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Bank of Finland Financial Stability Report

One of the Bank of Finland's core tasks is to contribute to the reliable, efficient and stable functioning of the financial markets. The Bank conducts regular analyses of the vulnerabilities and risks related to the financial system that could trigger or exacerbate economic disruptions. These are not forecasts, but analyses of potential financial market developments.

The financial stability analysis published on the Bank of Finland website is intended for financial market participants, other authorities and the general public to provide information and promote discussion on financial stability. The objective is to ensure that these parties take the current condition of and future outlook for the financial system into consideration in their operations. In addition to the stability analysis, the publication features articles of topical interest. The information presented in this report is based on the data available on 9 May 2016.

The contents of the Bulletin may be freely quoted, but due acknowledgement is requested.

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EDITORIAL

No imminent threats in financial sector, but stability must be ensured

19 MAY 2016 11:00 AM • BANK OF FINLAND BULLETIN 2/2016 • EDITORIAL

Euro area monetary policy and domestic fiscal and structural policies are supporting Finland's slowly recovering economy. In a weak cyclical environment, there are no signs of acute threats to financial stability. The low level of interest rates has the potential to increase the risk of over-indebtedness and further feed asset prices. This sort of development could add risks to the Finnish financial system and reinforce structural vulnerabilities. Close monitoring is necessary to preserve the stability of the financial markets. Addressing stability threats requires access for the authorities to an adequate set of macroprudential instruments, which must be created in good time.



In recent years, the euro area has witnessed a high degree of monetary accommodation, which supports the price stability objective of the European Central Bank and economic growth in Monetary Union Member States. In addition, Finland has pursued an expansionary fiscal policy. These measures have underpinned the recovery of the Finnish economy. Nonetheless, Finland's economic situation remains difficult, and bringing the economy onto a sound footing will also require structural reforms.

The weak economic outlook is not providing incentives for corporate fixed investment. Growth-friendly economic policies – in particular, an accommodative monetary policy stance – may lead to excessive credit growth, assets may be channelled into financial investments and asset prices may rise rapidly in such a scenario. In Finland, there are

currently no signs of cyclical overheating in asset prices or lending. However, against a backdrop of low interest rates, these risks cannot be ignored.

A precondition for stable economic activity is reliability and efficiency in the functioning of the financial system. Credit institutions must be well capitalised and the financial market infrastructure operationally reliable. Key to the stability of the Finnish financial system is preventing and monitoring a further build-up of vulnerabilities and an increase of risks within banks and the insurance sector as well as securing the smooth functioning of payment and settlement systems.

Financial markets in Finland are more concentrated than in most other euro area countries. Here, a few large financial sector companies hold significant market shares in banking, non-life insurance and earnings-related pension insurance sectors. This makes it necessary to ensure that, in all these sectors, there is a sufficient degree of competition forcing market participants to improve service and product development and enhance productivity. The competitive situation is changing, with the entrance of new financial sector enterprises onto the banking scene, in particular. Banks need to critically review their established business models, as competitors with new approaches and light operational structures seek to tap the same markets, making use of digital services.

The Finnish financial markets are in general undergoing structural change anyway. One of the largest banks is transforming its operations into a branch structure in Finland. This bank will simultaneously move outside single euro area banking supervision. All the consequences of this change are not yet apparent, but it will in any case require closer cooperation between euro area and Nordic authorities. This change reveals a shortcoming of EU legislation in relation to banking supervision. The relevant legal provisions fail to take account of a foreign branch with a highly significant market position and share within a Member State.

The Finnish banking sector is financially sound, and banks have posted record results in recent years, despite the protracted weakness of the economy. Although the loan stock has grown in both household and corporate loans, the low level of interest rates is eroding banks' net interest income. From the stability perspective, it is also worth noting that large banks raise funding on the international financial markets and also operate actively in other Nordic countries. This interconnectedness could transmit to Finland financial stability risks materialising elsewhere.

The solvency of the Finnish insurance sector is good. The low level of interest rates and the weak economic situation have nevertheless also rendered this operating environment challenging. Earnings-related pension providers and life and non-life insurance companies manage large investment portfolios that provide coverage for future insurance commitments. With declining investment returns, risk appetite could grow – a trend that will require careful monitoring. The insurance sector is closely interlinked with other Nordic countries, and this dimension necessitates comprehensive supervision of the sector in cooperation with Nordic supervisors.

Macroprudential policy is a new segment of economic policy. It supplements fiscal and monetary policies and the supervision of financial institutions, which, by themselves, have been unable to prevent the accumulation of risks in the financial sector in the past.

The financial crises of recent years have highlighted the importance of macroprudential policy on a global scale. Macroprudential policy is devised to eliminate the adverse side-effects of the other segments of economic policy and activity, and it focuses on the financial system as a whole. Key macroprudential tools include the capital buffer requirements for financial institutions and various lending restrictions.

In Finland, macroprudential policy and its tools entered into force at the beginning of 2015. Although the Board of the Financial Supervisory Authority is the decision-maker in this regard, macroprudential policy is conducted in close cooperation with other national authorities and the European Central Bank. The financial markets are seamlessly integrated, and it is therefore vital for Finnish authorities to have access to tools similar to those in other countries – notably in Nordic countries and the Baltic States.

The practice of amortizing housing loans has served Finnish households well. Loan repayment is particularly important, as household debt has continued to increase. It protects households in the event of housing prices taking a downward trajectory. This protection can be further supplemented with macroprudential tools related to the adequacy of debt-servicing ability. It is in Finland's own interests that the toolkit for addressing stability risks is put in order in good time. Experiences gained from the 1990s and international financial crises show what happens if such tools are not available. There is no time to complete the toolkit once a situation has already got out of hand.

Helsinki, 18 May 2016

Pentti Hakkarainen

Deputy Governor, Bank of Finland

Tags

- [financial stability](#)
- [macroprudential policy](#)
- [macroprudential instruments](#)
- [threats to financial stability](#)

FINANCIAL STABILITY ASSESSMENT

Stability of Finnish financial system cannot be taken for granted

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY

The Finnish financial system has operated smoothly amid the difficult economic conditions of the past few years. However, financial stability can never be taken for granted. Due to the structural vulnerabilities of the financial system – the concentration and interconnectedness of the financial sector – the consequences of financial crisis could be particularly serious in Finland. To strengthen the stability of the system, the macroprudential toolkit available to the Finnish authorities should be brought to an internationally comparable level.



The Finnish financial system has remained stable regardless of the overall weakness of the economy. Short-term risks related to lending, debt accumulation and asset price developments do not pose an imminent threat to financial stability. Financial institutions have strengthened their capital adequacy, thereby improving their lending and loss absorption capacity.

The ratios of household debt to disposable income and GDP, which were high to begin with, have continued on their long-term growth paths, albeit at a slower pace, whereas relative house prices have fallen close to their long-term averages.

The concentration, size, funding structure and Nordic interconnectedness of the Finnish banking sector makes it structurally vulnerable: banking crises and other serious

problems of the financial system could spread rapidly through the Finnish banking system, causing substantial costs. The conversion of Nordea's Finnish subsidiary into a branch further increases the interconnectedness of the Nordic banking system.

The loan-to-value (LTV) cap for housing loans to take effect in July 2016 will enhance the stability of the Finnish financial system, as will the increase in housing loan risk weights prepared by the FIN-FSA Board. The means available to the Finnish authorities for mitigating the probability and consequences of financial crises are, however, insufficient in international comparison.

The experience gained from the global financial crisis and the 1990s crisis in Finland point to the need for putting in place the macroprudential toolkit in time to deliver effective early intervention in the event of an escalation of the risks to financial stability. The timing of macroprudential measures should be commensurate with the prevailing economic situation. Measures to tighten macroprudential policy should be scheduled so as not to excessively constrain access to credit and tighten lending criteria in weak cyclical conditions.

Subdued global growth causes accumulation of risks in the financial system

Finland's open economy and financial system are vulnerable to the risks of the global economy and international financial markets. Recent and future foreseeable developments in the global economy show some disquieting features from the perspective of financial stability.

The world economy has recovered slowly from the financial crisis witnessed in 2007–2009 and the euro area sovereign debt crisis following in its wake. In addition to the crises, at least population ageing in the advanced economies, fading technological development and a chronic shortage of global demand have been offered as explanations for the sluggish pace of global growth (Chart 1) (see [article](#) discussing the three explanators of the long period of slow growth, in Finnish).

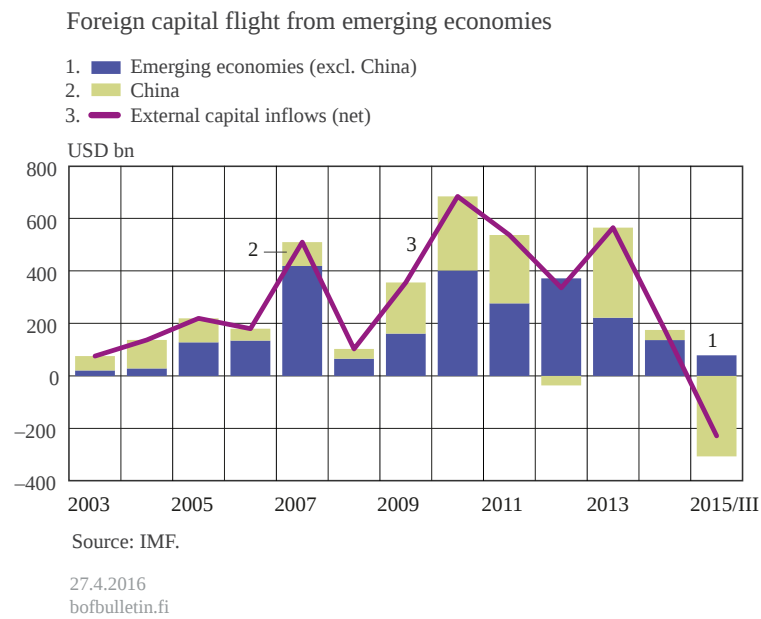
Chart 1.



The advanced economies have pursued a highly accommodative monetary policy to boost economic growth. However, investments have been channelled to the securities markets and in some countries also to the housing and commercial property markets, as well as to real investments. In emerging economies, indebtedness has increased particularly in the corporate sector.

The reversal of capital flows (Chart 2), depressed outlook for global growth and some other factors induced fluctuations on the international financial markets in the early months of 2016. The UK referendum on EU membership in summer 2016 may further heighten market unrest (see article '[What would Brexit mean for the financial markets?](#)').

Chart 2.



The European Central Bank has adopted several measures to promote price stability and economic growth. The measures are a necessary response to the very moderate inflation outlook. However, in some countries, the low level of interest rates and diverging economic developments across the euro area countries may result in a surge in asset prices and excessive credit growth. Such country-specific risks are contained by measures of national macroprudential policy.

Cyclical risks to financial stability moderate in Finland

Disruptions in the international economy and financial system may spill over to Finland not only through the financial markets but also e.g. via exports, interest rate developments and the links between Nordic banks.

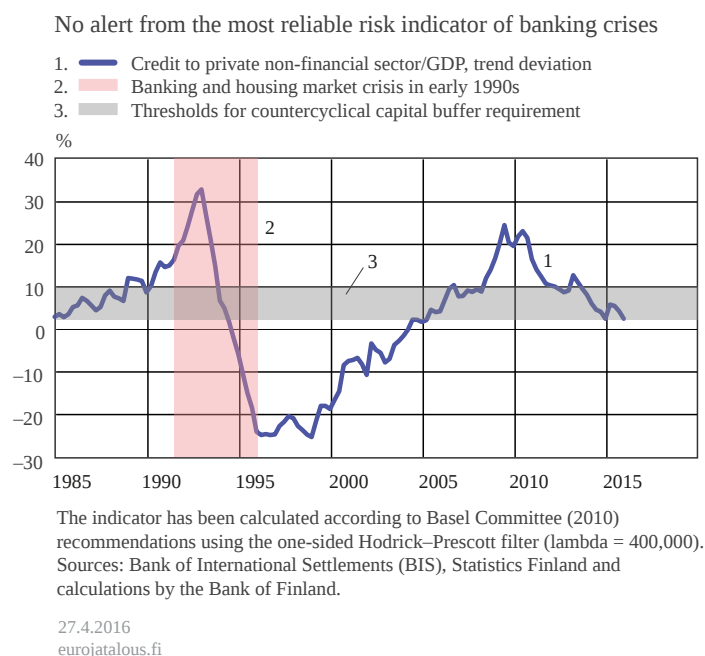
In the assessment of the Bank of Finland, the cyclical risks to financial stability facing the Finnish financial system are currently low. Cyclical risks to financial stability are typically associated with exceptionally fast growth in – or high levels of – lending, indebtedness and asset prices. The early warning indicators^[1] employed by the Bank of Finland and FIN-FSA in macroprudential analysis do not currently signal any significant increase in these stability threats in Finland.

In light of empirical studies, exceptionally high values of the trend deviation of the ratio of private sector credit to GDP (credit-to-GDP gap) have mirrored an increase in the probability of a banking crisis with high reliability.^[2] In Finland, values of the credit-to-

1. Early warning indicators are indicators whose exceptional values have delivered the most reliable and timely warnings of future banking crises.

GDP gap have generally declined in recent years (Chart 3), reflecting the sluggish pace of credit growth.

Chart 3.



If the value of the credit-to-GDP gap exceeds a defined trigger level, national authorities must take the imposition of a countercyclical capital buffer requirement on credit institutions under special consideration. In Finland, values of the credit-to-GDP gap have been above the trigger level in recent years, but in light of other risk indicators and the comprehensive assessment of the authorities, the risks of lending have not given cause for adoption of measures to increase the countercyclical capital buffer requirement.

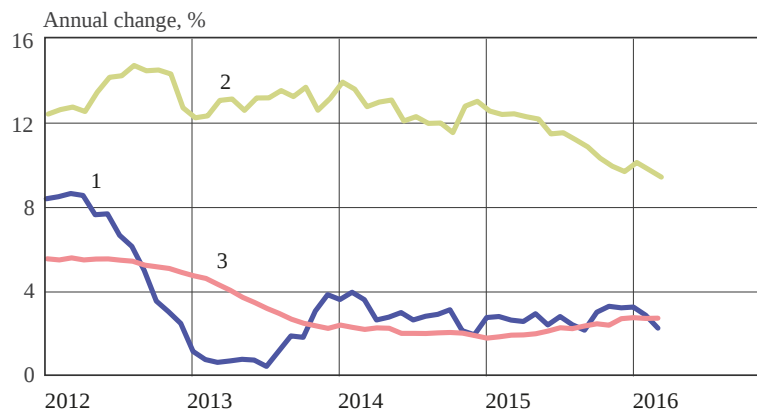
As regards the other major risk indicators, e.g. annual growth rates of banks' household and corporate loan stocks are much slower than just a few years ago (Chart 4).

2. For a more detailed discussion on the calculation of the credit-to-GDP gap and its important role in macroprudential policy, see an article on the calculation of the aggregate credit risk indicator (in Finnish) http://www.suomenpankki.fi/fi/julkaisut/selvitykset_ja_raportit/makrovakausraportti/Pages/2015-nro-2-erillisraportti.aspx.

Chart 4.

Slow growth in household and corporate loans in Finland

1. Non-financial corporations (excl. housing corporations)
2. Housing corporations
3. Households

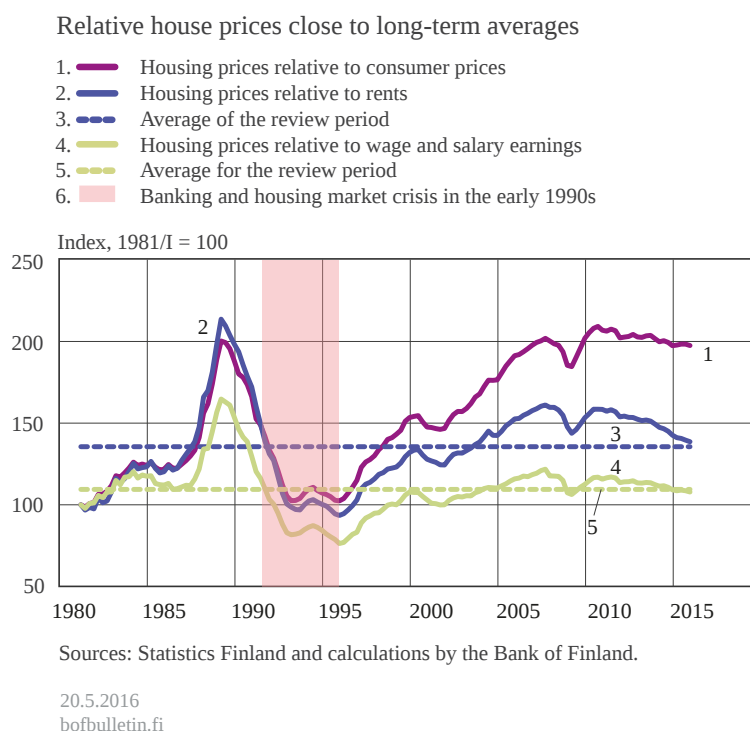


Source: Bank of Finland.

27.4.2016
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Similarly, house prices do not show any signs of overvaluation in Finland as a whole. In recent years, house prices relative to rents and wage and salary earnings have declined close to their long-term averages (Chart 5). There are, however, large regional differences in housing price developments.

Chart 5.



Overall, against a backdrop of sluggish credit growth, there is currently no need to deploy macroprudential tools to mitigate the risks of credit growth.^[3] Accordingly, the Finnish macroprudential authority, FIN-FSA, whose Board takes the macroprudential decisions in Finland, has refrained from increasing the countercyclical capital buffer requirement from 0%.^[4]

Banking sector financially solid but structurally vulnerable

There are significant longer-term *structural* risks present in the Finnish financial system.

The high concentration and large size of the banking sector relative to the economy push up the costs of banking crises, while Finnish banks' high reliance on market-based sources of funding exposes them to disruptions in the international financial system. In addition, the Nordic links of the banking and insurance sector make the Finnish financial

3. Macroprudential instruments are mainly regulatory instruments whose primary objective is to prevent financial crises by dampening credit cycles and strengthening the loss absorption capacity of financial institutions. For a more detailed discussion on the macroprudential instruments available to the Board of the FIN-FSA, see http://www.finanssivalvonta.fi/en/Supervision/Macroprudential_supervision/macroprudential_instruments/Pages/Default.aspx.

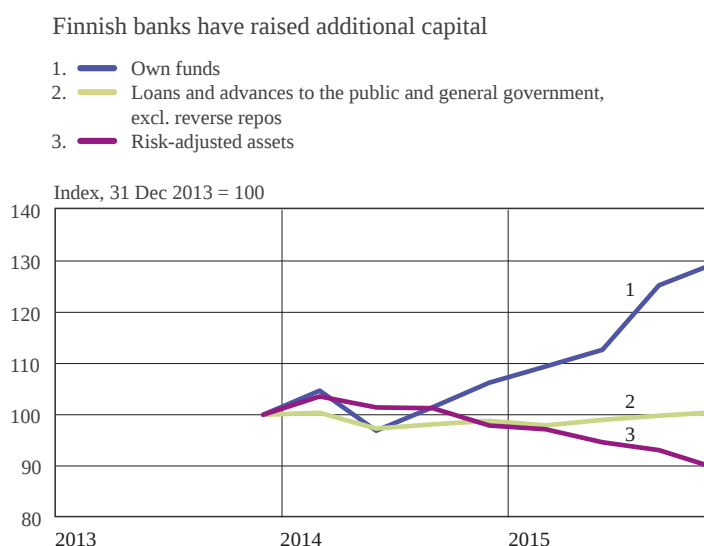
4. In its capacity as ultimate macroprudential supervisor within the Banking Union, the European Central Bank has the right to tighten the countercyclical capital buffer requirement or other macroprudential instruments used in Finland (excl. the LTV cap for housing loans) from the level proposed by the Board of the FIN-FSA. However, the ECB has not yet exercised this right.

system vulnerable to the problems of Nordic banks and to fluctuations in the Nordic housing markets (see article '[Nordic financial sector vulnerable to housing market risks](#)').

Activation of the macroprudential tools to address the structural vulnerabilities and risks of the banking sector may also be justified under adverse cyclical conditions. The banks are by far the most important source of external finance for households and non-financial corporations in Finland. Therefore, the authorities must adopt regulation to ensure the strong capital adequacy and lending capacity of banks under all circumstances.

The FIN-FSA Board strengthened the risk resilience of the credit institutions identified as significant for the Finnish financial system (O-SIIs) by imposing on them additional capital requirements to be fulfilled as of the beginning of 2016.^[5] In the course of 2014 and 2015, Finnish banks have increased their own funds substantially (Chart 6), not least in response to the tighter capital requirements introduced (see the article '[Reform of bank capital regulation enters final phase](#)').

Chart 6.



Source: Financial Supervisory Authority.

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Finnish law does not allow for the imposition on banks of a Systemic Risk Buffer (SRB) requirement, which is applied by nearly all other EU countries. The SRB is designed to mitigate systemic risks arising from the large size or vulnerable structure of the banking system. An expert group that reviewed the necessity of the SRB in Finland cited the concentration of the Finnish banking sector and its key role as a source of funding for the private sector as arguments in favour of incorporation of the SRB into Finnish national legislation.^[6]

5. The O-SIIs and the additional capital requirements imposed on them are: Nordea Bank Finland (2%), OP Group (2%), Danske Bank (0.5%) and Municipality Finance (0.5%).

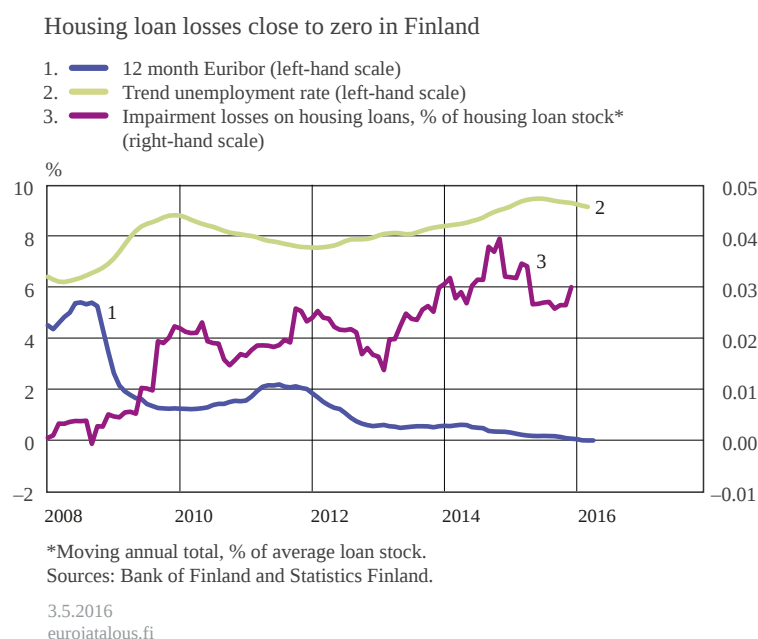
Low level of interest rates weighs on banks' and insurance companies' profitability

The depressed level of interest rates has rapidly passed through to the rates on housing, consumer and corporate loans in Finland. If protracted, low interest rates and the weakness of the economy will place a strain on the banks, whose profitability is, to a significant extent, dependent on the demand for new loans and the margin between deposit and lending rates (see article '[Low interest rates place a strain on the banks](#)').

