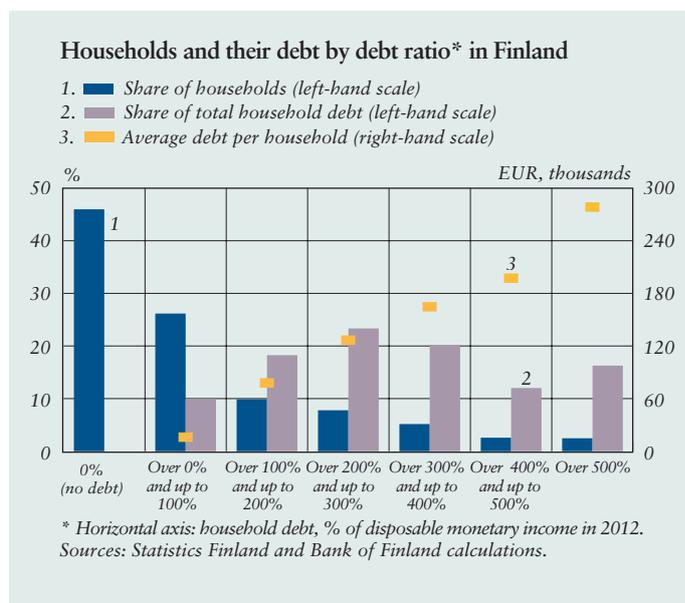
Chart 9.



household loan stock at the end of the year.<sup>16</sup> The number of consumers with

<sup>16</sup> FIN-FSA statistics.

Chart 10.



payment defaults increased during the year, however.<sup>17</sup>

Households' debt-servicing capacity has remained good, on average, and financial buffers have also been sufficient to provide a shield against short-term shocks to income and expenses. In view of their incomes, heavily indebted households are however, vulnerable to unemployment, significantly rising interest rates and falling housing prices. If materialised, these shocks could have implications due to both increased credit risks and lower consumption.

*The weak economic outlook increases risks related to household income*

Finland's muted economic performance increases households' financial uncertainty and risks related to income

<sup>17</sup> Statistics of Suomen Asiakastieto Oy, a company providing corporate, risk management, and sales and marketing information services in Finland.

developments. In spring 2014, households' expectations of how their own finances and Finland's economy and employment situation would develop were both more pessimistic than a year earlier as well as over the long term, on average.<sup>18</sup>

A several percentage points' increase in the unemployment rate from the current level of about 8.5%<sup>19</sup> would add to payment and debt-servicing difficulties for those losing their jobs but, according to estimates, this would only have a limited overall impact on banks' credit risks.<sup>20</sup>

*Variable loan interest rates increase household vulnerability*

The low level of Euribor rates has bolstered households' debt-servicing capacity by keeping their interest expenses historically low, with regard to their incomes. The situation is expected to remain similar over the short term.<sup>21</sup> However, owing to variable loan interest rates, households are vulnerable to potential increases in interest rates. Significant growth in interest expenses would reduce households' financial margin, increase debt-servicing difficulties and restrict households' opportunities to consume

<sup>18</sup> Statistics Finland consumer survey.

<sup>19</sup> The trend of the unemployment rate in February 2014, according to Statistics Finland labour force survey.

<sup>20</sup> Mäki-Fränti, P. (2014) Kotitalouksien velkaantuminen ja taloudellinen liikkumavara (Household indebtedness and financial margin). BoF Online 7/2014. Herrala, R. – Kauko, K. (2007) Household loan loss risk in Finland – estimations and simulations with micro data. Bank of Finland Discussion Paper 5/2007.

<sup>21</sup> ECB interest rates are estimated to remain at present or lower levels for an extended period of time. Bank of Finland press release, 24 March 2014.

or save. Nevertheless, households' financial buffers are estimated to withstand even significant increases in interest rates from their current low levels.<sup>22</sup>

The strong elevation of Euribor rates in 2006–2008 was rapidly reflected in growing interest expenses for households. The interest burden is the heaviest for those households most indebted with regard to their incomes, and these households' interest expenses are also the most sensitive to fluctuations in interest rates (Chart 11).

#### *Housing prices have declined in real terms*

Housing price developments in Finland have been levelling off since 2009, which is a positive trend for the prevention of cyclical risks related to the housing market and lending for house purchases. Real housing prices in the first quarter of 2014 were on average 4.0% lower than their peak in summer 2010 (Chart 12).

Price divergence between the Greater Helsinki area and the rest of Finland continued since, in the first quarter of 2014, real housing prices in the Greater Helsinki area declined more slowly (–0.3%) than elsewhere in Finland (–2.1%) compared with the situation a year ago.<sup>23</sup>

Chart 11.

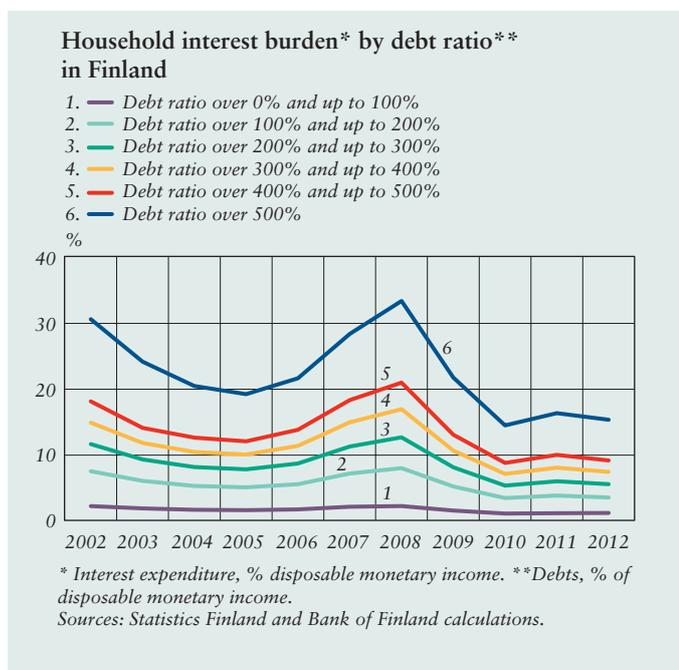
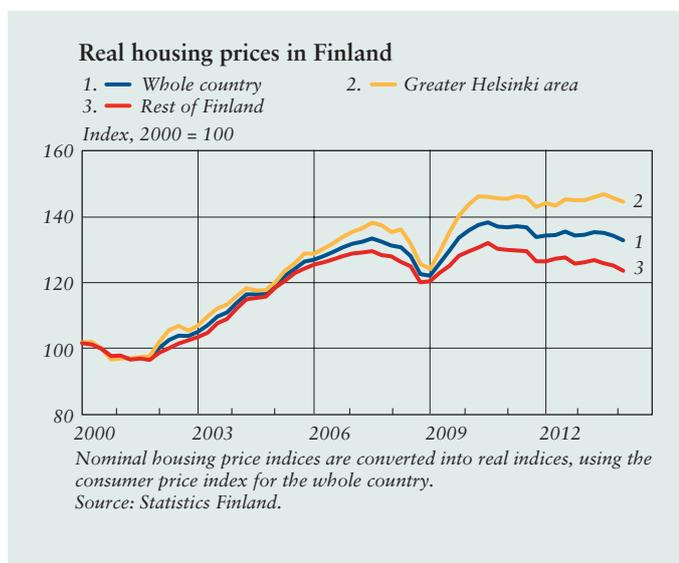


Chart 12.



<sup>22</sup> Mäki-Fränti, P. (2014).

<sup>23</sup> Box 2 analyses long-term housing market trends.

Box 2.

## Indicators of risks related to lending secured by residential real estate

Unbalanced real estate market developments – excessive growth in real estate lending and the elevation of real estate prices to unsustainable levels – have turned out to be one of the key sources of cyclical risks in many countries. Early identification<sup>1</sup> and prevention of these risks by means of macroprudential supervision and policy is important for safeguarding the stability of the financial system.<sup>2</sup>

The European Systemic Risk Board (ESRB) has selected a set of indicators that it regards as promising indicators of risks relating to residential and

commercial real estate markets.<sup>3</sup> Comparison of the indicators was based on their previous power to distinguish between countries heading for a real estate market crisis and other EU countries, before the start of the crisis. Other criteria included a sufficiently high coverage of data from EU countries for the purpose of calculating the indicators and a sufficiently long time-series in order to analyse long-term trends.

The focus of this analysis is on examining indicators of household indebtedness and the state of the housing market. These indicators are designed to warn of risks related, in particular, to lending secured by residential real

estate and to support decision-making on the use of macroprudential instruments regarding housing loans.

The Finnish housing market overheated at the end of the 1980s and collapsed following the depression at the beginning of the 1990s. In the 2009 recession, household credit demand and ongoing housing market confidence supported the Finnish economy, while risks related to financial stability continued to increase slightly.

Below, we look at how certain indicators have behaved in Finland in the long run. On top of cyclical developments, significant structural changes also need to be taken into account in interpreting the indicators.

### Household indebtedness

Private-sector debt relative to GDP is one of the internationally most closely monitored indicators of indebtedness. Strong household debt accumulation has been typical ahead of the housing market escalating into a crisis.

In Finland, the stock of household credit grew vigorously before the banking and housing market crisis at the beginning of the 1990s (Chart A). The debt ratio has also expanded more strongly than its trend<sup>4</sup> since 2002.

<sup>1</sup> See also Box 3 on leading indicators of banking crises.

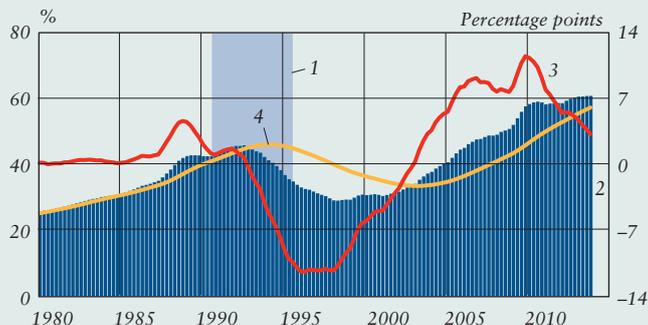
<sup>2</sup> The instruments that the Financial Supervisory Authority will be able to employ for promoting macro-level stability in Finland are discussed in more detail in the section 'Financial system policy'.

<sup>3</sup> ESRB (2014) *The ESRB handbook on operationalising macro-prudential policy in the banking sector*.

Chart A.

### Ratio of household credit stock to GDP and its trend deviation in Finland

1. Banking and housing market crisis at the beginning of the 1990s (left-hand scale)
2. Household credit stock, % of GDP (left-hand scale)
3. Trend\* (left-hand scale)
4. Deviation from trend (right-hand scale)



\* Calculated using the one-sided Hodrick–Prescott filter, with lambda 400,000. Sources: Statistics Finland and Bank of Finland calculations.

<sup>4</sup> Here, the trend is calculated using the one-sided Hodrick–Prescott filter (lambda = 400,000).

Interpretation of the indicator poses a problem, because debt growth in the first post-millennium decade was also fuelled by a higher number of households, longer loan repayment periods, a larger average loan size and lower interest rates on loans, compared with the situation in the 1980s and 1990s. Moreover, the strong contraction of GDP in the 2009 recession was reflected in the indicator as a temporary widening of the trend deviation of the debt ratio.

### Housing prices

The state of the housing market can be assessed by comparing housing prices with wage and salary earnings or housing rents. Relative developments in housing prices and wage and salary earnings reflect how affordable housing prices are from the buyers' point of view, whereas the relationship between housing prices and rents is conceptually identical with the stock market P/E ratio.

Relative housing prices rose rapidly in Finland in the latter half of the 1980s (Chart B). Price performance was more moderate in the first post-millennium decade. In the long run, housing prices have risen faster than rents, which fact is explained by the declining trend in the user cost of owner-occupied housing. This has been due mainly to falling interest rates.

During the recession of 2009, the drop in relative housing prices remained mild and short-lived, with developments evening out thereafter.

### Investments in residential buildings

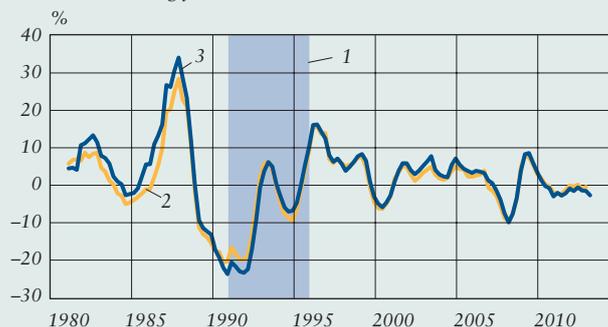
Housing market overheating relative to other economic activity can also be evaluated

from the perspective of investments. Investments in residential buildings increased strongly in Finland in the latter half of the 1980s, accompanied by a sudden rise in their GDP share (Chart C). Investments in residential buildings fell during the 2009 recession, but have subsequently returned close to their long-term average level.

Chart B.

#### Annual change in relative housing prices in Finland

1. Banking and housing market crisis at the beginning of the 1990s
2. Housing prices relative to wage and salary earnings
3. Housing prices relative to rents



Sources: Statistics Finland and Bank of Finland calculations.

Chart C.

#### Investments in residential buildings in Finland

1. Banking and housing market crisis at the beginning of the 1990s
2. Investments in residential buildings, % of GDP
3. Average of the review period



Sources: Statistics Finland and Bank of Finland calculations.

### Public-sector debt continues to grow

Finland's GDP continued to contract in 2013 (-1.4%). With economic growth being flat, the general government financial balance has already been in deficit for several years. Last year, combined general government – ie central government, local government and the social security funds – EDP debt<sup>24</sup> increased by EUR 7 billion, to EUR 110 billion at the end of the year, which was 57% of GDP.

Central government EDP debt amounted to EUR 95.7 billion at the end of 2013, which was just under 50% of GDP. The central government EDP deficit in 2013 totalled EUR 6.5 billion, thus being at the same level as in the previous year.

Local government EDP debt was EUR 14.5 billion at the end of 2013, accounting for 7.5% of GDP. The local government EDP deficit totalled EUR 1.7 billion in 2013.<sup>25</sup>

Finland's public-sector debt is concentrated on long-term borrowing: long-term debt at the end of 2013 accounted for nearly 95% of total public-sector debt. For example, the average maturity of central government debt has already been lengthening for several years and was about 6 years in March 2014. The duration<sup>26</sup> of the debt in the same period was slightly less than

4 years, which is markedly shorter than the average duration of other euro area sovereign debt, which was 6.7 at the end of March 2014).<sup>27</sup>

Government debt issues continued to be successful in 2013, supported by the best possible credit rating – even though S & P lowered its outlook on the credit rating for Finland from stable to negative in April 2014 – and borrowing costs have stayed small, at about 2 percentage points. Thanks to low interest rates, the government's annual interest expenditure has remained below EUR 2 billion for several years, despite brisk debt growth.

According to the 2014 Budget, the Finnish government's gross borrowing requirements will be about EUR 18 billion. Of this amount, a good EUR 4 billion worth of new debt was issued in the first quarter of this year. The government's net borrowing requirements in 2014 will be approximately EUR 7 billion.

#### *Public-sector debt to be raised on international financial markets*

Almost 90% of government debt is financed by borrowing from international financial markets (Chart 13). Although the public sector's debt issues rely on broad-based diversification both geographically and among investors, the strong dependence of public-sector debt financing on foreign investors could, in unexpected crisis situations, expose public finances to more serious problems through several channels. The availability of funding on international

<sup>24</sup> EDP (Excessive Deficit Procedure) debt refers to combined consolidated general government debt, excluding intra-debt items.

<sup>25</sup> Statistics Finland (2014) General government deficit and debt in 2013.

<sup>26</sup> Duration is a measure of yield and price risk, informing the investor of the average period of time in which interest and principal on debt will be paid. If the duration of a bond is 4, its price will change by about 4% in response to a one percentage point change in yield.

<sup>27</sup> Bloomberg.

financial markets would deteriorate significantly, and borrowing costs could also rise rapidly. A potential lowering of the public sector's credit rating would amplify the negative spiral, and the sector's debt-servicing costs would expand faster than forecast. Such a threat would hamper the resolution of problems related to the public sector's debt sustainability. Rising interest rates on public-sector debt would also increase costs of funding in the private sector for both banks and non-financial corporations.

During the last ten years, local government debt has visibly grown faster than GDP and the debt relative to GDP has doubled (Chart 14). The sources of finance for local government debt have simultaneously changed so that the stock of loans granted by banks to local government began to contract in 2008 and the proportion of bank loans has diminished to around 10% of the entire stock of local authority interest-bearing debt of approximately EUR 15 billion. The main provider of finance to local government is Municipality Finance. It obtains the funds for local government almost entirely from international financial markets. Consequently, the main threats relate to factors that could reduce access to and availability of international financing.

Chart 13.

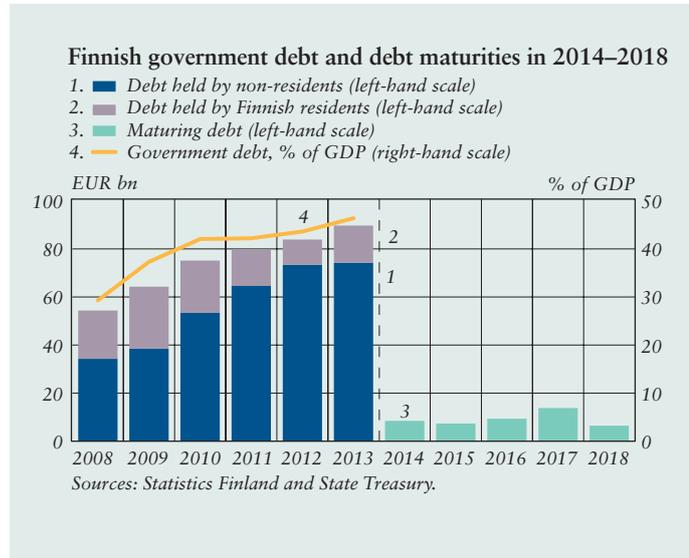
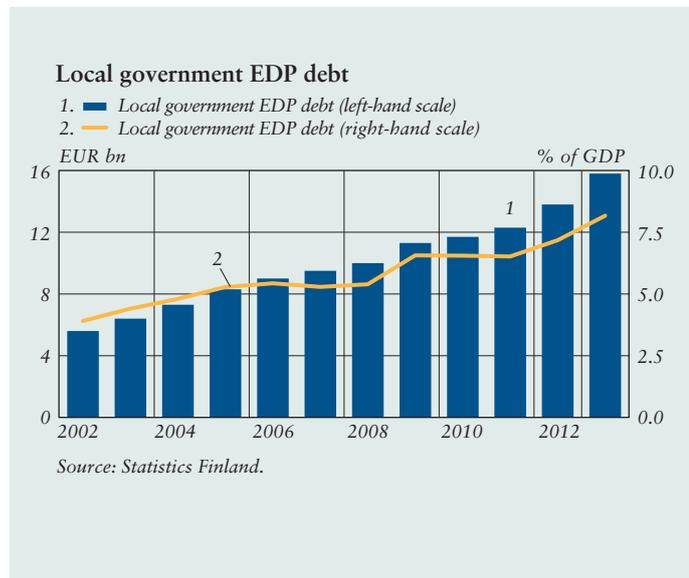


Chart 14.



Box 3.

### Leading indicators of banking crises

Macroprudential policy serves the function of preventing the financial system from heading for a crisis. For this task to be successful, it is necessary that the causes of crises are understood and that the designated macroprudential authority has access to reliable information as to whether there is an increased probability of a crisis.

