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The cover picture depicts the national
motif on the Slovenian 20 cent coin:
Lipizzaner horses.

Preface

A well-functioning financial and payment system is a crucial prerequisite for the operation of the economy in a modern society. It requires a stable financial system, beyond reproach, capable of handling its basic tasks, such as the transmission of finance and payments, pricing of financial instruments and distribution of risk. Furthermore, the risk-bearing capacity of the financial market agents and public confidence in financial institutions and the infrastructure must be sufficient to endure disruptions in the operating environment.

One of the tasks of the Bank of Finland is to promote the stability, reliability and efficiency of the Finnish financial system and to participate in its development. The Bank's efforts are integrated with the objectives of the European System of Central Banks and also require close cooperation with other authorities.

The Bank of Finland's task is to analyse the stability of the financial system, as a whole. The Bank evaluates the most significant threats to stability in the operating environment of financial institutions, the state of the principal borrower sectors, the risk-bearing capacity of financial market participants and the reliability and efficiency of the underlying systems.

The central themes of this report are the financial market's recovery from the global crisis and the measures used to restore the stability of the system. The worst phase of the financial crisis has now been passed and 2009 has seen significant improvements in the operating capacity of the international financial markets. For the present, the Finnish banking sector appears to have survived

the crisis with its profitability and capital adequacy intact. On top of which, the domestic financial sector's infrastructure has shown itself to be reliable in times of crisis.

Enhancement of macroprudential supervision is key to re-establishing stability in the financial system: prevention and mitigation of system risk, dampening down procyclicality of the financial markets and preventing risk concentrations from arising. The Bank of Finland is actively involved in the creation of the new supervisory and regulatory environment. The objective is to ensure a financial sector that has a better risk-bearing capacity and is better prepared for liquidity risk.

The Financial Stability Report is intended for all financial market agents, other authorities and the public to provide information and promote discussion on relevant topics. This serves the purpose of ensuring that these parties can take financial market conditions into account in their operations.

The Bank of Finland has published its assessment of the nation's financial stability since 1998. Information presented in this report is based on data available on 4 December 2009.

Helsinki, 7 December 2009



Pentti Hakkarainen,
Deputy Governor of the Bank of Finland

Summary

The worst phase of the global financial crisis has now been passed and 2009 has seen significant improvements in the operating capacity of the international financial markets. The banking and insurance sector's infrastructure has shown itself to be reliable also in times of crisis. The liquidity and contagion risks caused by the financial sector's internal problems have declined. However, the operating environment remains a challenge to financial market participants. Behind the recovery lies both an unprecedented weight of support measures provided by various authorities and an economic upswing that is still on uncertain footing.

Despite weakening financial performance Finland's banking sector's profitability and capital adequacy has remained strong within the context of a very difficult operating environment. It is considered that banks' risk situation will be even more clearly linked to overall economic performance. It is also that narrowing net interest income and expanding loan losses are precursors to a weakening in the banking sector's profitability in the near future. However, the banks' sizeable capital buffers are capable of withstanding the predicted losses. In the light of stress tests, undertaken on the banking and insurance sector, capital adequacy is seen as being resilient, even with worse-than-anticipated economic developments. One of the core questions is the financial system's ability to maintain the transfer of credit in support of the economic upswing.

Households' debt servicing capacity has declined, although – overall – it remains adequate. Difficulties have concentrated on debt servicing of a few.

There has also been an improvement in the availability of business financing, but the corporate economic situation remains fragile. For the insurance sector, the main risks are related to their investment activities.

In Finland, the majority of loan stock is subject to variable interest rates, so that changes in the rates are transmitted very rapidly to the customer, affecting their ability to service their loan obligations. The sharp reduction in interest rates over the past year has reduced loan servicing costs and loan losses. However, care must be taken that borrowers don't become lulled into thinking that these low rates are here to stay. A significant effect of short-term market rates being used as reference rates on loans is that they weaken the predictability of interest expenditure.

The internationalisation of the domestic financial market infrastructure continues, ahead of integration within the European forum. With the centralisation of operations, sound governance is the way to reduce the risks to which both the infrastructure and its users are exposed. This requires transparency regarding structural changes, in that adequate information is made available to meet the needs of market operators and authorities alike.

The most notable risks and threats that deviate from the forecast development for 2010 are:

- 1) The recession is prolonged and the financial sector's operating environment weakens yet again.
- 2) Problem banks become dependent on financial market support measures.
- 3) The financial system's financing capacity proves to be inadequate as economic growth picks up.

- 4) Reform of the financial system regulatory framework is not fully achieved, leaving the system with structural shortcomings.
- 5) Problems are caused by the IT systems, business continuity or liquidity capacity faced by a major player in the market infrastructure.

Problems and shortcomings highlighted by the financial crisis are being tackled on a broad front. The emphasis of the reform is on prevention and mitigation of systemic risk within the financial markets. The importance of macro-prudential supervision in the prevention of systemic risk is increasing as too is cooperation between the relevant authorities when reinforcing institutional supervision.

Based on the lessons learnt from the current crisis, a broad, long-term revision road map of the regulations governing the market and of the supervisory process has been initiated. The following recommended measures, central to the reform, are aimed at preventing risks and threats:

- 1) The new financial supervision framework at EU level should be brought into force, without delay. It is important that the European Systemic Risk Board has access to the necessary information as the basis for its risk warnings and policy recommendations. Close cooperation between micro- and macroprudential supervision is a prerequisite for achieving the objectives of the new supervisory framework.
- 2) When developing regulations the main emphasis should be on creating a specific crisis resolution regime for banks. It needs to be possible to intervene in time when banks run into problems. The competent authority must be granted the powers to bring the necessary measures about. Specific proceedings for the consistent handling of banks' liquidation and bankruptcy should be established at EU level. The effect of which would be to prevent the types of disturbances that have affected financial market stability, as well as having an impact on the cost incurred by society and on the moral hazard, affecting some financial conglomerates that are 'Too Big To Fail'.
- 3) A strategic exit from sizeable public support programmes needs to be carefully coordinated at international level and carried out in stages. Banks in crisis need to either be brought back to health or unwound in order to return the markets to normal and to avoid distortions in competition.
- 4) EU legislation regarding financial market infrastructure should be developed so as to promote cross-border supervisory cooperation, to ensure market efficiency and to remove problems with competition.
- 5) Banks must take advantage of improvements in the market condition and strengthen their balance sheets, in order that their lending capacity is sufficient to meet the growing demand that will come with an upswing in the economy.