In fact, the high profitability of the banking sector can be partly attributable to e.g. fee and trading income, whereas income from lending has declined. Those Finnish banks in particular that raise a significant share of their funding on the markets have, nevertheless, benefited from the fall in interest rates. The profitability of banks has also been bolstered by low amounts of impairment losses (Chart 7) and non-performing loans.

Increased use of interest-only periods on housing loans has helped sustain domestic demand in the severe economic conditions experienced in Finland. The more widespread use of interest-only periods on housing loans should not, however, be encouraged to result in a considerable extension of loan repayment periods or major changes to current amortisation practices.

Chart 7.



The Finnish insurance and banking business is concentrated in the hands of a few large financial and insurance conglomerates (see article '[Reform of insurance sector regulation](#)'). Considering that the Finnish earnings-related pension providers and life

6. Report on the necessity of introducing a Systemic Risk Buffer requirement in Finland. Ministry of Finance publications 4/2016 (in Finnish with English abstract).

and non-life insurance companies manage large investment portfolios, attention should be focused on potential systemic risks transmitted by the insurance companies.

The market fluctuations witnessed in the early part of 2016 were reflected notably in earnings-related pension providers' financial results for the first quarter of 2016. However, the investments of insurance companies and pension providers are rather broadly diversified, and solvency in the sectors is good. If prolonged, the low level of interest rates will also weigh on the profitability and solvency of insurance companies, given that a significant share of their investments are fixed-income investments. When the investments mature, the assets must be reinvested at a lower interest rate, which reduces interest income and impairs achievement of the companies' return objectives.

The profitability of life and non-life insurance companies is also reduced by an increase in the value of market-based technical provisions in response to falling interest rates. In addition, the profitability of life insurers is eroded by the guaranteed-return policies currently featuring a guaranteed rate of interest above average returns on fixed-income investments. However, sales of guaranteed-return life policies were largely discontinued in Finland some time ago. The majority of new policies sold represent unit-linked policies, where the investment risk is born by the customers.

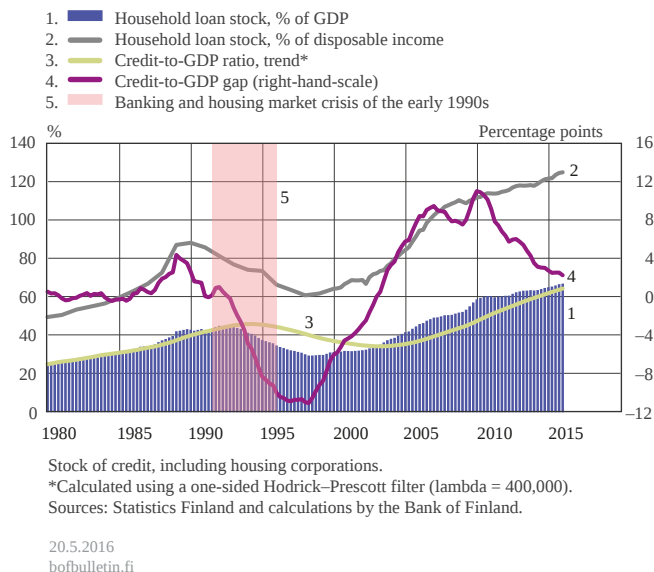
Structural stability risks related to lending for house purchase remain elevated

High household indebtedness also represents a structural vulnerability of the banking sector. The risks related to lending for house purchase and accumulation of debt increased in the first decade of the new millennium largely for two structural reasons: an increase in average housing loan sizes and a significant extension of average loan repayment periods.

Household indebtedness relative to disposable income has more than doubled over the past twenty years (Chart 8). International experience shows that indebted households cut back their consumption strongly in times of economic crisis, which further aggravates the crisis (see blog on housing loans and the Great US Recession [in Finnish]). Household vulnerability relative to housing market risks is heightened by the concentration of household assets in housing. There are also large regional differences within the housing market.

Chart 8.

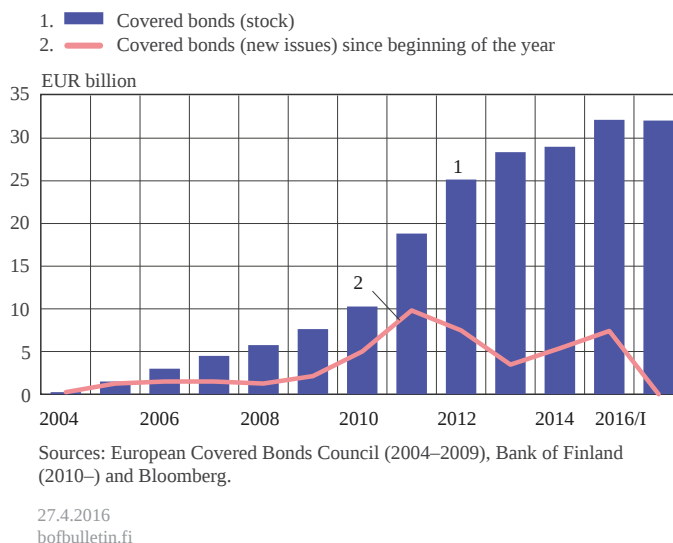
Household indebtedness in Finland is growing, but slowly than before



The Finnish financial system's vulnerability to the risks of lending for house purchase and the housing market is increased by the large share of housing loans in the banks' aggregate lending volumes and the low risk weights assigned to housing loans in their internal risk-weighting models (see article '[High housing debt increases risks to financial stability](#)'). Furthermore, mortgage-backed bonds play a major role as sources of funding and investment for Finnish and Nordic banks (Chart 9).

Chart 9.

Finnish banks have raised large volumes of funding using covered bonds



As regards the stability of the financial system we can, however, make the positive observation that the increase in some vulnerabilities related to household indebtedness has moderated in recent years, or vulnerability has even declined. Although household indebtedness has continued to grow, the rate of growth has moderated below trend (curve 4, Chart 8).

The most highly indebted mortgage holders – with a ratio of debt to disposable income above 400% – have decreased in number since 2010, as has their share of aggregate housing debt. Moreover, the share of housing loans in banks' lending to households and non-financial corporations has contracted in response to the slow growth in the housing loan stock (see Charts 3 and 5 in article '[High housing debt increases risks to financial stability](#)').

Authorities need internationally comparable macroprudential instruments

The exceptionally low level of interest rates conceals the risks related to the high level of household indebtedness. Although accumulation of debt has helped sustain household consumption and, by extension, domestic demand in recent years, a renewed strong acceleration of debt accumulation would be a risk for the Finnish economy, with an ageing population and a weak long-term growth outlook.

The legal provisions on the loan-to-value (LTV) cap will take effect in July 2016, which is positive in terms of financial stability. In Finland, the effectiveness of the LTV cap as a macroprudential instrument is, nevertheless, compromised by the exceptionally liberal method of calculation.

In contrast to most other countries, a wide range of items other than the object of purchase are also recognised as eligible collateral in the calculation of the LTV ratio. For some loan applicants, this collateral treatment may result in rather high effective LTV ratios, even exceeding the value of the object purchased.

In order to improve the effectiveness of the LTV ratio and its international comparability, a modification of the LTV calculation formula as defined in the Credit Institutions Act should be considered.

At the end of 2015, the Board of the FIN-FSA stated that housing loan risk weights are low from a macroprudential perspective and decided to begin preparations for an increase in risk weights to also capture the systemic risks arising from lending for house purchase. Housing loan risk weights serve to define the amount of capital buffers to be held by banks to cover exceptionally large unexpected losses on housing loans.

The introduction of higher risk weights on housing loans primarily serves to strengthen banks' resilience to housing loan losses. However, the Finnish authorities do not have access to sufficient and internationally comparable instruments for containing the risks associated with household indebtedness and the housing markets by using macroprudential tools targeted at demand factors.

In light of international experience, restriction of the maximum loan size relative to the borrower's disposable income would be an effective instrument for this purpose. The Finnish authorities should also have recourse to means for restricting, where necessary, maximum loan maturities and introducing loan amortisation requirements. If necessary, the FIN-FSA may also issue recommendations on lending for house purchase to the banks.

Adoption of macroprudential measures is subject to careful consideration in Finland and macroprudential decisions are always taken with due regard to the prevailing economic conditions, the tightness of other regulation and the estimated effects of the measures on lending, financial institutions and the macro economy. Macroprudential policy should also be sufficiently transparent and consistent in order to avoid the emergence of unnecessary uncertainty on the markets.

Structural changes and new financial participants shaping the financial system

The structure of the Finnish banking sector is about to change as Nordea converts its Finnish subsidiary into a branch. In this process, supervision of the bank's Finnish operations will be taken over by the Swedish supervisory authority, customer deposits will become subject to the Swedish deposit guarantee scheme and resolution responsibility will be assigned to the Swedish resolution authority, outside the EU's Banking Union (see article '[Conversion of Nordea subsidiaries into branches – Nordic interconnectedness increases](#)').

The restructuring of Nordea will create an exceptional situation in a European context, too, as supervisory and resolution responsibility for a deposit bank of national systemic importance is transferred away from the national authorities.

The restructuring of Nordea makes it increasingly important for the Nordic countries to have in place as consistent a macroprudential toolkit as possible. The Finnish macroprudential toolkit is currently narrower in scope than that of most of its neighbours (see article '[Finland's neighbours rein in lending for house purchase](#)').

Traditional banking is also being shaped by new financial participants that are taking advantage of digitalisation in the provision of banking, payment and asset management services (see article '[Will digitalisation transform the financial sector, too?](#)'). The emergence of new participants and business models will step up competition in – and increase the supply of – financial services.

However, some of the new quasi-banking business may find its way outside banking regulation or be subject to lighter regulation than banks per se. The transformation of the banking and financial business is also subject to close scrutiny in Finland. We know from economic history that a crisis can build up in the supervisory dead zone outside traditional banking.

Financial stability needs an operationally reliable infrastructure

Financial stability analyses are often undertaken under the assumption of a smoothly functioning financial infrastructure. This assumption is as such well-founded, considering that no problems were identified in the financial infrastructure – payment systems and securities clearing and settlement systems – during the global financial crisis of 2007–2009. Reliable systems help to keep the wheels of the economy turning (see article '[Market infrastructures – the pillars of financial stability](#)').

Market infrastructure connects financial system participants to each other, and disruptions in the infrastructure may rapidly spill over to the financial system as a whole. For example central counterparties on the one hand promote risk management but may on the other hand also themselves act as sources of risk (see article '[Central counterparties can both prevent and cause risks](#)').

The infrastructure must be built to withstand a wide range of disruptions both in normal times and in times of crisis. The national exercise for testing preparedness and contingency arrangements in the financial and insurance sectors carried out in autumn 2015 showed that the increasingly international infrastructure presents a huge challenge in the preparation of national contingency plans.

Completion of Banking Union and establishment of Capital Markets Union consolidate EMU

Economic and Monetary Union (EMU) cannot operate without a stable European financial system. Completion of Banking Union with the European Deposit Insurance Scheme (EDIS, see article '[New European Deposit Insurance Scheme to be introduced soon](#)') and the creation of a single Capital Markets Union will serve to distribute risks and hence promote stability.

The changeover to a European Deposit Insurance Scheme is, however, justified only when the balance sheets of the banks' participating in Banking Union have been reliably cleansed of old problems and the sufficiency of their capital adequacy has been ensured.

The key objective of the Capital Markets Union is to diversify the funding sources of small and medium-sized businesses in particular and hence improve their growth potential. The establishment of a Capital Markets Union also adds to the necessity for developing macroprudential tools designed for financial corporations other than banks.

A positive development in terms of a revival of the Finnish capital markets is the upward trend in Helsinki stock exchange listings witnessed over the past few years. Although the amount of new capital raised via the stock exchange is small from the perspective of the economy overall, it is significant for the businesses themselves. New capital contributes to supporting their potential new investment projects.

Tags

- [systemic risks](#)
- [macroprudential policy](#)
- [threats to financial stability](#)

What would Brexit mean for the financial markets?

12 MAY 2016 11:00 AM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

KARLO KAUKO

- [Karlo Kauko](#)
Senior Adviser

On 23 June 2016, the United Kingdom will hold a referendum on whether to remain in or leave the European Union. Opinion polls suggest the outcome of the vote is uncertain. Given that no country has yet left the EU, there are no experiences of the consequences of exit to draw on. The economic implications will largely depend on the arrangements for economic relations between the EU and the UK. However, the risk of the UK leaving the EU has already pushed down the exchange rate of the pound. The status of the City of London as an international financial centre would probably weaken, and some financial actors might relocate to the euro area.



A Member State may withdraw from the EU simply by notification. Unless otherwise agreed, the withdrawal will take effect two years from the notification.^[1] There is no experience of the consequences of such withdrawal. When Greenland left the European Economic Community in 1985 and Algeria upon gaining independence in 1962, neither were actual Member States of the Community, and the EU in its present form did not exist at that time.

The UK does not rank among the most integrated EU Member States, which is likely to mitigate the impact of exit. The country does not participate in Schengen, the euro area or the TARGET2 payment system for central banks. In fact, the status of the UK upon leaving the EU is still unclear. If the country were to become a member of the European

1. Article 50 of the Treaty on European Union.

Economic Area (EEA) and EFTA, like Norway and Iceland, the effects could be limited. However, more substantial consequences would ensue if the EU and the UK were only to form a loose customs union. In the extreme case, EU-UK trade would be subject to the rules of the World Trade Organisation (WTO).

The Bank of England has estimated that leaving the EU would erode the UK's economic growth potential.^[2] Both an analysis^[3] by the HM Treasury and a report^[4] commissioned by the Confederation of British Industries (CBI) find that leaving the EU would have strong adverse implications for the UK economy, even more so if the country were also to be outside the EEA.

If the key conclusions are correct, many UK bond issuers would probably be facing a downgrade. The credit derivatives market has already incorporated the higher risk in UK government bonds in their price setting. A fall in bond prices would lower the capital adequacy of many banks both in and outside the UK, which could reduce credit supply. In addition, the creditworthiness of UK banks would be likely to suffer, and the UK's long-standing current account deficit would certainly not ease the situation.

Considering that expectations are reflected in foreign exchange rates, the exchange rates of the pound against other currencies could change substantially. On 17 March, the Monetary Policy Committee of the Bank of England assessed that the recent depreciation of the pound was partly related to the risks associated with the referendum, although no effects on asset prices or risk premia were discernible.

The City of London is one of the most important financial centres in the world. All banks authorised by an EU or other EEA Member State may establish a branch in London or anywhere else within the EEA on the basis of their domestic authorisation. Similarly, authorisation granted in one EEA Member State gives the bank the right to provide financial services to other EEA Member States on a cross-border basis without establishing a branch. Many US and Swiss banks have gained access to the EU market from London on the basis of a UK authorisation. This practice may end if the UK were also to stand outside the EEA. Financial actors based in London provide many important services, including central counterparty services,^[5] for customers resident in other EU Member States.

A report^[6] published by Deutsche Bank argues that it is not in the interests of the EU to negotiate a deal with the UK that would offer a Member State extensive benefits upon leaving, as this could encourage other countries to follow suit. For example, access to the Single Market for Financial Services could be denied upon exit. Many other EU Member States would be happy to welcome high-earning financial professionals into their country as taxpayers. For example, when interviewed for radio on 15 February, the Chairman of

2. EU Membership and the Bank of England (October 2015).

3. HM Treasury analysis: The long-term economic impact of EU membership and its alternatives (April 2016).

4. PricewaterhouseCoopers (March 2016) Leaving the EU, Implications for the UK Economy.

5. For more details on central counterparty services, see the forthcoming article 'Central counterparties can both prevent and cause risk' by Kasper Korpinen, www.bofbulletin.fi.

6. Brexit update: the days ahead and what chances a good UK deal? (14 April 2016).

the Board at the bank HSBC, Douglas Flint hinted at the possibility of relocating around 1,000 jobs to the Paris-based subsidiary in the event of the UK leaving the EU.

Winding down operations in one location and starting up operations to replace them elsewhere would not be a simple exercise. In the process of transition, errors could be made that could cause interruptions to business and major losses not only for the relocating businesses but also for their customers and other stakeholders. Some turnover of staff would be likely to occur, which would increase these operational risks.

Brexit would require legislative reform in the UK, at EU level and in the remaining EU Member States. Many legal acts have been drafted under the assumption of UK membership. The Directives include explicit references, for example to national derogations, while the assumption of UK membership may be more implicit in many national and EU regulations. The necessary legislative changes would consume resources needed for other supervisory and regulatory developments.^[7]

Tags

- [referendum](#)
- [EU membership](#)
- [Brexit](#)
- [United Kingdom](#)

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7. Association for Financial Markets in Europe (2016): The UK Referendum – challenges for Europe's capital markets. p. 36–57.

Will digitalisation transform the financial sector too?

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

EERO TÖLÖ

- [Eero Tölä](#)
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Traditional financial participants are facing new competition in the wake of digitalisation. On one hand, major technology giants have begun to provide services designed primarily for payments but partly also for lending, while on the other hand fast-growing fintech startups are out to peck the most delicious titbits off banks' plates, spurred by feather-light cost structures and new ways of thinking.



Over several decades, technological advances have introduced innovations like payment cards, online banking and electronic trading platforms to the financial sector. Although a lot has changed from the customers' perspective, the arrival of Internet and electronic services has not, however, been as revolutionary in impact as in some other sectors, such as the telecommunications branch and record stores, where digitalisation has turned the whole scene around. This may be somewhat surprising, given that the financial services are largely immaterial and hence easily digitalised. However, the steps taken in various segments of the sector in recent years signal a more profound shake-up of financial sector structures.

Payments lead the way

The transformation has been felt first in the field of electronic payments, where a host of online and mobile payment applications have emerged alongside conventional card payments. Although part of the new payment applications have been launched by banks

and card companies; a significant proportion – such as Paypal, ApplePay, Google Wallet and Ripple – originate outside of the conventional payment ecosystem.

Methods of payment differ greatly across countries. In Finland, card payments have been the most common method of payment for groceries for some 10 years already, and Finland has been one of the leading countries in electronic payments. More recently, however, the more novel technologies, such as mobile payments, have not gained ground in Finland to the same extent as, for example, in Sweden and Denmark, or, a little farther away, in China and Kenya.

How will payments change in practice? Real-time crediting of the payee's account is a growing trend. The Euro Retail Payments Board (ERPB) has set itself the objective of implementing a Europe-wide scheme for instant payments by November 2017 and several systems are planned which would implement this set of rules.

In step with electronic payments gaining more ground and the processes of customer data analysis becoming more advanced, data on payment transactions can increasingly be harnessed for marketing and strategic decision-making purposes. By January 2018, at the very latest, EU Member States must transpose the new Payment Services Directive (PSD2) into national law. This will step up competition and innovation in payment services, as banks, upon customer authorisation, will have to make customer data available to third parties and execute payments initiated by customers via third parties.

Payments and trading are also exposed to a somewhat extreme form of digitalisation known as blockchain technology. Blockchains enable safe electronic archiving of transaction history and other data without a trusted centralised operator responsible for the system. In addition to payment applications, other envisaged uses of blockchain technology include enhancement and digitalisation of complex dynamic contracts, accounting of holdings and various other purposes. The largest banks operating in Finland are members of the international R3 consortium partnership, which explores and develops business solutions based on blockchain technology.^[1]

Digital liberalisation of financial intermediation

Digitalisation has also found its way into the core of banking, i.e. financial intermediation. A growing number of crowdfunding and peer-to-peer lending platforms provide funding and investment opportunities exclusively via the Internet. The novelty in this activity is easier and faster access to funding for actors that, due to their high credit risk or small size, would experience difficulties in obtaining finance through conventional channels. Another new element is the opportunity for small investors to invest directly in consumer loans and minor corporate bonds and participate in venture capital investment.

Although still holding a rather small market share in most countries and being primarily designed for high-risk funding, the new forms of funding are growing rapidly. For

1. See blog dated 5 April 2016 on the website of the R3 consortium partnership <http://r3cev.com/blog/2016/4/4/introducing-r3-corda-a-distributed-ledger-designed-for-financial-services>.

example, the Chinese peer-to-peer lending market has already reached a volume of USD 66.9 billion.^[2]

There are currently three domestic peer-to-peer lenders and a number of foreign operators active on the Finnish market. Market participants' data show that domestic peer-to-peer lenders granted new peer-to-peer loans worth around EUR 37 million in 2015. New digital competition is also created by branchless banks operating online only and offering loans and deposits from abroad.

The measures initiated by the Finnish authorities in response to the digitalisation of financial intermediation include the Crowdfunding Act and an electronic register of shares in housing corporations. The Crowdfunding Act clarifies the legal status and regulation of crowdfunding participants, while the electronic share register enhances the processing of shares in housing corporations and facilitates branchless offering of mortgage-backed loans.

Service reliability must be ensured and risks to financial stability taken into account

The effects of digitalisation also extend to the insurance business, securities trading and investment advice services, as well as to payments and financial intermediation. Competing insurance providers are entering the insurance field, and new innovative applications are being used in the customer-driven pricing of insurance policies. Robot and algorithm-based investment strategies, which have long been used in professional trading, are now being made available for a broader investor base, while investment advice services are being automated.

It is vital that authorities keep track of the structural changes and respond appropriately to advances in digitalisation. Three key issues are:

- promoting security of digital services
- facilitating innovation in the strictly regulated financial sector
- ensuring financial stability.

The new financial actors do not necessarily have their physical location in Finland, nor are they supervised by the Finnish authorities, which is a challenge for fostering the safety of digital services. Furthermore, part of the new activities require regulation that has yet to be drafted.

The authorities may contribute to fostering innovation by making provision for it both in the formulation of new regulations and in the interpretation of existing regulations, and by offering assistance and information. A model example of this is the Innovation Hub^[3] set up by the UK Financial Conduct Authority (FCA) and designed to promote useful innovations in financial services. In addition, the UK provides 'innovation visas' and

2. Citi (2016) Digital disruption.

3. Ks. <https://innovate.fca.org.uk/>.

lighter taxation of, for example, patent-based profits, reflecting the tightening international competition to attract innovative businesses.

In terms of financial stability, the risks of new business models and technological solutions must also be considered in the long run.^[4] Such risks include the usual risks of excessive debt-taking associated with the creation of new funding channels and easier access to lending. Examples of the new types of risks that have emerged in the wake of digitalisation are the repeated stock market ‘flash crashes’ witnessed in recent years, appearing out of thin air and passing as quickly as they arise, as well as cybercrime.

Tags

- [digitalisation](#)
- [innovation](#)
- [financial technology](#)
- [structural changes](#)

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4. Banque de France (April 2016) Financial Stability Review. Financial Stability in the Digital Era. See https://www.banque-france.fr/fileadmin/user_upload/banque_de_france/publications/Revue_de_la_stabilite_financiere/RSF20/FSR20-Full-text.pdf.