Statistical ratios that have been shown to anticipate banking and financial market crises are called leading indicators. These indicators describe imbalances and vulnerabilities that normally accumulate in the economy and the financial system and that may later unwind, bringing instability to the financial system or, at worst, driving it to a crisis.

This box reviews leading indicators in the light of current research findings and considers, from the viewpoint of macroprudential policy, what kind of research on the subject would still be needed. Given that current macroprudential tools are mainly devised for the banking sector, this analysis concentrates on leading indicators of banking crises.

Factors explaining banking and financial crises have been subject to econometric research since the 1990s.<sup>1</sup> The task is not an easy one, and it is hampered by the

<sup>1</sup> An extensive overview of the literature on leading indicators of banking crisis is included in the shortly forthcoming article by Kauko, K. (2014) *How to Foresee Banking Crises? A Survey of Empirical Literature. Economic systems.*

mere fact that there is no widely accepted definition of a crisis. Consequently, researchers usually define crises in the manner they deem best.<sup>2</sup> Banks' negative aggregate income<sup>3</sup> or exceptionally high funding costs, for example, have been used as signals of banking crises.<sup>4</sup> As studies define crises with different criteria, the factors that different studies have found to be capable of predicting crises can depend on how crises are defined. It is therefore challenging to draw general conclusions from various research findings.

Another factor hampering research is that there have been a relatively small number of crises in history (for the needs of empirical research) and that they take very diverse forms. Some crises only affect a certain part of the financial markets (stock markets and exchange rates) or sectors (the banking sector or the government bond market). Others, again, spread more widely to the financial system, such as a simultaneous twin crisis of the banking sector and the foreign exchange markets or the latest global financial system

<sup>2</sup> *Frequent use is currently made of the Laeven and Valencia database. See Laeven, L. – Valencia, F. (2012) Systemic Banking Crises Database: An Update. IMF Working Papers 12/163.*

<sup>3</sup> Herralá, R. (1999) *Banking crises vs depositor crises: the era of the Finnish markka 1865–1998. Scandinavian Economic History Review 47, 5–22.*

<sup>4</sup> *Hahm, J. – Shin, H. S. – Shin, K. (2013) Noncore Bank Liabilities and Financial Vulnerability. Journal of Money, Credit and Banking 45(1).*

crisis. Different types of crisis are at least in part explained by a different range of economic imbalances.

Determinants of crises also vary slightly according to the type of economic or currency system that is in place. For example, in advanced economies, banking crises are typically preceded by credit stock performance that is faster than trend growth whereas, in emerging economies, banking crises are often related to the collapse of the currency's value or price instability. The causes of a crisis can also be very different depending on whether the difficulties mainly stem from a systemically important large bank or smaller banks.

The literature has explored several different indicators, which can be roughly divided into two groups. The first includes indicators relating to the real economy and the financial markets, and the second group is composed of banking sector indicators (Table). The latter can be broken further down into either country or bank-specific indicators.<sup>5</sup>

Indicators relating to the loan stock and asset values (credit to GDP, credit stock growth, rise in housing and share prices) are presented in almost all studies on

<sup>5</sup> A good summary of the use of indicators in various studies is included in the shortly forthcoming publication by Laima, P. – Nyholm, J. – Sarlin, P. (2014) *Determinants of systemic banking crises: Finland in a panel of EU countries. Bank of Finland Discussion Paper.*

Table.

Indicators to predict crises, as identified in the literature

Real economy indicators	Banking sector indicators
- GDP	- Size of banking system
- Real interest rates	- Lending
- Exchange rates	- Housing loans
- Inflation	- Deposit insurance
- Share prices	- Financial market regulation
- Housing prices	- Market-based funding
- Government debt	- Loans and deposits
- Current account	- Systemic dimension of banks
- Monetary aggregates	- Liquidity creation
- Measures of expectations*	- Debt-servicing ratio

\* Indicators measuring expectations of economic agents, such as IFO indices.  
Source: Relevant research literature.

leading indicators and have been found to predict banking crises. This supports the generally held view that lending tends to be cyclical in the same way as economic fluctuations and is therefore one of the most important causes of banking crises. The phenomenon is familiar in both advanced and emerging economies. Research findings suggest that indicators of credit cycles would also have helped to foresee the latest global financial system crisis.<sup>6</sup>

Indicators relating to developments in the real economy have not turned out to be as useful in predicting crises anywhere else, other than in emerging economies. The probability of a crisis has been discovered to increase in these countries during periods of slow economic growth, rapid inflation and high interest rates.<sup>7</sup> A current

account surplus has typically been found to protect the country from crises.<sup>8</sup>

In recent years, the literature has also brought forward indicators relating to the banking sector other than the credit stock, which provide information on banks' balance sheet developments. For example, banks' increasing market funding may signal future problems.<sup>9</sup> Banks' high debt-servicing ratio and liquidity creation have also been found to predict crises.<sup>10</sup>

The most important properties of indicators used in macroprudential policy are easy interpretability and ability to signal crises early enough to allow macroprudential authorities sufficient

time to respond to increased risks. A suitable period for signals to arrive is about one and a half years ahead of a crisis. On the other hand, indicators should not warn of increasing risks too early as the use of macroprudential policy also always means costs to society, for example, via slowing economic growth because of reduced lending.<sup>11</sup>

The indicators should also be precise enough to distinguish between right and wrong signals. Clearly, no single indicator will ever be able to signal crises absolutely correctly, and this makes it necessary to have several indicators in place. Decision-makers must also always accept the possibility of false signals and consider which is more harmful: to react when no crisis is coming or not to react when a crisis is coming.

Imbalances in the economy usually accumulate over the long term, and empirical studies could therefore examine the predictive power of indicators over longer horizons. Likewise, it would be a good thing to remember that policy decisions can never be based on mere statistical relevance. In practical work, the most valuable indicators are, in fact, those based on existing economic theory.<sup>12</sup>

<sup>6</sup> Borio, C. – Drehmann, M. (2009) *Assessing the risk of banking crisis – revisited*. BIS Quarterly Review. March.

<sup>7</sup> Demirgüç-Kunt, A. – Detragiache, E. (2005) *Cross-country empirical studies of systemic bank distress: a survey*. National Institute Economic Review 192: 68-83.

<sup>8</sup> Rose, A. K. – Spiegel, M. M. (2011) *Cross-country causes and consequences of the crisis: an update*. European Economic Review 55: 309-324.

<sup>9</sup> Habm et al. (2013.)

<sup>10</sup> Drehmann, M. – Juselius, M. (2013) *Evaluating Early Warning Indicators of Banking Crises: Satisfying Policy Requirements*. BIS WP 421. Berger, A. – Bouwman, C. (2011) *Bank Liquidity Creation, Monetary Policy, and Financial Crises*. Working Paper. Wharton Financial Institutions Center.

<sup>11</sup> Drehman – Juselius (2013).

<sup>12</sup> Shin, H. S. (2014) *Procyclicality and the Search for Early Warning Indicators*. In Claessens et al. (eds.) *Financial Crises, Consequences, and Policy Responses*. IMF.

Box 4.

### Tensions between Ukraine and Russia increase risks in the real economy, in particular, but also in financial markets

Growing tensions between Ukraine and Russia have increased the prospect of risks that could affect euro area economies not only through direct contagion mechanisms – such as the banking sector’s direct claims – but also indirectly through lower growth in the real economy or disruptions in the functioning of international financial markets. In addition to tentatively positive signs from the real economy, the restored functioning of the financial markets has stabilised the euro area in its process of recovery from the sovereign debt crisis. Even so, the correction of debt levels is still pending, and structural weaknesses continue to persist. For this reason, sensitivity to financial market disruptions has remained in place.

Examination of direct contagion channels reveals that European bank claims on Russia totalled about EUR 120 billion at the end of 2013. The biggest lenders in volume terms were the banking sectors of France, Italy, Germany, Austria and the UK. Dutch and Swedish banks also have considerable activity in Russia. Bank claims have dropped by nearly EUR 30 billion from their peak in early 2013. Similarly, during the same period, European bank claims on Ukraine were considerably

smaller, about EUR 17 billion, of which Austrian, Italian, French and Dutch banks had the most claims in volume terms. The quality of assets is currently a subject of major concern, as Russian household credit has increased strongly in recent years. Unsecured lending, in particular, has witnessed robust growth. Consequently, the Russian central bank has expressed concern about the fast growth rate of household debt. Anxiety over increasing loan losses is related to the very weak growth outlook for the Russian real economy. In terms of risks, notably the corporate sector’s foreign currency debt entails significant vulnerabilities, as this debt accounts for a third of total lending to the Russian corporate sector. Disruptions in exports, in particular, could impair the corporate sector’s ability to service their debts.

The Finnish banking sector’s direct claims on Russia and Ukraine are relatively modest and are not expected to jeopardise domestic banks’ capital adequacy. Viewed by sector, the domestic banking sector’s exposures to Russia are highest in the real estate and construction sectors and in trade. Some of the largest domestic investors have deliberately been reducing their exposures to Russia since

the 2008 crisis. As for investment funds, the share of Russia-related risks was fairly large only in a few cases. The situation is more complicated for non-financial corporations because of the investments they have made in Russia, among other factors. These investments could even assume significant exposures.

Amid rising tensions, indirect channels would probably develop into more significant sources of risk than direct channels. They would expose the banking and financial sector to changes in the valuations especially of those companies’ shares and bonds that have strong linkages with Russia and, in lending, to potential growth in loan losses from sectors with high Russia-related business risks. Finland’s already weak growth prospects are highly vulnerable to changes in the export outlook. On the other hand, loan losses would also grow in sectors with large imports from Russia. Furthermore, small enterprises with high Russia-related business risks could be particularly vulnerable to disruptions. If investors’ confidence in the domestic banking sector were to change, it would be reflected in weakening access to market funding and higher funding costs.

# Financial system risk resilience and structural risks

The Finnish financial system's risk resilience has remained good overall. The profitability and capital position of both the banking and insurance sectors have remained good on average, relative to the risks in the operating environment. The low level of interest rates and the sluggishness of the economy, however, strain the profitability of the traditional business models of both banks and insurance companies. The weak economic outlook and the search for higher yield increase the risks of lending and investment. The fact that the loan stock is tied to Euribor rates as well as banks' dependency on international wholesale funding increase the banking sector's vulnerability. The banking sector's degree of concentration and interconnectedness intensify domestic and foreign risks of contagion.

The infrastructure behind payment traffic and securities clearing and settlement has operated reliably, but international dependencies have changed the risks and vulnerabilities. Therefore appropriate attention must be paid to continuity arrangements and risk preparedness.

## Capital adequacy of the Finnish banking sector solid

The Finnish banking sector's total capital adequacy ratio, calculated on the basis of Tier 1 and Tier 2 capital, was 16.0% at the end of 2013, compared with 17.0% a year earlier (Chart 15). The slight decline in the capital adequacy ratio was due to an increase in risk-weighted assets. According to the Financial Supervisory Authority (FIN-FSA), this was mainly

due to a rise in average risk weights, closer to pre-2012 levels.<sup>1</sup>

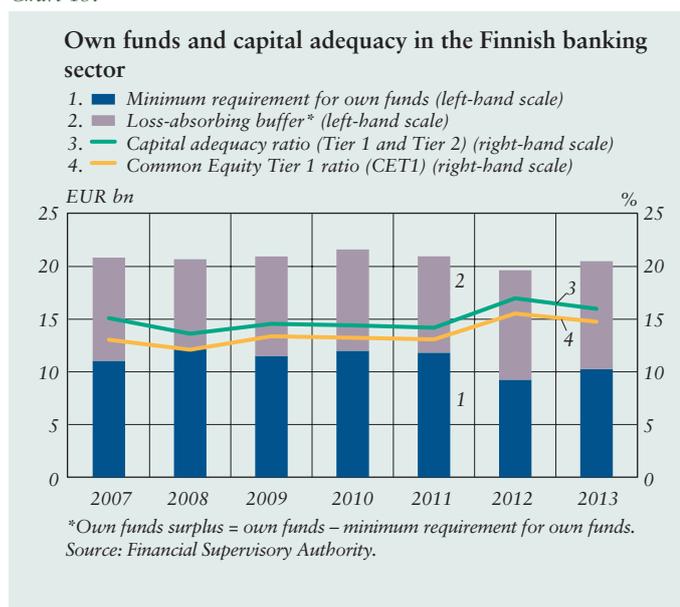
Banking sector capital adequacy has remained strong overall and the loss-absorbing buffer is still good, relative to the estimated assets-related risks. The sector's surplus of own funds, relative to the statutory minimum capital requirement of 8%, was over EUR 10.2 bn at the end of 2013, compared with close to EUR 10.4 bn a year earlier (Chart 15).

The majority of the banking sector's own funds are highest-quality capital. The core capital ratio, calculated on the basis of common equity Tier 1 (CET1), was 14.8% at the end of 2013, compared with 15.5% a year earlier.

The new Capital Requirements Directive and the associated Regulation

<sup>1</sup> Financial Supervisory Authority (2014) Financial position and risks of supervised entities 1/2014.

Chart 15.



adopted in 2013 will enter into force in 2014, and the new capital requirements introduced therein will be phased in gradually by the end of 2019.<sup>2</sup> The Capital Requirements Regulation, which was applied as of the start of 2014, requires banks to have a CET1 capital ratio of a minimum of 4.5%, and the Regulation tightens the definition of own funds and risk weights of assets. According to FIN-FSA, the stricter definitions will lower the Finnish banking sector's CET1 capital ratio by approximately 1.6 percentage points. However, banks will be able to fulfil the new minimum capital requirements without special measures to strengthen their capital adequacy.

New regulation ensures that Finnish banks' capital adequacy will remain at a sound level also in future. This is important for maintaining general confidence in the banking system and for maintaining banks' credit ratings and lending capacity even in a weak economic environment. From the start of 2015, banks' capital positions can be bolstered, if necessary, also by introducing variable additional capital requirements.<sup>3</sup>

In practice, banks are expected to hold more capital than required by the statutory minimum requirements. In the ongoing comprehensive assessment<sup>4</sup> of

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<sup>2</sup> The additional capital requirements included in the Directive will be transposed into Finnish legislation by a new Credit Institutions Act. See the section 'Financial system policy'.

<sup>3</sup> The use of the countercyclical capital buffer requirement is discussed in an article by Kauko, Topi and Vauhkonen, available in this publication.

<sup>4</sup> The comprehensive assessment is described in more detail in Box 8. In Finland, the comprehensive assessment includes Danske Bank Plc, Nordea Bank Finland Plc and OP-Pohjola Group.

the banking system, conducted by the ECB and national supervisory authorities, the benchmark for the CET1 capital ratio is set at 8%. The same benchmark is also used as a threshold in the baseline scenario of the EU-wide stress test exercise that is currently being prepared and coordinated by the European Banking Authority (EBA).<sup>5</sup>

Banks' own long-term capital adequacy targets also clearly exceed the minimum requirements imposed by the authorities. For example, Nordea's objective is to maintain the entire Group's CET1 capital ratio at a minimum of 13%. The OP-Pohjola Group's new target for core capital adequacy is 18%, and that of its subsidiary, Pohjola Bank, is 15%. The objective of the Bank of Åland is to raise its CET1 capital ratio to clearly over 11%. Aktia's target is to maintain its Tier 1 capital ratio at a minimum of 10%.<sup>6</sup>

#### *Banking sector assets have declined*

The size of the Finnish banking sector,<sup>7</sup> measured in terms of assets, has decreased since 2011 (Chart 16). At the end of 2013, the banking sector's total assets were approximately 15% smaller than two years earlier. This was mainly due to the decrease in the balance sheet value of derivative assets and liabilities

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<sup>5</sup> Of the Finnish banks, OP-Pohjola Group is included in the stress test. Nordea Bank Finland Plc, which is part of Nordea Group, and Danske Bank Plc, which is part of Danske Bank Group, participate in the stress test via their parent company.

<sup>6</sup> The figures are based on the banks' annual reports for 2013.

<sup>7</sup> Finnish banking groups, excl. branches of foreign banks operating in Finland. The information is based on figures published by FIN-FSA.

on the back of an increased use of central counterparty clearing in derivatives contracts.

The decline in assets has improved the banking sector's equity ratio; the ratio of own funds to assets was 4.4% at the end of 2013 (Chart 16). The long-term decline in the ratio is mainly due to cross-border arrangements within the Nordea Group: on the one hand, the increase in the balance sheet value of capital market activities which have been centralised to the balance sheet of Nordea Bank Finland, and on the other hand, the significant dividends paid by Nordea Bank Finland to its parent company, which resulted in a decrease in own funds.

*Dependency on international wholesale funding increases banking sector vulnerability*

The single most important source of funding for banks operating in Finland is deposits (Chart 17). The banks finance the gap between the loans granted and deposits received by issuing bonds, mainly in the international capital markets. This structural funding gap has remained virtually unchanged in the past year, and banks have not experienced any difficulties filling it. However, dependency on wholesale funding exposes banks to disruptions in international financial markets and underlines the importance of a good credit rating.<sup>8</sup>

The average maturity of banks' market-based funding has lengthened gradually, with the increase in the stock

<sup>8</sup> See also Box 6 on the vulnerabilities and structural characteristics of the Nordic banking sectors.

Chart 16.

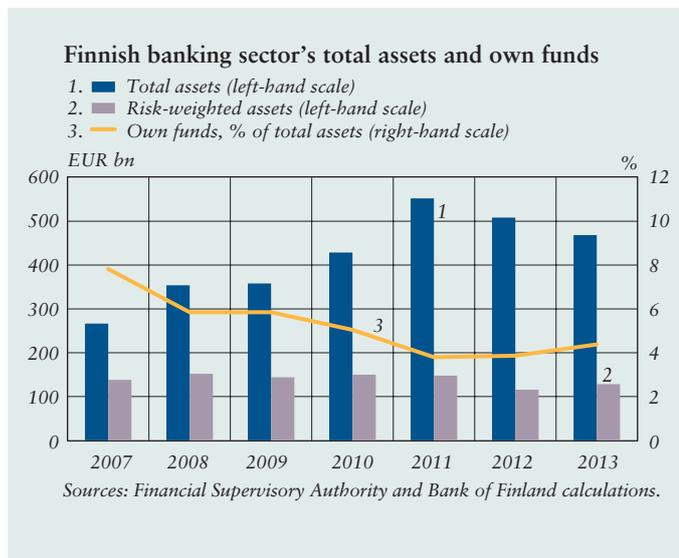
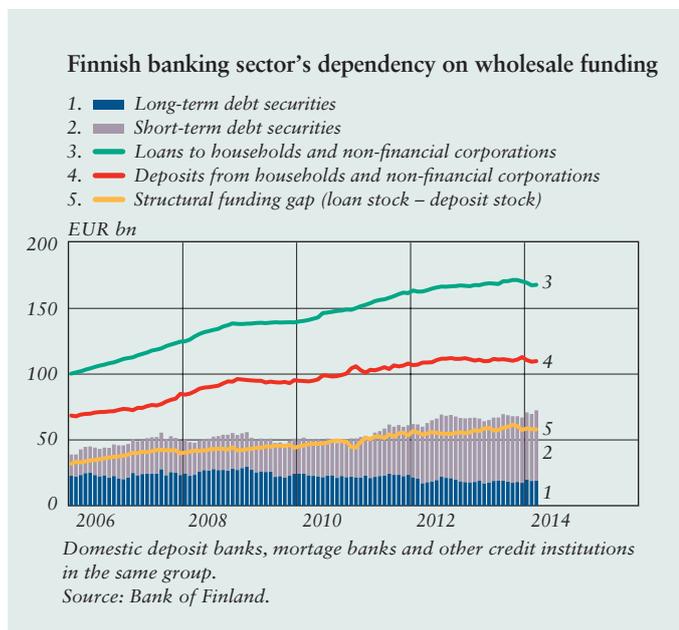


Chart 17.



of long-term debt securities issued by banks. The largest portion of this is accounted for by covered bonds, whose growth rate was as its strongest in 2011–2012. The requirement for the Net Stable Funding Ratio (NSFR),

which will be phased in gradually in 2016–2018, maintains the need to increase the share of long-term funding.