Operating environment

International financial markets have picked up over 2009, although the operating environment continues to be difficult for the banking sector and financial sector infrastructure alike. The financial markets are dependent on support measures and the economic upswing is still on uncertain footing.

As an export-driven economy, Finland may recover more slowly than other countries due to the structure of the country's exports. In turn, the slow recovery has an adverse effect on both households and companies and thereby on the domestic banking sector.

Significant changes are also anticipated in the supervisory and regulatory environments. These changes will also affect Finnish banks, even though they have substantial capital buffers and their operations have maintained a reasonably low level of risk. The internationalisation of the domestic financial market infrastructure continues, along with integration within the European forum.

Improvements in the economic situation and outlook for financial markets

As a result of the financial crisis, international economic development was weak in 2009. Although the world economy's outlook remains uncertain, it is considered that the most extreme output contraction is behind us. Indeed, with improvements in the economic outlook, optimism abounds. However, according to various forecasts 2010 will see moderate developments, although the United States and Asian markets are expected to see brisker expansion than in Europe.

Expansionary monetary and fiscal policies have supported recuperation of the financial markets. Central banks have maintained low interest rate levels,

expanded central bank financing eligible collateral assets in addition to allocating abundant amounts of foreign currency and varying maturity liquidity in central bank operations. Additionally, several central banks have bonds purchase programmes in place, the purpose of which is to continue to improve market liquidity.

The easing of the international market can be seen, for example, in the risk index chart illustrating conditions on the US financial market, below (Chart 1). The lack of trust between operators in the markets has reduced and interbank markets are recovering, risk premia spreads are narrowing and share markets are picking up. Banks have been able to improve their operational preconditions by transferring poorly performing assets to various asset management companies. Also, banks' funding has become noticeably easier to secure.

This has been accompanied by the return of investors' risk appetite, which has improved the availability of financing. Several US and European financial conglomerates have been able to acquire new capital on the markets and thereby repay the billions in support provided by their governments to help them through the crisis. Meanwhile, the take-up on central bank funding channels has dropped off.

However, the situation in the financial market remains vulnerable and negative economic news can easily weaken the prevailing optimism. International financial systems continue to operate below par, in addition to which access to long term financing has not yet fully recovered and the weaker banks still rely on state support.

Changes in the operating environment

As to the operating environment, significant pressures to change have been created by the crisis. First, the deep recession experienced in the real economy inevitably leads to a rise in banks' impairment losses. The economic situation in Middle and Eastern Europe has been particularly bleak. Western financial conglomerates that had earlier extended their operations into countries in these regions have found themselves needing to recognise large impairment losses on lending in the area, making downward adjustments on goodwill and increasing their loan loss reserves.

According to estimates by the International Monetary Fund (IMF), cumulative losses on loans granted and on securities held by banks and financial services firms would amount globally to about USD 2,800 billion (approximately EUR 1,900 billion) for the period 2007–2010 (Chart 2).¹ According to the IMF, 60% of these losses would be recognised in the US and 40% in the UK and the euro area. By the end of November 2009, banks had recognised about USD 1,700 billion in losses, globally.²

Secondly, regulation concerning the financial community is tightening. Revision covers such areas as regulations governing banks' accounting and financial reporting as well as extension of the regulations to concern operating sectors not previously governed. There will also be changes in supervisory structures and improvements in pre-emptive crisis prevention and management (see this report's Financial System Policy section).

Thirdly, there have been changes in the markets' structure and corporate governance. Within the banking sector, ownership levels by the respective State have grown in several banks as a result of

Chart 1.

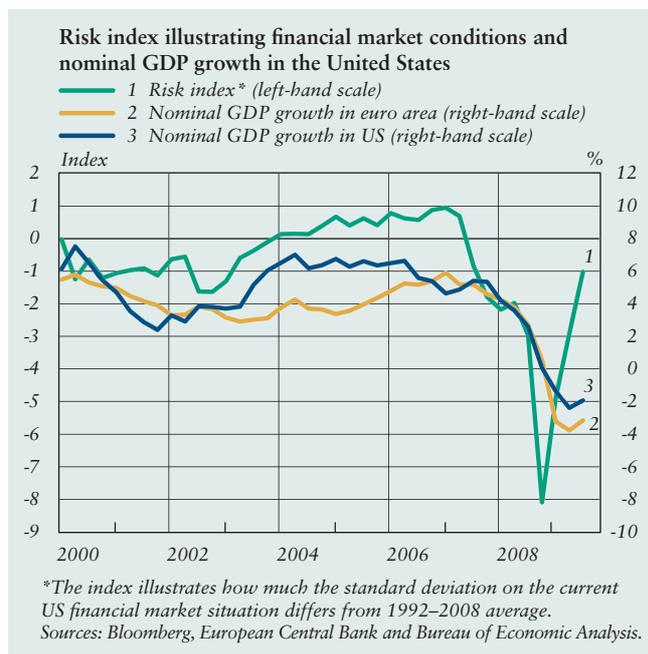
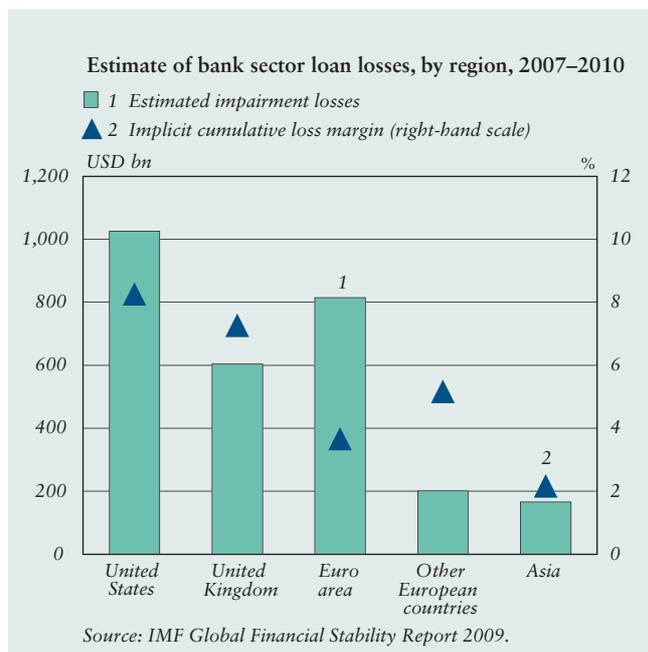


Chart 2.