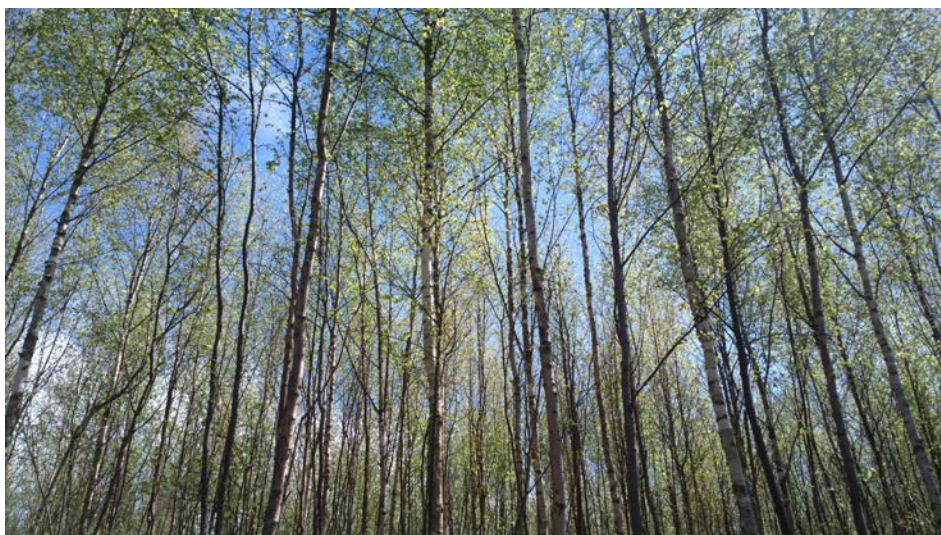
Low oil price reveals implications of carbon risk

12 MAY 2016 11:00 AM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

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A significant proportion of the world's investment assets lie with companies whose business activities produce large emissions of carbon dioxide. In the future, climate policy emissions restrictions will affect these companies' ability to operate, which could lower their value. The consequence could be a substantial risk for investors who do not make timely provision against this 'carbon risk'. The fact that the carbon risk is hidden within investors' investment portfolios will simply serve to undermine confidence between market actors.



Carbon risk threatens the value of emissions-producing companies

The decline in the price of oil has been on the news repeatedly over the past couple of years. As a result of this trend, the 300 largest global corporations in the oil and gas sector have lost a total of USD 2,300 billion off the value of their shares, a decline of 39%. Likewise, the assets used as collateral by oil and gas corporations on loans totalling USD 2,500 billion have lost a substantial amount of their market value.^{[1],[2]}

1. The corporations may, under applicable conditions, enter part of their as yet unutilised domestic reserves as own funds and use them as collateral for a loan application. As the price of oil declines, the 'collateral value' of the reserves also declines. The dilemma for the banks is that they offered these companies the opportunity to borrow to an agreed limit against these oil assets. As the price of oil has declined, so the value of the reserves has also dipped, and the banks are therefore forced to reduce their credit facilities in order to minimise their risks. This

Carbon risk arises because climate policy emissions limits may undermine a company's earnings performance and value if its operations produce a lot of emissions. If owners and investors do not take timely account of the impacts of emissions limits, the value of a company that produces a lot of emissions can decline rapidly. Correspondingly, banks and other lenders to these companies are forced to make contingency plans for a situation where such companies may not be as well-equipped as before to service their loans once the emissions limits have come into effect.

The present situation brought about by the low price of oil provides a good example of what the carbon risk occasioned by climate change and a strict climate policy could mean in practice for the financial sector. The difference is that the current low price of oil is presumably a passing phase, and the earnings capacity of oil and gas corporations and the value of the fossil fuel reserves they administer can be expected to rise from current levels in the years ahead.

Once emissions limits begin to affect corporate valuations, it is unlikely that every corporation can ever restore its previous value. Companies whose business model is strongly based on carbon emissions will at some stage be forced to prepare for emissions limits by developing cleaner technology or a cleaner business model. The later a company begins to prepare for future emissions limits, the harder it will be for it to retain its value far into the future.

Carbon risk could become a problem for the whole financial system

If we look several decades into the future, the future of all companies is uncertain. Why, then, is there a need for a separate warning regarding carbon risk?

The difference between carbon risk and many other types of risk is that in regard to carbon risk a significant number of companies are in practice exposed to a single risk factor – emissions limits. Exposure to a single risk factor allied to the fact the scale of the risk cannot be estimated very precisely should by itself ring warning bells for investors.^[3]

The impact on financial stability from carbon risk arises because approximately one third of all securities issued around the world (shares and bonds) are more or less exposed to carbon risk.^[4] Pension funds, insurance companies and other financial market

increases the possibility of bankruptcy for these companies, which could actually lead to greater losses for the banks. As long as the price of oil remains low, the banks only have bad alternatives.

2. If the collateral value of the reserves entered as own funds weakens, this could further depress the price of oil, because as prices fall an increase in production is the only way to prevent a strong decline in cash flow. Thus the price drop leads to pressure for even lower prices, which acts as a self-reinforcing downward trend. For more on this see e.g. BIS (March 2015) Oil and debt. BIS Quarterly Review, http://www.bis.org/publ/qtrpdf/r_qt1503f.pdf.

3. Some institutional investors nowadays ask the companies they invest in how climate policy will affect their business in the future. During the course of 2016, the Financial Stability Board will be developing a carbon risk reporting system, the idea being to enhance the transparency of carbon risk.

4. Prudential Regulation Authority (September 2015) The impact of climate change on the UK insurance sector. See <http://www.bankofengland.co.uk/prad/documents/supervision/activities/pradefra0915.pdf>.

participants have investments in such securities. In 2014, the oil and gas sector alone had syndicated bank loans to a total value of USD 1,600 billion.^[5]

If we additionally take into account the fact that many other companies are directly or indirectly dependent on the oil and gas sector, it is clear a substantial amount of financial assets are invested in companies that are all exposed to changes in value caused by emissions limits.

It is often hard to assess how much of a large corporation's value depends on emissions-producing business activities. Even harder for an outside observer to assess is how much of e.g. an institutional investor's portfolio is exposed to carbon risk. In a crisis, this lack of transparency can, in a worst-case scenario, lead to speculation and a possible weakening of market functioning, if confidence in other market participants were to falter.

Important to prepare sufficiently and in time for emissions limits

Carbon risk is ameliorated by the fact that emissions limits will come into effect gradually over several decades and both companies and their investors will have time to alter their investments before problems arise. Although this argument is partially true, it fails to take account of three factors.

In the first place, companies with emissions-producing business activities could find it hard to invest sufficiently in clean innovations, as innovations are in the short-term expensive and uncertain – even in the best case they would eat into current income flows, and the benefits would be realised only long-term.

Secondly, investors may be tempted to assume that they will be able to rid their portfolios of these risky investments at the last minute, but that until such time they should hold onto them in the hope of good returns.

Finally, delays in climate policy decision-making and the setting of emissions limits could to some degree lead to a need to impose strict emissions limits on a very tight schedule.

We cannot be sure how big a problem for the financial system carbon risk will eventually turn out to be. There are so many factors influencing developments that at the moment we can only propose a range of possible scenarios. Supervisors should nevertheless be monitoring developments and taking care to ensure that financial sector actors take sufficient steps at a sufficiently early stage to prepare for the coming change. The general tightening of banks' capital adequacy requirements has, however, already improved banks' capacity to cope with problems in the economy. It remains important to ensure that no individual factor such as carbon risk can endanger the entire financial system, either directly or via any other systemically important actor.

5. BIS (March 2015) Oil and debt. BIS Quarterly Review. See. http://www.bis.org/publ/qtrpdf/r_qt1503f.pdf.

Tags

- [carbon risk](#)
- [climate change](#)
- [financial stability](#)

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Low interest rates place a strain on the banks

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

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The current exceptionally low level of interest rates promotes price stability and economic growth in the euro area, but it also puts a strain on retail banking profitability. In Finland, the banks' most important source of income, net interest income, is now exposed to pressures from several different directions at once. Low interest rates have compressed the spread between lending and deposit rates. At the same time, loan and deposit stocks have increased only slowly. Low interest rates have reduced customers' debt-servicing expenditure, but may also mask risks.



Interest rate cut transmission has been quick in Finland

The European Central Bank (ECB) has launched a set of measures in pursuit of its price stability objective and in support of economic recovery in the euro area.^[1] The decline of the key ECB interest rates has driven short-term market interest rates down, and they have exceptionally fallen below zero. For example, the 3-month Euribor has been in negative territory since spring 2015 and the most popular reference rate for housing loans in Finland, the 12-month Euribor, since February 2016.

1. See e.g. ECB Economic Bulletin, Issue 2/2016.

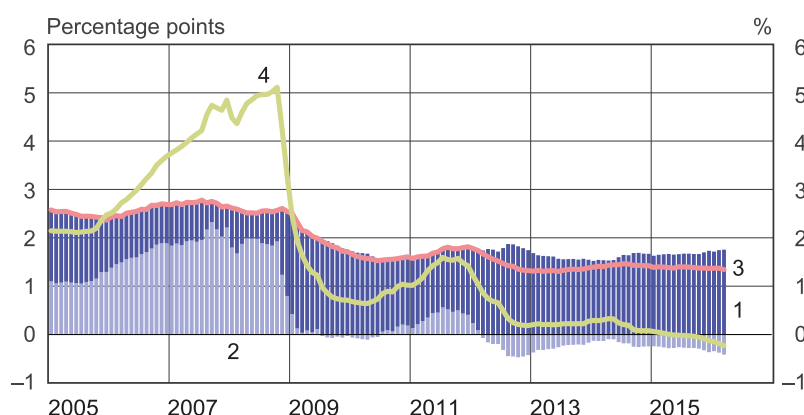
The interest rate cut has passed through to interest rates paid and received by Finnish bank customers more quickly and more strongly than in the euro area on average. This is because, in Finland, the bulk of loans to households and non-financial corporations is linked to Euribor rates or banks' own reference rates, which normally follow market interest rates with a short lag. More than half of deposits from the public also carry variable rates.

The profitability of financial intermediation is largely based on the interest rate spread between funding and lending. Owing to different interest rate linkages, the interest rate spread between the deposit and loan stocks, i.e. the overall margin, typically widens in response to rising interest rates and narrows in response to falling interest rates (Chart 1). In Finland, this interest rate spread has remained historically small for a prolonged period, but has not narrowed significantly since autumn 2012. However, looking ahead, the spread may narrow further still if the average interest rate on the loan stock continues to fall but banks keep interest rates on retail deposits at a minimum of zero.

Chart 1.

Overall margin of Finnish MFIs has narrowed in response to lower interest rates

1. ■ Spread of average interest rate on loan stock vis-à-vis 3-month Euribor
2. ■ Spread of average interest rate on deposit stock vis-à-vis 3-month Euribor
3. — Spread between deposit and loan stocks (overall margin)
4. — 3-month Euribor (right-hand scale)



Sources: Bank of Finland and Reuters.

19.5.2016
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Banks' market-based funding has also become cheaper, which has helped mitigate the adverse effects of low interest rates on banking profitability. Lower yields on bonds issued by Finnish banks reflect both improved financial conditions on global financial markets and Finnish banks' good creditworthiness in the eyes of international investors. In recent years, the share of long-term debt instruments in bank funding has increased and that of short-term debt instruments decreased, whereas the share of deposits has remained virtually unchanged.^[2]

Diminished net interest income still the most importance source of income

In Finland, retail banking accounts for a large part of banks' business operations. For this reason, the margin between interest income and interest expenditure has a significant impact on banking profitability.

Net interest income has been subject to divergent pressures in recent years. The loan stock has grown only slowly in the economic downturn, despite exceptionally low interest rates. Growth in the deposit stock has also remained subdued, and in practice e.g. the household deposit stock has already been at a standstill for four years. Interest income on banks' liquidity buffers has also declined, as banks have increased the share of high-quality liquid assets in their buffers, as required by the liquidity coverage ratio (LCR).

The banking sector's net interest income has been falling without a break since autumn 2014, contracting by 5.4% in 2015. Net interest income peaked at EUR 4.5 billion in 2008, when interest rates were considerably higher than at present. In 2015, net interest income was only EUR 2.8 billion. Net interest income has also shrunk relative to the balance sheet size of the banking sector (Chart 2). This change reflects, in part, a decrease in the share of loans and deposits in the balance sheet and an increase in derivatives that generate other income.

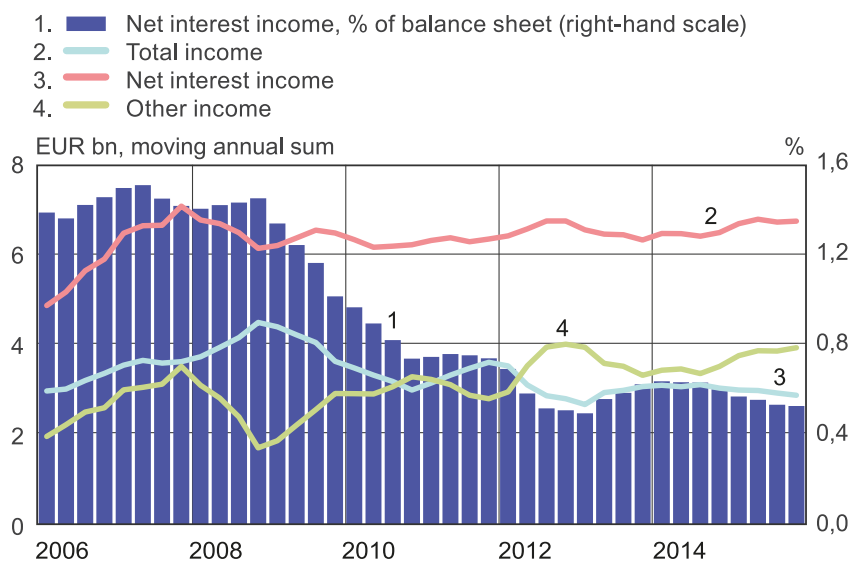
Overall, however, Finnish banks' profitability has remained good, particularly relative to the difficult operating environment and other European banks. In Finland, banks have managed to offset lower net interest income by augmenting other income, which helped increase the sector's total income by 3.9% in 2015. This earnings growth was supported by higher levels of net income from trading and investment and net fee income. A further boost to other income has come from net income from financial and insurance conglomerates' insurance business.^[3]

2. Financial Supervisory Authority (2016) Banking sector's capital adequacy strong, risks posed by the operating environment high.

3. Information released by the Financial Supervisory Authority on the domestic banking sector includes insurance business conducted by domestic financial and insurance conglomerates.

Chart 2.

Finnish banking sector's net interest income has contracted relative to other income and balance sheet



Sources: Statistics Finland and calculations by the Bank of Finland.

19.5.2016
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The low level of interest rates has contributed to the sustained relatively small amount of non-performing assets and loan losses, which has helped support bank profitability. Yet this also involves risks. Low interest rates, particularly in combination with interest-only periods granted by banks to their borrower-customers, may lead to a situation where a possible weakening of customers' debt-servicing capacity remains concealed. Potential payment defaults will not materialise until interest rates rise and interest-only periods end.

Tags

- [low interest rate level](#)
- [banks](#)
- [profitability](#)
- [net interest income](#)

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Banks concerned about profitability and the sustainability of their operating models

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

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The year got off to an uncertain start for the European banking sector, and market turbulence was strong in the first half of 2016. The uncertainty has reflected increased concerns about the growth prospects for the global economy. Rising credit risks in the energy sector, weak market liquidity and uncertainty about monetary and economic policies' ability to support economic growth have increased market volatility. Uncertainty over global growth prospects has also focused strongly on the banking and financial sector, which is particularly sensitive to changes in the economic outlook. Although the profitability and liquidity position of the European banking sector has improved on average in recent years and capital adequacy has advanced, the banking business is facing numerous risks both in the short and the long term. Banks' long-term profitability and the sustainability of their operating models have been singled out as special causes for concern.

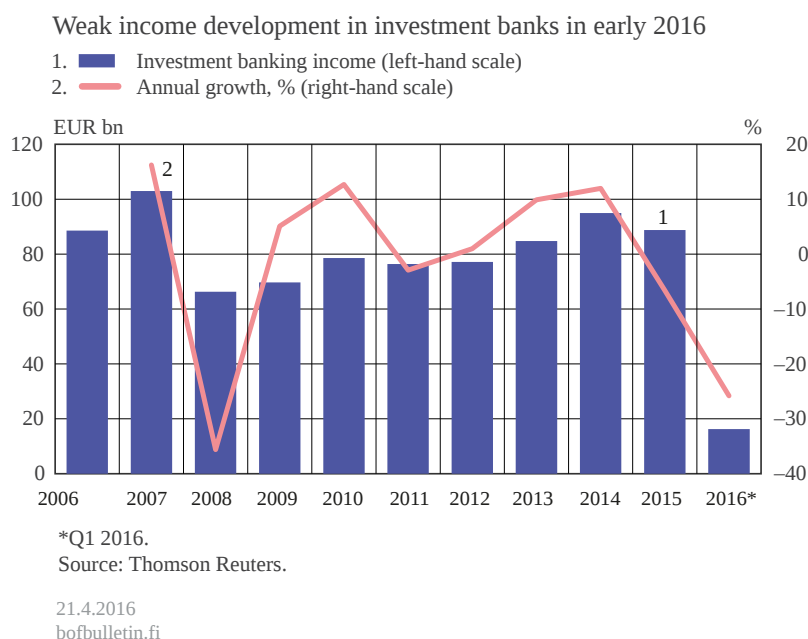


Market uncertainty has weakened short-term prospects for large banks

The financial market uncertainty has particularly weakened large investment banks' profitability in the short term. Although the effects of the market uncertainty in early 2016 on, for example, banks' funding costs seem to have been short-term and focused mostly on the highest-risk instruments, the uncertainty has been reflected in lower

commission, fee and trading income. For this reason, shares of the more closely market-related investment banks have lately been exposed to higher price reduction pressures than shares of other banks. At an annual level, fee income has decreased in the first quarter of 2016 by almost 30% from the previous year.^[1] Although the situation has stabilised since the end of February, the financial markets remain very vulnerable to significant market fluctuations and sudden changes in market sentiment.

Chart 1.



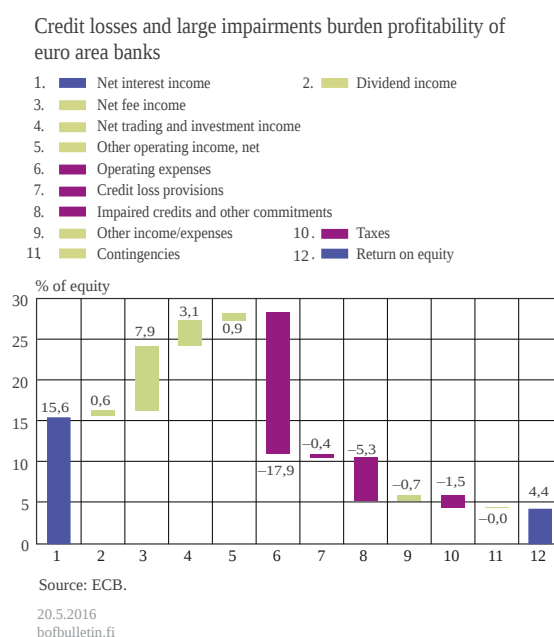
Financial and debt crisis inheritance burdens profitability

In addition to market risks, the profitability of European banks is also eroded by the inheritance of the financial and debt crisis. In particular, the environment of low interest rates and the considerable number of non-performing loans and credit losses are regarded as the greatest challenges. The low interest rates due to weak economic growth and accommodative monetary policy and the small difference between short- and long-term interest rates have reduced the interest income of European banks. Interest income is an important item in banking business, as the difference between interest income and interest expenses, i.e. net interest income, represents an average 55% of income in the business of European banks.^[2] For some small European cooperative and savings banks, the interest margin is actually even more important than this, up to 70–80%. In addition, the low interest rates reduce banks' ability to increase their interest margin through new lending, as the margin between banks' funding and lending shrinks with the decreased difference between short- and long-term interest rates.

1. Thomson Reuters Global investment Banking Review (1/2016).

2. EBA (2015) Risk Assessment of European Banking System.

Chart 2.



However, the effects of low interest rates on bank profitability varies significantly between banks and countries. The effects depend on banks' ability to transfer costs to customers and the structure of banks' funding and income. Country-specific traditions, such as proportions of fixed and floating rate loans, are also very important to the profitability effects of low interest rates. On the other hand, the extraordinary monetary policy measures by central banks support banks' profitability by reducing their funding costs, and in the short term they have also increased the gains from securities sales. The gradual economic recovery in some European countries as well as the cost trimming and streamlining of operations by banks also improve the profitability outlook for banks.

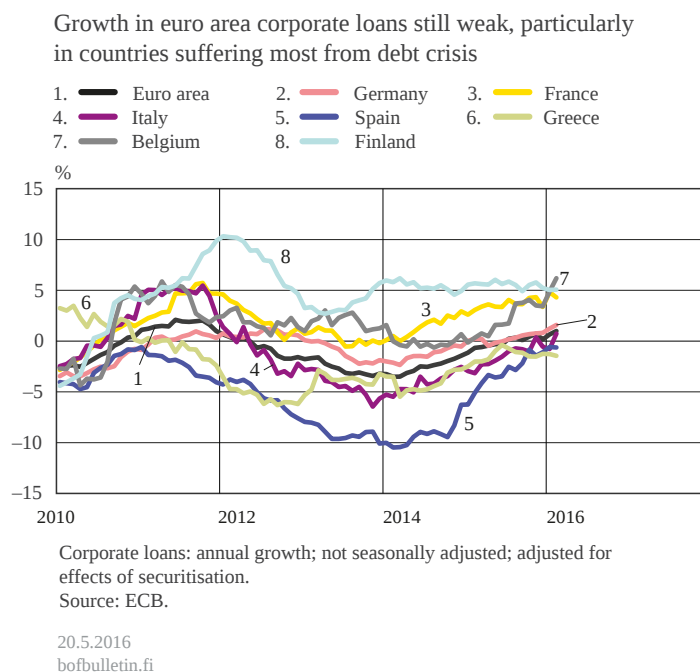
In addition to the environment of low interest rates, non-performing loans also undermine European banking profitability and lending capacity. Non-performing loans easily turn into a self-fuelling vicious circle, which it has been found hard to escape from. Non-performing loans undermine banking profitability, because banks have to prepare for future losses by accumulating provisions, thereby reducing business income. Furthermore, non-performing loans on the balance sheet generate no income, such as the income on normal claims. In addition, the share of non-performing loans not covered by provisions binds a lot of capital, because bad loans often carry higher risk weights. Bad loans also weaken banks' balance sheets, increasing their funding costs, as investors require a higher return on higher-risk investments.