With the use of covered bonds as a source of funding, housing loans are increasingly used as collateral for banks' debt securities. If asset encumbrance rises to high levels, it may start to hamper banks' funding, weaken banks' credit ratings and thus increase the cost of unsecured wholesale funding, in particular. The use of housing loans as collateral for funding also increases banks' vulnerability to a decline in housing prices.<sup>9</sup>

Banking sector liquidity has remained good. At the end of 2013, the

<sup>9</sup> See also European Systemic Risk Board (2013) Annex to the recommendation on funding of credit institutions.

total amount of cash and debt securities eligible for refinancing with central banks was virtually unchanged compared with the average amount at the end of 2011 and 2012. However, the Liquidity Coverage Ratio (LCR) requirement, which will tighten gradually in 2015–2018, requires Finnish banks to hold a higher share of high-quality liquid assets, in order to decrease liquidity risk.<sup>10</sup>

#### *The Euribor-tied loan stock and slower stock growth strain profitability*

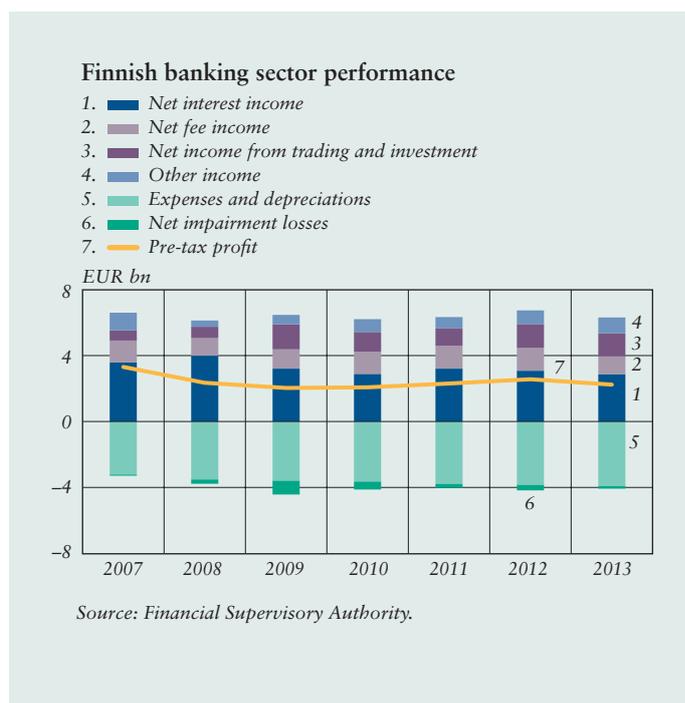
The Finnish banking sector's total pre-tax profits (EUR 2,240 m) for 2013 were approximately 13% lower than a year earlier. The performance of Finnish banks has remained considerably stable, even in the challenging operating environment (Chart 18). However, the cost-to-income ratio weakened to 62.1%, from 57.1% a year earlier, due to a decrease in income and an increase in expenses. Return on equity (ROE) declined to 8.1%, from 8.5% (Chart 19).<sup>11</sup>

The accommodative euro area monetary policy has kept short-term market rates at an historically low level for a long period. The low level of interest rates has weakened the profitability of Finnish deposit banking, as the overall margin between the average interest rate on the loan and deposit

<sup>10</sup> Financial Supervisory Authority (2014) Financial position and risks of supervised entities 1/2014.

<sup>11</sup> In 2013, banks results were also affected by certain special factors. The most significant factors were the bank tax, the decrease in loan losses due to an internal guarantee agreement in the Nordea Group and the commission expenses paid by Nordea Bank Finland to its parent company because of the guarantee agreement, resulting in lower net fee income.

Chart 18.



stock has narrowed to exceptionally low levels ie 1.3 percentage points, at its lowest (Chart 20).

Banks have boosted profitability by increasing the margins on new loans, for example. Despite a decrease in deposit rates, the deposit margin has since spring 2012 been negative relative to the 3-month Euribor, which is exceptional.

The overall margin started to increase gradually and net interest income started to grow in the second quarter of 2013 as a result of the slight rise in Euribor rates and the turnover of the loan stock. Improving the profitability of deposit banking however remains a challenge, due to the slower growth of the loan stock.

The fact that the loan stock is tied to Euribor rates and banks are dependent on long-term wholesale funding creates a vulnerable combination for the profitability of banking, particularly in a situation in which Euribor rates are historically low but banks funding costs depend strongly on the market's confidence in the banking system.

#### *Quality of lending has remained good*

The stock of loans and guarantees of banks operating in Finland was approximately EUR 255 bn at the end of 2013, which is approximately 5% higher than a year earlier.<sup>12</sup> The domestic banking sector's (excl. branches of foreign banks) net impairment losses on loans and other receivables in 2013 were less

<sup>12</sup> FIN-FSA statistics on lending by Finnish banking groups and branches of foreign credit institutions with deposit bank operations in Finland.

Chart 19.

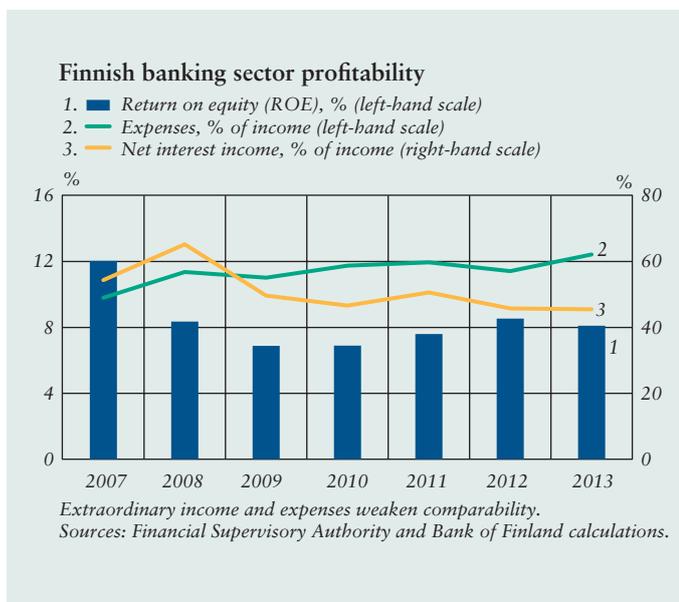
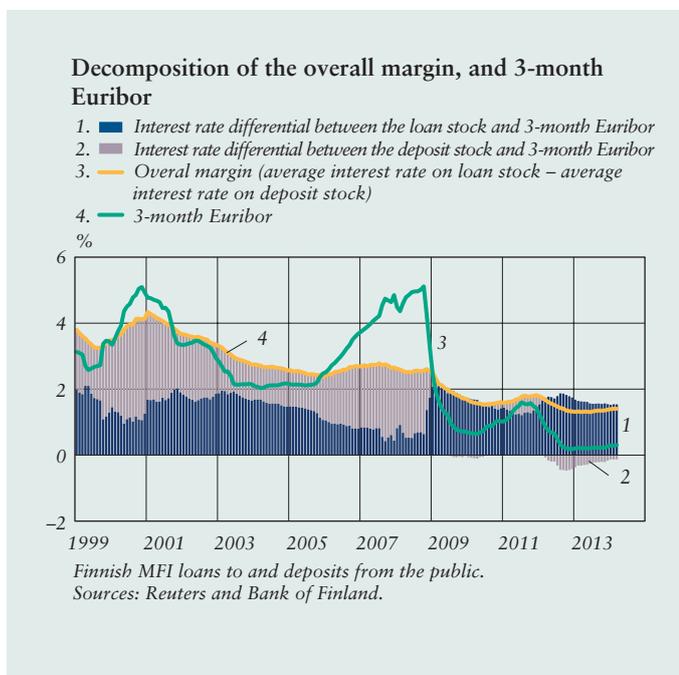


Chart 20.



than half the amount in the previous year, amounting to less than 0.1% (EUR 152 m) of the banks' stock of loans and guarantees. Banks' losses on individually assessed assets, relating to foreign claims, declined significantly compared with the year-earlier period. The decrease in loan losses was partly due to a guarantee agreement between Nordea Bank Finland and its parent company, which accounted for the majority of Nordea Bank Finland's corporate exposures and reduced its loan losses by a total of EUR 83 million.<sup>13</sup>

Due to the structure of the credit stock, Finnish banks are vulnerable to, in particular, to risks related to developments in the housing and real estate

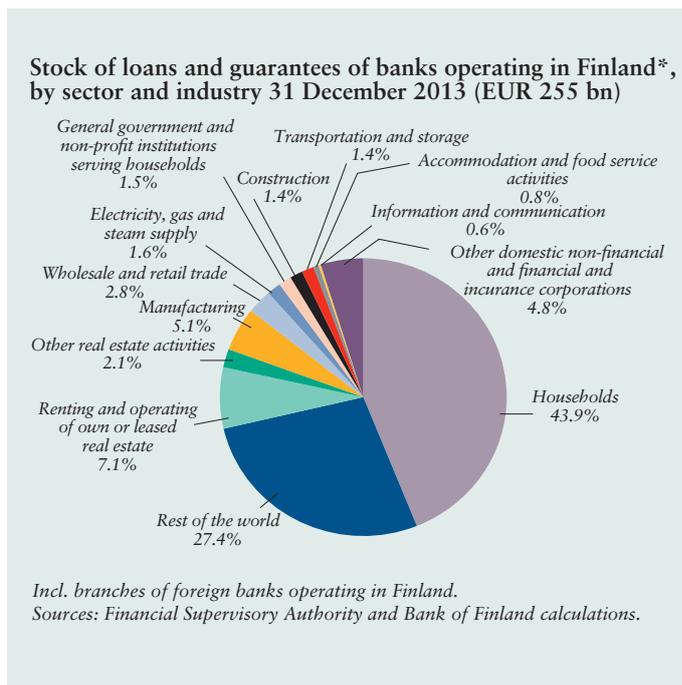
<sup>13</sup> Nordea Bank Finland Annual Report 2013.

markets. Approximately 44% of the loan stock is loans granted to domestic households and 9% of it is loans to housing corporations and other real estate industry (Chart 21). Thus far the level of losses on these loans has been very low, and banks' nonperforming loans to households, housing corporations and the real estate industry are small, relative to the stock of these loans.

Manufacturing companies dependent on developments in the international export and import markets also account for a significant portion of the loan stock. In the manufacturing industry, the majority of debt is accounted for by companies in the manufacture of machinery, equipment and metal products. In contrast, the sectors vulnerable to primarily domestic cyclical fluctuations, ie construction and accommodation and food service activities, account for a very small portion of the loan stock.

The weakness of the Finnish economy increases the probability of future loan losses. The total number of corporate bankruptcies and the amount of banks' nonperforming assets, which are signals of credit risk, have increased in the past year, but their levels are still moderate. At the end of 2013, nonperforming assets amounted to approximately 0.6% of the stock of loans to households and non-financial corporations. The low level of interest rates supports the debt-servicing ability of both households and non-financial corporations by keeping the interest rate expenses of loans tied to variable interest rates small.

Chart 21.



Box 5.

### Modelling of banks' credit losses with macro factors

Models used in the modelling of credit losses can be divided into structural and non-structural models as well as their hybrids.

Structural models enable the assessment of credit loss risks without access to credit loss data. These assessments are based on a modelling of the key elements of credit losses. These are borrowers' default probabilities, loss given default (LGD) ratios and their interdependencies.

Non-structural, or reduced form models, can be used to model the historical dependency of credit losses for example from macroeconomic factors, such as GDP growth, interest rate levels and private indebtedness.

Structural models are important in banks' risk management, capital requirements calculations and stress tests.

On the other hand, reduced form models enable, for instance, the assessment of credit losses in several countries with a single model.

Losses on household loans are usually modelled utilising reduced form models, often by reviewing the credit losses of the private sector as a single variable. A structural model is not always a natural alternative in this case, since the number of loans is high and the loans are small relative to the loan stock. However, the impact of the maturity of housing loans, the age of the loan and the

loan to value ratio on banks' expected credit losses has been studied using a model with structural characteristics.<sup>1</sup>

The use of reduced form models is limited by the weak international availability of credit loss data. In this context, structural models, where credit losses are derived from their elements, are a robust alternative.

At the Bank of Finland, structural models have been developed for estimating the probability distribution of credit losses on corporate loans and for stress testing. In the model developed in 2006 by Sorge and Virolainen,<sup>2</sup> sector-specific default rates are first modelled utilising key macro variables – the output gap, interest rate level and indebtedness of the corporate sector. Similarly, by generating scenario paths based on probability distributions for these variables, a probability distribution can be formed for credit losses. The model accounts for the distribution of loans to different sectors and different borrowers, and hence it allows the assessment of the impact of sector-specific and company-specific risk exposures on credit losses. Subsequent versions of the model<sup>3</sup> also take into account the fact that in the

context of a large number of defaults, the ratio of losses on loan amounts also increases. This can result, for example, from the fact that when defaults abound, collateral values tend to decrease. Both factors reflect cyclical developments. This dependency increases credit loss risks.

The model framework of Sorge and Virolainen can also be applied to stress testing the capital requirements for banks' corporate loans. It allows one to estimate the size of the capital adequacy buffer that is required to keep the bank's capital adequacy above the minimum requirement, with a determined statistical confidence level, for example, for a year.<sup>4</sup> The model has been utilised in making assessments about the impact of cyclical developments on companies' default probabilities by sector. This type of analysis could prove useful in the scope of the so-called Basel III capital requirements framework in seeking to reduce the pro-cyclical impact of capital requirements.<sup>5</sup>

Reduced form models have been used in modelling the credit losses of the entire private sector in models covering both Finland and nine European countries.

Out of these models, the version developed by Pesola emphasises that GDP growth and

<sup>1</sup> Palmroos (2009). See also Vilminen – Palmroos (2013).

<sup>2</sup> Sorge – Virolainen (2006).

<sup>3</sup> Jokivuolle – Virén – Vähämaa (2010) and Jokivuolle – Virén (2013).

<sup>4</sup> Jokivuolle – Virolainen – Vähämaa (2008).

<sup>5</sup> Jokivuolle – Virén (2012).

interest rate shocks affecting credit losses should be defined as forecast errors between actual developments and consensus estimates.<sup>6</sup> Developments in credit losses also depend on the joint impact of these shocks and the level of indebtedness of the private sector preceding them.

The most recent model developed in 2014<sup>7</sup> illustrates the joint impact of shocks and indebtedness. In this model, a negative change in GDP increases credit losses much more forcefully when private indebtedness stands at a particularly high level. The model provides an explanation as to why the strong drop in Finnish GDP in 2009 did not result in similar credit losses to those experienced in the depression at the beginning of the 1990s (Chart); this time,

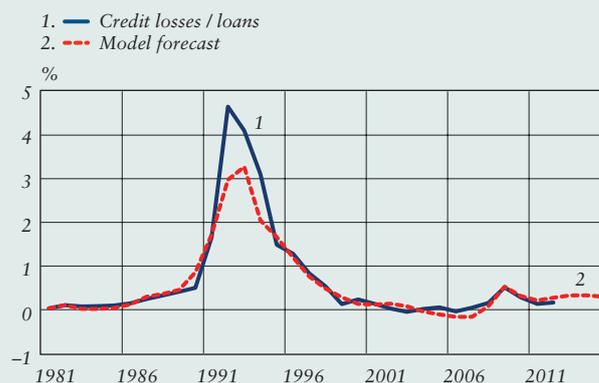
corporate indebtedness was clearly more moderate. Another key factor was the low level of interest rates following the financial crisis, which supported the debt servicing capacity.

In the models presented here, macroeconomic shocks cause credit losses. Actual credit losses in turn may amplify the

impact of the initial shocks. This may occur if credit losses materially impair the capital adequacy and lending capacity of the banking sector. The objective of an ongoing study at the Bank of Finland is to take this interaction into account in the operation of the macro economy and the financial sector, as well.

Chart.

#### Forecast of credit losses in Finland



Sources: OECD and Bank of Finland.

<sup>6</sup> Pesola (2011).

<sup>7</sup> Jokivuolle – Pesola – Virén (2014).

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*Banking sector's condition has improved measured by stress indices*

The overall condition of the Finnish banking sector can be assessed by a stress index, which includes the following variables: banks' share prices, interbank deposits, banks' profitability, own funds and loan losses (Chart 22).<sup>14</sup> The higher the value of the stress index, the higher the stress for the banking sector.

According to the stress index, the condition of the banking sector is good and it has not changed significantly over the past year. The current value of the index is bolstered by the rise in banks' share prices and the small amount of loan losses. Of the factors weakening the index, return on assets and the ratio of own funds and assets have both decreased, compared to the pre-financial crisis situation.<sup>15</sup>

The probability of possible future problems for the Finnish banking sector can be assessed using the distance-to-default indicator, which predicts the probability of default and is calculated based on banks' share prices and assets. The higher the indicator value, the more stable the banking system. In spring 2014, the condition of the banking sector, based on this indicator, was also slightly better on average than in the period under review (Chart 23). The indicator shows that the condition of the Finnish banking sector started to improve in summer 2012.

<sup>14</sup> The methods related to Charts 22 and 23 are described in the special issue of the Bank of Finland Bulletin, Financial Stability 2006, p. 44–46.

<sup>15</sup> The index does not take into account the risk-weighted capital ratio which is calculated in accordance with Basel II regulations and is slightly higher than the ratio at the end of 2007 and compensates for the decline in equity ratio.

Chart 22.