¹ IMF Global Stability Report (October 2009).

² Bloomberg 23 November 2009.

the support measures imposed. On top of which, mergers have meant that many large financial conglomerates have grown in size still further. It is probable that the second phase of the crisis will affect small and medium sized market operators most significantly. Increasing loan losses and upward pressures on costs are driving companies to either merge or to seek increased returns through new products or new markets.

A result of the crisis can also be seen in increased risk awareness in the markets. The risk premia demanded by investors grew in size over the course of the crisis, to historically high levels. Risk premia spreads have narrowed noticeably over 2009, from their previously exceptionally high level, but the level experienced before the crisis is not expected to return.

The financial crisis also had the effect of bringing forward sub-sectors which, in practice, lack sufficiently reliable financial market infrastructure. For example, the markets for OTC derivatives and credit default swaps (CDS) in particular grew so forcefully that the market counterparties' practices were unable to keep up. Global pressures, from the authorities side, is now shifting OTC derivatives more towards the areas of trading and central counterparty clearing.³

Fourthly, the crisis had added to the market participants' need to make strategic choices over the range and international nature of their business activities. As a result of the crisis, many international financial institutions have concentrated their business on their key markets and

³ European Commission communication 20 October 2009. See: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1546&format=HTML&aged=0&language=EN&guiLanguage=en>.

customers and withdrawn from secondary market areas. This has left room for domestic operators and offered them the opportunity to develop their own market share.

On the other hand, such changes in the market profile create the prospect for extending their activities through buying new functions or through expanding their existing organisation. It has also meant that participants from outside the financial sector have also been presented with the chance to extend their business into the financial markets. For example, several participants have expressed interest in offering central counterparty services for OTC derivatives.

Changes in the international operating environment reflected in Finland

The Finnish financial sector as a whole survived the initial stage of the financial crisis relatively unscathed. The banks' capital buffers remained large and no exaggerated risk-taking was perceived. On the other hand, employee pension insurers' investment losses were significant and the capital adequacy regulations relating to them had to be eased. It is possible that, in future, the cascade effect caused by changes in the international operating environment will be more substantial.

The most pressing threats to the financial sector's operating environment are to do with the general economic condition. Despite recovery within the global economy, as an export-driven economy, Finland may recover more slowly than many other countries due to the structure of the country's exports. In turn, the slow recovery has an adverse effect on both households and companies and thereby on the domestic banking sector. A

lacklustre economic growth particularly underlines the importance of cost efficiency.

Delay of economic recovery is the main threat

Weaker-than-forecast economic growth would change the confidence level in the financial markets very rapidly to a more adverse direction. It would result in a greater-than-anticipated increase in impairment losses, which in turn would be added to the banks' existing difficulties in accessing funding, would increase risk premia, asset values would fall and there would be a rise in the numbers of bankruptcies.

In stress tests undertaken by the Committee of European Banking Supervisors (CEBS), the largest financial conglomerates operating in Europe would anyway be capable of enduring weaker economic development.⁴

The banking sector's lending capacity has deteriorated with the increase in impairment losses and a reduction in securitisation. The key question is how the financial system can maintain its ability to transmit credit in support of recovery. A well-functioning financial and payment system is essential for economic growth.

Under current conditions, a new crisis or disturbance would significantly weaken the financial sector's operating environment. If this were to happen, financial market parties could need additional support, as current stimulus packages would prove insufficient and no sustainable growth would begin for many years. Governments are left with limited possibilities to offer a new round of

support measures, as the present crisis has left them heavily indebted.

Improvement in the market situation still greatly depends on public support measures. The additional liquidity, injected into the market during a time of exceptional support measures, cannot however remain within the financial system permanently. There is a threat from mistiming the phasing out of the support measures. Exiting too soon would weaken the market situation yet again, as for example, when banks have to renew a substantial amount of maturing money for 2010–2011. On the other hand, delay could foster new economic instabilities.

It is possible that the billions used by governments to avert the crisis and the plentiful central bank liquidity on offer have already planted the seeds of new operating environment disturbances. Even though the substantial support measures have been indispensable in mitigating the worst of the crisis, historically low money market rates have already tempted businesses to get returns using means that cannot sustain stable market development in the long run.

On the other hand, should the economic situation improve beyond expectations, the threat is that the reforms identified by this financial crisis will be left undone and the need for change will not be seen. In which case, there would be weaknesses left in the financial markets which could enable a crisis to flare up again in the future. A particular lesson learnt from this crisis has been that the financial sector needs a specific crisis resolution that would enable more effective intervention when banks run into difficulties.

⁴ Committee of European Banking Supervisors press release, 1 October 2009, on stress test results. See www.c-ebbs.org.

Internationalisation of payment and settlement systems

The internationalisation of Finland's payment and settlement systems continues. In the future, the various elements of the infrastructure will increasingly shift outside Finland as they take advantage of European integration and economies of scale.

The shift towards a Single Euro Payments Area (SEPA) continues. This development is leading to retail payments mainly being processed outside Finland, in the future.

The Directive on markets in financial instruments (MiFID) will have the effect of tightening competition in securities trading. As a result of this Directive coming into force, in September 2009 the Helsinki Stock Exchange (NASDAQ OMX Helsinki Oy) transferred over to using central counterparty clearing for settlement of their securities. This means a considerable change in operating practices and improvements in brokers' counterparty risk management.⁵ As a result of this, one part of the securities trading value chain is transferred abroad.

From the point of view of the Finnish securities infrastructure, the most notable change brought about by the central counterparty clearing is a reduction in the volume of transactions which inevitably has a cost effect on market participants. A rise in unit costs weakens the Finnish operators' competitive edge.

The main threat to the infrastructure is a major player, for instance a domestic bank that experiences significant disruptions in its IT system or to its liquidity capacity that is reflected in the

⁵ See: Marko Myller: Keskusvastaupoliselvitys alkaa Helsingin pörssissä: Mikä muuttuu? (Central counterparty clearing begins at the Helsinki Stock Exchange. What will change?) BoF Online 12/2009.

infrastructure. As Finland's infrastructure is highly concentrated, the difficulties experienced by fairly large operators are felt with force. Were confidence in financial institutions to weaken, infrastructural problems experienced by the end user could appear relatively much larger than they otherwise might. For example, extensive cloning of payment cards could weaken consumers' confidence in payment instruments as a whole quite considerably.