European banks still have EUR 1,000 billion of non-performing loans on their balance sheets. However, the problem is primarily significant in the countries that suffered most from the debt crisis, where the volume of non-performing loans has remained high in spite of a gradual economic recovery. In these countries, banks' capacity for lending to the real economy has been disrupted and the net flows of lending are still clearly

negative. In addition, the private and public sector debt level in many countries is still quite high and companies' loan servicing ability is weak. Especially the corporate sector, and particularly the SME sector that is so important in southern Europe, is still suffering from a large number of non-performing loans.^[3] Increased higher-risk lending requires additional capital in the banks, and finding new funding has not been problem-free in times of weak profitability, as the banking sector has been valued at a very low level in the wake of the market turbulence, which makes it more difficult to obtain funding or makes additional funding through share issues too expensive. Banks have also had to consolidate their balance sheets to meet the requirements of stricter regulation.

Due to the large number of non-performing loans, strengthened capital adequacy in the banks is particularly important, because it reduces market uncertainty over the banking sector, strengthens banks' funding and improves their future lending capacity. Necessary measures to solve the problem of non-performing loans have been commenced, but this will take time, as there is no single solution that would fit all. The measures should also be comprehensive and include i.e. legislative changes, development of secondary markets for non-performing loans, banking sector consolidation measures and different measures in the public sector. New limitations due to Europe-wide recovery and resolution regulation must also increasingly be taken into account.

Chart 3.



3. EBA (December 2015) Risk Assessment of the European Banking System.

New players and operating models challenge traditional banking

Due to the protracted profitability problems, more than 30% of the banks reporting to the European Banking Authority (EBA) indicate that they will still make revisions to their operating models. According to the EBA, banks are planning particularly to adjust their investment banking and foreign operations and decrease their high-risk lending. In addition to profitability problems, banks report that they are planning this mostly because of tightening regulation and the entry of new players and operating models onto the market. Those new players and operating models will begin to challenge traditional banks in the next few years.

As a rule, the new players and operating models can be divided into two groups. Firstly, the increased use of financial innovations (Fintech) and digitalisation in recent years and the tightening regulation of the traditional banking sector have changed the competitive situation on the financial markets and in payments. Particularly in the USA, the United Kingdom and emerging economies, such as China, various players utilising digitalisation and social media, such as peer-to-peer lending and group borrowers, have rapidly gained market shares in e.g. consumer loans, student loans and SME lending. Although the success of players using new technology is hard to assess, they may have significant effects on bank profitability. Citibank assesses that banks will lose about 17% of their income to new players by 2023. How radical the change will be will, however, also depend on banks' own ability to adopt new innovations and operating models.

In addition to the players utilising cutting-edge technology, various more traditional operators are also competing for banking business, such as venture capital companies, investment companies and asset managers. Their entry onto the market has been particularly driven by their less stringent regulation compared with the banks. As banks tone down their activities, different property, hedge and debt funds are extending the focus of their investments from securities to lending. In Europe, new types of credit funds grant loans mainly to medium-sized high-risk companies, where the return is higher than in loans to large companies and where the need for alternative funding channels has increased as banks have reduced their high-risk lending. According to the data and intelligence house Preqin, different debt funds globally collected about USD 85 billion in new equity in 2015, and the amount of managed assets increased to about USD 520 billion.

If the significance of new players on the credit market increases at the present rate, they will in future play an important role in lending to the private sector. However, there is a risk that the channelling of funds is shifting to players characterised by weak supervision, little experience of banking and the effects of economic cycles on credit losses, inadequate risk management and less transparent operations than the banks. In addition, there are almost no risk-reducing macroprudential tools in the sector and they could prove difficult to introduce.

Tags

- [banking sector](#)

- [profitability](#)
- [risks](#)

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High housing debt increases risks to financial stability

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

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Finland's financial system is, by structure, vulnerable to risks associated with lending for house purchase. Housing loan volumes are large relative to other lending by banks and requirements on banks' own funds. The fact that household debt levels have increased and that housing wealth constitutes a large proportion of household assets also increases the vulnerabilities. In addition, covered bonds secured by housing loans play a significant role in bank funding and investment. However, the increase in vulnerabilities has largely levelled off in the 2010s.



The downturn in the Finnish housing market has been soft

The strong growth in lending for house purchase and high household debt levels occasionally cause risks in different countries. These risks last materialised on a large scale in connection with the global financial crisis. When the financial system, the real economy and housing markets become simultaneously ensnared in a crisis, the costs to society are invariably huge. It is therefore important to identify and mitigate the risks well in advance.

In Finland, sluggish economic developments since the severe economic downturn of 2009 have been reflected in the housing market as a protracted but relatively soft downward trend. The Finnish financial system has remained stable, and real house prices have declined at a moderate pace. In addition, households have continued to

accumulate debt, unemployment growth has halted and private consumption has driven domestic demand. The low level of interest rates has also supported the economy.

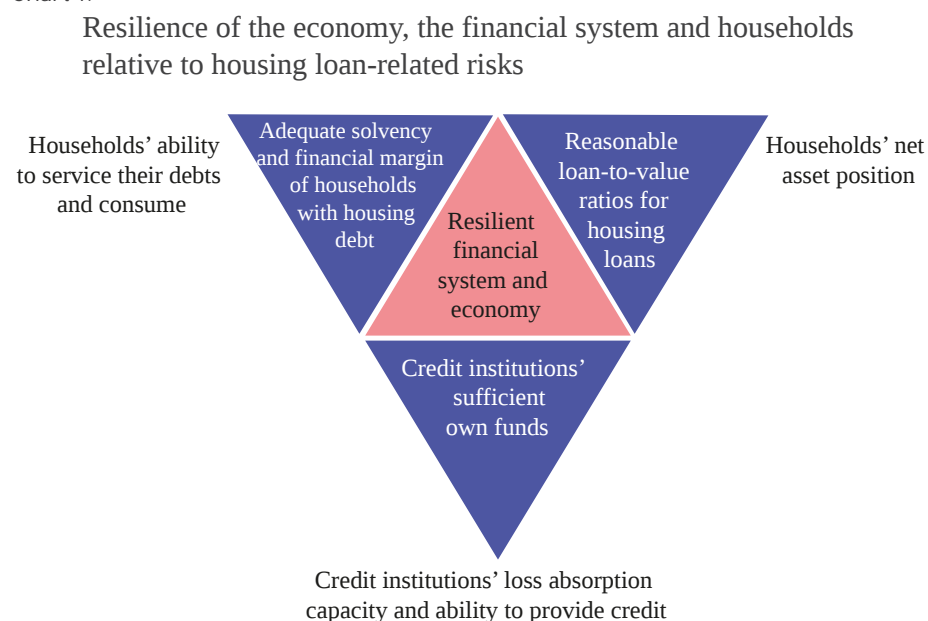
The situation therefore differs markedly from the deep recession of the early 1990s. At that time, the devaluation of the Finnish markka together with the collapse of overheated housing markets, unwinding of excessive household debt, strong growth in unemployment and a reduction in demand intensified adverse macroeconomic effects. These factors also increased banks' credit losses and deepened the banking crisis, even though housing loan losses remained limited.

Three safeguards for financial stability

The capacity of the economy and the financial system to withstand stability risks arising from housing loans and household debt accumulation rests on several safeguarding factors (Chart 1). From the perspective of the financial stability, the key safeguarding factors are:

- 1) adequate repayment ability and financial margin of households with housing debt
- 2) reasonable loan-to-value ratios for housing loans
- 3) credit institutions' sufficient own funds

Chart 1.



Source: Bank of Finland.

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How well different factors can safeguard households with housing debt and banks from risks is particularly tested in adverse situations in which the household debt service burden increases, nominal house prices decline and credit provision causes either direct

or indirect losses to banks. The severity of the risks transmitted through the real economy depends, for example, on households' ability to consume and businesses' solvency and willingness to invest.

The first of the safeguards for financial stability – households' ability to service their debts and consume – reduces the probability of large-scale materialisation of risks. The second safeguard – households' solid net asset position – increases their ability to adjust to changes in their finances and decreases direct losses to banks on the materialisation of credit risks. Thirdly, credit institutions' strong capital adequacy underpins their ability to absorb losses arising from the materialisation of risk and improves their possibilities to acquire funding and grant loans even under weak cyclical conditions.

In Finland, authorities have striven to strengthen the factors safeguarding financial stability with precautionary measures. The Financial Supervisory Authority (FIN-FSA) has issued recommendations for banks on the calculation of housing loan applicants' financial margin and the maximum level of loan-to-value ratios.^[1] The regulations concerning loan caps will enter into force in July 2016. Additional capital requirements have also been imposed on credit institutions. (For more information on macroprudential authorities' tools to mitigate risks, see the article Finland's neighbors reign in lending for house purchase.)^[2]

Housing debt levels higher relative to income

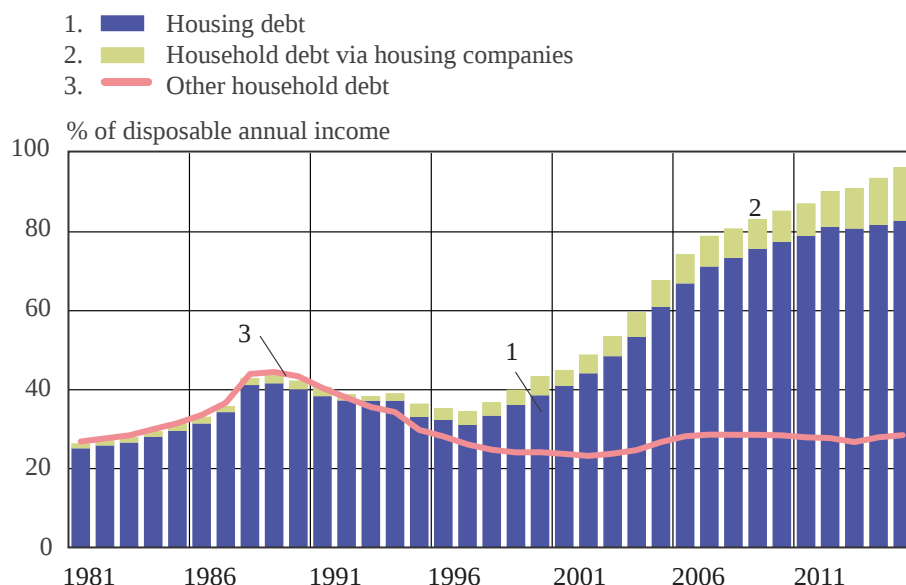
A key factor affecting the build-up of risks and vulnerabilities is high household indebtedness. Housing debt of Finnish households has more than doubled relative to annual disposable income in the 2000s (Chart 2). The significance of housing-related debt is further emphasised by the fact that loans taken out by households via housing companies have also been growing. Other household debt relative to income is, in contrast, lower than in the second half of the 1980s, for example.

1. FIN-FSA's supervision release on household housing finance (8 June 2010).

2. See also the European Systemic Risk Board: Report on residential real estate and financial stability in the EU (December 2015). The macroprudential authorities' toolkit to mitigate risks is divided in the report into three categories similarly to Chart 1.

Chart 2.

Housing debt of Finnish households relative to income has more than doubled in the 2000s



Sources: Statistics Finland and calculations by the Bank of Finland.

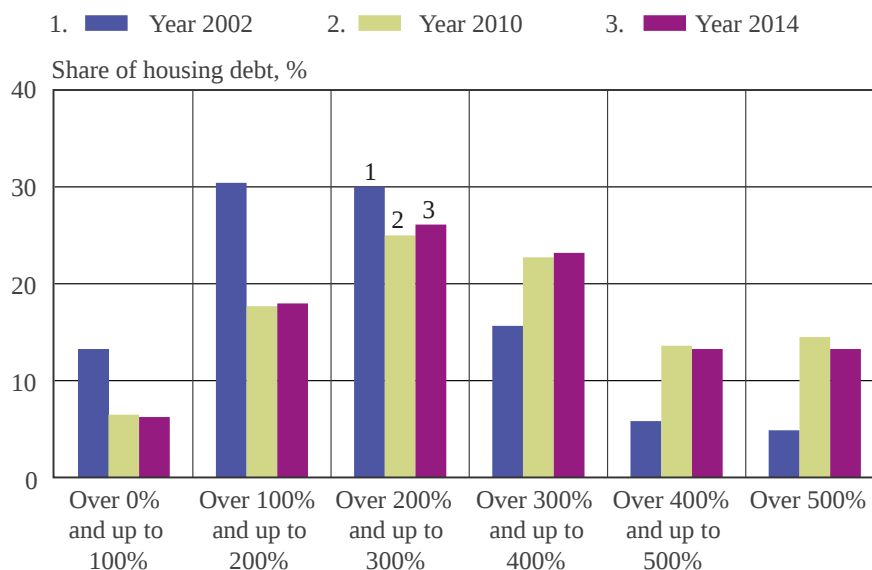
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The strong growth of housing debt in the first decade of the 2000s stemmed partly from two structural changes in lending standards, the impact of which on the growth rate has levelled off in the 2010s. Average amounts of new housing loans (in EUR) grew and loan maturities lengthened considerably compared with the situation of the 1990s. However, new housing loan maturities are still short in Finland by international standards, i.e. 18 years on average, although in many cases they are typically around 20 or 25 years. Housing loans with an initial maturity of over 30 years are very rare in Finland.

Compared with the situation at the beginning of the 2000s, an increasing number of households with housing debt have become heavily indebted relative to income. As the rate of debt accumulation has decelerated, the situation has somewhat improved, however, since 2010. According to the most recent data, more than a quarter (26.5%) of housing debt is borne by households whose total debt is over four times higher than their annual monetary income (Chart 3). The corresponding figure for 2002 was less than 11%, and in 2010 it peaked at over 28%.

Chart 3.

Significant share of housing debt borne by heavily indebted households



In horizontal axis household debt ratio (total debt, % of disposable monetary income).

Sources: Statistics Finland and calculations by the Bank of Finland.

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The fact that housing loans are tied to variable interest rates increases the vulnerability of households that are heavily indebted relative to their income. Depending on the loan amortisation method, a rise in the reference rate either increases the monthly debt service costs (annuity loan) or lengthens the loan repayment period (fixed-installment loan).

Finland is gradually reducing the share of housing loan interest payments deductible in taxation, from the earlier 100% to 25% by 2019. This will increase household interest expenses in future – particularly in times of rising interest rates. The level of interest rates is currently expected to remain low for an extended period.^[3] Nevertheless, the lowering of the tax-deductible share of interest payments serves to reduce the attractiveness of large housing loans, which is positive for financial stability.

According to a FIN-FSA recommendation, banks should examine and consider in credit decisions the housing-loan applicant's financial margin by calculating how high the debt service burden would be relative to monthly income if the loan interest rate were to rise to 6% and the loan term could not be extended to over 25 years. The FIN-FSA's 2012 sample survey of new housing loans showed that, in the sample of new housing loans granted over a period of three days, the debt service burden calculated on the basis of the

3. The Governing Council of the ECB expects the key ECB interest rates to remain at present or lower levels for an extended period of time. See the European Central Bank (2016) Economic Bulletin 2/2016.

above stress test would have been significant, i.e. over 40% of net income, in the case of every fourth customer.^[4]

Housing wealth a significant share of household assets

A significant share of Finnish households' total assets consists of dwellings (Chart 4).^[5] The large proportion of housing wealth is explained e.g. by the fact that owner occupancy is notably more common in Finland than renting.^[6] In addition, real house prices have increased considerably over the long term.

The structure of assets has for the most part remained unchanged in Finland in the 2000s. However, the distribution of assets is uneven between households, and the same also pertains to debt. A fall in asset prices could reduce consumption particularly for heavily indebted households with a weak net asset position.^[7]

4. FIN-FSA (2012) Otantatutkimus henkilöasiakkaiden asuntoluotoista 2012 ('Sample survey of housing loans 2012'; in Finnish only).

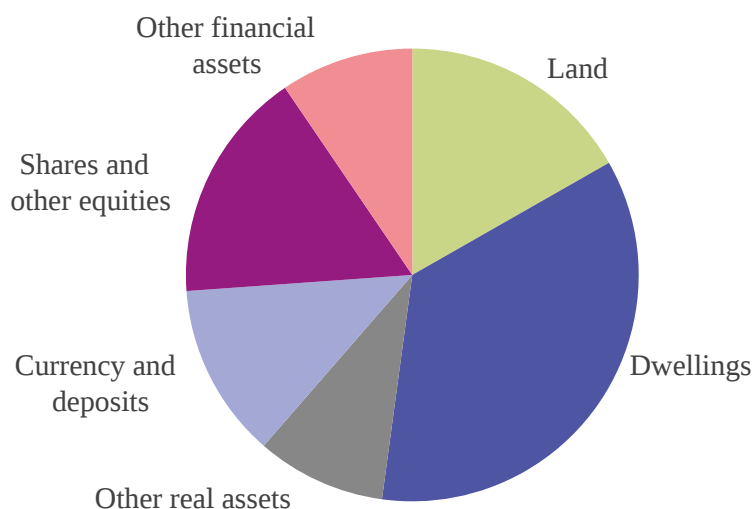
5. Estimates of the value and structure of household wealth vary depending on the calculation method. Chart 4 is based on Statistics Finland's financial accounts, according to which housing wealth accounts for more than one third of total household assets. In the household wealth survey based on Statistics Finland's micro data on households, main residence constitutes a larger share – more than one half on average – of total assets.

6. The relatively small share of financial assets in Finnish households' total wealth – especially by international comparisons – is partly explained by savings accumulating from statutory pension contributions, which are classified in Finland as assets of employee pension funds. In many other countries, pension saving is voluntary, and the related assets are categorised as household financial assets.

7. See e.g. Essi Eerola's blog entry [Asuntolainat ja Yhdysvaltojen suuri taantuma](#) ('Housing loans and the Great Depression in the United States'; in Finnish only).

Chart 4.

Housing wealth a significant share of Finnish households' assets



Data as at the end of 2014.

Sources: Statistics Finland and calculations by the Bank of Finland.

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Self-financing by households with new housing debt often scarce

Some of the housing loans taken out in recent years have, at the time of loan origination, been rather large relative to the value of the housing serving as loan collateral. The FIN-FSA sample survey of 2012 shows that, in the sample covering a few days, more than one third of new housing loans were granted with a self-financing share of below 10%, and in many of these cases the loan even exceeded the price of the housing. Large loan-to-value (LTV) ratios have been more general in the case of first-time home buyers than of customers that have switched homes.^[8]

The maximum LTV ratio for housing loans (loan cap) that will become effective in Finland in July 2016 will prevent banks from granting large housing loans to households that cannot provide such adequate collateral as required by regulation. The collateral can also consist of real assets other than the housing to be purchased with the loan.

The large size of the housing loan relative to the value of the house (small self-financing share) increases the risks relating to falling house prices. In Finland, however, monthly amortisation of housing loans curbs household debt accumulation and decreases the risk

8. FIN-FSA (2012) Otantatutkimus henkilöasiakkaiden asuntoluotoista ('Sample survey of housing loans 2012'; in Finnish only).

that the total assets of a household with housing debt would fall below the remaining loan principal, should the household become financially stressed.

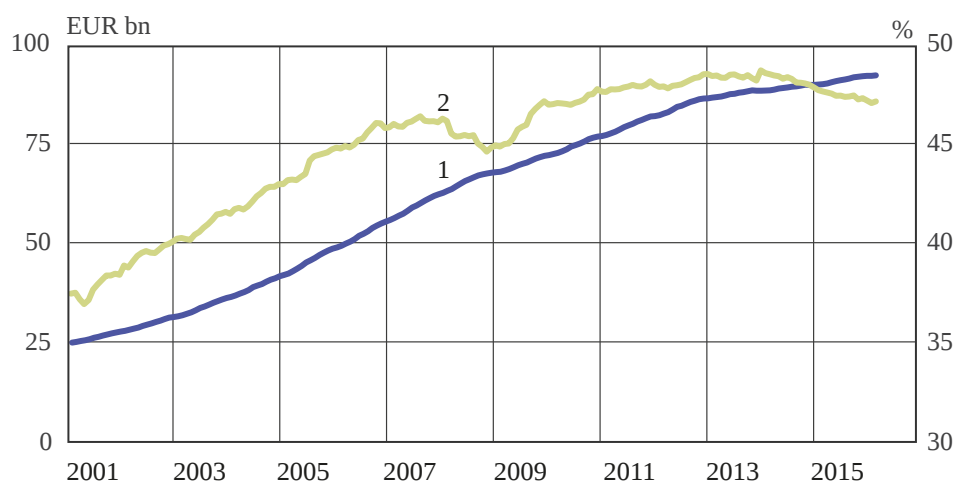
Housing loans of high importance, but risk weights are partly low

Housing loans make a significant share of euro-denominated loans granted by Finnish credit institutions to households and non-financial corporations. At the beginning of 2016, the share was about 47%, i.e. approximately 10 percentage points higher than in 2001 (Chart 5). In the past few years, however, the share has slightly declined, as the stock of housing loans has grown at a slow pace and therefore also at a slightly slower rate than the stock of loans granted to non-financial corporations and housing corporations.

Chart 5.

Housing loans form a large share of lending

1. — Stock of housing loans
2. — Share of housing loans in total loan stock* (right-hand scale)



*Finnish credit institutions' euro-denominated loans to households, non-profit institutions serving households, non-financial corporations and housing corporations.

Source: Bank of Finland.

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Own funds required of banks to cover risks relating to lending for house purchase depend not only on general capital adequacy requirements imposed on banks and the volume of housing loans but also on the estimated riskiness of housing loans, i.e. the risk-weighted amount of housing loans. The higher a loan's risk weight is, the more own funds a credit institution must have relative to the loan amount.^[9]

9. For example, a housing loan with a risk weight of 10% binds, with a capital adequacy requirement of 10.5%, bank's own funds by 1.05% of the amount of the exposure. For banks using the standardised approach (SA) the risk weight for housing loans is 35%.

Finnish banks that use internal ratings based approaches (IRB) currently estimate that unexpected credit losses on housing loans are low. Banks using IRB models apply in their capital adequacy calculations risk weights based on these estimates. From the perspective of macroprudential stability, however, risk weights below 10% are low, considering the risks relating to household debt accumulation both for the financial sector and the real economy.^[10]

Covered bonds increasingly important

Finnish banks depend on both deposits of the public and market funding for financing housing loans and other lending. Banks acquire a larger share of market funding than before via bonds secured by housing loans. At the end of 2015, these so-called covered bonds accounted for over 40% of banks' market funding and for over 60% of total bond funding.^[11]

The increase in banks' long-term funding is positive for the stability of funding, but the wider use of covered bonds is also reflected in high levels of bank asset encumbrance. Banks have also invested in covered bonds issued by other Nordic banks and mortgage credit institutions e.g. because of their good availability, liquidity and eligibility. This increases the overall importance of housing loans and related debt securities on both sides of the balance sheet.

Cross-ownership of debt securities and concentration and interconnectedness of the banking sector may increase the cross-border contagion risks relating to housing loans. The three large banks systemically important for the Finnish financial system account for a large share of lending, i.e. over 60%.^[12] Lending for house purchase is even more concentrated: the three largest banks account for over 80% of the stock of housing loans (Chart 6).^[13] Two of these banks are directly interlinked to the Nordic banking sector, which may increase the significance of joint Nordic vulnerabilities. (For more details, see the article [Nordic financial sector vulnerable to housing market risks.](#))

10. Statement by the Board of the Financial Supervisory Authority regarding the low level of housing loan risk weights applied by banks and the need to raise them (22 December 2015).