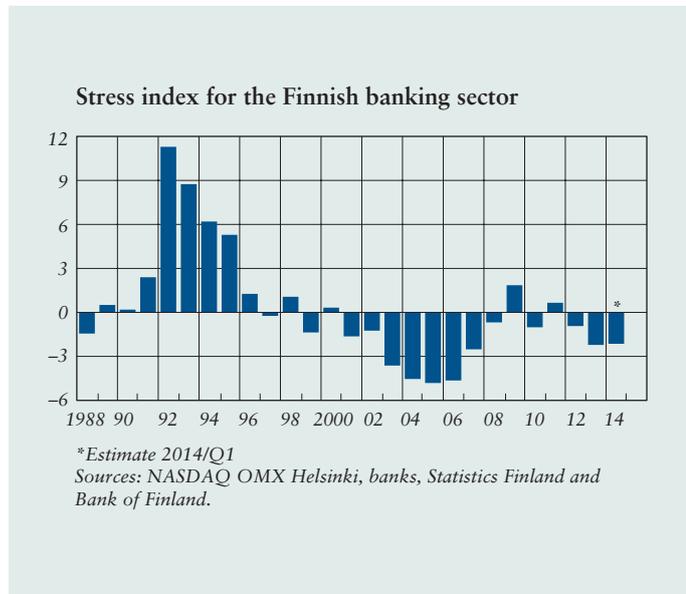
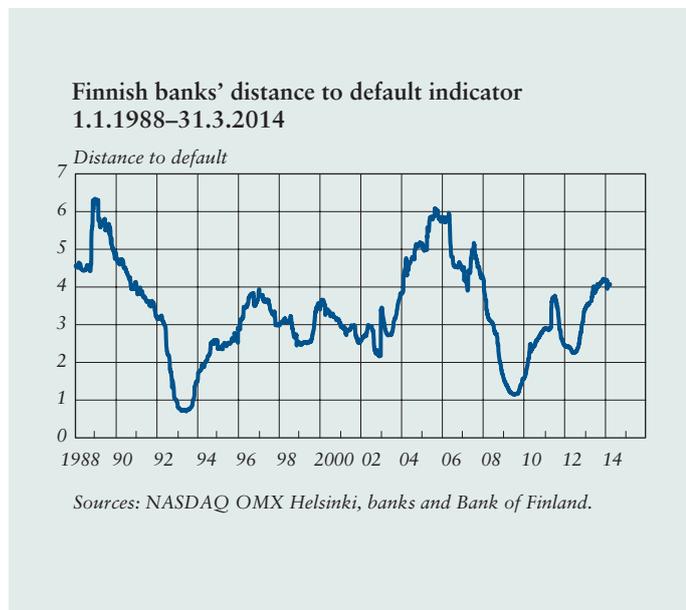


Chart 23.



*The banking sector's degree of concentration and interconnectedness intensify risks of contagion*

A contagion risk refers to the risk that the problems of one financial system participant spread from one financial institution and country to other financial institutions and countries. The problems of individual participants can intensify into extensive problems in a financial system if financial institutions do not have adequate loss buffers relative to exposures. Risks related to direct exposures are monitored by examining financial institutions' claims on other financial institutions as well as various countries, non-financial corporations and sectors. Moreover, financial institutions are exposed to joint risks because they share the same operating environment and same types of securities and credits. In both the cases, contagion risks are mitigated by asset diversification and adequate bank capitalisation.

The Finnish banking sector's degree of concentration is among the highest in the EU. At the end of 2013, the total assets of the three largest banks (Nordea Bank Finland, OP-Pohjola Group and Danske Bank Oyj) accounted for 92% of the banking sector's total assets.<sup>16</sup> At the end of 2013, direct exposures between domestic banks were however smaller than in the previous years of the 2000s.

<sup>16</sup> In 2013, two new central credit institutions were established in Finland – Central Bank of Savings Bank Finland Ltd and Bonum Bank Ltd which operates as the central credit institution of POP Banks – as Aktia announced that it will terminate its services as central credit institution at the beginning of 2015. The change will decrease savings banks' and local cooperative banks' dependency Aktia.

The interconnectedness of the Nordic banking sectors enables the spreading of financial system risks from one country to another.<sup>17</sup> Two of the three largest banks operating in Finland are owned by foreign banks and are therefore particularly vulnerable to possible problems in their Nordic parent banks.<sup>18</sup>

Domestic banks' foreign assets and liabilities have increased in the 2000s. At the end of 2013, domestic MFIs' foreign assets totalled EUR 242 bn, and their foreign liabilities totalled EUR 315 bn.<sup>19</sup> Foreign assets and liabilities increase banks' vulnerability and sensitivity to shocks deriving from outside a bank's home country.<sup>20</sup>

The majority of the foreign claims are on items in the other Nordic countries and the United Kingdom, which is an important centre for securities trading. In addition, banks operating in Finland have significant claims on items in the other large EU countries and the United States. The claims on items in the higher-risk countries ie so-called GIIPS countries,<sup>21</sup> Russia and other emerging countries are small in both value and relative terms. Individual Finnish non-financial corporations active in Russian trade do not either pose significant risks to the Finnish banking sector.

<sup>17</sup> IMF (15 November 2013) Financial Stability Assessment. See <http://www.imf.org/external/np/pp/eng/2013/111513.pdf>.

<sup>18</sup> See also Box 6 on the macrostability risks of the Nordic financial system.

<sup>19</sup> Bank of Finland Balance of Payments Statistics 12/2013.

<sup>20</sup> See subsection Dependency on international wholesale funding increases banking sector vulnerability.

<sup>21</sup> Greece, Ireland, Italy, Portugal and Spain.

Box 6.

## Macrostability risks of the Nordic financial system

The stable and functioning financial system of the Nordic countries has enjoyed a so-called safe-haven status during the crisis period of the recent years. The real economy in the Nordic countries has performed relatively strongly compared to the rest of Europe, and the countries' credit ratings have remained at the best possible level.

Nordic banks with solid capital adequacy and profitability<sup>1</sup> have received funding with very favourable terms in recent years in comparison with other European banks. Nordic banks' funding costs have also been contained by the low supply of bank bonds in Europe.

Despite the favourable conditions, the stability of the Nordic financial system is exposed to significant risks. Although the risk of materialisation of these risks is low, the impacts of any materialising risks could be large and rapid.

### *Significant centralisation and interconnectedness in the banking sector*

One of the key risks of the Nordic financial system is due to the structure of the banking sector. In an international

<sup>1</sup> Danish banks are an exception, as many of them continue to suffer from the profitability difficulties caused by the Danish banking crisis for commercial banks.

comparison, the size of the banking sector in Nordic countries relative to the size of the economy is considerable. The size of the banking sector in Sweden is about four-fold and in Denmark three-fold, relative to the gross domestic product.<sup>2</sup>

The Nordic banking sector is also highly centralised, since, as measured by balance sheets, it is dominated by six large banks (Nordea, Danske Bank, DnB, Swedbank, SEB and Handelsbanken). The largest Nordic bank, Nordea, is the only one also categorised globally as a systemically important financial institution.

The operations of the largest Nordic banks extend to a geographically large area. Swedish banks have significant market shares in all Nordic countries and the Baltic States, and the Danish Danske Bank has significant activities in both Finland and Sweden. Hence, the interconnections within the Nordic banking sector are significant both through their extensive network of branches and subsidiaries as well as cross-border activities.

Due to the interlinkages, the risks of Nordic banks are also

<sup>2</sup> The figures of the ECB's consolidated banking statistics include both domestic banking groups (including units operating abroad) and foreign banks operating in the country. Hence, for example Nordea Bank Finland is included in both Swedish and Finnish figures.

significant from the point of view of the stability of the Finnish financial system. The market shares of Swedish and Danish banks in lending to the public in Finland amounts to about 46% of lending, overall. Finnish banks' Nordic risks are also amplified by their investments in bonds issued by Nordic governments, banks and mortgage banks.

### *Large exposures to the real estate sector*

The special characteristics of the Nordic financial system include the considerable role played by mortgage banks in the financing of housing loans and the major role of mortgage-backed securities in banks' funding in general. Danish mortgage banks are Europe's second-largest issuer of mortgage-backed securities, while Swedish banks are the fifth-largest issuer.

The Nordic housing loan system is also considered relatively transparent, liquid and conservative in its lending policy, which has promoted investors' confidence in the system. Hence, Nordic mortgage banks have been able to raise funding at low cost from the international financial markets.

However, the flip side of the coin involves considerable macrostability risk. House prices surged in Denmark and Sweden

before the financial crisis, and household indebtedness has risen to a high level. There is the danger of risks stemming from a potential overheating of the real estate and housing markets, which have also been acknowledged in the European-wide joint bank stress tests by the ECB and the European Banking Authority (EBA), to be conducted in summer 2014.

A special characteristic of Swedish and Danish housing loans is non-amortisation loans, where the household only pays interest to the bank. Both Swedish and Danish macrostability authorities have encouraged banks to avoid granting non-amortisation housing loans due to the related macrostability risks, such as high indebtedness.

#### *Sensitivity to disruptions in market funding prevails*

Another major risk to the Nordic banking sector is its dependency on market-based funding. The mortgage-bank-driven banking system is largely based on market funding, and therefore the discrepancy between loans and deposits in the Danish and Swedish financial system is large in comparison with European banks. Deposit growth has been slower than loan growth in both Sweden and Denmark.

Sweden also lacks extensive money markets, and therefore banks must resort to foreign money markets particularly for

their short-term funding. Swedish banks obtain their short-term funding primarily from the United States through local branches. Short-term dollar-denominated funding has made Swedish banks a significant investee for dollar-based money market funds. A negative turn in investors' risk sentiment may rapidly expose Swedish banks to liquidity problems, which was what happened to French banks in 2011.

Due to the high liquidity risks, the Swedish banking supervisory authority ordered banks to meet, at an accelerated pace, the liquidity requirement provided in the EU's Capital Requirements Regulation, which states that banks must be able to cover the outflow of liquidity in stress conditions at least for 30 days. Swedish banks have also lengthened the maturity of their funding somewhat, but nevertheless their refinancing risks continue to be significant.

Although the prospects for the real economy in the Nordic countries is forecast to remain moderate, and the risk-bearing capacity of the financial system remains relatively robust, Nordic banks and governments alike must remain strong due to the risks described above. The financial system cannot afford to lose the confidence earned, since the relatively low level of deposit funding, banks' dependency on short-term market funding and

long maturities of the credit portfolio are a vulnerable combination in a crisis situation. A preview of this was seen in 2009, when both the Swedish and Danish governments had to guarantee non-collateralised senior bonds in their respective countries, although the banks faced only relatively little stress compared with other European banks.

When funding is hindered – for example in the context of instability of international financial markets – the banking sector may rapidly wind up in profitability problems even if the banks did not suffer any credit losses.

The risks may also materialise for example due to a weaker-than-expected development of the real economy. Increasing unemployment may lead to declining house prices, which would weaken the quality of banks' balance sheets. This in turn would be reflected in funding difficulties as investors' risk sentiment changes.

However, the unemployment level, which has remained relatively low so far, and the low level of interest rates have sustained households' debt-servicing capacity and kept credit losses at a low level even in Denmark, where the downward correction in house prices reached 30% during the financial crisis.

### Insurance companies' average risk resilience has remained good

Finnish insurance companies' profitability and solvency have remained good on average. Insurance companies' business models have been adjusted to the challenges posed by the low level of interest rates, and the weak economic operating environment has not eroded growth in companies' premiums written.

The insurance sector's main domestic macrostability risk is the weak development of economic activity. Even though the industry has thus far been able to cope with the risks related to the lower-than-average level of interest rates, the threats posed by the low interest rates have rather increased than receded. Long-term fixed income investments are maturing, and it is difficult to find in the bond market investments with a similar level of yield without significantly increasing the risks of investment. For example, the risk premia of high-yield corporate bonds relative to government bonds have decreased already to pre-crisis levels. Consequently, the risks caused by a possible rapid adjustment in asset prices have increased.

Premiums written by Finnish insurance companies have posted strong growth rates despite the weakness of the economy. Life insurance companies' premiums written in 2013 amounted to over EUR 22 bn, up by 9%. As a result of the fading growth of the real economy, premiums written by pension insurers posted subdued growth rates, and in the non-life insurance sector, growth in statutory workers' compen-

sation insurance was weak. However, non-life insurance companies' total premiums written on direct business increased by nearly 6%.

The low level of interest rates has changed the business models of life insurance companies, in particular. Of life insurance companies new insurance contracts, practically all are various kinds of unit-linked life insurance products. Premiums written by life-insurance companies rose in 2013 by nearly 40%, to EUR 5.4 bn, of which over 85% were accounted for by unit-linked policies. The share of unit-linked policies in life insurance savings has risen to 56%.<sup>22</sup> The most rapid pace of growth in premiums written was posted in capital redemption contracts (85%). In capital redemption contracts, tax is levied on the return only when the contract expires, which makes these contracts competitive investment products. Premiums written on personal pension plans started to decline considerably, and the number of new business plummeted in 2013. As a result of changes in tax legislation, the demand for personal pension plans has decreased strongly.

### *Income from investment has remained reasonable in the challenging conditions*

Insurance companies' investment income has remained relatively good on average in the environment of low interest rates, but considerable differences between companies were observed in 2013, which were due to

<sup>22</sup> Federation of Finnish Financial Services (2014) Finnish insurance in 2013.

differences in investment allocation. The majority of life and non-life insurance companies' investments are fixed-income investments, and in 2013, the nominal return rate of life insurance companies was 4.2% and that of non-life insurance companies was 4.0%.<sup>23</sup> Pension insurance companies' average return on investments improved in 2013 and was better than that of other insurance companies at 8.3%, on average, which was due to the good level of returns on equity investment. Pension insurance companies' total investments were EUR 98 bn, of which 39% were investments in equities<sup>24</sup> and approximately 7% were hedge investments.<sup>25</sup>

<sup>23</sup> Financial Supervisory Authority (2014) Financial position and risks of supervised entities 1/2014.

<sup>24</sup> Listed and unlisted shares and private equity investment.

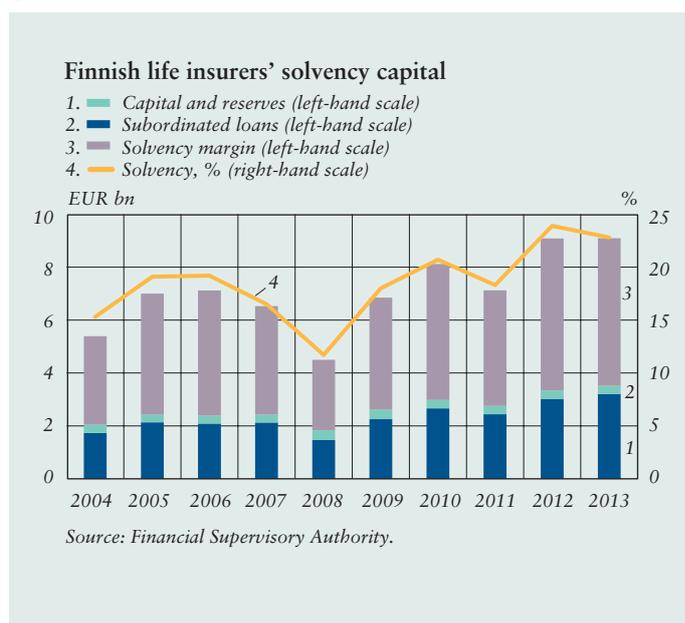
<sup>25</sup> The Finnish Pension Alliance TELA (2014) Summary of investment assets.

As a result of the good level of returns on equity investments, pension insurance companies posted a total profit of EUR 3.3 bn in 2013. Of the total profit, just under EUR 3 bn was used to bolster solvency capital. Due to the increase in solvency capital, the average solvency ratio (solvency capital relative to technical provisions) improved, to stand at 28% at the end of 2013. The increase to almost 40% in the weight of equity investment in the overall investment portfolio weakened pension insurance companies' risk-based solvency position, and at the end of 2013, it stood at 2.1 (2.5 in 2012).<sup>26</sup>

Non-life insurance companies' solvency capital and the profitability of non-life insurance improved. Non-life insurer's combined expense ratio was 95.6% (99.3% in 2012). At the same time, solvency capital relative to technical provisions improved slightly and was 61% (58% in 2012). The risk-based solvency position also improved, standing at 2.3 (2.1 in 2012). Despite a slight weakening, the solvency of life insurance companies has remained good. The solvency ratio was 22.8% at the end of 2013 (23.9% in 2012). Finnish life insurance companies have a strong capital position on average, relative to European life-insurers (Chart 24).

The Finnish insurance sector's risk resilience has remained strong on average, due to the good solvency ratio, but considerable differences between companies can be observed. In future, maintaining the current level of income

Chart 24.



<sup>26</sup> Financial Supervisory Authority (2014) Financial position and risks of supervised entities 1/2014.

from investment would require increasing the risks in investment. Risk management thus plays a key role.

*Insurance companies' role from the macro stability perspective is being examined*

The Finnish insurance sector is exposed to various indirect risks via investment markets. In the European insurance sector, the European Insurance and Occupational Pensions Authority (EIOPA) is currently conducting stress tests. The results of stress testing will be published in November. The International Association of Insurance Supervisors (IAIS) has examined the macro-level stability issues of the insurance sector in its publications.<sup>27</sup> Based on international experience and literature, the significant factors in terms of systemic risk are the nature of the companies' business, the size of the companies and the interdependencies between the companies.

In Finland, the insurance sector's importance from the perspective of financial stability risks is due to its key role in domestic investment activities. Insurance companies and banks can also have close links via investments and holdings, particularly in financial conglomerates. Disruptions and shocks in the financial markets or in the individual financial market participants can rapidly spread from one sector or company to another sector or company and thereby intensify financial market problems and the decline in asset prices.

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<sup>27</sup> IAIS (2009) Systemic risk and the insurance sector (October) and IAIS (2011) Insurance and financial stability (November).

## Financial market infrastructure

Financial market infrastructure is a key part of a well-functioning financial system. To maintain public confidence and the stable functioning of society, it is of key importance that the arrangements that underlie payment traffic and securities clearing and settlement are sound and that the functions are performed smoothly in all conditions. The systems serving the financial markets have operated reliably overall.

Infrastructure risk resilience can be assessed based on various risks and their transmission channels. The objective of international oversight principles<sup>28</sup> is to ensure that risks related to financial market infrastructures – such as credit and liquidity risk, operational risk, and general business risks – are recognised and adequately prepared for. However, managing individual risks is not enough; instead, we have to understand the interdependencies of the various risks. The oversight principles therefore emphasise the importance of a comprehensive risk management framework and risk management as a whole. These principles are a significant tool for preventing risks affecting the entire financial system, in other words systemic risk.

*Various risks and their management in infrastructures critical to the Finnish financial market*

The realisation of one risk can lead to the realisation of other risks. For example, as a result of an operational disruption in a

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<sup>28</sup> See <http://www.bis.org/publ/cpss101a.pdf>.

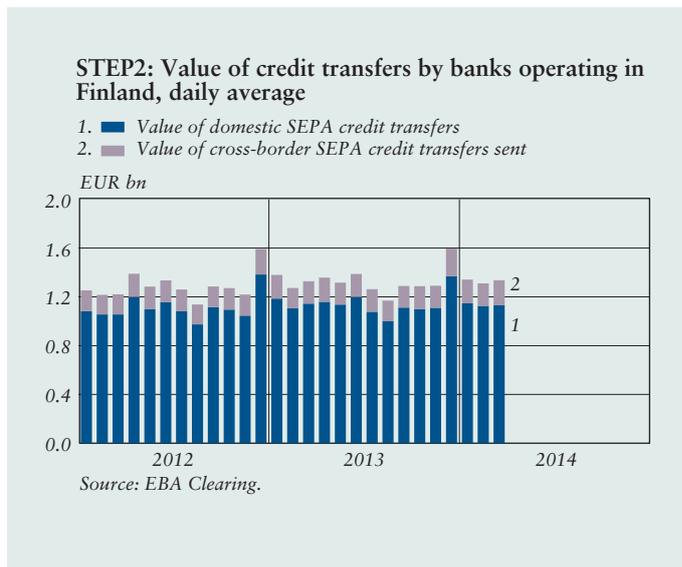
payment system, the participants do not receive their funds as planned, and the transfer of funds to other participants will therefore be delayed. In this case, the realisation of operational risk will lead to the realisation of liquidity risk. If a system participant is unable to meet its obligations, this will in certain types of systems lead to the realisation of credit risk, in that the participants will not receive the funds at all. If the problems are persistent and occur in a critical system, it may jeopardise the entire economy and financial intermediation. The realisation of such a systemic risk could cause problems to the entire society.