Households become indebted

The risks related to household indebtedness are closely linked to developments in the real economy: the key factors affecting debt servicing capacity are interest rates, unemployment and housing price developments. With a long trend of indebtedness already seen, the household sector has become increasingly more vulnerable to the disruptions associated with these risk factors; then again, households have an increasing array of means at their disposal, to protect themselves against these risks.

Since the end of the 1990s, households have financed their consumption and investments by increasing their indebtedness. For a long time, debt levels have grown faster than disposable income. Average indebtedness has risen steadily and, in 2008, it reached record levels at 104% on average of disposable income. In international comparisons, Finnish household indebtedness is still at average levels, and below average against other Nordic households (Chart 3).

The rate of growth of household lending stock has slowed steadily for the last few years. In October, household lending stock grew, year-on-year by a good 5%, in comparison to an average

annual growth of just below 13% for the period 2003–2007.

The consumers' view of how worthwhile borrowing is has improved notably since autumn 2008, with the rapid drop in interest rates, but economic uncertainty has had a dampening effect on lending stock growth. Increasingly many bank managers see that household interest in borrowing in the coming 12 months is considerably larger than the previous survey led them to believe.⁶ Based on the results of the survey, the previously the previously bleak outlook is improving.

Considerable interest risk for households

One feature of Finnish households' indebtedness is the use of floating rates for sizeable parts of the loan stock. Over recent years in the euro area, less than half of new loans have had floating rates applied to them, while 95% of Finnish loans have. Because of the vast proportion of loans having floating rates applied to them, in Finland, changes in market rates are transmitted more rapidly through to the loan rate than in countries where the majority of household loans have either fixed rates or where the original rate is fixed for a long period.

The interest rate linkage on loans shortened from earlier periods following the strong drop in rates since autumn 2008, when increasingly households transferred their loans – particularly those linked to the 12-month Euribor – to Euribor rates that were more reasonable at that point in time. As a result of these transfers, either households' monthly debt servicing costs were reduced or their loan periods were shortened. At the same time,

⁶ Federation of Finnish Financial Services, Saving and the use of credit, 2009.

Chart 3.

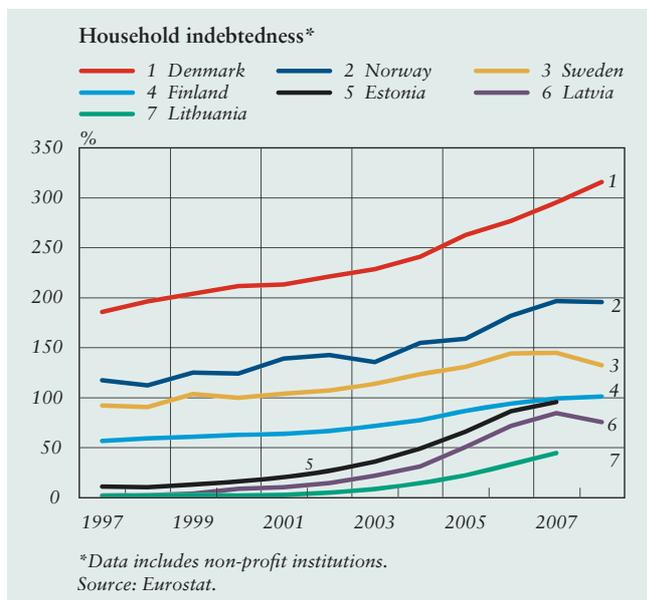
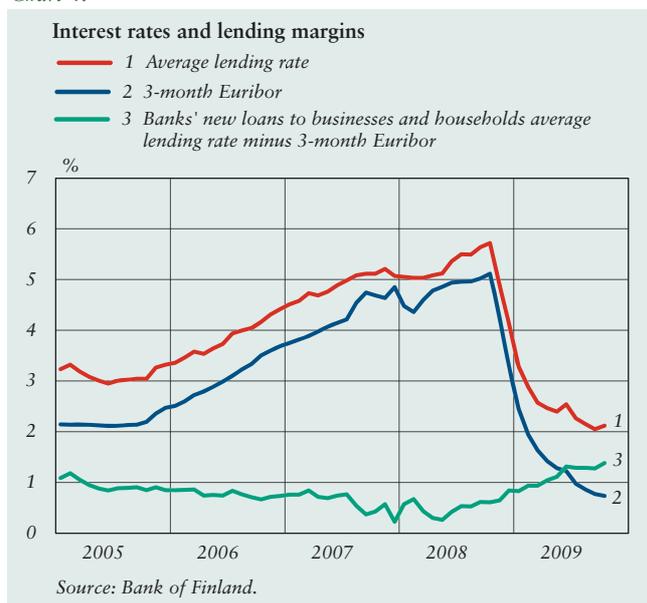


Chart 4.



the predictability of interest expenditure has been weakened, as interest rates on loans are reset more frequently and any rise in market rates is rapidly reflected in the loans' rates. The effect of the reduction in interest rates has been somewhat mitigated with the widening of banks' lending margins (Chart 4).

The threat of unemployment

Finland's unemployment outlook has clearly weakened. Unemployment rates have accelerated noticeably since the beginning of the year and unemployment is expected to rise to close to 11% over the next two years. The recent developments deviate from the unemployment situation seen in the depression of the 1990s, in that the education level of the unemployed has risen since then, which is expected to make re-employment far easier. From the financial stability perspective however, there is still the risk that these more highly educated, unemployed households are also more highly indebted, which can cause debt servicing problems where unemployment is prolonged.