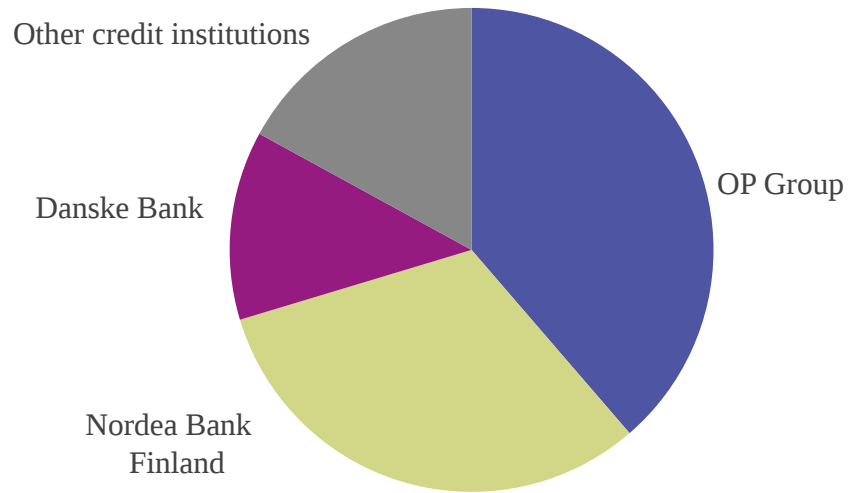
11. Financial Supervisory Authority (2016) Banking sector's capital adequacy strong, risks posed by the operating environment high.

12. Federation of Finnish Financial Services (2015) Financial Services Statistics 2014.

13. Bank of Finland data on aggregate housing loan volumes and banks' financial statements for 2015.

Chart 6.

Lending for house purchase is concentrated in Finland on the three largest banks



Market shares at the end of 2015.

Sources: Bank of Finland and banks' financial statements.

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Tags

- [financial stability](#)
- [housing loans](#)
- [banks](#)
- [households](#)
- [indebtedness](#)

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Nordic financial sector vulnerable to housing market risks

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

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Household indebtedness is high in the Nordic countries. Housing loans are a significant part of banks' business, and covered bonds are important for banks both as sources of funding and as investments. The large size of the Nordic banking sector, its high degree of concentration and its interconnectedness with insurance companies increase the importance of housing market-related risks for the financial system and the economy as a whole. The materialisation of threats would increase losses in lending and investment activities and the cost of funding.



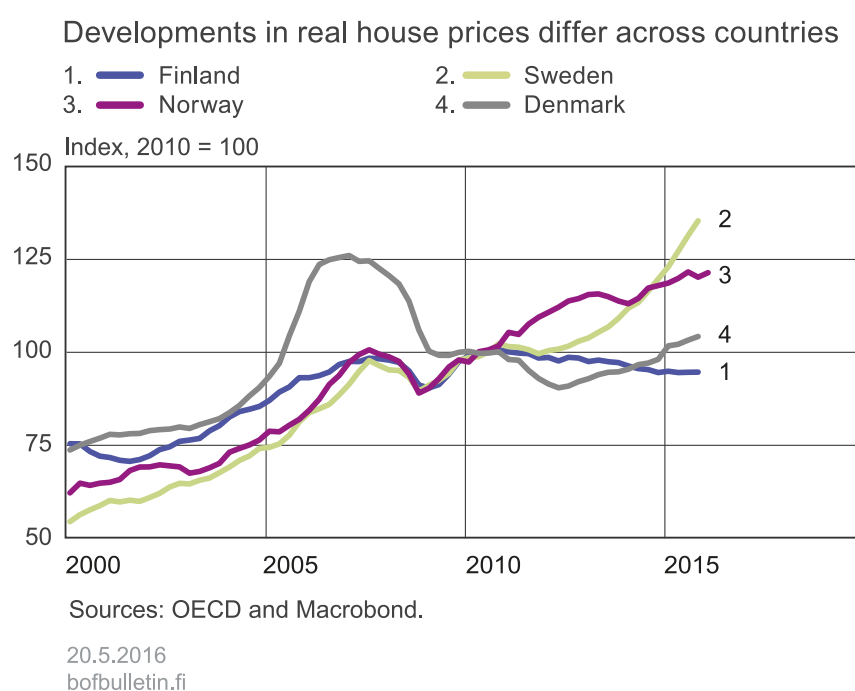
Nordic countries in different stages of the housing market cycle

The Nordic countries are relatively small economies that are dependent on exports, and therefore vulnerable to global business cycle fluctuations. The global economic downturn triggered by the financial crisis resulted in a deep recession in Finland, Sweden and Denmark in 2009, as well as serious problems in the Danish housing and banking

markets.^[1] Sweden and Norway recovered from the recession fairly rapidly, whereas in Finland and Denmark economic growth has remained subdued for a protracted period.

Unsynchronised economic growth is also evident in a divergence in housing market cycles. House prices in real terms have risen strongly in Sweden and Norway. Particularly in Sweden, the sharp upward trend in prices has also continued in the past year (Chart 1). In Denmark, the rapid upward trend in house prices in real terms continued until the first half of 2007. In the following five years, however, prices plunged by nearly 30%, and the subsequent rise in prices has been slower than before the crisis. In Finland, house prices have risen more moderately than in the other Nordic countries since the turn of the millennium.

Chart 1.



Nordic households' debt levels have risen throughout the 2000s, and debt ratios are considerable by international standards, e.g. relative to households' annual disposable income. The differences between countries are also considerable, however, and are due, among other things, to differences in housing loan repayment practices.

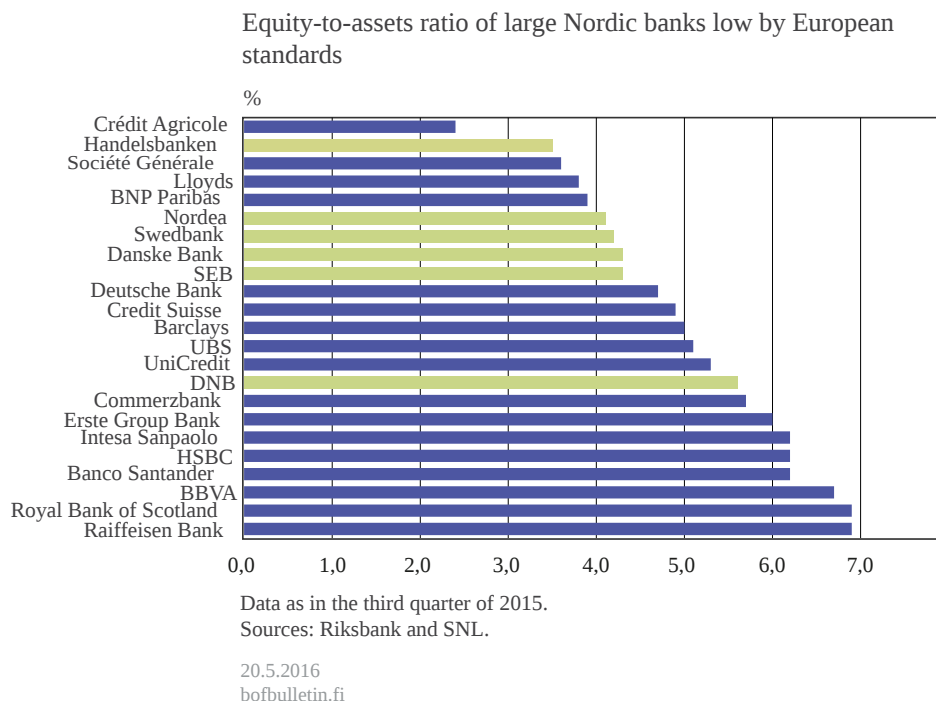
Nordic banking sector large and concentrated

The profitability of Nordic banks has remained for the most part good in recent years, and significantly higher than in the European peer group. The only exception is

1. This article does not examine Iceland, whose interconnectedness with the Nordic financial system is currently lower than that of the other Nordic countries. Iceland's economy is in the process of recovering from the banking and economic crisis that started in 2008.

Denmark, where some of the banks failed during the global financial crisis. The capital adequacy of the Nordic banking sector is solid by European standards, as measured by the equity-to-risk-weighted assets ratio. In contrast, the banking sector's equity-to-assets ratio is fairly low by European standards (Chart 2).

Chart 2.



The state of the Nordic banking and financial system is currently good, but the system has also significant structural vulnerabilities. The materialisation of risks related to these vulnerabilities could also be a significant threat to financial stability in Finland. The vulnerabilities of the Nordic banking sector are its large size, degree of concentration, the major role of housing loans in the financial system as well as banks' dependence on market funding.

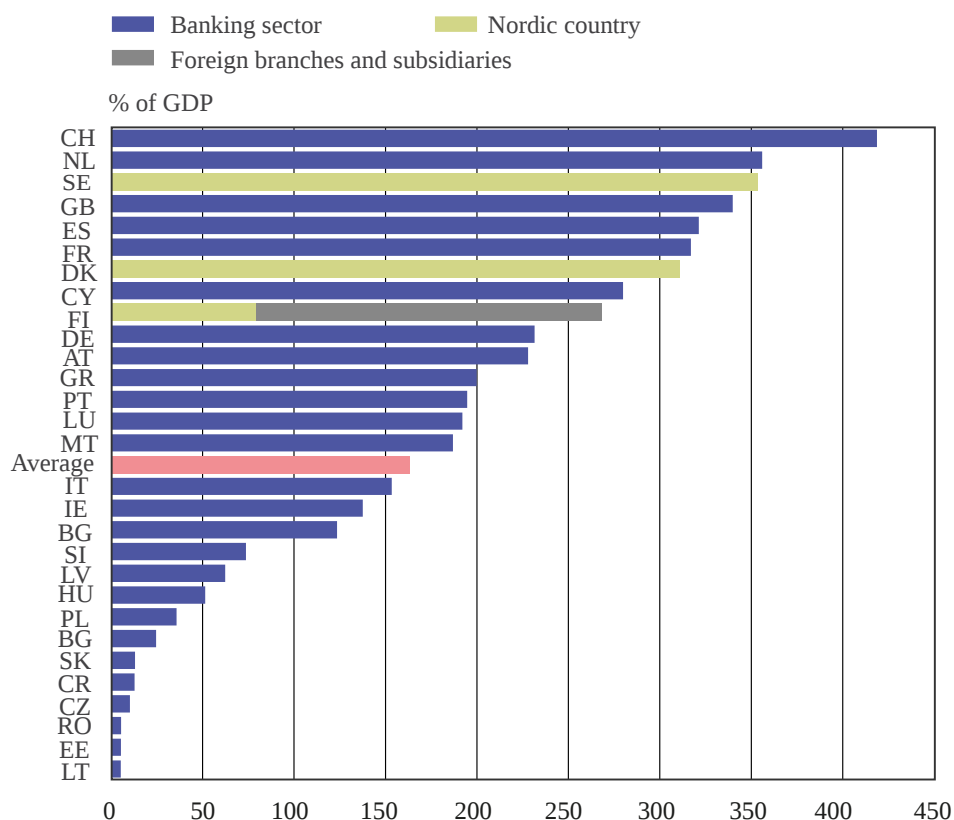
The vulnerability of the Nordic financial sector is increased also by the strong interconnectedness of the banking and insurance sectors via both ownership structures and investments, and particularly share markets. Interdependences exist both on the national and the Nordic level.

Relative to the size of the economy, the Nordic banking sector can be considered large by international standards. In Sweden, the size of the banking sector is approximately 3.5 times the economy's GDP, and even in Denmark it is some three times GDP (Chart 3). The size of the Finnish banking sector is approximately 2.7 times GDP, including the subsidiaries and branches of foreign banks operating in Finland. The number of banks is also significant: in April 2016, the number of credit institutions operating in Denmark, Norway, Sweden and Finland totalled 754.^[2]

2. EBA credit institution register (2016).

Chart 3.

Nordic banking sector large relative to size of the economy



Data as at the end of 2014.

Sources: Riksbanken, Financial Supervisory Authority, Statistics Finland, and calculations by the Bank of Finland.

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The Nordic banking sector, however, is strongly concentrated, because measured in terms of assets, the sector is dominated in practice by a handful of banks that are systemically important for the national financial systems. Danske Bank, Handelsbanken and Nordea have a significant market share in four Nordic countries (Table 1). The other large banks are DNB, OP Group, SEB, and Swedbank. Many of the banks also have a significant position in the Baltic market.

Table 1.

Market shares of large Nordic banks, %

	Norway		Sweden		Finland		Denmark	
	Loans	Deposits	Loans	Deposits	Loans	Deposits	Loans	Deposits
Danske Bank	5.1	5.0	4.7	3.9	9.8	11.9	26.5	27.1
DNB	29.5	46.7	0.5	0.7	-	-	-	-
Handelsbanken	5.1	3.0	22.0	19.0	5.8	3.4	-	-
Nordea	13.5	12.5	13.6	14.6	28.8	28.7	17.6	31.2
OP Group	-	-	-	-	34.2	36.4	-	-
SEB	-	-	14.3	15.4	-	-	-	-
Swedbank	-	-	22.2	19.9	-	-	-	-
Total	53.2	67.2	77.4	73.5	78.6	80.4	44.1	58.3

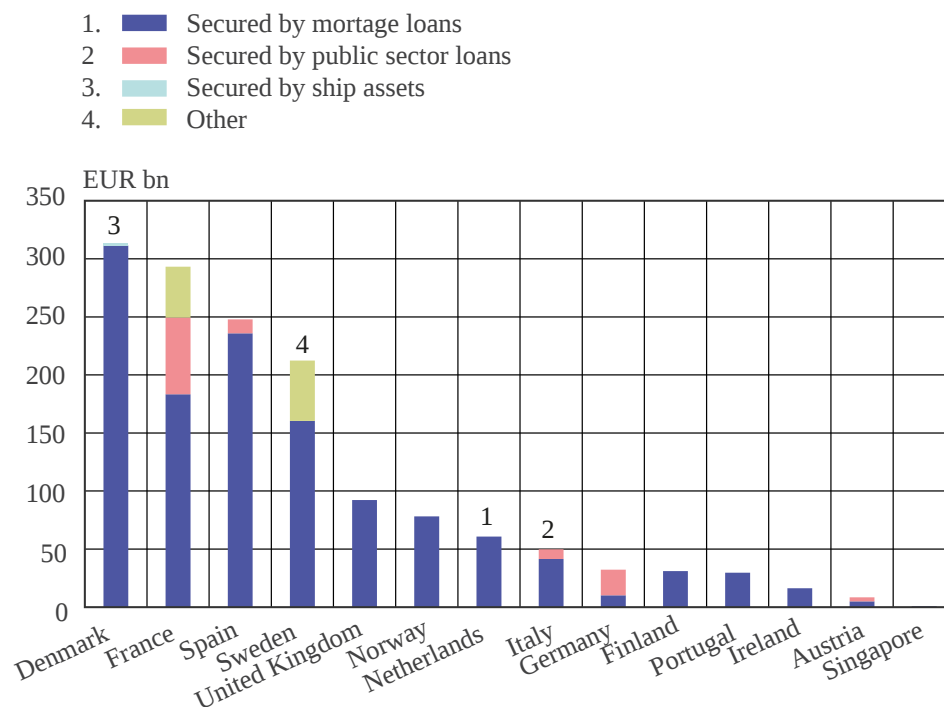
Sources: The Federation of Finnish Financial Services (31 Dec 2014), Statistics Sweden (29 Feb 2016), Finans Norge (31 Dec 2014) and banks' financial statements.

Covered bonds increase interconnectedness

A Nordic special characteristic can be considered the important role of mortgage credit institutions and covered bonds, particularly in the funding of housing loans, but also in bank funding in general (Chart 4). With the exception of the Danish mortgage credit bank Nykredit, all of the large mortgage credit banks are owned for the most part by commercial banks.

Chart 4.

Nordic credit institutions have issued a large volume of covered bonds



Source: Covered Bond Label.

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The strong growth in lending for house purchase, particularly in Denmark and Sweden, has boosted the balance sheets of mortgage credit banks in these countries. At the same time, the share of housing loans in banks' balance sheets has risen to very high levels by European standards. As the funding of mortgage credit institutions is based solely on market-based funding, the funding gap between loans granted and deposits received in the Danish and Swedish MFI sector is now at a record level.

The good performance of the Nordic economies, low unemployment and strong developments in the housing market over the longer term have provided mortgage credit banks an opportunity to acquire market funding at a very low cost. The Nordic mortgage credit system is also considered very transparent, liquid and conservative in terms of lending standards, which has boosted investors' confidence in the system.

The situation of mortgage credit banks remained relatively stable during the global financial and sovereign debt crisis. Despite the significant decline in house prices in Denmark, loan losses on housing loans remained low relative to banks' other loan losses. The low level of interest rates and long repayment periods of housing loans have thus far supported demand for housing loans and decreased the losses on these loans.

Even though the Nordic markets for covered bonds are considered to be safe and liquid, they also involve vulnerabilities and risks that, in the worst-case scenario, could be significant for the stability of the financial system.

Firstly, Nordic banks are very dependent on market funding. Currently, some 35–45% of Nordic banks' funding is market-based. The large importance of market funding exposes banks to changes in the risk sentiment of the global financial markets.

Secondly, the large Nordic banks also operate as market makers in the secondary market for covered bonds, to safeguard the liquidity of markets. As a result, 20–30% of covered bonds are held by these banks.

Thirdly, the refinancing of bonds held by banks often takes place in the short-term money markets, such as the repo market^[3], which further increases the interconnectedness of the financial system and exposes banks to disruptions in these markets. The volume of covered bonds held by banks has decreased recently, however, which may at least be partly due to tighter regulation. In Denmark, this has raised concerns about the weakening of market liquidity.^[4]

Fourthly, due to the large importance of covered bonds, other domestic entities are also strongly interconnected with these markets. In Denmark and Sweden, some 70–80% of investors in covered bonds are domestic. In addition to banks, other major investors in these instruments are insurance companies and pension funds, which further increases the systemic importance of covered bonds.

In Finland, domestic investors' holdings of covered bonds issued by Finnish banks are, in contrast, relatively small. For example, at the end of 2015, Finnish banks held approximately EUR 1 bn of covered bonds of domestic issuers, which accounted for only a few percentages of the volume outstanding of these bonds. Finnish banks have, however, invested in bonds issued by other Nordic banks and mortgage credit institutions.

A crisis in the Nordic housing markets and a collapse in collateral values could, in a worst-case scenario, lead to a simultaneous rise in credit and counterparty risks in the entire financial system and a weakening of bank funding and liquidity conditions. The probability of a significant crisis is, however, very small.

Insurance sector dependent on stock market returns

Profitability in the Nordic insurance sector has in recent years been fairly strong, on average, and solvency has also remained strong overall, despite uncertainties in investment activities. Currently, the biggest challenges for insurance companies are the impact of the low level of interest rates on profitability and on the need to make changes in business models. Interest rates have remained low for a protracted period, but the impact of this on the return on investment will become increasingly evident as fixed-income investments with lower yields mature and assets are reinvested in instruments with a lower interest rate.

3. Repo = repurchase agreement.

4. The subject is discussed in e.g. the financial stability publication of Danmarks Nationalbank (Financial Stability 2nd half 2015).

Nordic life-insurance companies have, on average, a large volume of guaranteed-return life and pension insurance policies, the guaranteed return on which is higher than long-term, low-risk market interest rates. The significance of guaranteed-return policies varies from country to country, however, and there are also considerable country- and company-specific differences in the maturities of technical provisions and fixed-income investments.^[5]

In Norway, guaranteed-return life insurance policies account for approximately 80% of life insurance companies' technical provisions, and in Sweden, too, the proportion of these insurance policies is still considerable. In Sweden, the impact of the decline in interest rates on the solvency of life insurance companies has been alleviated by a reform in 2014 that mitigates the impact of lower interest rates on technical provisions. In Finland, sales of new life insurance policies with a guaranteed return have already been very low for a number of years, and currently only one-third of life insurance savings are guaranteed-return.

The return on the investment activities of Nordic life insurance companies has reached the level required for insurance policies with a guaranteed return. The vulnerability of the companies has increased, however, as a result of the decline in interest rates. New fixed-income investments will fulfil the yield requirements only if the risk level of the investments is raised considerably. If companies do not raise the yield and risk level for the fixed-income investments, they will be increasingly dependent on the return on equity investments. A considerable decline in share prices would probably cause serious solvency problems for several Nordic life insurance companies.

Problems could spread from the other Nordic countries to Finland

In the unlikely scenario that the Nordic mortgage credit bank system would start to falter, the problems could easily spread from the other Nordic countries to Finland, via several channels. Possible channels of contagion would be the large Nordic banks operating in Finland, the partly common vulnerabilities related to wholesale funding and, as regards the real economy, foreign trade and a general weakening trend in economic confidence.

Of the four largest banking groups operating in Finland^[6], three are either branches or subsidiaries of a foreign Nordic bank (Table 2). As the capacity of branches and subsidiaries to provide financial services also depends on the situation of the entire group, and because these entities hold a significant share of the Finnish market (at the end of 2014: approximately 44% of loans to the public), financial difficulties of these

5. Results of the stress test carried out by the European Insurance and Occupational Pensions Authority (EIOPA) in 2014 show that the largest duration gap, caused by the differences in the maturities of technical provisions and fixed-income investments, are found in Sweden, where, together with Germany, the differences in maturities are the largest. In Finland and Denmark, the corresponding differences in maturities are considerably smaller than in Sweden or Germany.

6. OP Group, Nordea Bank Finland Plc Group, Danske Bank Plc and Handelsbanken Group. See banks' market shares of loans to the public <http://www.finanssiala.fi/en/statistics/FK-Tilasto-FinancialServicesStatistics2014.pdf>.

large Nordic banks in other Nordic countries could be reflected in Finland as a decrease in the provision of credit.

Table 2.

Cross-country differences in the structure of large Nordic banks

	Finland	Sweden	Norway	Denmark	Baltic countries
Danske Bank	Subsidiary*	Branch	Branch	Parent company	Branch
DNB	Branch	Branch	Parent company	Branch	Subsidiary
Nordea	Subsidiary**	Parent company	Subsidiary**	Subsidiary**	Branch
SEB	Branch	Parent company	Branch	Branch	Subsidiary
Swedbank	Branch	Parent company	Branch	Branch	Subsidiary
Handelsbanken	Branch	Parent company	Branch	Branch	Branch

Situation as at the end of May 2016.

*Also a branch.

**Nordea has announced that it will convert its deposit banks operating in Finland, Norway and Denmark into branches.

Source: Banks.

As in Sweden and Denmark, in Finland, too, a large and increasing share of bonds issued by banks are covered bonds. Covered bonds have also provided Finnish banks with funding at a reasonable price, due to their high credit rating and eligibility as collateral.

The increased use of covered bonds is, however, reflected in higher asset encumbrance which may, particularly in a stress situation, push up the interest rates on unsecured bonds issued by the banks. In a serious stress situation, funding acquired by issuing covered bonds could also become more expensive and the demand for these could subsequently weaken.