Liquidity risk can be reduced by incorporating netting features for incoming and outgoing payments into the system, which decrease the amount of funds needed for settlement. For example the STEP2 payment system, which processes Finnish credit transfers, operates in this way. The value of

Finnish retail payments transferred in the system relative to the banking sector's total exposures is so small that it does not pose a significant liquidity risk (Chart 25). In contrast, the reputation risk will be considerable if consumers' payments are not transferred as usual. Systems in which funds are paid to the end customer's account immediately, but in which the interbank fund transfer is executed only later, involve credit risks. Credit risk may arise, for example, in the domestic interbank payment system POPS, in which this risk is managed with bilateral credit limits between the participants. In the EURO1 payment system, credit risk is managed eg by collateral pool. From the collateral pool, funds can be taken for settlement if a participant is unable to meet its obligations. In securities clearing and settlement systems, securities are usually delivered in accordance with the delivery-versus-payment (DVP) principle, that is both parties to the trade receive their assets simultaneously, and no credit risk arises. In contrast, the central counterparties operating in securities clearing have to accept a credit risk, which they manage with various arrangements, for example with collateral and via funds.

Operational risk is managed with continuity arrangements, which are tested regularly. It is important that the system participants take an active part in the testing. This ensures that in the event of a problem, the arrangements are familiar to all the system participants. In addition to the testing of individual systems, more extensive

Chart 25.



national contingency exercises are conducted under the auspices of the National Emergency Supply Organisation.<sup>29</sup> The next exercise is planned for 2015. It is important that adequate effort is devoted to these exercises, and that the various parties understand the benefits of these exercises in terms of preparing for various crisis scenarios.

The key infrastructure behind the Finnish financial system has undergone a considerable internationalisation process in the 2000s. Dependency on foreign systems changes the risks and vulnerabilities of transaction processing. Seeking the benefits of integration and the implementation of changes can result in the fragmentation of functions into several units, and national know-how may disappear. The importance of managing this entire subject area meticulously should therefore be emphasised. It is in the interest of financial market participants to ensure that nationally appropriate continuity arrangements are in place in case of disruptions.

#### *Key channels of contagion for problems*

Between the different systems and participants a variety of interdependencies exist through which the problems can spread from one participant and system to other participants and systems. Currently, among the most significant channels for contagion are large banks, central counterparties and critical service providers.

Many banks participate in several systems, and they can also have several

key roles in individual systems. Consequently, the problems of an individual bank could rapidly cause problems to the other participants also, both nationally and internationally.

On the other hand, central counterparties, which clear securities trades, are also key channels of contagion for problems in the infrastructure,<sup>30</sup> and the regulation of central counterparties has been increased as a result of the financial crisis. EMIR, that is the regulation on OTC derivatives, central counterparties and trade repositories (European Market Infrastructure Regulation EU No 648/2012), entered into force on 16 August 2012. The key objective of the regulation is to increase information available on all derivative contracts and improve the risk management of OTC derivatives, in particular. The regulation imposes extensive reporting and risk management requirements.

The focus is also increasingly on critical service providers. Entities critical to systems and their participants include providers of messaging services to the financial markets. SWIFT is such an entity critical to the Finnish financial system.<sup>31</sup> The above-mentioned oversight principles include an annex on the oversight expectations applicable to critical service providers. Based on these oversight expectations, authorities have also published a consultative report on assessment methodology.<sup>32</sup>

<sup>29</sup> See <http://www.nesa.fi/organisation/national-emergency-supply-agency/>.

<sup>30</sup> See Bank of Finland (2013), Bank of Finland Bulletin 2/2013, Financial Stability, p. 41.

<sup>31</sup> Society for Worldwide Interbank Financial Telecommunication, [www.swift.com](http://www.swift.com).

<sup>32</sup> See <http://www.bis.org/publ/cpps115.pdf>.

Problems in a key payment system, for example TARGET2, would rapidly spread to the entire society. This is because TARGET2 settles the payments of approximately 80 other payment and settlement systems. If settlement were unsuccessful, a large number of credit transfers by consumers and companies would not be executed and the payees would not receive payment. In securities trading, securities and funds would not be transferred to their new owners. Due to its highly critical role, TARGET2 has extremely good and well-tested continuity and contingency arrangements. In future, the importance of systems provided by the Eurosystem will be underlined further with the launch of the securities settlement platform (TARGET2-Securities, T2S). Settlement in the T2S platform is also dependent on the reliable operation of TARGET2.

### *Systems have operated smoothly*

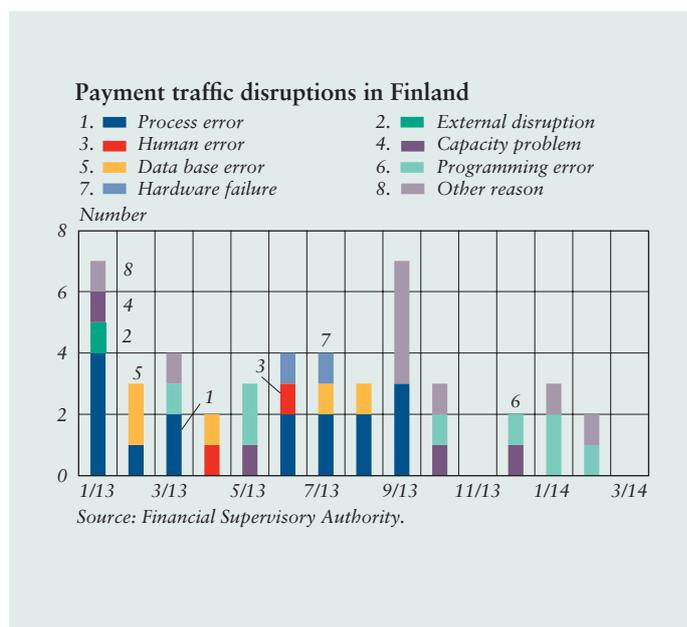
Systems critical to the Finnish financial market have operated reliably overall in the past year (see Appendix).

Changeover from the domestic PMJ system to the pan-European STEP2-system involved a considerable number of disruptions, as a result of which, for example, the payment of wages and salaries as well as pensions was delayed. The situation seems to have improved recently (Chart 26). The PMJ system ceased operations at the end of January 2014, when domestic direct debits were replaced mainly by e-invoice and SEPA credit transfer or direct payment, in connection with the migration to the Single Euro Payments Area.

Card payments have also become increasingly international in the past couple of years. Finnish debit cards have been replaced mainly by cards issued by Visa and MasterCard. At the same time, the issuing of cards and acquiring of card transactions have become bank-specific, and a major player Nets (former Luottokunta) has been sold to international investors. The card payment process has operated reliably overall. There is however a threat that dependency on international operators will grow and the role of domestic operators will continue to decrease further.

Euroclear Finland's securities clearing and settlement systems have operated reliably. On the basis of the Bank of Finland's oversight assessment, the decision was taken to closely monitor that the harmonisation and standardisation activities of Euroclear Finland are implemented on schedule

Chart 26.



and that the market participants operating in Finland are consulted adequately under the T2S project.

Euroclear Finland is currently developing a new system. It will be introduced in stages, before migration to T2S in 2017, and the new system will be assessed against the oversight principles. Large system projects are challenging, and a successful outcome requires that all parties commit themselves to the projects and timetables. Adjustment to changes must not be left to the last minute.

Even though the systems have operated reliably overall, appropriate attention must be paid to risk management also in future. The continuity arrangements of system providers and participants are good, and they are tested regularly. However, the chain of service providers to international systems is long and therefore it is important to ensure that no areas are left outside continuity arrangements and their joint testing.

#### *Oversight mainly international cooperation*

International banking supervision has recently been a key subject of discussion. Oversight of financial market infrastructures is already international. Despite the changeover from domestic systems to international arrangements, the Bank of Finland's statutory task is still to participate in maintaining the reliability and efficiency of payment system and overall financial system. This naturally poses challenges to cross-border cooperation between authorities. The

Bank of Finland actively participates in cooperation in the Eurosystem and with other relevant authorities.

Cooperative oversight is based on international oversight principles. These are global requirements which cover payment systems, securities clearing and settlement systems, as well as central counterparties and trade repositories. Finland, as a member of the Eurosystem, will introduce the oversight principles for systemically important payment systems as a regulation of the European Central Bank. This is one example of the tightening of oversight, which is not based only on conventional discussions and moral suasion.

Cooperation between authorities is defined also by EU-level legislation. The so-called European Market Infrastructure Regulation (EMIR) sets out the establishment of colleges of supervisors, and their work has already started. The only central counterparty operating in Finland is the European Central Counterparty N.V. (EuroCCP N.V.). It was created in the combination of the Dutch EMCF N.V. and the British EuroCCP Ltd. The Finnish Financial Supervisory Authority is a member of the supervisory college of EuroCCP N.V., and the Bank of Finland attends the meetings as an observer. The college focuses on the assessment of the adequacy of the risk management mechanisms outlined in EMIR, looking at, for example, stress testing and collateral requirements, as part of the authorisation process. A college established, managed and chaired by the Dutch central bank, has concluded

that the arrangements are adequate and in compliance with EMIR.

The members of the Eurosystem participate, via the ESCB committee and working groups, in the oversight of the large-value payment systems TARGET2 and EURO1, and the retail payment system STEP2. In recent years, the Bank of Finland has focused particularly on the oversight of STEP2. A major concern has been the management of a complex system entity and the adequacy of continuity arrangements as the domestic retail payment system ceased operations. The Bank of Finland also participates in the cooperative oversight of the Euroclear group, coordinated by the Belgian authorities.

#### *Future challenges*

EU legislation on financial market infrastructures has increased considerably in recent years, which changes the operating environment of service providers.<sup>33</sup> In future, payments will be regulated, for example, by the directive on payment accounts, which was adopted by the European Parliament, and the regulation on interchange fees for card-based payment transactions, which is currently being prepared. Another major regulatory initiative is the ongoing revision of the Payment Services Directive. The regulation on improving securities settlement in the EU and central securities depositories was also adopted by the European Parliament. In addition to these infrastructure-specific regulatory initiatives,

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<sup>33</sup> See Box 7 in this publication.

other regulations on banking also affect banks' willingness to invest in infrastructure.

Not only regulation but also technology advances all the time, which promotes competition in the industry. Examples of new means of payment are payment methods used in social media, and virtual currencies. The continuously changing operating environment poses challenges to payment service providers, supervisors, legislators, and users.

Box 7.

### SEPA on the final stretch – the following development steps already in preparation

The Single Euro Payments Area (SEPA) has finally reached the final stretch after years of preparation. At present, it seems that all SEPA countries will be able to complete the transition by August 2014.<sup>1</sup> In Finland, SEPA migration was implemented in a manner deviating slightly from the procedure followed in many other countries: the national credit transfer had already been replaced by the SEPA credit transfer towards the end of 2011, and the national direct debit has been largely replaced by the e-invoice and SEPA credit transfer procedure instead of the SEPA direct debit.

A successfully implemented migration in the entire area is vital, in terms of achieving the benefits of the Single Euro Payments Area, since only then can consumers, retailers, authorities as well as small and larger companies truly begin to utilise the pan-European payment standards to the full. From the consumers' point of view, SEPA payments from one country to another are facilitated and payment options are diversified. Retailers and companies can also engage their payment service providers in more extensive competitive bidding and manage their payment traffic, covering the whole SEPA area from a single bank account.

<sup>1</sup> This is the "extra transition period" enabled by the amendment of the SEPA Regulation adopted in February. Banks operating in Finland decided to comply with the deadline of 1 February 2014 provided in the original SEPA Regulation.

The overall impact of the Single Euro Payments Area on the European payment markets can only be assessed thoroughly in the longer term. The costs of system changes and their adjustment to SEPA compatibility have materialised immediately, but the benefits of increased competition and economies of scale will surface at a later stage. In addition, common payment standards lay the foundations for the development of new and innovative European-wide payment services.

In addition to the changes required by the Single Euro Payments Area, the payment sector is at a turning point in other respects, too. Key trends include 1) transformation of the sector and agents, 2) changes resulting from technological advancements and 3) changes in legislation.

In addition to traditional payment service providers, there are new entrants to the payment markets, such as payment institutions. Meanwhile, for example, technological advancements have enabled so-called proximity payment and real-time payment solutions. Furthermore, ongoing legislative reforms transform the playing field for payments, such as by specifying the rights and obligations of new agents and the pricing of services.

However, in the midst of the final rush towards SEPA migration and payment reforms, development

efforts continue. At the European level, a concrete example is the Euro Retail Payments Board, ERPB)<sup>2</sup> established to continue the work of the SEPA Council. Its key objective is to promote integrated, innovative and competitive common payment markets.

A new national cooperation body, a Payments Council, has also been established in Finland at the Bank of Finland's initiative, and which acts as the national counterpart for the European-level Board. The Payments Council assembles the users and producers of payment services as well as the authorities, with the aim of promoting the utilisation of means of payment which are advanced, internationally compatible and efficient from the point of view of the entire society. The work of the Payments Council is based on an open exchange of ideas and discussion. This enables consideration of the views of the various participants in the payment chain in envisioning payment systems for the future.

In future payment systems, availability, usability as well as reliability and security remain the key criteria. Payment services must continue to be handy for the users and appropriate for the producers.

<sup>2</sup> See <http://www.ecb.europa.eu/paym/sepa/stakeholders/governance/html/index.en.html>.

Box 8.

### Comprehensive assessment of major euro area banks

The Regulation on the Single Supervisory Mechanism (SSM) requires a comprehensive assessment of the banking system. The assessment is conducted under the ECB's direction in close co-operation with the national supervisory authorities. The purpose of the assessment is to form a clear picture about the state of the banks and to remedy confidence in the banking system. The comprehensive assessment consists of a risk assessment, a review of the quality of loan assets and a stress test. The assessment concerns 128 systemically significant banks, and its results will be disclosed in October 2014.

In March, the ECB published a detailed assessment manual<sup>1</sup> for the review of loan assets, which is used to conduct the assessment under uniform terms in all euro area countries. During the review, which is divided into multiple stages, inspections will be made into the banks' processes, accounting practices, correct grouping of different balance sheet items and the sufficiency of impairments.

One of the key stages in the review is the appraisal of individual loans and customers chosen in the sample. Since it is impossible to inspect all loans

granted by the banks, a representative sample has been taken from each bank to ensure sufficient coverage of the loans inspected, in terms of each country and bank. The sample covers approximately 58% of the risk-weighted assets of the banks concerned. The number of individual customers inspected amounts to approximately 135,000.<sup>2</sup> The customers chosen include both corporate and private loan customers, such as people with housing loans.

The review is not solely based on general-level data provided by banks to the authorities, but a significant proportion of the review is made on bank premises so that the review is targeted in detail at individual loans and customers. In addition to loans, the accuracy of the valuation of collateral provided by weak customers will be evaluated.

Quality assurance is a key element in ensuring the reliability and accuracy of the results and guaranteeing a uniform review of different countries and banks. Quality assurance is divided into three levels, where the first one consists of the supervisors and inspectors conducting the review. The second level consists of separate quality assurance teams detached from the inspection work. The third level comprises the ECB's country-specific teams

and the centralised office steering the entire exercise.

A key characteristic of the comprehensive assessment is the combination of the loan asset quality review with the stress test. This differs from previous exercises and improves the exercise, since any shortcomings found can be accounted for in the stress test.

As a result of the assessment, banks are required to implement corrective measures where necessary. After the disclosure of the outcome of the comprehensive assessment, the ECB will request a plan from the banks to remedy any lack of capital. The plans may be based on non-distribution of retained profits, cut of bonuses, issuance of equity instruments, strong conditional capital instruments, and the sale of selected assets at market price. The deadline for remedying any capital shortfall arising from the loan asset quality review and the baseline scenario of the stress test is 6 months, and the shortfall must be covered by Common Equity Tier 1 (CET1) capital instruments, unless the deficit is reduced by other methods. As regards the adverse scenario of the stress test, the deadline to remedy any capital shortfalls is 9 months, and it can also be met by Additional Tier 1 (AT1) capital, subject to certain restrictions.<sup>3</sup>

<sup>1</sup> *Asset Quality Review, Phase 2 Manual*. See, ECB 11.3.2014 <http://www.ecb.europa.eu/press/pr/date/2014/html/pr140311.en.html>.

<sup>2</sup> *Hearing at the Committee on Economic and Monetary Affairs of the European Parliament 18.3.2014, Daniele Nouy*.

<sup>3</sup> *ECB press conference 29 April 2014*.

# Financial system policy

The flow of market-based finance to enterprises and households must be secured. At the same time, adequate risk-bearing capacity of banks and the preservation of confidence in the banking sector must be safeguarded. Application of the forthcoming new macroprudential tools requires careful consideration by the authorities in the current and foreseeable economic situation. The proposed macroprudential toolkit should be strengthened by a systemic risk buffer requirement and by enabling a genuine countercyclical use of the loan cap. The banking union and the new crisis resolution legislation are significant steps towards a more stable financial system. However, the Single Resolution Mechanism still needs to achieve its objectives in practice.

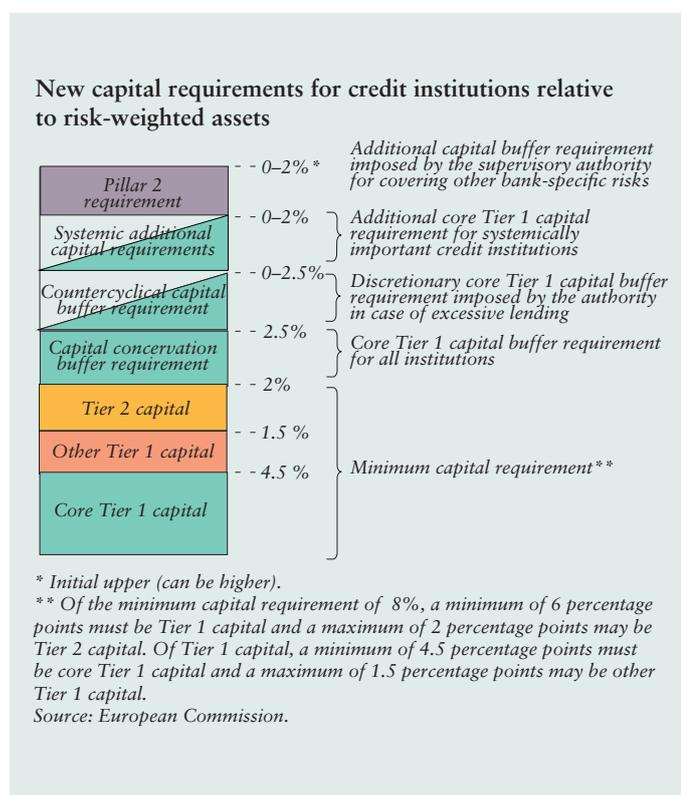
The European financial system is recovering from the global financial crisis and the euro area sovereign debt crisis. The emphasis of economic policy measures has shifted to repairing the damage caused by the crises, preventing future crises and strengthening crisis management.

The key ongoing reforms relating to financial regulation in Europe are the new Capital Requirements Regulation and the Capital Requirements Directive for credit institutions. The Directive will be implemented in Finland with the new Credit Institutions Act. The related Government bill was introduced to Parliament in April 2014. The Credit Institutions Act will bring changes to capital adequacy and liquidity requirements for Finnish credit institutions (Chart 27) and give new macroprudential tools to the Board of the Financial Supervisory Authority.