For those who have retained their employment, real incomes have still risen briskly in 2009, based on pay negotiations carried out during the previous years as well as due to low inflation rates, but the

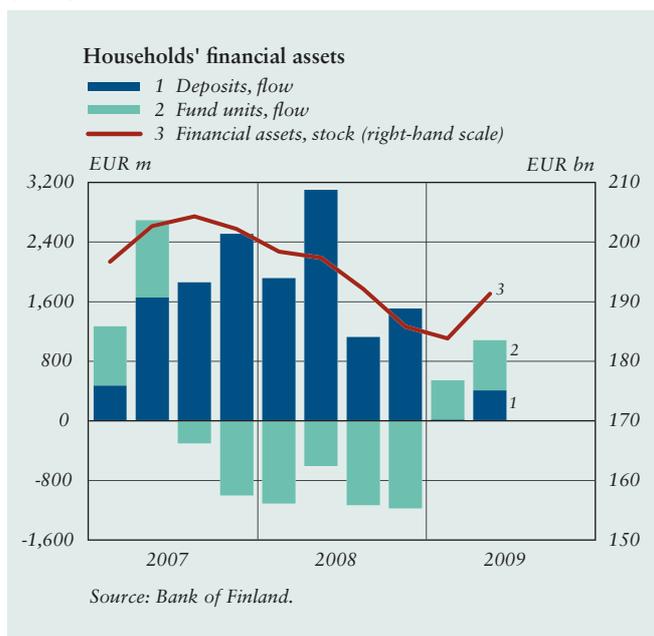
rise in income levels will clearly slow in the future. On positive feature is that households have prepared themselves better for unemployment and other economic risks, than before. Mainly these precautions are in the form of savings, but large numbers of first-time buyers and those taking out larger loans have taken out loan insurance.⁷

Housing prices at last year's levels

The third factor affecting debt servicing capacity is house price developments, which can be seen directly in households' total assets, on top of which, housing is usually used as the collateral for household loans. In July–September 2008, old properties' nominal prices finally took a downward turn after a long upward period. The moderate decrease in prices was short-lived, as in spring 2009 housing prices again made an upward swing. As a result, in July–September 2009, housing prices had recovered to year-earlier levels, throughout the country.

Household financial assets began to shrink with the crisis, as shares, mutual fund units and insurance investments' investment risks were realised in significant investment losses. Households reacted negatively to stock market developments by transferring their assets from high-risk instruments to deposits, which were perceived as being safer. However, there was a turnaround in these trends at the beginning of 2009 when a vigorous surge in share prices led to a growth in financial assets (Chart 5). Also, net financial assets improved, as financial assets clearly grew faster than debts.

Chart 5.



⁷ Federation of Finnish Financial Services, Saving and the use of credit, 2009.

Debt servicing capacity still adequate

Household's loan servicing capacity has weakened, reflected in banks' increasing problem loans. Also, there has started to be a visible rise in those experiencing debt servicing difficulties. January–September 2009, the volume of payment defaults increased by 21% over the year-earlier figure. However, in September, the number of private persons registered as having payment defaults was only 2% larger than a year earlier, which meant that the defaults had been accumulated by the same persons.

Although the low interest rates have so far been able to keep debt servicing costs in check, interest risks have increased as the number of debts has grown and the interest rate terms have shortened. Interest futures predict a turn in market rates in the coming years, up from the historically low levels now seen, and the predicted higher market rates would be seen in turn in a rise in debt servicing expenditure. The bleaker employment outlook has also added to the risks associated with households' debt servicing.

All in all, households' debt servicing capacity has declined, although it remains adequate. The largest risk is linked to the clearly worsening employment development as a result of which, at worst, debt servicing difficulties arising from unemployment could lead to the compulsory sale of homes and a dramatic plunge in housing prices. However, the likelihood of this scenario being realised is extremely small.

Corporate sector outlook deteriorated

Aggravation of cyclical conditions can be seen in the rapidly deteriorating ability of the corporate sector to get access to

funding and in a tightening of terms, as banks' own financing has become hard to come by and liquidity problems worsen. Companies' new loan margins are widening – as much as double. Margins on old loans have also widened noticeably, as a result for example of breach of loan covenant.⁸

Problems related to the availability of financing spread rapidly to world trade. Export companies order books began to shrink, which led to a reduction in export companies' output. The overcapacity of businesses in the forestry sector has also weakened export prospects. In the domestic market, construction is the first sector to suffer in times of poor cyclical conditions. With an increase in unemployment and a drop in consumer expectations, the difficulties are transmitted to the service and transport sectors.

There are differences in small business's difficulties in accessing financing, in comparison to the difficulties experienced by medium and large companies. For small companies, non-equity funding has traditionally been acquired almost completely through banks. The dearth of bank funding spread rapidly to this group, as larger companies also ended up having to turn to domestic banks to secure financing as foreign banks funding dried up almost completely. At the same time, tightened collateral requirements added to small companies' funding problems and brought flows of financing partly to a halt. One of the main hurdles to medium and large companies' access to funding

⁸ Confederation of Finnish Industries, Ministry of Employment and the Economy and the Bank of Finland (2009) Survey on Business Finances.

has been the cost of financing, in other words the expanding loan margins as well as the shorter maturity periods that were demanded. At the end of 2008, companies drew down a fairly substantial amount of short-term bank financing. This has been one reason behind the reduction in companies' bank credit from the beginning of the year, as loans were amortised and new loans were not drawn down at the same pace. Reduced investment needs and deferred investment decisions have also put a damper on borrowing (Chart 6).

In addition to bank credit, in Finland, medium and large companies began to arrange credit through re-lending from employee pension funds. At the time the financial crisis broke out, EUR 4 billion of such loans had been drawn down. The amount of employee pension fund re-lending has been

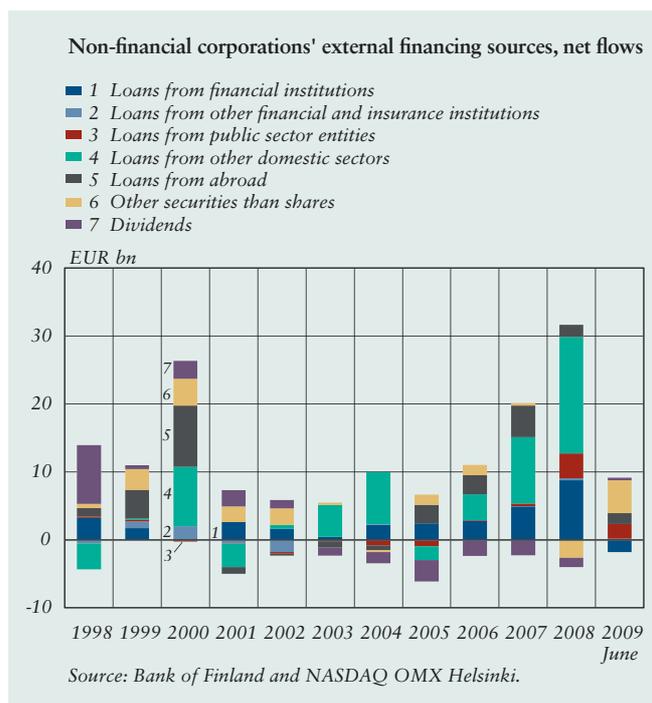
somewhat over half a billion, at its lowest. As a source of funding, loans issued by employee pension funds through re-lending are a special feature of the financial market in Finland, available to help bridge companies over their worst financing difficulties. As the banking system normalises and international financial markets open up again, the use of financing using strict collateral requirements is dampened in normal times. The cost of employee pension funds' premium loans is higher, for example, than those for banks' floating rate loans. There has been a slow-down in employee pension lending during autumn 2009.