The Nordic countries are important trading partners, and they would be adversely affected by each other's negative economic developments. Foreign trade statistics 2015 by Finnish Customs show that Norway, Sweden and Denmark account for a total of 18.6% (EUR 8 bn) of Finnish exports and for 21.3% (EUR 8.9 bn) of Finnish imports. The most significant items exported from Finland to the other Nordic countries are, e.g. machinery and transport equipment, raw materials and fuels.^[7] The recovery of the Danish economy from the banking crisis has been facilitated by economic developments in its main trading partners, Germany and Sweden.

Tags

- [Nordic countries](#)
- [banks](#)
- [insurance companies](#)
- [housing loans](#)

7. See also Bank of Finland Bulletin article 'A brief history of Finnish foreign trade'.

- [financial stability](#)

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Conversion of Nordea subsidiaries into branches – Nordic interconnectedness increases

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

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Nordea Group intends to merge its large subsidiary banks operating in other Nordic countries to the Swedish parent company, which is supervised by the Swedish supervisory authority, Finansinspektionen. The importance of the change for Finland is heightened by Nordea's large market share.



In Nordea Group's intended organisational change, the subsidiary banks operating in Norway, Denmark and Finland will be merged into the parent company, the Swedish Nordea Bank. The plan to transfer the Finnish operations to the Swedish parent company was approved by Nordea's Annual General Meeting in March 2016. According to a press release on the Annual General Meeting, the merger is expected to take place in early 2017. Nordea already announced back in 2003 that it was planning such a merger.^[1]

Section 3.1 of the merger plan states the following: '*... the business activities which today are conducted by the Transferee Company's Danish, Finnish and Norwegian banking subsidiaries ... after the merger will be conducted by branch offices of the Transferee Company.*' It is also stated that the change will have no effects on employment. The

1. Bank of Finland Bulletin (special issue 2003) [Financial stability](#), p. 42.

objective is to *'simplify the legal structure ... in order to strengthen corporate governance, decrease administrative complexity and enhance efficiency.'*

Nordea has applied for permission for the merger from the Swedish supervisory authority. A new group entity (Nordea Hypoteksbank) has been established in Finland and will be issuing covered bonds in Finland.

Nordea has controlled a market share of almost 30% of household loans in Finland. Globally, there are scarcely any examples of a branch of a foreign bank being systemically important in its host country, even as a retail bank. Economics literature does not widely discuss how the market activities of a foreign bank's subsidiary and branch differ. In the banking business, however, a group's legal structure is important. Therefore, the merger will probably have an impact on a number of factors.

Nordea's operations in Finland will be moved beyond the scope of the Banking Union formed by euro area countries and of the Union's Single Supervisory Mechanism. Instead of the European Central Bank, the Finnish branch will be supervised by the Swedish supervisory authority. The Finnish Financial Supervisory Authority will only play a limited role, in e.g. conduct of business supervision, and the supervisors may cooperate on some issues. From the perspective of competition neutrality, regulation and supervision should be as uniform as possible for banks that operate on the same markets. This emphasizes the significance of mutual understanding between supervisors.

For example, after completion of the merger, possible changes in the internal ratings based models used for calculating risks to credit granted in Finland will require approval by the Swedish authority. These models affect e.g. the amount of own funds a bank must have and on what conditions it can or should grant loans.

After the merger, Nordea will belong to the Swedish deposit guarantee scheme, albeit there are only minor differences in deposit guarantee schemes among EU countries. The Swedish deposit guarantee scheme does not yet include a specific coverage for funds received from the sale of housing. However, Sweden is revising its deposit guarantee legislation so that assets received from the sale of one's own home and certain other funds received as compensation would be covered to a value of SEK 5 million.^[2]

The Swedish markets are characterised by concentration in the banking sector, interlinkages between banks and the large size of banks relative to the economy. These factors can influence authorities' decisions both in crisis situations and in contingency planning. From the perspective of the economy, it is essential that critical functions, such as payment transfers, continue in crisis situations. As a Swedish bank, Nordea is not a member of the Single Resolution Mechanism of the Banking Union, nor are the assets of the Single Resolution Fund available to it. Instead, Sweden's own resolution fund (resolutionsreserven, see the Swedish Resolution Act [lag 2015: 1016]) could be used. The Riksbank has expressed its concern that Sweden's undertaking may increase if supervision and capital adequacy and liquidity buffers are insufficient.^[3]

2. Government proposal 2015/16:106, proposed section 4c. Submitted to the Swedish parliament in Stockholm on 17 March 2016.

If activities in different countries are branch operations of one single group, there are no country-specific own funds or capital requirements. If the capital adequacy of a bank that operates in many countries as a single group changes because of a factor relating to one country's economy, the possible impact on credit supply is probably very similar in all countries. For example, losses resulting from the bursting of a housing bubble in one country could also affect credit supply elsewhere.

Decisions made and regulations imposed in Finland to ensure financial market stability will not all automatically apply to Nordea after the conclusion of the merger. If Finland imposes a countercyclical capital buffer, the requirement will also automatically apply to Nordea's receivables from Finland. By contrast, a systemic risk buffer, which is currently not included in Finnish legislation, would only apply to a Swedish bank's branch in Finland if the Swedish supervisor were so to decide.

Tags

- [Nordea](#)
- [merger](#)
- [banks](#)

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3. 'Nordea's planned reorganisation increases the Swedish state's undertaking'. Sveriges Riksbank. Press release, 13 April 2016.

Investment funds have grown significantly in Finland – do their operations involve stability risks?

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

TOPIAS LEINO

- Topias Leino
Economist

Investment funds have emerged as significant financial intermediaries in Finland since the turn of the millennium. In this role, they supplement traditional deposit banking. However, from the perspective of financial stability, investment funds may also involve risks reminiscent of banking. One such key risk is if assets invested in funds are converted into significantly less liquid (less cash-convertible) form. Why can such liquidity transformation in a worst-case scenario pose a risk to financial stability, and how extensively is it performed among Finnish investment funds?



Investment funds registered in Finland^[1] have posted significant growth in size since the beginning of the new millennium. While still at the beginning of the millennium the value of assets held by these funds totalled EUR 10.3 billion, this had increased about tenfold, to EUR 104.5 billion, by the end of 2015.

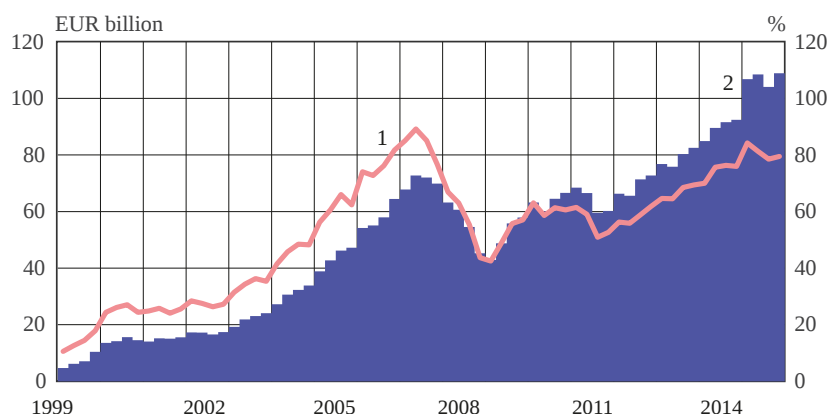
Meanwhile, investment funds have emerged as significant financial intermediaries alongside with traditional deposit banking (Chart 1).

1. In this article, investment funds refer to funds included in sectors S.123 (money market funds) and S.124 (other undertakings for collective investment in transferable securities, UCITS) in the European System of Accounts. This includes all funds governed by the Finnish Mutual Funds Act and alternative investment funds, special investment funds (i.e. non-UCITS) and private equity funds.

Chart 1.

Finnish investment funds have grown significantly since turn of millennium

1. Total assets
2. Fund shares relative to deposits with Finnish deposit banks by households, non-financial corporations, insurance companies and general government entities (right-hand scale)



Sources: Statistics Finland and Bank of Finland.

23.5.2016
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Money changes form in investment funds

One of the key economic functions of investment funds, like banks, is to intermediate finance. The funds collect money from the 'surplus sector' (investment funds in the form of fund shares, and deposit banks in the form of deposits) and channel such money as investments to those who have a shortage of funds, i.e. the 'deficit sector'.

From the perspective of financial stability, a key risk may arise from the fact that assets could become more difficult to convert into cash, i.e. less liquid, in connection with financial intermediation.^[2]

Within investment funds, this liquidity transformation can take different forms. A fund may, for example, promise that the fund shares offered by it are redeemable at two days' notice but simultaneously invest part of the received assets in financial instruments for which conversion into cash takes longer.

Liquidity transformation becomes a problem especially when investors, for whatever reason, want to simultaneously withdraw large amounts of their assets from an investment fund. In such a case, the liquid assets of the fund will not necessarily suffice to cover all demands for redemption within the fund's promised redemption period. This may arouse suspicion among the investors and further stimulate demands for

2. Liquidity means the convertibility into cash of a financial claim or other asset.

redemption. Increasing redemption demands put pressure on the investment fund to sell its illiquid holdings at discount prices, which in turn weakens the possibility for remaining investors to get their money redeemed on reasonable terms.

Possible runs on investment funds and related dumping at fire-sale prices may depress not only the prices of the investments themselves but also the prices of linked assets, thereby destabilising the markets.

This phenomenon is significant – and difficult to assess – because it is linked to financial stability via two channels. On one hand, overall adverse financial market developments may weaken the liquidity of funds' investment assets; on the other hand, the dumping of illiquid assets could serve to reinforce unfavourable trends.

Liquidity transformation in Finnish investment funds

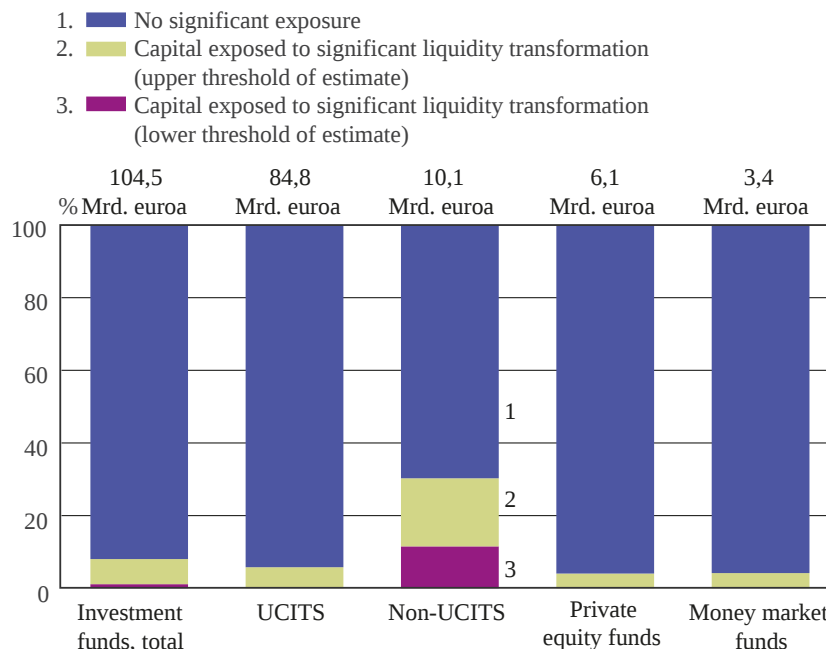
We examine below the extent of liquidity transformation in Finnish investment funds, based on an evaluation method making use of fund-level data.^[3] The method, which is described in the appendix to this article, is to an extent sensitive to the assumptions of the analysis, which is why the results presented must be regarded as merely indicative.

The results give a description of assets exposed to significant liquidity transformation in investment funds under normal market conditions.

3. The information comprises fund-level data serving as the basis for the Bank of Finland's investment fund statistics on fund assets and liabilities and data reported by alternative investment funds, included in the Financial Supervisory Authority's (FIN-FSA) AIFMD data collection, on the redeemability of their fund shares and the convertibility into cash of their assets (fund manager's estimate). The data refer to the end of 2015.

Chart 2.

In relative terms, non-UCITS were the undertakings most strongly engaged in significant liquidity transformation in Finland at the end of 2015



Sources: Calculations by the author, Bank of Finland statistics and FIN-FSA's AIFMD data collection.

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On the basis of the results, a maximum of about 8% (EUR 8.4 billion) of fund capital in Finnish investment funds is exposed to significant liquidity transformation. Accordingly, 92% of fund capital would appear to be excluded from at least significant liquidity transformation (Chart 2).

Viewed by fund category, non-UCITS funds carry the highest degree of exposure in relative terms. In these funds, depending on the evaluation method, 12–30% of fund capital is exposed to significant liquidity transformation. Non-UCITS funds also constitute the most heterogeneous group in respect of their redemption and investment rules.

UCITS investment funds, i.e. funds according to the European Union UCITS Directive and regulated by the Finnish Mutual Funds Act, are in absolute terms subject to the largest exposure, EUR 4.9 billion.^[4] In these, the exposure is heightened, on one hand, by the large size of the fund category and, on the other hand, by the channelling of some investments into assets estimated as being relatively illiquid, such as fund shares. However, evaluations of their liquidity are surrounded by uncertainty.

4. UCITS = Undertakings for Collective Investment in Transferable Securities.

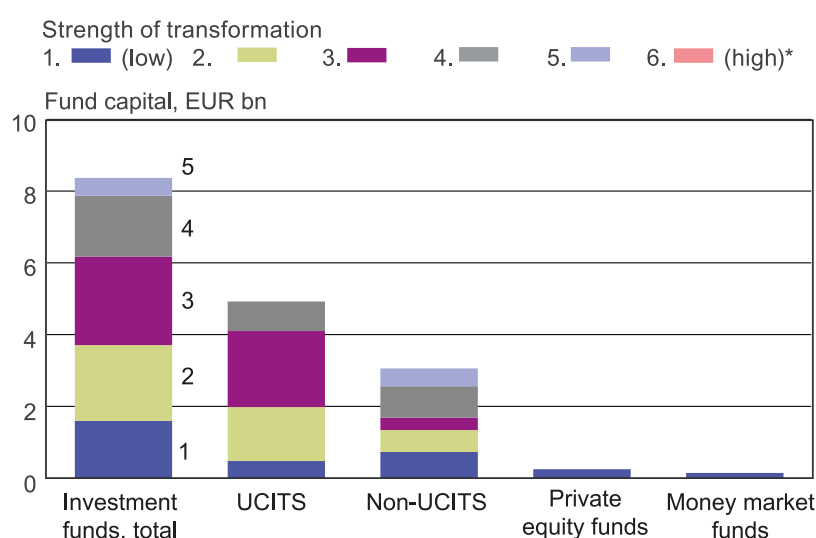
The results point to the lowest degree of liquidity transformation in money market funds and private equity funds. While redemption periods in money market funds are short and investment instruments highly liquid, redemption periods in private equity funds are typically long so as to match with their holdings of illiquid investment assets. Consequently, in the case of both of these fund categories, there is no significant liquidity mismatch between investment assets and fund-share liabilities.

Even so, the extent of liquidity transformation alone does not provide a sufficient indicator for the risks involved in this process.

If the capital exposed to liquidity transformation is further divided into six classes^[5] reflecting the strength of transformation, differences can be identified between fund categories (Chart 3) and between types of fund investments (Chart 4).

Chart 3.

Estimate of fund capital exposed to significant liquidity transformation in Finland and the strength of transformation, by fund category at end 2015



*In Finland, there is currently no fund capital included in class 6.

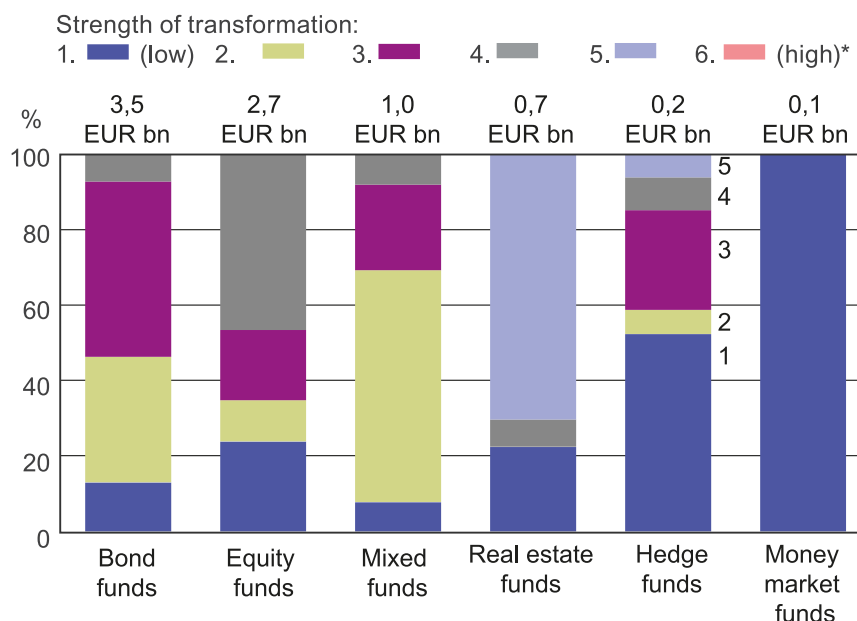
Sources: Calculations by the author, Bank of Finland statistics and FIN-FSA's AIFMD data collection.

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5. Here, the strength of liquidity transformation means the notional difference between the days needed for redemption of fund shares and for conversion into cash of investment assets. The categories of strength and the method used for their definitions are explained in the [technical appendix](#).

Chart 4.

Estimate of the strength of liquidity transformation in Finnish investment funds, by fund type at end 2015



*In Finland, there is currently no fund capital included in class 6.

Sources: Calculations by the author, Bank of Finland statistics and FIN-FSA's AIFMD data collection.

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According to the results, relatively strong liquidity transformation appears to be present mostly in real estate funds, even though the exposure in absolute terms is rather limited. In equity funds, the strength of exposure is boosted mainly by investments in unlisted shares.

Overall, the above outcomes do not point to pronounced and, relative to fund capital, particularly large risk concentrations related to liquidity transformation in Finnish investment funds at the end of 2015. However, given the strong links of the phenomenon with general market developments, close monitoring is warranted going forward.

In assessing the results, it is also worthwhile bearing in mind that they are based in part on the author's own estimates and in part on fund managers' estimates provided in a survey. These estimates may change, especially in situations of market distress.

Tags

- [investment funds](#)
- [shadow banking](#)
- [financial stability](#)

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TECHNICAL APPENDIX

How was liquidity transformation in investment funds measured?

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This appendix describes the method applied, the results of which are reported in the article [‘Investment funds have grown significantly in Finland – do their operations involve stability risks?’](#)

There is no single unambiguously correct manner of measuring liquidity transformation as performed by investment funds. Central to such an analysis is the quality of the available data on the liquidity of fund holdings of investment assets and the liquidity of their fund-share liabilities.

The present examination was based on fund-level data serving as the basis for the Bank of Finland’s investment fund statistics and on data derived from the Financial Supervisory Authority’s AIFMD data collection. The latter includes information reported by Finnish alternative investment funds^[1] covered by the AIFM Directive, on the days required for the redemption of their fund shares (on the basis of the fund rules), and fund managers’ estimates of the number of days required for the conversion of their investment assets into cash.

1. Alternative investment funds are statistically classified into non-UCITS or private equity funds.

Each fund's fund-share liabilities and investment assets are divided into seven classes^[2] that can be considered to represent distributions of the liquidity structures of the fund's fund-share liabilities and investment assets. These can also be seen as probability distributions. One can consider, in particular, that the *redeemability of fund-share liabilities* reflects the probability distribution of the liquidity of fund liabilities and that the *convertibility into cash of investment assets* reflects the probability distribution of the liquidity of fund assets.

Firstly, in respect of each fund F , expectation values were defined for days needed for fund-share redemption D_L as follows:

$$E(D_{L,F}) = \sum_{i=1}^7 p_{F,i} \times d_i$$

Here $p_{F,i}$ is the percentage of fund-share liabilities included in class i of fund F and d_i is the average of the extremes of class i reflecting the days required for redemption (e.g. in class 2 this is $(2+7)/2 = 4.5$).

The obtained expectation value for the liabilities side can also be placed in any of the seven classes in connection with a corresponding classification for the assets side. Consequently, the value of assets exposed to liquidity transformation was defined so as to equal the sum of assets defined for classes higher (containing more illiquid items) than the class of the expectation value for the redeemability of fund-share liabilities.

Meanwhile, the strength of liquidity transformation was gauged by first defining expectation values in terms of days ($E(D_{A,F})$) for the convertibility into cash of investment assets exposed to liquidity transformation, in the same way as in the case of fund-share liabilities.

This enabled calculation of a 'liquidity gap' measuring the difference in days between the redeemability of fund-share liabilities and the convertibility into cash of investment assets:

$$E(D_{L,F}) - E(D_{A,F}).$$

2. The values were divided into classes as follows: 1. no more than 1 day, 2. 2–7 days, 3. 8–30 days, 4. 31–90 days, 5. 91–180 days, 6. 181–365 days, and 7. more than 365 days.

The values obtained were placed into six classes^[3] reflecting the strength of liquidity transformation and used in reporting the results.

Given that the AIFMD data collection does not cover investment funds subject to the UCITS Directive, money market funds and some private equity funds, it was necessary to estimate liquidity distributions of assets and liabilities for these separately. The information employed here was derived from the Bank of Finland's fund-level statistics, which contain extensive security-specific data on assets and liabilities of investment funds.

The assets included in the analysis were first grouped into seven liquidity categories based on their instrument, sector and country codes.^[4]

Expectation values for the redeemability of fund-share liabilities of funds other than AIFs were, in turn, defined on the basis of a rough fund classification.^[5] In this context, the highest degree of uncertainty relates to the value defined for redeemability regarding private equity funds.

After expectation values had been established for the redeemability of fund-share liabilities and for the convertibility into cash of investment assets, the remaining funds could otherwise be analysed in accordance with the method used in the case of AIFs. Calculations for AIFs were performed using both information derived from the AIFMD data collection and information on liquidity distributions of assets, based on the grouping made for the analysis. The latter calculation method gave a EUR 1.8 billion higher amount for assets exposed to liquidity transformation.

The liquidity defined for an asset in the latter method is linked to the security's classification data. In reality, however, asset liquidity is often not necessarily a static feature of security classes so defined or even of an individual security. In practice, the liquidity of a security can vary according to the timing of sales, the market situation and the size of the saleable lot. For this reason, the results based on our method should be deemed at best indicative.

3. 1. no more than 7 days, 2. 8–30 days, 3. 31–90 days, 4. 91–180 days, 5. 181–365 days and 6. more than 365 days.

4. Category 1: Cash and deposits, money market instruments, bonds and derivatives issued by residents of core countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States) and international organisations. Category 2: Listed shares, bonds and derivatives issued by non-core country residents; fund shares, fixed-term and repo deposits and other financial assets in core countries. Category 3: Fixed-term and repo deposits and other financial assets in non-core countries. Category 4: Direct loans to residents of core countries. Category 5: Fund shares and loans of investment funds resident in non-core countries. Category 6: Unlisted shares of core country residents. Category 7: Unlisted shares, fixed and other real property of non-core country residents. In classifying the information, use was made of reference data received from the AIFMD data collection. After classification, it was possible to calculate expectation values for the convertibility into cash of fund-specific assets, in the same way as above for alternative investment funds (AIFs).