The banking union currently under completion will strengthen supervision and crisis management of banks operating in the euro area. The ECB will assume its responsibility for the supervision of banks of countries participating in the banking union in November 2014. The Single Resolution Mechanism, in turn, will come into action gradually from 2015 onwards.

Finally, the European Commission proposal concerning restrictions on banks' riskiest business operations will safeguard retail depositors from the effects of excessive or unsuccessful risk-taking by banks (Box 9).

Chart 27.



## Banks' lending capacity must be ensured

The evaluation of measures needed to ensure the stability of the Finnish financial system is presently very challenging. With the real economy facing both structural and cyclical problems, it is important to ensure that the financial system does not create additional obstacles to economic recovery, but that funding continues to be transmitted to companies and households in a sound manner, based on the market mechanism. At the same time, it must be ensured that the risk-bearing capacity of the financial system is adequate to withstand even weaker-than-expected developments in the real economy.

Cycles in the real economy and the financial system often move asynchronously, and in the credit market the phases of the cycle often last longer than the phases in the real economy.<sup>1</sup> This divergence between credit and economic cycles has been observed recently in Finland, too. Credit growth has continued – albeit at a slowing pace – in conjunction with an economic downturn or very low economic growth.

Ensuring balanced lending requires that banks have adequate capital in relation to their risks and that confidence in banks is maintained. Strong capital adequacy of banks operating in Finland underpins confidence and prevents sharp and potentially disruptive changes in lending in a challenging operating environment.

<sup>1</sup> Aikman, D. – Haldane, A. G. – Nelson, B. D. (2014) Curbing the credit cycle. *The Economic Journal*. See DOI: 10.1111/econj.12113.

The comprehensive assessment of major euro area banks, currently being carried out by the ECB (Box 8), will give an internationally comparable view of the condition of the largest banks operating in Finland, as well. This comprehensive assessment will build confidence in banks assessed as having adequate capital and improve operating conditions for those banks. If problems are identified, corrective action must be taken without delay. For viable banks, this means increasing equity capital.

The ongoing tightening of capital requirements will strengthen banks' lending capacity and confidence in the banking sector in the long term. In the short term, tighter requirements may lead to contraction in lending supply. Such a contraction may affect the riskiest credit in particular, such as corporate credit.<sup>2</sup>

The macroprudential tools to be introduced in Finland must be applied with careful consideration, taking into account the prevailing economic and credit cycles. For example, additional regulatory requirements for systemically important banks should, as far as possible, be imposed gradually and with adequate transitional periods. In any case, banking supervision should also pay particular attention to supporting balanced lending developments.

In addition to measures relating to the banking sector, it is important to further evaluate the needs and possibilities of removing obstacles from market-based funding of small and medium-sized enterprises, in particular.

<sup>2</sup> See eg Bridges, J. – Gregory, D. – Nielsen, M. – Pezzini, S. – Radia, A. – Spaltro, M. (2014) The impact of capital requirements on bank lending. *Bank of England Working Paper No. 486*.

## Finland's macroprudential tools must be strengthened

The Capital Requirements Directive provides national authorities with new regulatory instruments – macroprudential tools – to tackle systemic risks threatening the stability of the financial system as a whole. According to the proposed new Credit Institutions Act, the Board of the Financial Supervisory Authority will have at its disposal four macroprudential tools: countercyclical capital buffer requirement, maximum loan-to-value (LTV) ratio (loan cap) for housing loans, risk weights for housing loans and additional capital requirements for systemically important credit institutions.<sup>3</sup>

The macroprudential tools enabled by legislation and other measures designed to prevent systemic risks need to be viewed as a coherent whole. The systemic risks identified must be addressed with a measure that is best suited to the case in question, or a combination of measures. When establishing the magnitude of any measures to be taken, attention should be given to the effects that other macroprudential tools applied simultaneously have on the financial system.

The countercyclical buffer requirement strengthens the banking sector's resilience against risks stemming from excessive credit growth and enhances the sector's lending

<sup>3</sup> In addition to these tools, the EU Capital Requirements Regulation permits national financial supervisory authorities to use certain regulatory instruments relating to credit institutions also for macroprudential purposes. See eg the European Systemic Risk Board (2014) Handbook on Operationalising Macro-prudential Policy in the Banking Sector.

capacity in economic downturns.

According to a rough calculation by the Bank of Finland, setting the buffer to its maximum level of 2.5% would, at best, increase the Finnish banking sector's euro-denominated own funds – and thereby the loss-absorption capacity – significantly (Table).

On the other hand, the countercyclical buffer requirement may only have a limited effect on the costs of bank funding and hence on loan terms and conditions and lending growth. The cap on housing loans may be a more efficient method in curbing growth in lending.

The costs to financial institutions and borrowers from imposing the countercyclical buffer requirement are direct and visible. On the other hand, the benefits – particularly a smaller probability of financial crises and a

Table.

### Calculation example on the impact of the countercyclical capital buffer (CCB) on deposit banks' own funds

#### Assumptions:

- Banking sector's voluntary capital buffers\* remain unchanged\*\*
- Relationship between banking sector's leverage ratio (LR)\*\*\* and capital ratio (CR) remains unchanged
- Banking sector's balance sheet total remains unchanged
- Figures correspond to of Basel II definitions

	CCB	CR	LR	Own funds, EUR bn
Starting position	0%	16.0%	4.4%	20.5
	↓	↓	↓	↓
Ending position	2.5%	18.5%	5.1%	23.7
Difference	2.5 percentage points	2.5 percentage points	0.7 percentage points	3.2 EUR bn

\* Capital ratio minus capital requirements for banking sector, percentage points.

\*\* Here, the terms 'unchanged' and 'starting position' refer to figures for the deposit banking sector at end-2013.

\*\*\* Own funds/balance sheet.

Sources: Financial Supervisory Authority and Bank of Finland calculations.

reduction in the costs of crises – will only materialise over a longer term and may be difficult to connect to the buffer requirement. Due to the asynchronous nature of the advantages and disadvantages, authorities may be inclined to use the countercyclical buffer requirement during credit upturns too seldom, too late and too cautiously.

In order to mitigate this risk, imposing and increasing the countercyclical buffer requirement should be strongly based on a restricted set of indicators that have been selected, determined and made public in advance. Authorities' discretion may be of more importance when the buffer requirement is reduced.<sup>4</sup>

#### *Need for countercyclical use of the loan cap*

According to the Government proposal for the Credit Institutions Act, a cap of 90% will be imposed on new housing loans (95% for first-time homebuyers) starting from July 2016. The loan cap is set relative to the fair value of the collateral at the date the loan is granted. The Board of the Financial Supervisory Authority may, in order to limit exceptional growth in risks relating to financial stability, reduce the loan cap by a maximum of 10 percentage points.

Short-term risks relating to the stability of lending for housing purchases, housing markets and household indebtedness seem to have stabilised. However, the Finnish

<sup>4</sup> For the use of the countercyclical capital buffer in Finland, see the article by Karlo Kauko, Jukka Topi and Jukka Vauhkonen in this Bulletin.

economy is vulnerable to disruptions in the housing markets for many reasons. For example, housing loans constitute a large portion of bank lending and housing itself is a large part of household wealth. Heavy migration, low interest rates, insufficient housing supply and a release of pent-up demand may boost housing price rises particularly in growth centres, once economic recovery takes hold.

The loan cap proposed by the Government has in some debates been criticised as being ineffective, since it has been estimated to have only a limited effect on banks' current lending policies. However, the purpose of the loan cap is to permanently ensure that under no circumstances would new housing loans reach excessive levels relative to the collateral used. International experience has shown that setting a loan cap may also cushion fluctuations in housing lending and house prices and improve banks' lending practices.<sup>5</sup>

The loan cap would be the most effective tool in evening out fluctuations in housing loans and housing markets, estimated as being excessive, if the tool could be used in a countercyclical manner (Chart 28).<sup>6</sup> In normal times the loan cap could be set close to the middle range of the accepted fluctuation band. The cap would be lowered if systemic risks relating to

<sup>5</sup> See eg. Putkuri – Vauhkonen (2013) *Lamauttaako vai vakauttaako lainakatto Suomen asuntomarkkinat?* ('Would a loan cap paralyse or stabilise the Finnish housing market?') *Finnish Economic Journal*, 1/2013.

<sup>6</sup> For example the Pellervo economic research institute has spoken in favour of the countercyclical use of the loan cap in its publications. See eg. Alho, E. (2013) *Asuntopoliittikan erityiskysymyksiä: lainakatto.* ('Specific topics in housing policy: the loan cap') PTT working papers 144, 2013.

lending were assessed as having increased significantly. In an economic downturn lending could be eased by raising the loan cap.<sup>7</sup>

The loan cap is an important tool in reducing systemic risks associated with lending for housing purchases. However, it still needs to be considered whether other macroprudential tools should also be employed in this field. On the basis of international experience, housing loan growth has been successfully curbed by, for example, restricting households' debt-service-to-income ratio (DSTI).<sup>8</sup>

*Finland needs to enable the use of the systemic risk buffer requirement*

The EU Capital Requirements Directive gives national authorities the possibility to impose additional capital requirements on their respective banks based on their systemic importance or the vulnerable structure of the banking sector. At maximum, these additional capital requirements can amount to 5% of a bank's risk-weighted assets, and with specific measures to even more.

The Nordic and Baltic banking systems are strongly integrated (Box 6). In an integrated banking market, bank regulation and supervision should be as harmonised as possible. Large cross-country differences in regulation may induce banks to shift their capital, business operations and risks between

<sup>7</sup> In the Government proposal for the Credit Institutions Act the normal level of the loan cap is at the upper range of the accepted fluctuation band. Therefore, the height of the loan cap can only be adjusted asymmetrically: it is possible to lower the loan cap from its normal level, but not to raise it.

<sup>8</sup> Kuttner – Shim (2013) Can non-interest rate policies stabilise housing markets? Evidence from a panel of 57 economies. BIS Working Papers, No 433.

Chart 28.

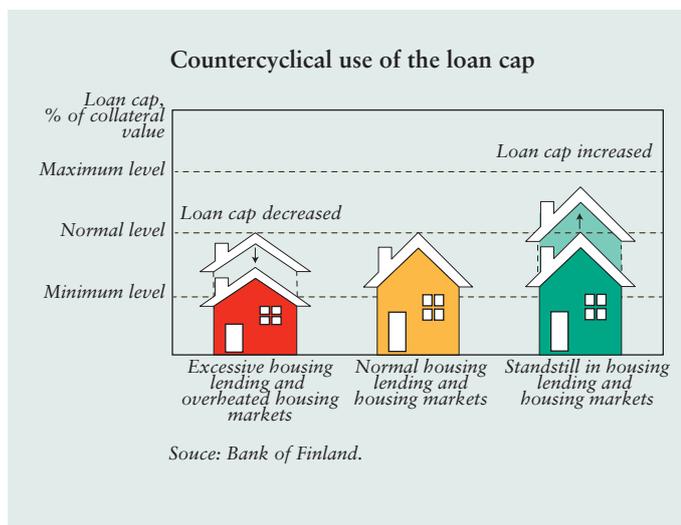
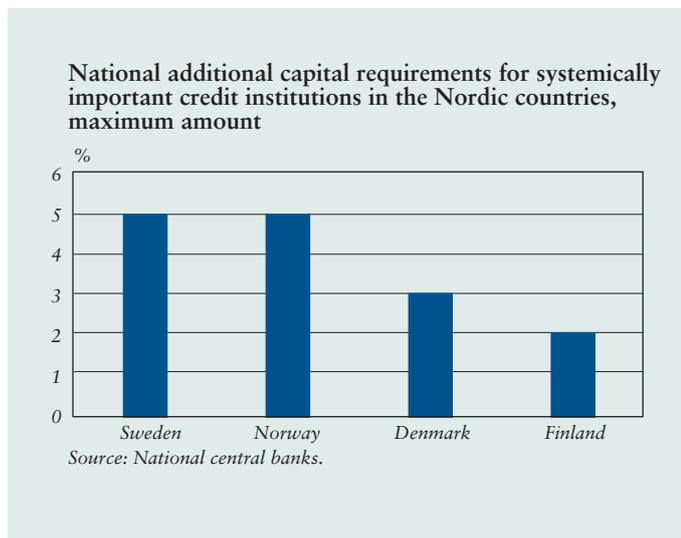


Chart 29.



countries resulting in possible disruptive effects on financial stability, which are difficult to predict.

Norway, Sweden and Denmark have announced that they plan to impose significantly higher capital requirements on their respective largest banks than the EU minimum requirements (Chart 29). According to the

Government proposal for a Credit Institutions Act, the additional capital requirements for systemically important banks in Finland can in practice be set at 2%, at most.

The Finnish credit institutions legislation should allow for the introduction of the systemic risk buffer requirement provided for in the Directive. This would ensure that capital adequacy requirements for Finnish banks could be brought in line with those applied in the other Nordic countries, if necessary.

### **Bail-in must be applied consistently**

Serious problems experienced by banks cannot be resolved in the same manner as those of other enterprises, which is why authorities need new tools to tackle problems in the financial system. The banking union and other EU crisis resolution legislation provide authorities with extensive powers to address banks' problems in a timely manner. The legislation also entails reforms to enhance investor involvement in bearing the burden of bank resolution (ie bail-in) and reduce the economic interdependence between banks and sovereigns. In future, large banks can also be wound down without causing significant disruptions to financial stability or costs to taxpayers.

The new crisis resolution legislation is an important step towards a more stable financial system. The majority of work has already been completed, but the crisis resolution mechanisms (joint and national alike) still need to meet the expectations and objectives placed on them in practice.

Comprehensive and consistent implementation of bail-in is of particular importance. Crisis resolution has also been criticised for being too complex and inflexible. Therefore, the systems must prove this criticism wrong from the very beginning.

### *The Single Resolution Mechanism*

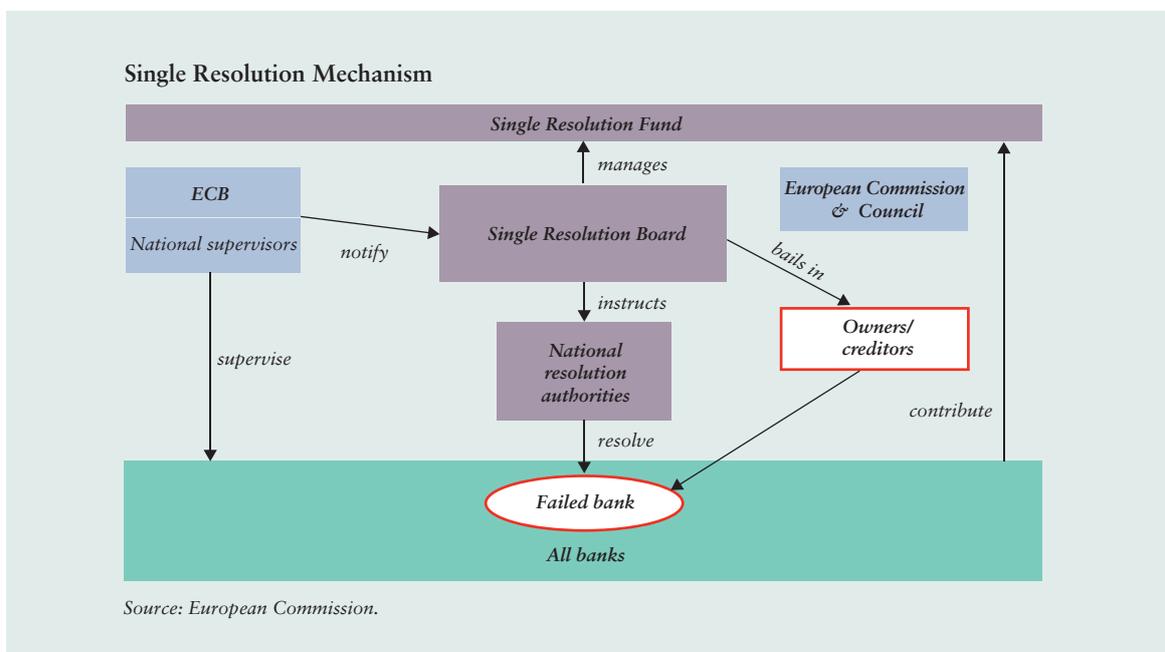
The European Parliament and the Council reached a political agreement on the Regulation concerning the Single Resolution Mechanism in March 2014. A separate intergovernmental agreement will be concluded on the Single Resolution Fund. The Single Resolution Mechanism (Chart 30) is one of the three pillars of the banking union.<sup>9</sup> Its purpose is to ensure that potential problems in the banking sector will in future be managed with minimal costs to taxpayers and the real economy. The Single Resolution Mechanism will cover euro area Member States and non-euro area Member States which separately decide to join the Single Supervisory Mechanism.

The Single Resolution Mechanism will commence operations gradually by the beginning of 2016. This is also when the provisions relating to bail-in are envisaged, at the latest, to enter fully into force. However, Member States can choose to apply the bail-in tool before the envisaged schedule. Accordingly, the resolution working group set up by the Ministry of Finance has proposed that the bail-in tool

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<sup>9</sup> The other pillars of the banking union are single banking supervision and a harmonised deposit guarantee scheme.

Chart 30.



would start to apply in Finland from the beginning of 2015, at the same time as other domestic resolution legislation.

A new key actor in the Single Resolution Mechanism is the Single Resolution Board which cooperates with the ECB responsible for banking supervision, and with the European Commission. National resolution authorities are actively involved in EU-level cooperation and participate in preparing resolution plans with respect to institutions that are under the control of the Single Resolution Board. National resolution authorities also prepare resolution plans for small institutions and adopt the related decisions provided that no use of the Single Resolution Fund is needed.<sup>10</sup>

<sup>10</sup> However, the Single Resolution Board is ultimately responsible for all banks of countries participating in the banking union.

Determination of whether a bank is failing and therefore to be placed into resolution is generally made by the ECB. Such a decision can also be taken by the Single Resolution Board if, after having been informed, the ECB does not react within three days.

The Board will then adopt a resolution scheme for the failing bank, in which it determines the necessary resolution and funding measures. The European Commission has to endorse the resolution scheme or object to it within 24 hours and present possible changes to the scheme. However, objecting to or changing the resolution scheme requires the Council's approval in cases where the public interest criterion is not met or where there has been a material modification to the amount that is to be used from the Single Resolution Fund.

As a rule, the Single Resolution Board takes crisis resolution decisions in a restricted composition (the executive session of the Board).<sup>11</sup> However, if a specific resolution decision involves the use of the Single Resolution Fund of over EUR 5 billion, the decision is taken in an extended composition (plenary session of the Board).<sup>12</sup> In addition, if the net accumulated use of the Fund during the previous 12 months exceeds EUR 5 billion, the extended composition assesses the measures taken and gives guidance to the restricted composition.

The Single Resolution Fund will be built up over a transitional period of 8 years. The target size of the Fund is 1% of the amount of covered deposits, ie EUR 55 billion. All banks operating within the banking union will contribute to the Fund. National crisis resolution funds will be progressively mutualised over the transition period. The Single Resolution Fund can also fund its operations by borrowing from the market. The Fund operates outside the EU budget, but a public backstop is envisaged to the Fund.

#### *National resolution procedure*

The EU Regulation on the Single Resolution Mechanism and the Bank

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<sup>11</sup> In the restricted composition, the Board consists of the executive chairperson, four full-time members and a representative from the national resolution authorities of each participating Member State in which the troubled bank is situated. In addition, a representative from both the ECB and the European Commission participate in the meetings as observers.