In addition to loans taken from employee pension institutions, small companies in particular have looked to public funding sources, such as Finnvera, to meet their financing needs. Finnvera offers counter-cyclical funding, guarantees and export funding and export guarantees. Large enterprises mainly get their public funding to finance research and project acquisitions.

With the recovery of the financial markets and investors increased willing to take on risks, larger companies have been able to return to the international bonds and syndicated loans markets. Finnish companies' borrowing from these markets picked up briskly in 2009. Listed Finnish companies have also taken advantage of a more favourable stock market situation and have raised new share capital to the value of approximately a billion euro.

The cyclical downturn has been reflected in listed companies' activities over the year. Turnover growth has come to a halt or even retreated and profitabil-

Chart 6.

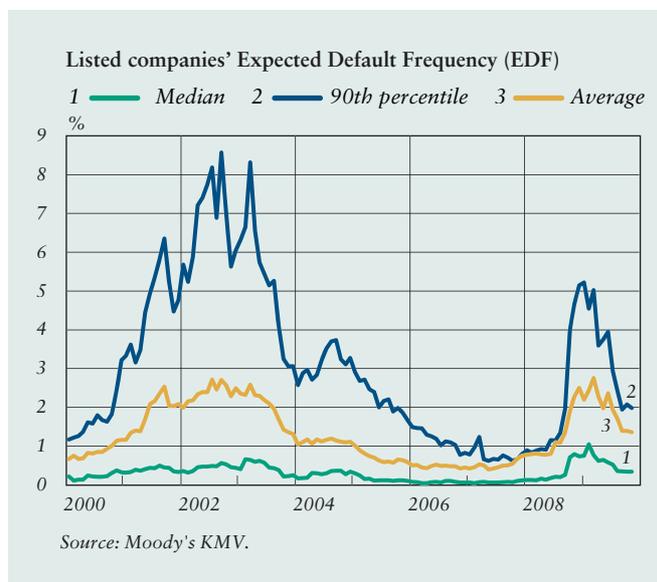


ity has weakened. Also indebtedness has begun to increase slightly. Both the poor condition of the export market and the order book crash will be seen in the corporate sector's books for a long time to come.

As a result of the cyclical conditions, companies' payment defaults and bankruptcies are on the increase. This in turn will lead to banks' loan losses in the future. In autumn 2009, newly registered company payment defaults increased by 30%. There was also an increase in the number of companies seeking liquidation, with numbers up a good quarter over the same period last year. A majority of bankruptcies came from the construction sector, but the service and transport sector figures are on the rise.⁹ The Stock Exchange's Expected Default Frequency (EDF) measure, based on listed companies' trading and financial statement information, rose considerably

⁹ See: www.asiakastieto.fi/asiakastieto/tilastot.

Chart 7.



in autumn 2008, but calmed down in summer 2009, although it still remains below the median the last few years (Chart 7).¹⁰

¹⁰ Calculated using the option pricing method, EDF is a measure of the probability that the market value of a firm's assets fall below the company's liabilities' underlying value.

Banking and insurance sector

The profitability of Finnish banking has declined, but is still sound, considering the very challenging operating environment facing the banking sector. However, banking sector profitability is projected to decline further in the near future in response to the low level of interest rates and rising loan losses, but the rise in market rates is expected to fuel an increase in net interest income and banks' results a little later. Banks' liquidity risks have been reduced, but credit risks have risen. Loan losses will hardly rise even close to the level witnessed in the early 1990s, as the low level of interest rates, moderate level of corporate indebtedness and low exchange rate risks will keep risks down.

Business risk in the banking sector

The risks inherent in banking have materialised during the financial crisis and the deep recession of the real economy following in its wake. The first risk to be realised was liquidity risk, reflecting tighter refinancing conditions for banks. The next to materialise was market risk, following a collapse in the investment income of banks and bank-owned insurance companies in particular. Thereafter, net interest income started to decline in response to the vigorous interest rate stimulus measures introduced by the central banks. The last to materialise was credit risk. This happened when the poor performance of the real economy – as evidenced by rising unemployment and more bankruptcies – was reflected in higher loan losses.

Liquidity and credit risk will be discussed in greater detail elsewhere in this publication. In this section, we will

focus on the recent and projected future development of business risk¹.

Banks post good results amidst very challenging operating conditions

In January–September 2009, total operating profits for banking in Finland² amounted to approximately EUR 1.3 billion, which was EUR 0.6 billion less than in the year before (Chart 8). In spite of the marked fall in performance, the result can still be considered good, given the challenging operating environment. The deterioration in the profitability of the banking sector started towards the end of 2007.

In international comparison, Finnish banks continue to outperform their foreign counterparties, but the difference in performance is not as large as before (Chart 9). US banks, in particular, show a substantial improvement in profitability. In the United States, and to some extent also on the European continent, a considerable contribution to the banking sector result is made by investment banking, the profitability of which is more cyclically dependent than that of regular banking. Conversely, the profitability of Nordic banks has continued to decline (Table 1 and Box 1).

Banks' long-term strategy has been to improve results by increasing lending and deposit volumes and expanding into insurance and investment banking. This strategy was very successful in times of economic upswing, when lending and deposit growth, together with rising interest rates, was reflected in improve-

¹ Business risk refers to the uncertainty surrounding banking sector performance.

² Includes domestic banking groups and the Finnish banking operations of foreign financial groups.

ments in net interest income, while favourable share price developments translated into higher investment income. However, the downside of the strategy was a gradual increase in risks, which were realised in the face of the recent exceptionally weak economic development. Growth in lending and deposit volumes has been strongly cut back in response to sluggish economic growth, and loan rates have fallen rapidly in step with market rates. Banks have responded by raising customer margins especially for corporate, but also for housing, loans from the very low level witnessed during the boom.