5. Money market funds: 1 day, UCITS investment funds: 4 days, private equity funds: 365 days, and others: 19 days.

Tags

- [investment funds](#)
- [shadow banks](#)
- [financial stability](#)

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Market infrastructures – the pillars of financial stability

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

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The financial system consists of financial institutions and the market infrastructures that connect them. They are both key to the stability of the system as a whole. The basic assumption is that infrastructures function reliably, and their criticality is noticed only in the event of a disruption. Stability analysis should, therefore, increasingly extend its focus to include both the functioning of infrastructures and their interconnectedness with financial institutions.



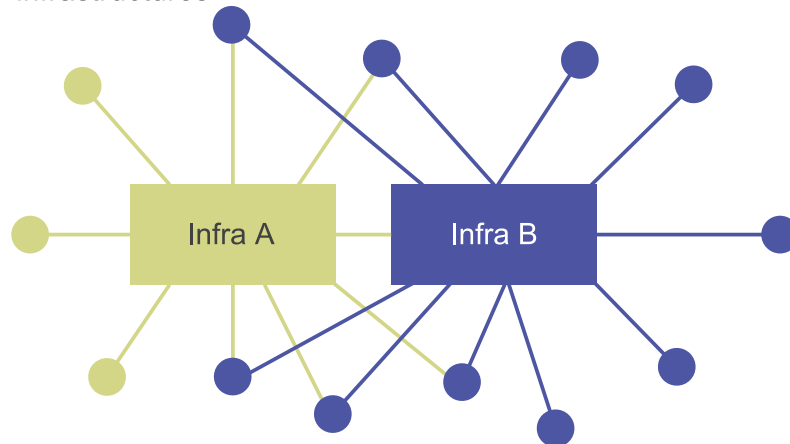
The stability of the financial system is fostered by identifying, assessing and managing systemic risks arising from financial institutions. The reliable functioning of market infrastructures providing services to the financial markets also plays a key role in this respect. These infrastructures – payment systems and securities clearing and settlement systems – are hubs that enable the transfer of payments and securities between the various participants.

The number of infrastructures in Finland and the euro area is very small relative to the number of their customers, i.e. financial institutions. Financial institutions can participate in several infrastructures, and, on the other hand, the infrastructures are interdependent.^[1]

1. For example, the TARGET2 payment system maintained by the Eurosystem settles the cash positions of over 70 ancillary systems. In TARGET2-Suomen Pankki, the average daily value of outgoing and incoming payments is EUR 50 bn, which is close in size to the annual budget of the Finnish Government.

Chart 1.

Interconnectedness of financial institutions and market infrastructures



○ Financial institution

Financial institutions and market infrastructures are interconnected. For example, financial institutions must execute fund transfers via payment systems so that securities can be delivered against payment in a securities settlement system.

Source: Bank of Finland.

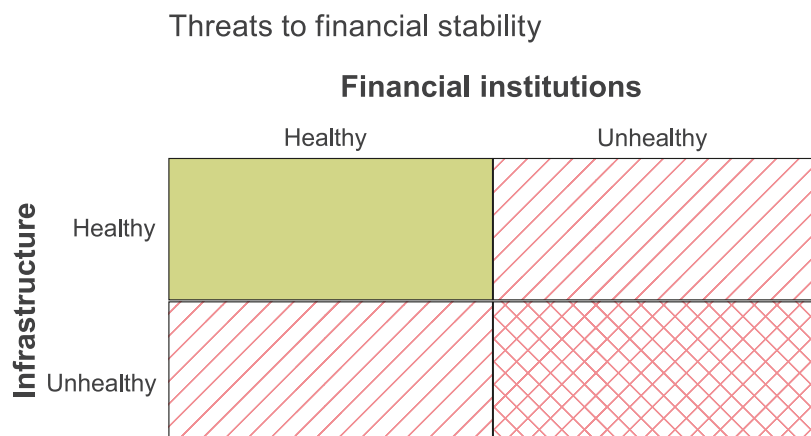
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The smooth functioning of financial infrastructures is often a basic assumption in financial stability analyses. This is justifiable as such, because the infrastructures functioned reliably during the latest financial crisis, for example. Systems that function smoothly do not attract attention: payments are transferred to recipients, and securities change owner in accordance with trades executed on a stock exchange or other trading venues, in the background of other activities.

On one hand, market infrastructures also have their own, stability-fostering role in the event a financial institution faces a crisis. The purpose of system-specific rules and practices is to safeguard the settlement of fund transfers and securities transactions even when the largest counterparties connected to the system are unable to fulfil their obligations.

On the other hand, market infrastructures may themselves be the source of financial instability: if an infrastructure does not function, the financial system cannot operate, despite the soundness of individual financial institutions and other financial sector entities. Finance is not intermediated to the participants that need it, people do not get their pensions or wages and salaries, card payments fail and there is a lack of clarity over securities ownership. Possible technical problems in the infrastructures are rarely linked to general uncertainty in the economy or a lack of confidence between market participants.^[2]

Chart 2.



Threats to financial stability may stem from financial institutions or from the functioning of market infrastructures that connect these institutions.

Source: Bank of Finland.

20.5.2016
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Disruptions in the systems are reflected almost without exception extensively and immediately on the end customers. This is particularly evident in the case of payment systems, and the higher the degree of real-time execution of payments, the more rapidly the effects become evident. Moreover, in a case of uncertainty over securities holdings, it would be impossible to use bonds and other securities as collateral. This would rapidly freeze central bank financing. Due to the interconnectedness of infrastructures, a disruption in one system would, in a worst-case scenario, also prevent the operation of the other systems.

The deepening of integration has accelerated the concentration of market infrastructures. The criticality of infrastructures providing services to several countries has become more pronounced in the euro area. Provision of services is also concentrated: the same technology supplier or outsourced provider of services may be behind several different infrastructures and the financial institutions connected to them. This has further increased the importance to financial stability of these sometimes external, critical service providers.

The stability of the financial system is safeguarded in a number of ways. In addition to international oversight principles^[3] on market infrastructures, we also need comprehensive institution-specific and national contingency plans. These require extensive understanding of the interconnectedness of financial infrastructures and financial stability. The national exercise for testing crisis preparedness and contingency

2. An exception to this may be a possible loss of confidence triggered by a cyber-attack. See Manninen, Otso (2015) [Could a cyber-attack lead to financial crisis? Bank of Finland Bulletin 2/2015](#).

3. The Bank for International Settlements (BIS) published in 2012 Principles for financial market infrastructures (PFMI).

arrangements in the financial and insurance sectors (FATO2015) carried out in autumn 2015 showed that the increasingly international infrastructure and the fragmented structure of critical service providers, in particular, have to be taken into consideration in contingency planning. Accordingly, financial stability analyses should focus also on the interconnectedness of financial institutions and market infrastructures.^[4]

Tags

- [market infrastructure](#)
- [financial stability](#)
- [macroprudential analysis](#)
- [payment systems](#)
- [securities clearing and settlement](#)

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4. Infrastructures critical to the Finnish financial markets.

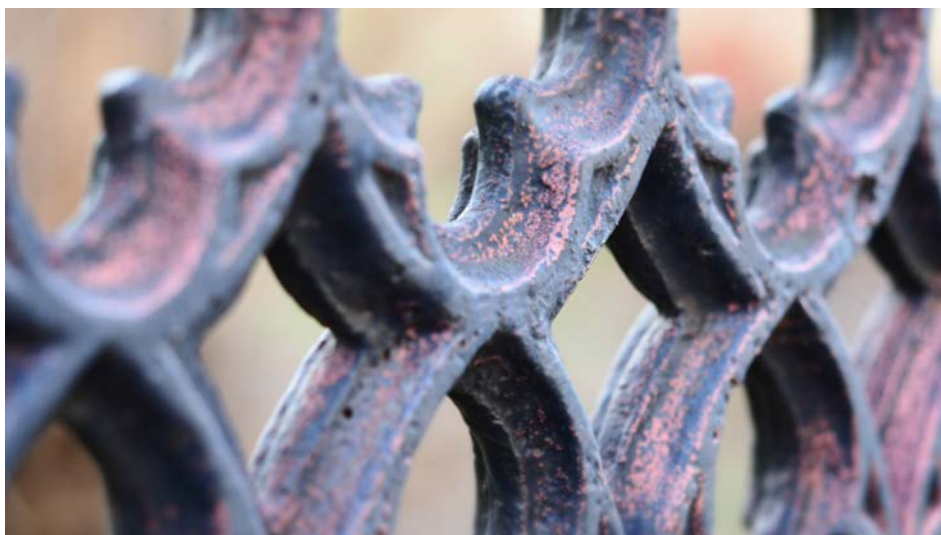
Central counterparties can reduce, but also cause risks

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In securities clearing, a central counterparty (CCP) interposes itself between the counterparties, becoming a buyer to the seller and a seller to the buyer. In so doing, the CCP assumes the counterparty risks related to the transaction. Counterparty risks arise between CCPs from their interoperability arrangements. It is vital for the stability of the financial system that CCPs have in place sound risk management practices.



Expanded provision of CCP services for Finnish stock market

The financial crisis of 2008 reminded us of the potential of bilateral securities transactions and derivative contracts to generate complex chains and risk concentrations. Counterparty risks may become chained to the extent that the parties involved and the relevant authorities do not have an adequate overall picture of the related direct and indirect risks. In an effort to make counterparty risks more transparent and manageable, reporting and the use of CCP clearing have subsequently been stepped up.^[1]

In CCP clearing, original obligations related to a securities or derivatives transaction are replaced by new contracts, in which the CCP interposes itself as a counterparty to each original contracting party. When a CCP interposes itself as a counterparty to

1. EMIR <http://EMIR> http://ec.europa.eu/finance/financial-markets/derivatives/index_en.htm.

transactions, the counterparty risks between the parties translate into risks between the parties and the CCP. This makes CCPs critical market participants, as they may act as counterparties to a huge number of parties and contracts. On the other hand, CCP clearing enables the netting of transactions,^[2] which reduces the amount of securities and money needed for the execution of trades.

The range of CCP services on offer for Finnish equity trading is expanding. EuroCCP has already been serving the Finnish markets since 2009. Meanwhile, LCH.Clearnet expanded the range of its CCP services to share transactions on Nasdaq's Nordic exchanges in November 2015. In addition, SIX x-clear is commencing operations^[3] as a third CCP. This trend is part of overall European developments in the sector, and the above CCPs already offer their services on a broad scale to many other trading venues.

Interoperability arrangements reduce disadvantages of dispersion

Some CCPs offer interoperability arrangements. An interoperability arrangement enables the clearing of transactions between two counterparties using the services of different CCPs. Clearing based on such an arrangement means that a contract on a securities transaction is split into three contracts. The seller's CCP becomes the buyer to the seller, while the buyer's CCP becomes the counterparty to the buyer. A third contract is concluded between the CCPs in such a way that the seller's CCP is the seller and the buyer's CCP is the buyer.

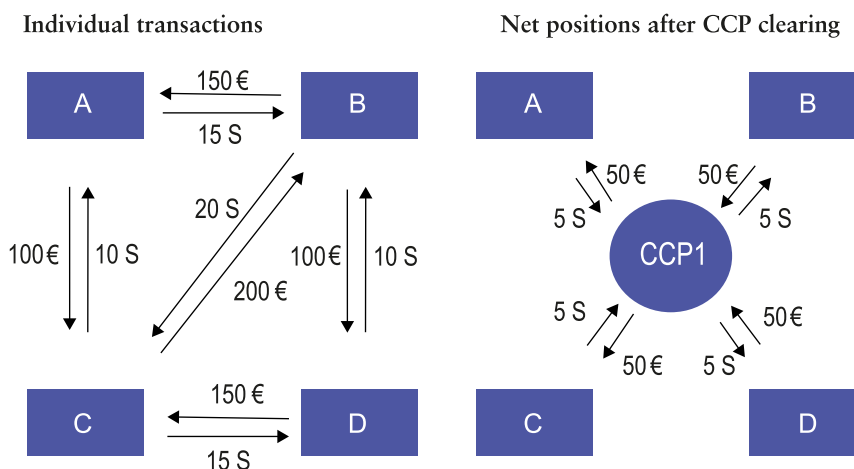
The operation of one CCP and the operation of interoperable CCPs is illustrated in Charts 1 and 2.

2. The combination of similar obligations so that only one net obligation remains.

3. See <https://newsclient.omxgroup.com/cdsPublic/viewDisclosure.action?disclosureId=702013&lang=en>.

Chart 1.

Individual transactions and transactions cleared with one CCP



The symbol € refers to monetary flows and the letter S to the number of securities. The arrows indicate the direction of monetary and securities flows.

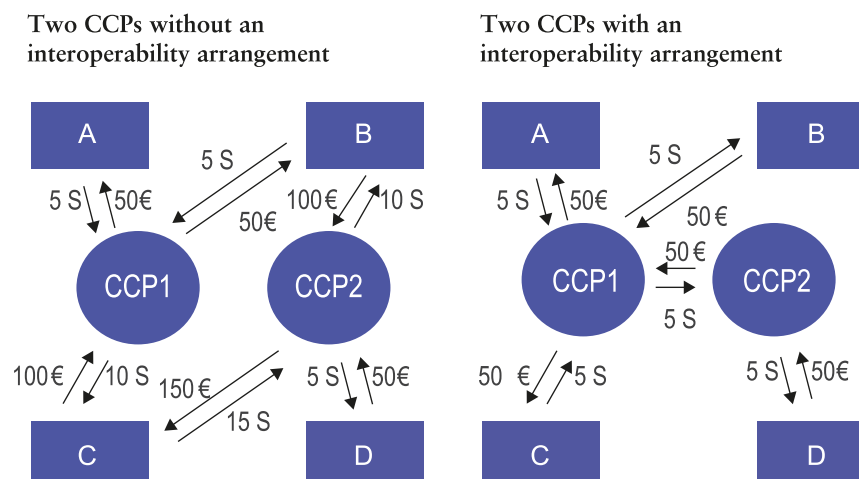
CCP = Central Counterparty

Source: Bank of Finland.

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Chart 2.

Clearing of transactions with two CCPs with and without an interoperability arrangement



The symbol € refers to monetary flows and the letter S to the number of securities. The arrows indicate the direction of monetary and securities flows. D is counterparty only to CCP2. C and B are counterparties to both CCPs.

On the right, B and C are counterparties only to the interoperable CCP1.

CCP = Central Counterparty

Source: Bank of Finland.

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The examples in Chart 2 illustrate the netting outcome obtained when the same payments in Chart 1 are used with and without an interoperability arrangement and when only party D is a customer of CCP2. In the first option, without an interoperability arrangement, parties B and C are counterparties to both CCPs. In this example, the positions of the parties operating with two different CCPs grow. In the example illustrating an interoperability arrangement where each party is a counterparty to only one CCP, the parties' net positions are the same as in the model involving one CCP in Chart 1. Only the position between the CCPs represents a difference vis-à-vis the model with one CCP.

From the perspective of market competition, it is desirable that markets are served by several CCPs. However, distribution of clearing transactions among several different CCPs, without specific additional arrangements, could worsen the netting outcome and reduce the benefits from CCP clearing. CCP interoperability arrangements mitigate such drawbacks. Interoperability arrangements have also caused concern and given rise to debate, as they lead to increasing complexity in arrangements and risk management, and bring systemically important CCPs together as counterparties to each other. It is important to prevent risks from spilling over via interoperability arrangements between CCPs.

CCP activity is subject to authorisation and official supervision. CCPs need to comply with strict prudential requirements and must collect margins from their clearing members (margin requirements) and maintain a default fund and their own financial resources. The margins, the default fund and the CCP's own financial resources must cover the simultaneous default of the two clearing members to which the CCP has the largest exposures under extreme but plausible market conditions.^[4] To minimise contagion risks, interoperable CCPs provide margins to each other but do not participate in each other's default funds.

Overall, CCPs play a key role as part of the critical financial market infrastructure. On one hand, CCPs contribute to risk management; on the other hand, they may also act as sources of risk. As a consequence, CCPs' risk management and interoperability arrangements must be on a sound footing so as not to pose a threat to the stability of the financial markets.

Tags

- [central counterparty](#)
- [counterparty risk](#)
- [netting](#)
- [systemic risk](#)
- [central counterparty interoperability](#)

4. EMIR <http://EMIR> http://ec.europa.eu/finance/financial-markets/derivatives/index_en.htm

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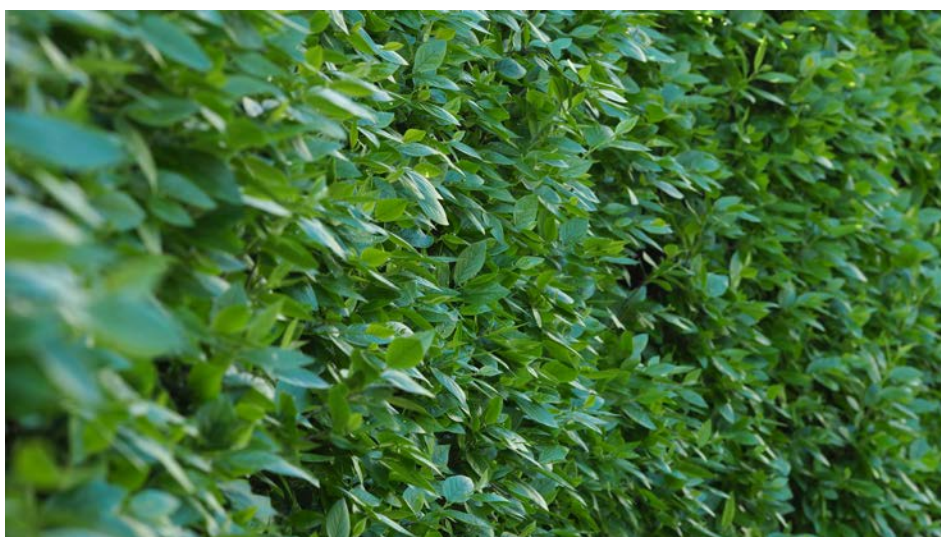
Finland's neighbours rein in lending for house purchase

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

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Finland's neighbouring countries have actively adopted macroprudential instruments to counter stability risks relating to lending for house purchase. Sweden and Norway are taking strong measures to restrain housing credit growth and the associated risks. Of the Baltic States, Estonia and Lithuania, in turn, have imposed limits on the maximum loan servicing costs and length of housing loans so as to prevent risks proactively. Finland has adopted new macroprudential instruments more slowly. The loan-to-value cap that will enter into force in Finland in summer 2016 is more lenient than the requirements imposed in neighbouring countries.



Macroprudential instruments tightening capital adequacy requirements for banks

The macroprudential instruments that affect housing credit can be broken down into three groups: instruments that tighten banks' capital adequacy requirements, those that strengthen the balance-sheet position of households with housing debt and those that ensure an adequate debt-servicing capacity in households with housing debt.

Macroprudential instruments that tighten banks' capital adequacy requirements, such as risk weights for housing loans, are primarily aimed at ensuring banks have sufficiently large capital buffers against unexpected losses on housing loans in crisis situations.

Sweden and Norway have increased the minimum risk weights on housing loans. Sweden's authority in charge of financial and macroprudential supervision – *Finansinspektionen* – raised the average risk weight floor for housing loans for banks using the Internal Ratings Based approach, initially to 15%, and later to 25%. In Norway the risk weight requirements were practically doubled by raising the minimum value of the loss given default parameter (LGD floor) used in the calculation of risk weights from 10% to 20%.

Large Finnish banks' average risk weights for housing loans have been under 10%, i.e. low by international comparison. Finland's macroprudential authority – the Financial Supervisory Authority (FIN-FSA) – announced in December 2015 that it had commenced preparations for raising the risk weights.

Macroprudential instruments ensuring adequate loss tolerance of households with housing debt

The maximum loan-to-value (LTV) ratio (loan cap) for housing loans partly resembles banks' capital adequacy requirements: the loan cap helps to ensure that households that have taken out a housing loan have sufficient loss buffers (net equity, self-financing share) at the time the loan was granted to cover them against falling house prices, unemployment and other serious financial risks.

The loan cap is the most used macroprudential tool among the Nordic countries and the Baltic States (see Table). Finland and Iceland are the only ones among these countries that have not yet enforced a loan cap. In Finland, the loan cap will become effective in July 2016 and in Iceland, in 2017.

The level of loan cap ranges between 85% and 95% in the Nordic countries and the Baltic States (Iceland has not yet decided on its level). In Finland, the cap on new housing loans will be 90% and for first-time homebuyers, 95%. The Board of FIN-FSA has the right to reduce the LTV ratio by 10 percentage points, if necessary.

Table.

Macroprudential instruments in the Nordic countries and the Baltic States

Instrument	Country	Level, %
Risk weights on housing loans	Norway	0.2, 20 ¹⁾
	Sweden	25
Loan-to-value (LTV) ratio (loan cap)	Iceland	Not yet decided
	Latvia	90
	Lithuania	85
	Norway	85
	Sweden	85
	Finland	90 / 95 (2016/III)
	Denmark	95
Amortisation requirements	Estonia	85
	Norway	LTV > 70%: 2.5% p.a.
Debt service-to-income (DSTI) ratio	Sweden (2016)	LTV > 70%: 2% p.a. 70% > LTV > 50%: 1% p.a.
	Lithuania	40
	Estonia	50
Maximum loan maturity	Lithuania	30 yr
	Estonia	30 yr

¹⁾ Probability of default (PD) floor 0.2% (2015). Loss given default (LGD) floor 20% (2013).

Source: Nordic-Baltic Macroprudential Forum.

How stringent loan cap regulation is depends on the level of the cap and the calculation method. In most countries, the loan cap limits the maximum size of a housing loan relative to the value of the house purchased and used as collateral for the loan.

In Finland, the method for calculating the loan-to-value ratio of a borrower is exceptionally lenient: besides the house to be purchased, a wide range of other collateral offered by the borrower (and accepted by the lender) can also be taken into account in calculating the maximum loan amount (loan-to-collateral, LTC). Consequently, the LTV

ratio (as typically calculated) may be fairly high in the case of some borrowers and exceed the value of the housing. However, it should be noted that the FIN-FSA Board has the right to restrict the type of collateral accepted in calculating the loan-to-value ratio.^[1]

The ability of households with housing debt to withstand shocks to housing markets and their own finances improves as they repay their debts and thus ease their debt burden. Average housing loan maturities are considerably shorter in Finland than in e.g. Sweden and Denmark, and households also typically amortise their loans on a monthly basis.

In Sweden, *Finansinspektionen* has finally, after sustained efforts, won the right to impose amortisation requirements for housing loans with an LTV ratio of at least 50%.^[2] The related Act entered into force in May 2016 and the actual amortisation requirements started to apply as from June 2016. Norway has also imposed an amortisation requirement for housing loans with an LTV ratio of over 70%.

Regulation on the maximum length of loans can pursue the same objectives as loan amortisation requirements. Estonia and Lithuania have imposed a maximum maturity of 30 years on new housing loans.