<sup>12</sup> The extended composition of the Board consists of the restricted composition plus a representative from national resolution authorities of each Member State participating in the banking union.

Recovery and Resolution Directive also form a basis for a national resolution procedure. On the basis of the new legislation, banks are required to draw up a recovery plan which is reviewed annually and states the measures to be taken to ensure business continuity should an institution's financial situation deteriorate. The Financial Supervisory Authority's supervisory powers will also be extended, so that the authority can intervene in banks' business more effectively, prior to aggravation of the problems. The Financial Supervisory Authority can use these early-intervention powers if it is likely that a bank will not meet the obligations under its authorisation. With the entry into action of the Single Supervisory Mechanism, the authority to take action, under early intervention measures, will be the ECB in the case of large credit institutions.

It is proposed that an independent resolution authority will be set up in Finland. The authority would obtain effective crisis resolution tools for an orderly restructuring and possible wind-up of the operations of distressed banks. All key powers to manage problem situations, including collection and management of stability and deposit guarantee payments, would be centralised in the national resolution authority. The authority would also have pre-emptive powers, on the basis of which it could require a bank to commence negotiations with possible buyers on the transfer of the bank's funds or business operations before it is placed into resolution.

Box 9.

## Structural reform of the banking sector

In January 2014, the European Commission published a press release on the structural reform of the EU banking sector.<sup>1</sup> The reform is based on the proposal for the separation of banking activities into a deposit bank and a trading unit, put forward by the High-Level Expert Group chaired by Erkki Liikanen, the Governor of the Bank of Finland. In the Commission's proposal, the final decision as to whether market-making, securitisation and trading in derivatives should be separated from deposit-taking activities rests on the supervisory authority. However, the supervisory discretion would be guided and the decision-making process would be predefined and transparent. The proposal would most likely only concern British and Swedish banks, of those banks that are outside the banking union.<sup>2</sup> Therefore, in most cases the deciding authority would be the ECB.

Deposit banks would be allowed to engage in trading in standardised derivatives as part of their own risk management and in order to serve non-financial sector customers. Unlike the High-Level Expert Group, the Commission would allow trading in EU sovereign debt instruments.

<sup>1</sup> *European Commission (2014) Structural Reform of the EU banking sector. Press release 29 January 2014.*

<sup>2</sup> *Of banks operating in Finland, the Regulation would probably concern Nordea, Danske Bank, Handelsbanken, Swedbank and SEB.*

The trading unit created by the structural reform must be capitalised and funded independently, and the unit is not permitted to accept deposits that are eligible for protection under deposit guarantee schemes, or operate in the retail payment system. The Commission also proposes imposing cross-ownership and cross-directorship restrictions on the deposit bank and the trading unit. Separation of activities would potentially reduce economies of scale and benefits from diversification of income sources. Since activities would be separated within the banking group, banking groups would maintain their ability to offer versatile financial services to their customers.

The Commission would prohibit proprietary trading and exposures to hedge funds altogether. The proposal therefore resembles the so-called 'Volcker rule' applied in the United States.

The purpose of the reform is to limit deposit banks' possibilities to take excessive risks. Deposits eligible under deposit guarantee schemes should be channelled, as effectively as possible, as credit for the benefit of the real economy.

One further objective is to change incentives for excessive risk-taking and growth. The trading unit must have separate funding arrangements and fund its operations from the markets with a price that genuinely reflects the risks of the unit's operations. In the future the

presumption that the state will step in to bail a bank out in an emergency situation will be restricted to activities where a market failure (eg a bank run) creates clear grounds for a safety-net.

Separation of activities would clarify the structures of banks and increase transparency. Market discipline would increase with greater incentives and conditions for monitoring. Moreover, supervision of banks would become easier.

The probability of emergency situations will be reduced, since incentives to excessive risk-taking and excessive growth are reduced. If a bank nevertheless runs into difficulties, crisis resolution legislation would enable a controlled winding-down of the bank. Structural reform relating to large banks and banks concentrated on trading also enables swift and effective resolution of these international banks by simplifying their structures and reducing interlinkages between banks. By making resolution of all banks credible, the structural reform facilitates the introduction of the Single Resolution Mechanism.

Harmonised implementation of the structural reform in the EU, instead of country-specific solutions, facilitates the task of the single supervisory and single resolution authority. An international consensus on the key features of structural reform would also be warranted in order to prevent regulatory arbitrage.

# Appendix

## Infrastructure critical to the Finnish financial market

System	Description	Oversight responsibility	Assessment
TARGET2	Eurosystem's technically centralised RTGS system based on a single shared platform.	ECB (lead overseer), Eurosystem.	A very critical system; operations have been reliable.
TARGET2-Suomen Pankki system	TARGET2 functions under the responsibility of the Bank of Finland.	Bank of Finland; adherence to common principles with other Eurosystem TARGET2 participants.	Operations have been reliable. Participants have had some individual communication problems which have not hampered payment traffic. In addition to Finnish banks, several Nordic banks settle payments via the system.
CLS	A significant settlement system for foreign exchange transactions.	US Federal Reserve (lead overseer), ECB (overseer of settlement in euro).	CLS has developed its operations, and by and large operations have been reliable. The Bank of Finland participates in the system oversight through ESCB cooperation.
EBA EURO1	EBA Clearing's transfer system for euro-denominated large-value payments.	ECB (lead overseer), Eurosystem.	Fulfils by and large the oversight requirements; operations have been reliable.
POPS	Banks' online system for express transfers. Domestic large-value payment system.	Bank of Finland	By and large, operations have been reliable.
EBA STEP2	Pan-European automated clearing house (PE-ACH) for euro-denominated retail payments.	ECB (lead overseer), Eurosystem.	A critical system for Finnish retail payments; fulfils the oversight requirements. Operations have been reliable. Delays in domestic payments caused by banks have decreased.
PMJ	Domestic retail payment transfer system.	Bank of Finland	The system ceased operations at the end of January 2014. Payments are nowadays processed by STEP2.
ACH Finland	Clearing house set up by some Finnish banks. Operations started in March 2009.	Bank of Finland	In December 2013 ACH Finland was granted authorisation to pursue the business of a credit institution under the name Bonum Pankki. It will operate as a central credit institution and is therefore no longer subject to oversight.
European Central Counterparty N.V. (combination of EMCF and EuroCCP)	Provider of central counterparty clearing services to eg the Nordic stock exchanges of NASDAQ OMX.	A supervisory college coordinated by the Dutch Central Bank (EMIR college of supervisors).	Operations have been reliable. Activities have been adjusted by corporate restructuring and in accordance with EMIR requirements.
Euroclear Finland's (former APK) systems.	Settlement systems for stock and money market instruments.	Bank of Finland	Operations have been reliable. Euroclear Finland fulfils the relevant oversight requirements and thus meets the eligibility criteria to access T2S. The company is in the middle of an extensive system project to enable migration to T2S.
Euroclear SA	Parent company of the Euroclear Group central securities depositories, providing common services to the Group entities.	A cooperative oversight group coordinated by the Belgian authorities.	The assessment of Euroclear Group's joint functions has focused on eg central securities depositories' T2S project risks and protection against cyber threats.
<b>Information networks</b>			
SWIFT	Most significant provider of messaging services to the financial markets.	Oversight group headed by the central bank of Belgium.	SWIFT is a critical service provider for financial market infrastructure. Its operations have been reliable. Fulfils the high-level oversight expectations.
Pankkiverkko 4	Domestic closed interbank network.	Bank of Finland	Subject to oversight monitoring. Network has been technically updated and operations have been reliable.
Cash ATM	Networks critical for the supply of cash to individual members of the public.	Bank of Finland	Subject to oversight monitoring to ensure acquisition of data and preparedness for crisis management. Operations of the ATMs have been mainly reliable.

# How should the countercyclical capital buffer requirement be applied?

25 April 2014

The countercyclical capital buffer requirement is one of the new macroprudential instruments that will come into use in Finland. It enables the strengthening of the banking sector's resilience to systemic risks resulting from excessive credit growth. In setting the requirement, strong emphasis should be placed on a small range of indicators to be selected, defined and published in advance. In contrast, reducing or releasing the buffer should primarily be based on judgment by the relevant authorities.

Lending grows rapidly in economic upswings and slows or even contracts in downturns. Hence, lending is typically procyclical and may therefore amplify the economy's cyclical fluctuations and financial crises. A new regulatory instrument – the countercyclical capital buffer requirement – is aimed at strengthening the banking system's lending capacity in times of crisis and possibly also at curbing lending growth when it is fastest.

The countercyclical capital buffer requirement is normally set by a designated national macroprudential authority to supplement, whenever necessary, minimum capital requirements imposed on banks. It is recommended that the requirement be set in a situation where authorities assess credit to the private sector to be growing at a perilously rapid pace and consequently to be threatening the stability of the financial system. The buffer requirement may be removed in an economic downturn, which will free up banks' own funds for coverage of potential losses and maintenance of lending.

The countercyclical capital buffer requirement is included in the reform package of the banking regulation (Basel III), published by the Basel Committee on Banking Supervision in December 2010. In Finland, the Board of the Financial Supervisory Authority (FIN-FSA) will, according to a Government bill, decide on setting this variable additional capital requirement and its respective size, as required. FIN-FSA will make such a decision for the first time in the first quarter of 2015, and thereafter at least on a quarterly basis.

## Objectives and transmission mechanisms of countercyclical capital buffers

The use of countercyclical capital buffer requirements and other macroprudential instruments has two key objectives: improving the crisis resilience of the financial system and reducing the sharpest fluctuations in lending. These objectives can be achieved through many transmission channels (Chart 1).

Banks' loss absorbency would be best strengthened if the banks responded to the imposition or tightening of the countercyclical capital buffer requirement either by raising more capital from their owners or the financial markets, or by accumulating retained earnings. However, especially banks with poor profitability performance may also cut their high-risk lending, in particular, in order to meet more stringent requirements. Tightening regulation may also encourage lenders to reduce their excess capital buffers held voluntarily



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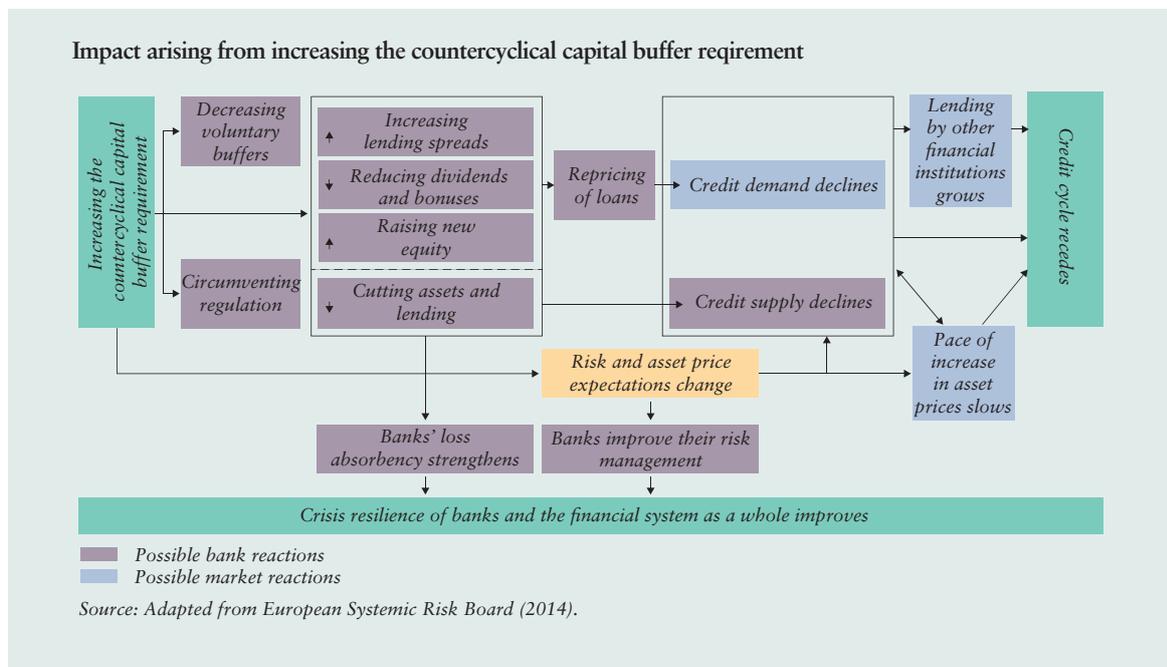


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*Jukka Vaubkonen  
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Chart 1.



or to circumvent regulation in various ways.

Empirical evidence suggests that higher capital requirements increase, at least moderately, the overall cost of bank funding as share capital for banks is more costly for a number of reasons than debt funding.<sup>1</sup> As a consequence of higher funding costs, banks may be tempted to widen margins on their customer loans, which will reduce credit demand, thus smoothing the credit cycle.<sup>2</sup>

The use of the countercyclical capital buffer requirement can also

<sup>1</sup> The views of many economists and representatives of the banking industry on the high cost of bank share capital differ a lot. A good overview on this discussion is provided by the publication Admati – Hellwig (2013), notably chapter 7.

<sup>2</sup> The frequency, timing and amplitude of credit cycles and business fluctuations may differ considerably (see Borio 2012). Credit cycles are, on average, clearly longer than business cycles.

smooth credit cycles and improve risk resilience indirectly by impacting on the expectations and behaviour of various market participants. For example, the growth rate of housing loans may decelerate if households think that setting the buffer requirement slows the pace of increase in housing prices. Activation of the buffer requirement could also increase lenders' risk awareness. Theoretical studies have found that countercyclical capital buffers can hold back ineffective investment activity in the real economy during cyclical upswings, but additional capital requirements should not be put in place during downturns, as the requirement could suppress even good investments.<sup>3</sup>

<sup>3</sup> Jokivuolle et al. (2014).

As only a few countries have put in place the countercyclical capital buffer requirement, no empirical evidence of the relative importance of different transmission channels (Chart 1) is yet available. Even so, analyses relating to Basel III can be made use of in the impact assessments.

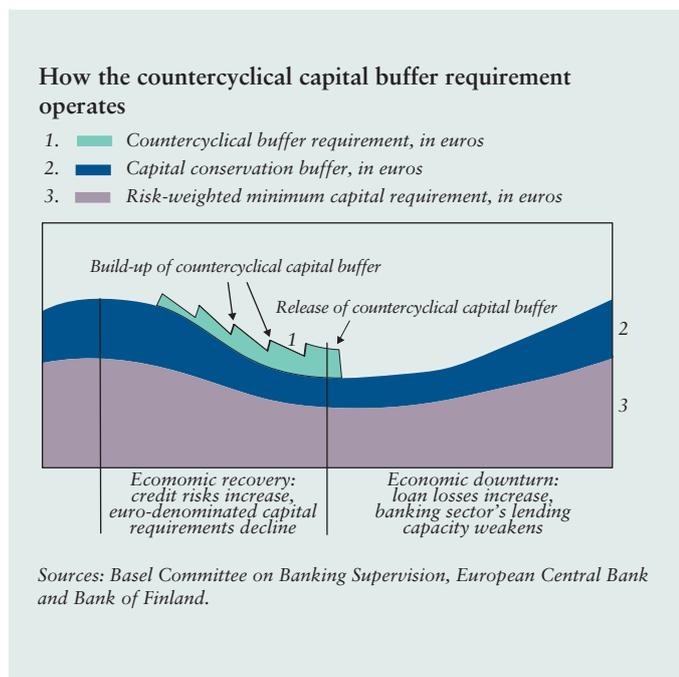
The world's largest banks have mainly responded to the ongoing tightening of capital requirements in the manner hoped for: they were able to considerably bolster their capital positions within a short period of time (in 2009–2012) without much pulling back from their lending or significantly widening their margins on customer credit.<sup>4</sup> Moreover, the banks did this in a challenging operating environment following the global financial crisis.

The introduction of the countercyclical capital buffer is recommended in a cyclical phase propitious for banking, marked by brisk credit demand, sound bank profitability and advantageous funding conditions (Chart 2). In such a situation, it is easier than normal for banks to boost their capital levels. Consequently, the countercyclical capital buffer requirement – in those cyclical situations where the tool is recommended – is likely to prove an effective means of improving the risk resilience and lending capacity of the banking system.

In contrast, there is a possibility that the countercyclical capital buffer requirement will only reduce fluctuations in the credit supply to a limited extent. Most theoretical and empirical

<sup>4</sup> Cohen – Scatigna (2014).

Chart 2.



analyses suggest that an overall tightening of capital requirements also has only a small impact on credit growth and bank loan margins.<sup>5</sup> In a strong cyclical upswing, the effects may be even smaller than normal due, among other things, to the abundance of alternative sources of finance other than banks. Some other macroprudential instruments could therefore be more effective tools for reining in lending fluctuations than the countercyclical capital buffer requirement.

### Implementation of the countercyclical capital buffer in the EU and Finland

In the European Union, the Capital Requirements Directive, adopted in

<sup>5</sup> A one percentage point increase in banks' capital ratios is estimated to raise lending spreads on bank credit by about 0.05–0.20 of a percentage point (Cohen and Scatigna 2014, Table 1).

2013, lays down provisions on the countercyclical capital buffer. The laws of each EU Member State are to specify the national details of the buffer requirement and to designate the authority in charge of imposing the countercyclical buffer requirement for credit exposures to the Member State in question.

As a rule, the countercyclical buffer rate can be set between 0% and 2.5%, but the Directive also allows a higher buffer rate if it is necessary for the prevention of systemic risks. The capital buffer requirement for an individual bank is constructed as a weighted average of the buffer rates set in different countries, with the bank's exposures to each country serving as weights.

In April 2014, the Finnish Government submitted a bill to Parliament on reforming the Credit Institutions Act.<sup>6</sup> The bill includes provisions on setting the countercyclical capital buffer requirement for banks operating in Finland. According to the Government bill, the countercyclical buffer rate (referred to in the bill as the variable additional capital requirement) in Finland may not exceed 2.5% of the total amount of banks' risk-weighted balance sheet items and off-balance sheet items.

The Government bill designates the FIN-FSA Board as the decision-making authority with respect to the capital buffer. Acting in concert with the Ministry of Finance and the Bank of Finland, FIN-FSA is to review quarterly the need to change the existing capital requirement or to keep it unchanged. In

addition, FIN-FSA must deal with the matter whenever the Ministry of Finance or the Bank of Finland so require, or if the European Systemic Risk Board (ESRB) issues a recommendation on the matter. FIN-FSA is required to consult the Ministry of Finance, the Ministry of Social Affairs and Health and the Bank of Finland in advance of decision-making (Chart 3).

FIN-FSA must publish its decision on the countercyclical capital buffer. A justification for the decision needs to be provided, and the entry into force of the decision must be announced. The requirement will become effective 12 months after the decision, unless there are specific reasons for faster implementation.