The capital adequacy of the banking sector has remained highly satisfactory: the capital adequacy ratio for September 2009 stood at 14.4%, which was clearly above the minimum requirement of 8%, with the capital buffer amounting to approximately EUR 9 billion. Despite declining performance, banks' results show a profit, and some of the banks have also raised funding through share issues. Banks' equity is of good quality, as it consists mainly of share capital and retained earnings. According to the findings of the stress test conducted by the Financial Supervisory Authority in summer 2009, the capital buffer of the banking sector is large enough to cope with a much gloomier economic outlook than projected.³

2010 will be the most challenging in terms of performance

Banks' operating profits are projected to decline over the years 2009–2010 but to begin to grow again in 2011. The poor

performance of banks reflects above all a decline in income and growth in loan losses. Following a reduction in the total margin (difference between the average

Chart 8.

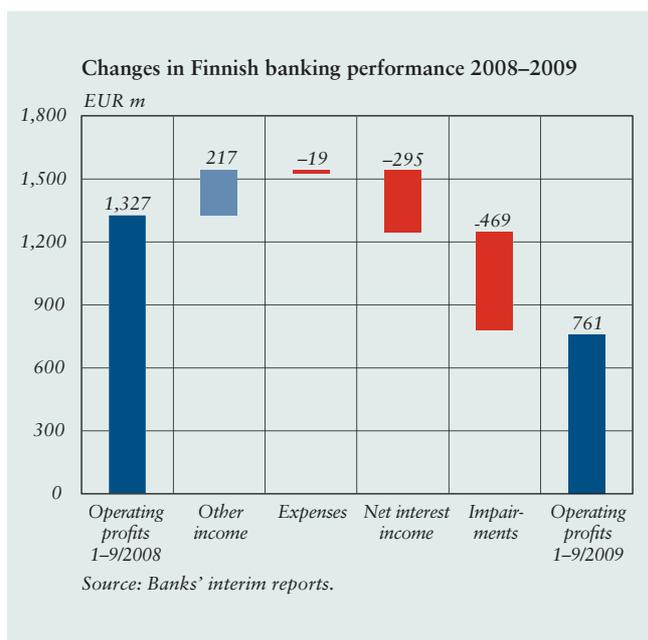
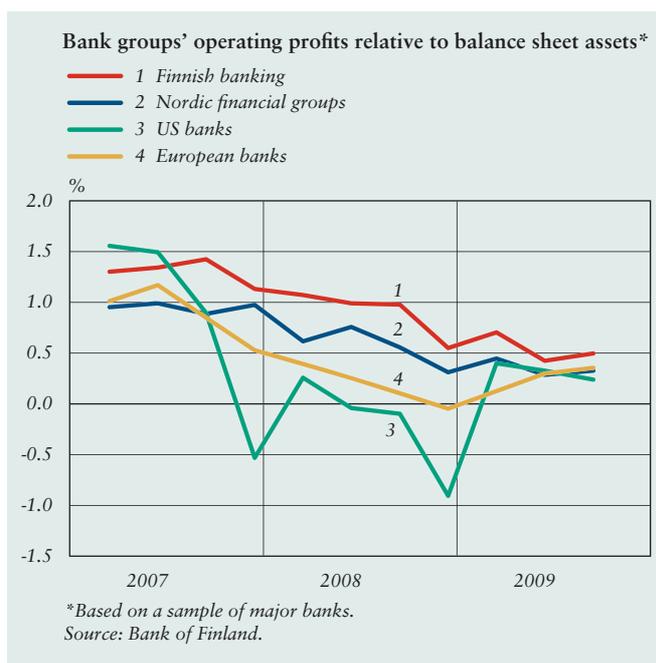


Chart 9.



³ Financial position and risks of supervised entities 2/2009 and Box 2 of this publication.

rate on the lending stock and the average rate on the deposit stock) and subdued volume growth in 2009–2010, net interest income is projected to contract substantially. Markets expect market rates to turn up, which is likely to improve net interest income in 2011.

Reflecting the good profitability of securities trading, other income is projected to be exceptionally high in 2009 but is not expected to remain as high. Net fee income is predicted to decline in 2010, especially following slackening demand for loans and market-based savings products in particular, whereas other income is expected to begin to grow slowly in 2011.

The importance of cost-efficiency to the result of the banking sector will be heightened over the next few years. Expenses are projected to grow very slowly overall. Administrative expenses are expected to decline in response to strict cost discipline and efficiency measures, although growing regulation may bring new administrative expenses for banks. Loan losses, in turn, are projected to grow considerably and to essentially cut back banks' results.

Risks related to the operating environment

The expected course of developments outlined above is not without uncertainties. The major uncertainties surrounding banks' business risks are related to the macroeconomic development.

A lower-than-predicted level of market rates would cause the total margin to shrink to a very low level, reducing net interest income more than projected. A much slower-than-expected growth in the lending stock in response to a stronger-than-expected economic decline would work in the same direction.

Weaker-than-expected economic growth would also be reflected in rising unemployment and more bankruptcies, which would, in turn, step up the increase in loan losses.

Net income from trading and investment may have a considerable effect on the result. Judging from the data for January–September, this would seem to be the case in 2009. The growing importance of this kind of income will increase the volatility of banking sector results, thus making it more difficult to predict results.

Table 1.

Nordic bank groups' profitability, cost efficiency and capital adequacy						
	Profitability: return on equity, (ROE), %		Cost efficiency, costs, % of income		Capital adequacy measured by core capital (Tier 1), %	
	2008	1–9/2009	2008	1–9/2009	31 Dec 2008	30 Sep 2009
Nordea Group	15.3	12.4	53	48	7.4	10.5
Danske Bank Group	1.0	1.8	67	47	9.2	12.6
OP-Pohjola Group	4.1	6.8	52	54	12.6	12.3
SEB Group	13.1	1.2	62	65	8.4	12.5
Svenska Handelsbanken	16.2	12.8	44	46	10.5	13.5
DnB NOR	12.4	10.7	51	48	6.7	7.3
Swedbank	17.1	-17.0	50	51	8.1	8.8
Jyske Bank	9.7	4.3	77	91	11.0	12.6

Source: Banks' interim reports.