Macroprudential instruments ensuring adequate debt-servicing ability of households with housing debt

The third group of macroprudential tools influencing housing credit aims to ensure that the debt-servicing ability of households with housing debt is sufficient even under straining conditions. Such instruments can e.g. limit the maximum amount of housing loan relative to a household's annual income (loan-to-income ratio, LTI) or the household's maximum debt servicing burden per month relative to available income (debt service-to-income ratio, DSTI).

At least so far, there has been little use of these instruments in the Nordic countries and the Baltic States. Exceptions are Lithuania and Estonia, which have adopted DSTI ratios of 40% and 50%, respectively. The DSTI requirement limits the maximum size of new housing loans so that debt servicing does not require a higher share of a household's monthly available income than determined in the requirement.

Tags

- [macroprudential instruments](#)
- [Nordic countries](#)
- [Baltic States](#)
- [housing loans](#)

1. See FIN-FSA regulation on the calculation of loan-to-value ratio (issued in November 2015):

http://www.finanssivalvonta.fi/en/Regulation/Regulations/New/Pages/03_2015.aspx.

2. See Finansinspektionen's press release (20 April 2016): <http://www.fi.se/Folder-EN/Startpage/Press/Press-releases/Listan/Amortisation-requirement-for-new-mortgages1/>.

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Reform of bank capital regulation enters final phase

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

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The capital requirements for banks were revised recently to improve the financial system's resilience to shocks. What remains is the finalisation of the reforms and the specification of implementation. The assessment and monitoring of the overall impact of regulation is important to ensure fair competition between banks and the financial system's ability to support sustainable economic growth.



Banks and credit institutions must hold an adequate amount of own funds to cover risks to their operations and possible losses in a crisis. Capital regulation defines the quality and minimum amount of capital^[1] banks are required to hold, relative to their total risk exposure.^[2] The global financial crisis that started in 2008 revealed that banks' capital requirements were too low and of inadequate quality for covering losses.

The authorities started to resolve the gaps in the international regulatory framework for banks immediately after the onset of the financial crisis, and the Basel Committee on Banking Supervision introduced a set of reform measures in 2010. The new rules ('Basel III') were phased in gradually in the European Union, starting on 1 January 2014. The

1. Banks' capital, i.e. their sources of funding, are divided into equity capital and debt. Equity consists of own funds of various quality, e.g. invested share capital or cooperative capital and retained earnings. Banks' debt capital includes deposits from the public as well as long- and short-term securities issued by banks.

2. Total exposure, i.e. risk-weighted assets, is calculated as the weighted sum of balance sheet values, using multipliers that are risk weights based on the estimated exposures of the assets.

Basel III recommendations will be implemented gradually in the EU, by means of the Capital Requirements Directive^[3] and the Capital Requirements Regulation, by 2019. The purpose of the regulatory reform and the introduction of more effective and harmonised banking supervision is to improve the stability of the banking system and prevent banking crises.

Minimum requirements complemented by buffers

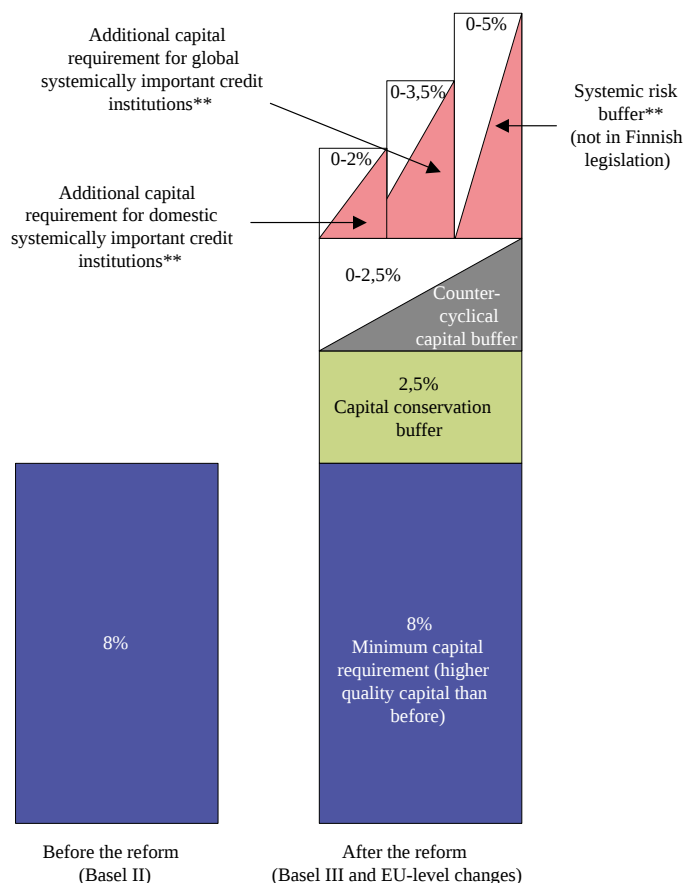
As a result of the new regulatory framework, banks are required to hold a larger amount of high-quality own funds. The minimum capital requirement of 8% relative to risk-weighted assets entered into force in 2015. Credit institutions must also fulfil the capital conservation buffer requirement of 2.5%. Authorities can also impose on banks a countercyclical capital buffer requirement to prevent systemic risk when growth or the volume of credit so requires. An additional capital buffer requirement can be imposed on global or domestic systemically important credit institutions. As a result of these requirements, the total capital requirement for banks is 10.5–16.5% of risk weighted assets.

In addition to globally harmonised minimum capital requirements and buffers, EU countries may introduce a discretionary additional capital requirement (systemic risk buffer). If the requirement is incorporated in national legislation, it can be set to cover e.g. risks caused by the large size or vulnerable structure of the banking system.

3. In Finland, the Capital Requirements Directive was transposed into domestic legislation by a new Act on credit institutions.

Chart.

Old and new capital requirements for the banking sector*



*Relative to risk-weighted assets. Capital requirements reflect also the leverage ratio requirement and the Pillar 2 requirement.
 **As a rule, the highest requirement is in force.
 Sources: European Commission and calculations by the Bank of Finland.

The supervisory authority assesses banks' risk exposures and the adequacy of capital and liquidity, applying harmonised procedures and methodologies (supervisory review and evaluation process, SREP). The assessments also take into consideration stress testing on banks; depending on the outcome of the stress tests, the supervisory authority may impose a discretionary additional capital requirement (Pillar 2 requirement).

The higher capital requirements and the measures required as a result of tighter regulation are reflected as an increase in banks' costs. However international studies^[4] show that the total benefits of tighter capital requirements are larger than the costs.

Basel III regulation is sometimes referred to as a regulatory wave. The Basel III reform is in the implementation phase, i.e. the last waves of the regulatory wave are hitting the shore. All in all, the revision of capital requirements is in its final stage, and a new regulatory wave is not in sight for the time being. What remains is the finalisation of the reform and the specification of implementation.

The Basel Committee on Banking Supervision will carry out in 2016 an impact assessment on the Basel III reform. The Committee is also committed to finalising the revision and specification of Basel III regulation by the end of 2016. The aim is that banks' capital requirements would not tighten significantly as a result of the specifications.

Specifications still required

The European Commission and the Single Supervisory Mechanism (SSM) of the euro area countries are in the process of harmonising the options and national discretions used in the application of prudential requirements. In addition, the calibration of the Basel III leverage ratio has not yet been finalised.^[5] The requirement complements the risk-based capital requirements by restricting the build-up of debt by banks so that they should hold 3% equity relative to non-risk-weighted assets. Authorities are also considering an additional leverage ratio requirement on global systemically important banks.

There are differences in the determination of risk weights and banks' models for calculating them, and these differences weaken the comparability of risk-weighted assets. A bank's approach to the calculation of risk weights may have a significant impact on capital requirements. Hence, both the Basel Committee and the European Commission^[6] have recently expressed an intention to harmonise the approaches to the calculation of risk weights. The harmonisation of the calculation of risk weights would support a level playing field among banks. The Basel Committee is also revising the capital framework for banks' trading books. The capital treatment of sovereign exposures is also currently subject to a global assessment.

If a bank fails and becomes subject to resolution proceedings it must have an adequate amount of assets for implementing the bail-in^[7] tool. The Financial Stability Board (FSB)^[8] has issued a total loss absorbing capacity (TLAC) standard for global systemically important banks that complements the capital and leverage ratio requirements imposed on the banks. The EU's Bank Recovery and Resolution Directive (BRRD) already includes a definition for a minimum requirement for own funds and eligible liabilities (MREL) applied to all banks. The TLAC is very similar to the European

4. For example Dagher, J. – Dell'Ariccia, G. – Laeven, L. – Ratnovski, L. – Tong, H. (2016) Benefits and Costs of Bank Capital. IMF Staff Discussion Note 16/04.

5. For example, the consultative document by the Basel Committee on Banking Supervision 'Revisions to the Basel III leverage ratio framework'. See <http://www.bis.org/bcbs/publ/d365.pdf>.

6. Communication from the European Commission 'Towards the completion of the Banking Union'. See <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015DC0587&from=FI>

7. Bail-in means that a bank's shareholders and creditors bear primary responsibility for the bank's losses.

8. A Board operating under the auspices of the G20 countries.

MREL requirement; it is nevertheless more extensive and tighter. The objective is to harmonise these requirements on the level of EU legislation.

Financial system's resilience to shocks needs fostering

High-quality capital regulation of the banking sector is consistent and provides similar banks a level playing field. Financial system participants – both banks and investors – must also have clarity as to future regulatory changes.

The framework for the capital regulation of the banking sector is now more or less in place, even though some of the important details are still being specified. The regulatory wave will subside, but the global financial markets are in a process of continuous change. The improvement of banks' capital adequacy, in addition to other regulatory and supervisory reform, has increased the resilience of the financial system, but it is not a magic cure for removing all the risks in the system.

Vulnerabilities and risks to financial stability must be monitored and analysed carefully in future, too. In addition to globally harmonised regulation, we need national macroprudential policies for addressing country-specific systemic risks and vulnerabilities. Authorities must react, by means of macroprudential or legislative measures, if the policy stance or regulation do not correspond to changes in the financial market environment or structures.

It is important to assess and monitor the overall impact of regulation. If there are gaps in legislation or excesses, these must be amended and corrected to ensure the ability of the financial system to support sustainable economic growth.

In history, a regulatory wave has often been followed by an easing of regulation. The extensive work done to improve the financial system's resilience to shocks must not be vitiated by letting history repeat itself.

Tags

- [banks](#)
- [capital adequacy](#)
- [regulation](#)

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New European Deposit Insurance Scheme to be introduced soon

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

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In November 2015, the European Commission proposed that a new European Deposit Insurance Scheme be established. The new scheme was to be launched at the beginning of 2017 and the reform include an 8-year transitional period. During this period the responsibility for pay-outs was to gradually be transferred from national level to the European Deposit Insurance Scheme by 2024.



Aiming at a more efficient overall solution

The European Deposit Insurance Scheme (EDIS) would be established by amending the Regulation on a Single Resolution Mechanism (the SRM Regulation), adding provisions on a new deposit insurance scheme. The new scheme would come into force on the basis of the Regulation, and no separate national legislation process would therefore be necessary.

According to the Commission, transition to a common deposit insurance scheme should enable a more efficient overall solution than the present national Deposit Guarantee Schemes (DGSs). The aim is a situation where the home country of a bank would be irrelevant to the depositor. Another key objective is to break the connection between deposit insurance and budget risk in the home country. In the new scheme, risks related to the common deposit insurance would be distributed throughout a larger group of operators, and thus deposit insurance would more resemble traditional insurance business.

On the whole, the Commission proposal has been favourably received, although critical voices have also been raised. The Bank of Finland has expressed a positive attitude to the project but has emphasised the importance of progress in other legislative projects for increased financial sector stability and decreased risk. It has also advocated the removal of problem assets from bank balance sheets and increasing capital adequacy before the transition to mutualised insurance.

Towards common deposit insurance in three phases

The EDIS would be limited to Member States in the Banking Union. Member States outside the Banking Union could participate in the new deposit insurance scheme only by joining the Banking Union.

The plan is to accomplish the EDIS in three phases:

1. In the **reinsurance phase**, national DGSs could, in a payout event or when requested to contribute to resolution, require a maximum 20% of their liquidity shortfall from the common Deposit Insurance Fund. However, no requirement of pay-outs could be directed to the joint fund until all resources of the national fund had been exhausted. In addition, the national fund must be able to show that it has fulfilled the timetable for fund collection required in the Bank Recovery and Resolution Directive (BRRD Directive). The reinsurance phase would start at the beginning of 2017 and continue for three years.
2. The **co-insurance phase** would begin after the reinsurance phase and continue for four years. In the co-insurance phase, national DGSs could request the common Deposit Insurance Fund to pay for part of the costs in such a way that the proportion financed by the common fund would increase annually by 20 percentage points. In addition, use of the common fund would require the national fund to have fulfilled the BRRD Directive requirements on collecting deposit insurance premiums. However, the national fund would no longer have to use all its resources before turning to the common fund.
3. The **full insurance phase** would commence after the co-insurance phase, which, according to the Commission's timetable, would be in 2024. In the full insurance phase, the common Deposit Insurance Fund would cover the liquidity needs of participating DGSs arising from a payout event or losses incurred from contributing to resolution.

Including also a common Deposit Insurance Fund

The new European Deposit Insurance Scheme would also include a common Deposit Insurance Fund formed by contributions collected from credit institutions. The Commission proposes that the Deposit Insurance Fund would in 2024 contain assets corresponding to 0.8% of insured deposits, amounting to a total EUR 44 billion.^[1] The final size of the fund would depend on the 2024 stock of deposits.

1. The amount is calculated on the basis of the position in 2011.

The national DGSs would directly invoice credit institutions for contributions on behalf of the Single Resolution Board, and the credit institutions would pay the contributions directly to the common fund. The method would differ from the stipulated procedure for the Single Resolution Mechanism, where national resolution authorities raise contributions, as specified in the SRM Regulation, from the credit institutions and transfer them to the Single Resolution Fund by virtue of a separate intergovernmental agreement.

The regulation would contain provisions on a 'funding path', which national DGSs would follow to ensure that they remain within the insurance cover offered by the Deposit Insurance Fund through the different phases. The Commission, after consulting the Single Resolution Board, may approve a temporary derogation from the funding path for a Member State.^[2]

In practice, the system of contributions would be cost neutral to the banks, because they would be able to deduct the contributions paid to the common Deposit Insurance Fund from their obligations to the national deposit insurance fund. The Finnish Deposit Insurance Fund already at this time contains assets exceeding the 0.8% limit stipulated in the BRRD Directive, so the contributions to be collected for the common Deposit Insurance Fund would not cause the banks additional costs.

If the assets of the common Deposit Insurance Fund would not, after the reinsurance phase, be sufficient to cover resolution in a payout event, extraordinary ex-post contributions would be collected from the credit institutions. The common Deposit Insurance Fund would also have the right to agree with DGSs in Member States outside the Banking Union on the requesting or granting of loans. In addition, it would have the option to request loans from other alternative funding sources. However, as yet there has been no agreement on a back-stop mechanism. In practice, a clear back-stop mechanism would be necessary in order to ensure confidence in the scheme also in a case of a wider systemic crisis. The European Stability Mechanism (ESM) has been proposed as one possible alternative. However, use of this mechanism would require a change to the Treaty, which would require unanimous acceptance by all Member States.

Tags

- [EDIS](#)
- [deposit insurance fund](#)
- [banking union](#)
- [deposit insurance scheme](#)

2. The phase of the business cycle, the pro-cyclical impact of the contributions or the position of contributions at national level may justify a derogation.

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Reform of insurance sector regulation

TODAY 2:00 PM • BANK OF FINLAND BULLETIN 2/2016 • FINANCIAL STABILITY •

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At the beginning of 2016, a new life and non-life insurance company solvency regulation was launched in EU, the so-called Solvency II regime. In the new regulation, both assets and liabilities of insurance companies are valued at market terms. The timing of the reform is awkward for the companies, as low interest rates and economic uncertainty burden company solvency.



New regulation launched at a difficult point of time

The insurance sector's importance as a potential cause of systemic risk is due to the scale of the sector's investment activity. In addition, monitoring the insurance sector is important, because insurance companies are to a large extent connected with both domestic banks and Nordic actors.

The Solvency II regime^[1] for insurance companies entered into force at the beginning of 2016 after lengthy preparations. As regards the operating environment, the timing of the new regulation was not the best possible. Slow economic growth and uncertainty have

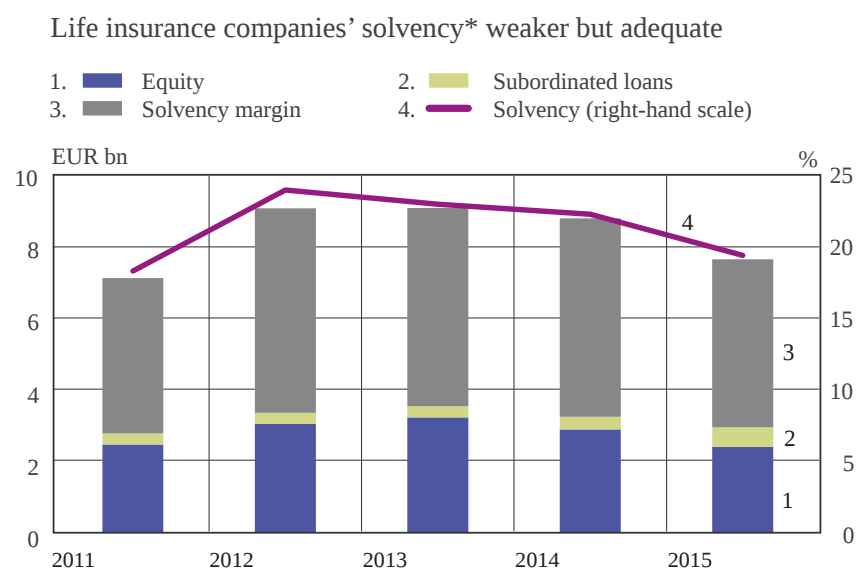
1. Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II). See <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0138>.

been reflected in volatility in the financial markets. Low interest rates have in particular burdened insurance companies. The running yield from low-risk fixed income investments has decreased, and the interest paid on life insurance policies with a guaranteed return is higher than the return on new investments. This may increase the emphasis on the return on investments and encourage excessive risk-taking. In Finland, on the other hand, policies with a guaranteed return now represent only one third of all life insurance policies, and new life insurance business is almost entirely unit-linked, which eases the situation.

In the wake of the entry into force of the new risk-based solvency regulation, not only the assets of insurance companies but now also the liabilities are valued at market terms. Valuation of technical provisions at market terms weakens solvency at the current very low interest rates. For this reason, the insurance companies, also the Finnish ones, have been permitted by supervisors to apply long-term transitional provisions for technical provisions in solvency calculation. The main purpose of these transitional provisions is to ensure a smooth transition to solvency calculation in accordance with the new regulation and avoid possible market disruptions due to low interest rates, such as fire sales of security holdings that could be caused by adjustment of insurance company investments to the new regulation.

The last Solvency I data were reported as at the end of 2015. The average solvency of Finnish insurance companies had deteriorated but still remained at a good level (Chart 1).

Chart 1.



*Life insurance companies' solvency calculated in accordance with the Solvency I provisions.

Source: Financial Supervisory Authority.

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Insurance sector increasingly concentrated

The Finnish insurance sector, like the banking sector, is concentrated and it will become even more concentrated as a result of the winding up of the insurance company Suomi. Assets and liabilities of the three largest life and non-life insurance companies form more than 75% of the aggregate assets and liabilities of the whole sector.

Banks and insurance companies, in turn, are connected through their holdings. The largest banks and banking groups have their own insurance companies, and insurance business can be of great importance to the income and profitability of financial and insurance conglomerates. In 2015, insurance operations supported the profitability of banking groups. Insurance companies and banks are also connected to the other Nordic countries via fixed income investments and holdings.

Insurance sector a possible source of systemic risk

In recent years, increasing attention has been paid to possible systemic risks caused by insurance operations.^[2] In particular, insurance companies' role as large-scale investors may lead to procyclical market disruptions, such as fire sales of securities.

The investments of Finnish insurance companies are largely diversified but, due to the large size of the investments, changes in them may have material effects in Finland. For example, domestic earnings-related pension providers and insurance companies hold nearly one third of Finnish corporate debt securities.^[3] Domestic ownership is positive for corporate funding, but a possible change in insurance companies' investment allocation could hamper market-term financing of Finnish companies. However, the corporate sector's diversified funding structure decreases the consequences of this risk.

In 2016, Europe-wide stress tests of the insurance sector will be carried out under the management of the European Insurance and Occupational Pensions Authority (EIOPA). The tests will help to assess the vulnerability of the sector to adverse market risk scenarios. The core of the tests is a so-called double hit scenario where, in addition to low interest rates, asset prices are also stressed. EIOPA will disclose the stress test results in December 2016.

Earnings-related pension assets nearly 90% of GDP

The growth of earnings-related pension assets has continued, primarily due to the good return on investments. At the end of 2015, the earnings-related pension assets of the private and public sectors, EUR 180 billion, represented about 87% of GDP.

The framework for investments by private sector earnings-related pension providers was revised in 1997, after which the weight of equity investments has increased. As a result of

2. In 2015, the European Systemic Risk Board published a Report on systemic risks in the EU insurance sector. See https://www.esrb.europa.eu/pub/pdf/other/2015-12-16-esrb_report_systemic_risks_EU_insurance_sector.en.pdf.

3. Insurance companies owned 16% and earnings-related pension providers 13% of Finnish corporate debt securities in 2015.

increased equity investments, the volatility of the return on investments has increased, but over the longer term equity investments have raised the return on investments. The average real return on private sector earnings-related pension investments has been 4.1% in 1997–2015. The return on public sector earnings-related pension investments has been a little higher. However, the returns are not fully comparable, because public sector pension providers are not governed by the same solvency provisions as the private sector.

In addition to national diversification, pension assets have also largely been diversified to international investment objects. Half of the investments have been made in countries outside the euro area, more than a quarter in Finland and the rest in other euro area countries. Almost half of all the investments had been made in the stock market or in investment objects involving equity risk. The proportion of different fixed income investments was 42% at the end of 2015. The relative share of stable property investments has remained at about 10% of all investments.

The return on fixed income investments of earnings-related pension providers' capital employed has already decreased to close to zero, and the return on all investments increasingly relies on investments involving property and equity risk. In line with the negative change in value of equity investments, the nominal return on investments fell to –0.1% in the first quarter of 2016.

As a result of low interest rates and increased stock market volatility, the risk-based solvency position of earnings-related pension providers deteriorated during 2015, and the trend has continued in the first quarter of 2016.^[4] In spite of the deterioration, the performance ratios have still remained at quite a good level, if the changes in the investment environment are taken into account. The key objective of earnings-related pension providers' investments is productive and prudent investment of assets covering the pensions. This emphasises the importance of on going assessment of the interaction between earnings-related pension providers' investments and solvency.

Tags

- [insurance](#)
- [Solvency II](#)
- [systemic risks](#)

4. Financial Supervisory Authority (2016) Financial position and risks of supervised entities, and interim reports of earnings-related pension providers.

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