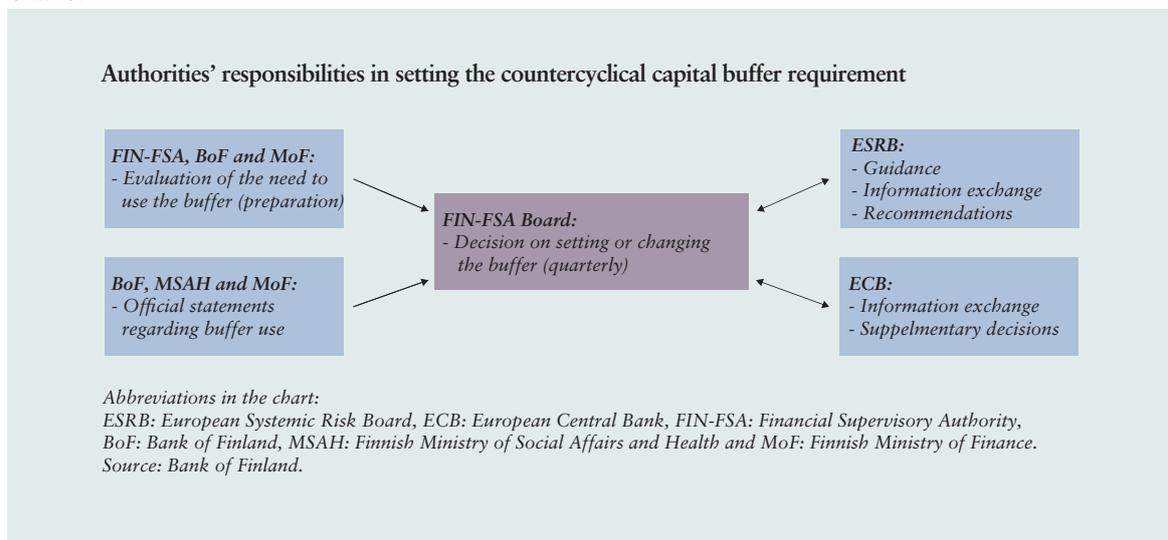
According to the Government bill, decisions on the countercyclical capital buffer must primarily be based upon the taking into account of the deviation of the credit-to-GDP ratio from its long-term trend. However, in addition to this ratio, or for a particular reason instead of this ratio, other factors may also be considered as a basis for decision-making. The grounds for decisions on the buffer requirement will be specified in a Ministry of Finance Decree in due course.

In making its decision, FIN-FSA must also take into account the recommendations and warnings issued by the European Systemic Risk Board. According to the EU Capital Requirements Directive, the European Systemic Risk Board may give guidance for setting the countercyclical capital buffer requirement. The Board is currently finalising its first set of guidance.

*The Government bill foresees FIN-FSA assessing the size of the capital requirement quarterly, in cooperation with the Ministry of Finance and the Bank of Finland.*

<sup>6</sup> Government bill to Parliament for an Act on credit institutions and certain related Acts (HE 39/2014vp).

Chart 3.



In connection with establishing a banking union, some macroprudential tasks have been conferred on the European Central Bank (ECB). These include the power to influence the size of the countercyclical capital buffer requirement in countries participating in the banking union. Prior to its quarterly decision on the size of the buffer requirement, FIN-FSA must notify the ECB of its intention and take the ECB's viewpoints into account in its final decision.

In accordance with the Regulation<sup>7</sup> concerning the Single Supervisory Mechanism, the ECB may impose a higher countercyclical capital buffer requirement in Finland, instead of FIN-FSA.<sup>8</sup> In such a case, the ECB must

cooperate closely with FIN-FSA, notify FIN-FSA in advance of its intention to apply a higher requirement and take FIN-FSA's viewpoints into consideration.

### **In setting the countercyclical capital buffer requirement, a primary role should be assigned to key indicators**

Given that systemic risks can manifest themselves and develop in a number of multifaceted ways, the size of the buffer requirement should not be mechanically based on single indicators pre-selected by the authorities, but a more broad-based judgment is also required. However, the indicators should provide strong guidance for the decision-making process, as the authorities may be inclined to apply the countercyclical capital buffer requirement and other macroprudential tools too infrequently, too late and too timidly.<sup>9</sup>

<sup>7</sup> Council Regulation (EU) No 1024/2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions.

<sup>8</sup> The ECB has the same power also with respect to other countries participating in banking union.

<sup>9</sup> European Systemic Risk Board (2014).

The reason for the authorities' inaction may be that the measures taken rapidly lead to obvious or presumed costs for the financial sector and its customers, while the benefits only materialise over the long term and are harder to perceive as being associated with the measures, than with the drawbacks.<sup>10</sup> Consequent application of the indicators in the use of the buffer requirement would help the authorities avoid those same – often cyclical – false conclusions that occasionally fuel excessive optimism or pessimism in the private sector.<sup>11</sup>

The buffer requirement should be set early enough, which would allow time for gradually increasing the requirement to a sufficiently high level, prior to the materialisation of systemic risks from excessive credit growth. This also enables the reduction of

adjustment costs caused by the implementation of prompt measures. Banks' existing strong capital positions could help to reduce such costs. However, the banking sector's strong capital adequacy should not be a barrier to putting the buffer requirement in place.

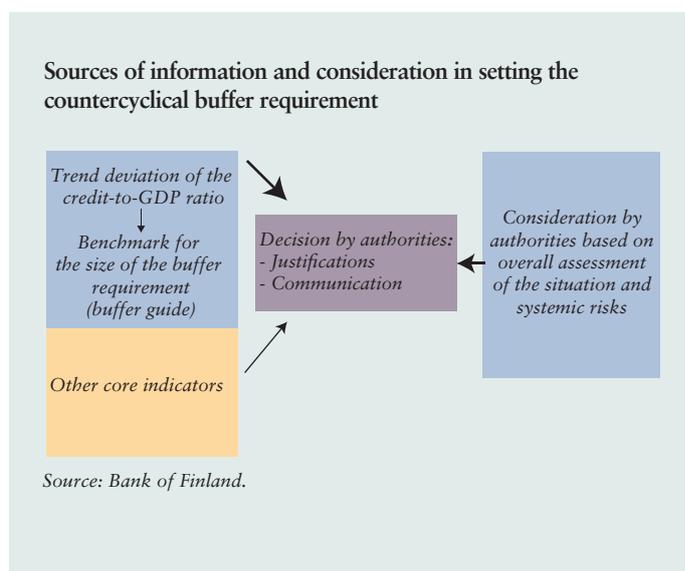
In setting and changing the countercyclical capital buffer requirement, Finland could opt for a procedure under which the decision-making authority, the FIN-FSA Board, exercising its judgment, would decide on the buffer requirement but the decisions would be guided by two layers of rules and indicators (Chart 4).

According to the EU Capital Requirements Directive, the first rule of decision-making consists of taking into account the deviation of the credit-to-GDP ratio from its trend and a buffer guide, calculated on the basis of this ratio, as a benchmark for the size of the buffer requirement. The ratio and the buffer guide should be calculated in line with the guidance to be provided by the Basel Committee on Banking Supervision and the European Systemic Risk Board.<sup>12</sup> Other key indicators compliant with the guidance provided by the European Systemic Risk Board and other calculations of credit-to-GDP ratios would be used as secondary justifications for the decisions.<sup>13</sup>

<sup>10</sup> European Systemic Risk Board (2014).

<sup>11</sup> See eg Shiller (2005).

Chart 4.



<sup>12</sup> To calculate the ratio, the stock of credit is first divided by nominal GDP. Statistical methods are then used to identify and measure, on the basis of this ratio, an equilibrium level or trend, which is assumed to be slowly changing. Finally, the difference between the actual ratio and the trend is calculated. If credit growth has been exceptionally fast, credit volumes are clearly above the trend and the value of the ratio is thus high.

<sup>13</sup> Useful core indicators are examined in the following subsection.

The designated authority would calculate and publish the ratios and the buffer guide based on the deviation of the credit-to-GDP ratio from its trend. The buffer guide would not bind the authority in its decision-making, but the authority could exercise its judgment and set a buffer requirement that differs from the buffer guide. However, the authority should present justifications for such divergence. If selected core indicators other than the trend deviation of the credit-to-GDP ratio also pointed to a marked increase in cyclical systemic risks, the authority should have specific reasons for not setting the buffer requirement.

The designated authority should conduct an overall assessment of the use of macroprudential tools and choose a combination of measures deemed best suited for a particular situation. Hence, in imposing the countercyclical capital buffer requirement, it would be advisable to give consideration to the calibration of other macroprudential instruments, on top of systemic risk indicators and other analyses.

Exercise of judgment by the authorities could play a greater role in reducing the countercyclical capital buffer requirement than in increasing it. Disruptions to the financial system often come to a head abruptly. In such a situation, it might be justified to promptly release accumulated countercyclical capital buffers for use by banks. Releasing the buffers could improve banks' ability to grant credit, maintain interbank competition and

curb the widening of lending margins during the declining phase of the credit cycle.

If the financial cycle were to deteriorate suddenly, the trend deviation of the credit-to-GDP ratio and many other indicators that accurately predict systemic risk growth would not necessarily be very quick to respond to the situation. Therefore, in releasing the buffer, the authorities should primarily rely on their overall judgment and consider, as a secondary option, on indicators that are based on market information and that respond rapidly to financial market disruptions, for instance.

### **Which indicators should be relied upon when tightening the countercyclical capital buffer requirement?**

Also in Finland, the countercyclical capital buffer requirement should primarily be based on the credit-to-GDP ratio and its deviation from the long-term trend, as defined by the Basel Committee. Modified versions of this ratio that are not fully compliant with the Basel Committee's original proposal can also be employed. Use can be made of other indicators, too, on which the European Systemic Risk Board is expected to issue a recommendation.

The European Systemic Risk Board has provided preliminary views on potential indicators in its Handbook on Operationalising Macro-prudential Policy in the Banking Sector, published in March 2014. Below, we look at the practices applied by different countries for imposing buffer requirements and at scientific research on the indicators.

*The setting of countercyclical capital buffer requirements aims to ensure banks' lending capacity even in conditions where banks operate at a loss or their capital adequacy is weakening substantially.*

Countercyclical capital buffer requirements have already been put in place in Norway and Switzerland. Norway has decided to use the credit-to-GDP ratio, the ratio of house prices to household disposable income, commercial property prices and the wholesale funding ratio of Norwegian credit institutions as indicators guiding the process of setting the buffer.<sup>14</sup>

In Switzerland, it has been possible to set countercyclical capital buffer requirements by market segment since 2012, based on the property market situation, in particular. The buffer requirement will be put in place automatically if all selected indicators point to an overheating of the property market. Judgment will be exercised if only some of the indicators signal an overheating.<sup>15</sup>

The aim of setting countercyclical capital buffer requirements is to ensure banks' lending capacity even in conditions where banks operate at a loss or their capital adequacy is weakening substantially. An example of such an extreme case is a banking crisis. Therefore, the buffer requirement needs to be set at least in the event of a significantly increased threat of a banking crisis.

Plenty of academic research has been published on the identification of leading indicators of banking crises since the 1990s. In the light of the research findings, the most common macroeconomic phenomena preceding banking crises are excessive credit

growth, current account deficits and property price bubbles.<sup>16, 17</sup>

The bulk of econometric research on leading indicators of banking crises is not directly based on precise theories regarding the birth of banking crises. The studies most often start from the premise that banks' problems originate from the overheating of lending and the build-up of asset price bubbles. With unsustainable levels of credit growth and asset price increases, even a minor factor can trigger a crisis. Credit institutions can then incur sizeable losses because of customer bankruptcies, falling market prices for collateral and banks' own unprofitable investments, among others.

In their illustrative analysis, Reinhart and Reinhart have explored this type of development, which they call 'capital flow bonanzas'.<sup>18</sup> Foreign investors become interested in a country and begin to invest there, which reinforces credit growth and the rise in asset prices. Capital inflows are also reflected in expanding current account deficits. These trends at worst lead to the build-up and bursting of credit and asset price bubbles. Economic developments in some of the current European crisis-hit countries prior to 2008 are reminiscent of this description.

<sup>16</sup> Kauko (2014).

<sup>17</sup> The conclusions of the Handbook on Operationalising Macro-prudential Policy in the Banking Sector, published by the European Systemic Risk Board (2014, p. 40), are broadly similar. According to these conclusions, warning indicators that best guide the application of the countercyclical capital buffer could measure overvaluation of commercial and residential real estate markets, the current account-to-GDP ratio and the burden for borrowers from debt service involving interest and amortisation, in addition to the trend deviation of the credit-to-GDP ratio.

<sup>18</sup> Reinhart and Reinhart (2008).

<sup>14</sup> Norges Bank (2013).

<sup>15</sup> SNB (2014).

The capital flow bonanza description could lead us to expect that a typical banking crisis is preceded by strong credit growth, sharp increases in share and property prices and current account deficits. This conclusion, according to many studies, does hold true fairly well, but the power of share prices to predict banking crises is perhaps weaker than could be expected.

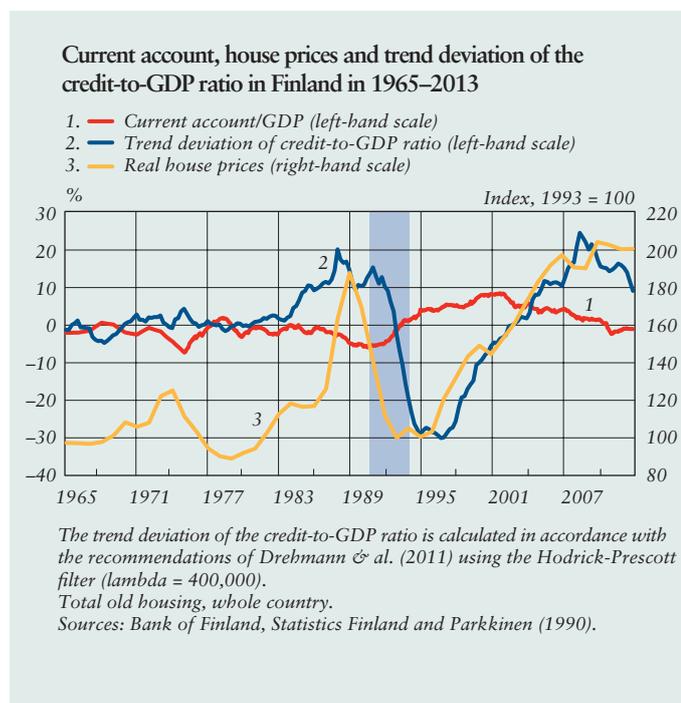
If a large number of households or non-financial corporations become over-indebted, credit stock growth will be unusually fast. Exceptionally strong growth in the credit-to-GDP ratio is, in fact, an obvious sign of dangerous overheating within the financial system. Research findings suggest that the trend deviation of the ratio appears to be a good leading indicator of banking crises.<sup>19</sup> Comparisons between potential leading indicators of banking crises have demonstrated that this ratio appears to perform better than any other of the indicators tested.<sup>20</sup> The trend deviation is normally widest about three years before the outbreak of a crisis.<sup>21</sup> Large trend deviations of the credit-to-GDP ratio would also have predicted the banking crisis in Finland at the beginning of the 1990s fairly well (Chart 5).

<sup>19</sup> Hagen – Ho (2007) and Davis et al. (2011) have shown that, in contrast, the credit-to-GDP ratio alone would not appear to be a very robust determinant of banking crises.

<sup>20</sup> Borio – Lowe (2002) and Drehmann et al. (2011).

<sup>21</sup> However, Repullo and Saurina (2011) have criticised the use of this ratio and indicated that a mechanical application of the trend deviation would often lead to setting additional capital requirements in economic downturns, when bank lending should be fostered rather than restricted.

Chart 5.



Excessive credit growth can also be gauged by other means. For example, the rate of credit growth as a percentage is a fairly good independent variable, as the growth rate is unusually fast a few years prior to the onset of a typical banking crisis.<sup>22</sup>

It may also be of relevance whether credit growth is due, mainly, to growth in lending to the corporate or to the household sector. Research findings suggest that strong growth in household credit has been a better predictor of future banking crises than growth in corporate credit.<sup>23</sup>

Purchases of real estate are normally financed by taking out bank loans, and housing property is often

<sup>22</sup> See eg Jordà et al. (2011), Demirgüç-Kunt – Detragiache (2000), Bordo – Meissner (2012), Schularick – Taylor (2012).

<sup>23</sup> Büyükkarabacak and Valev (2010).

used as collateral. Housing market bubbles thus appear to be much more dangerous than stock market bubbles. A brisk increase in housing prices is a typical phenomenon about two to three years ahead of the eruption of a banking crisis.<sup>24</sup> A large housing price bubble also developed in Finland prior to the 1990s crisis (Chart 5).

A current account deficit describes the economy's external indebtedness. It serves as a good basis for predicting crises because the deficit may be a problem or a potential symptom of other problems. A growing current account deficit may be linked to rapid expansion in banks' external funding. If banks' domestic lending grows particularly rapidly, there is almost no alternative other than to seek funding on international markets. Growth in external, often short-term, funding may expose banks to liquidity crises in difficult times.

Financial crises have been common when international capital flows have been large as, for example, before the First World War and again since the 1980s.<sup>25</sup> Research has found statistical evidence of the predictive power of the deficit with regard to banking crises.<sup>26</sup> The Finnish banking crisis of the 1990s was preceded by a strong weakening of the current account (Chart 5).

There is also evidence of high real interest rates being typically present at

the approach of a banking crisis.<sup>27</sup> The role of real interest rates is likely to stem from the fact that high real interest rates increase the debt-servicing burden for borrowers.

In contrast, some indicators that appear reasonable have turned out to be poor warning indicators. Share prices, for instance, are capable of predicting banking crises to some extent, while not showing particularly good signalling properties. The 'techno bubble' at the end of the 1990s, among others, was not followed by any kind of banking crisis. On the other hand, the crisis that began in 2008 has been particularly severe in those countries where share prices rose sharply in the pre-crisis years.<sup>28</sup> However, exceptionally fast price increases on the stock market and high share prices relative to dividend yields (high P/E ratios) may reflect increasing willingness of households and other investors to take on risks, which could be a sign of a general overheating within the financial system.<sup>29</sup> A prompt contraction of margins on new bank loans, in turn, may point to banks' increased risk appetite.

The GDP growth rate has not proved to be a particularly robust predictor of crises occurring a few years ahead, either.<sup>30</sup> The supply of money circulating in the economy is also an indicator with a fairly poor predictive power.<sup>31</sup> As for the link between bank

<sup>24</sup> See eg Barrell et al. (2011), Bunda – Ca'Zorzi (2010) and Drehmann et al. (2011).

<sup>25</sup> Reinhart – Rogoff (2008).

<sup>26</sup> Eg Lo Duca – Peltonen (2013), Rose – Spiegel (2012) and Roy – Kemme (2011).

<sup>27</sup> Roy – Kemme (2011), Barrell et al. (2011), Jordá et al. (2011) and von Hagen – Ho (2007).

<sup>28</sup> Rose – Spiegel (2012).

<sup>29</sup> Shiller (2005).

<sup>30</sup> Joyce (2011), Domaç – Martínez Peria (2003).

<sup>31</sup> Roy – Kemme (2012), Drehmann et al. (2011).

profitability and the financial sector's vulnerability to crises, empirical research findings are fairly limited.

Yet, the identification of phenomena warning of the threat of a banking crisis is not sufficient to serve as a basis for decision-making on the size of the countercyclical capital buffer requirement; rather, the authorities also need to choose the best indicators to measure these phenomena. A good indicator should tend to return to an equilibrium level that does not change over time. If no such equilibrium level exists, it is hard to assess when the value of the indicator is exceptionally low or high.

If the indicator values grow from one decade to another or, in terms of statistical properties, are 'random walks', the indicators should be converted into new indicators that vary only within certain limits. Otherwise, the indicator has only limited use in detecting imbalances. For example, the credit-to-GDP ratio has grown in most countries from one decade to another, but the trend deviation of this ratio can never differ greatly from zero. The indicator with the best forecasting power should be used when measuring the same economic phenomenon.

*Key words: countercyclical capital buffer requirement, macroprudential policy, macroprudential instrument*

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