Impact of crisis on the profitability of Nordic banks

The profitability of major Nordic financial conglomerates,¹ measured at return on equity (ROE, %), has deteriorated since 2008. The average annual ROE of Nordic banks was 8.4% at the end of September 2009 compared to 22.4% at the end of 2007 (Chart A). Differences in ROE among Nordic banks have grown considerably during the crisis. The best performing banks have yielded ROE in the region of 20%, whereas poorer banks have plunged into the negative.

A more detailed picture of the impact of the financial crisis on banks' profitability can be seen in the decomposition below, where ROE is broken down into contributing elements.²

The evaluation enables analysis of banks' performance development with the focus on

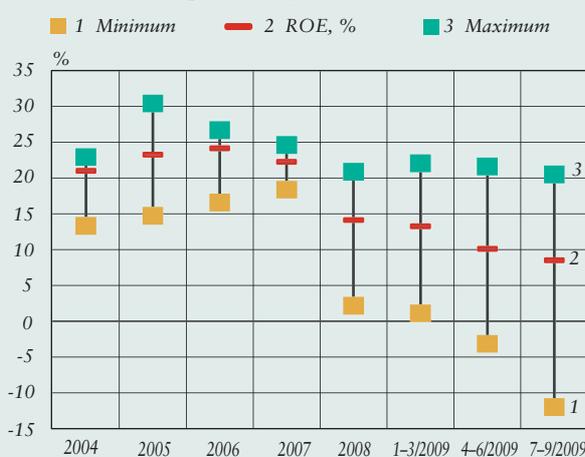
factors affecting financial market stability. The **profit margin** illustrates the operational strength of the institution. The higher the profit relative to operative income and loan losses, the better positioned the bank is to cover its expenses and loan losses.³ In turn, the **operational margin** represents

the bank's cost-effectiveness. The ratio increases with a reduction in costs. A change in the risk adjusted **asset turnover** represents more effective management of resources relative to risk. Growth in these factors reflects positive developments in banks' stability. The fourth factor illustrates changes in **willingness to take risk (asset-risk ratio)**. If profitability has been improved by steering the

³ See ECB Financial Stability Review, December 2009

Chart A.

Nordic banks' profitability 2004–2009 (ROE)



Sources: Banks' interim reports, Bloomberg and the Bank of Finland.

Table.

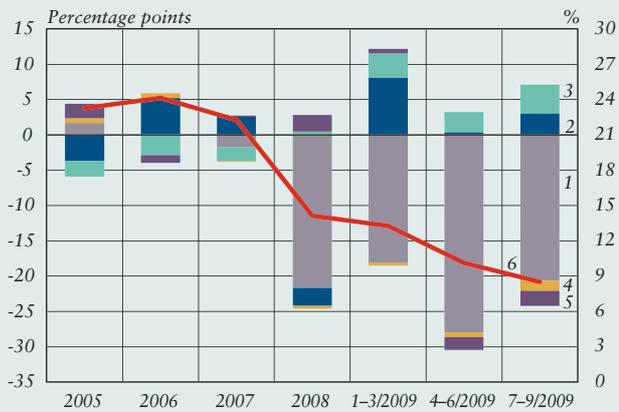
Factors affecting profitability

$\frac{\text{Profit before taxes}}{\text{Equity}}$	=	$\frac{\text{Profit before taxes}}{\text{Profit before loan losses}}$	x	$\frac{\text{Profit before loan losses}}{\text{Net income}}$	x	$\frac{\text{Net income}}{\text{Risk-weighted assets}}$	x	$\frac{\text{Risk-weighted assets}}{\text{Assets}}$	x	$\frac{\text{Assets}}{\text{Equity}}$
Profitability		Profit margin		Operational margin		Asset turnover		Asset-risk ratio		Financial leverage

Chart B.

Contributions to changes in Nordic banks' profitability 2005–2009

- 1 Profit margin
- 2 Operational margin
- 3 Turnover
- 4 Asset-risk ratio
- 5 Financial leverage
- 6 ROE (right-hand scale)



Sources: Banks' interim reports, Bloomberg and the Bank of Finland.

investment strategy towards a riskier direction it may have a negative impact on the bank's stability. Likewise if increase in ROE is due to higher **financial leverage** it may jeopardise the bank's stability: The higher the leverage ratio the more vulnerable the bank.

First few signs of the global financial crisis on Nordic banks

were felt towards the end of 2007, when profit margins turned into negative after a long period of positive growth (Chart B). The full impact of the crisis was revealed during 2008 when loan losses started to increase amidst falling profits. In 2009, improved cost efficiency and speedier asset turnover have helped compensate for the steep fall in profitability.

Reducing gearing and the willingness to take risk have been other recent measures contributing to stabilisation of operations.

The profitability of major European banks started to improve in the first half of 2009, but corresponding developments have not yet been observed among Nordic banks. Large European banks engaged in investment banking in particular have seen their earnings rise as a result of higher share prices, whereas Nordic banks operate mainly as universal banks.

Furthermore, the profitability of Nordic banks has remained fairly good throughout the financial market crisis, so a major boost to profitability is not to be expected. A third differentiating factor is the timing of economic recovery. It seems that the Nordic countries are witnessing a slower start of recovery compared to the rest of Europe on average, so it is likely that an improvement in Nordic banks' profitability will not be seen until after the European banking business is well on the path of recovery.

Lower liquidity risks

Early in the year, even capially strong banks may have experienced problems in meeting their payment liabilities – despite the situation in Finland remaining sounder, in comparison to many other countries. In this respect, the situation, relative to winter 2009, has been restored almost to normal.

The availability of funding in the wholesale market has improved significantly, permitting the banks to also issue debt instruments of relatively long maturities.

The improvement in the liquidity situation is also related to slower lending growth. However, developments in the stock of deposits have also been subdued because of shifts of assets away from deposits into for example fixed income funds and other mutual funds, although many fixed income funds often invest in bank-issued debt securities.

The improvement in the liquidity situation is also reflected in the Bank of Finland's monthly balance sheet. In the Eurosystem monetary policy operations conducted at the end of June 2009, Eurosystem central banks granted ample long-term credit to their counterparty banks. The Bank of Finland's claims related to monetary policy operations on euro area credit institutions – in practice on banks operating in Finland – surged to close to EUR 4 billion from around EUR 1½ billion. After June, the volume of claims has remained almost unchanged, although the banks would have had sufficient collateral to put up and although the Eurosystem has offered banks more credit both through their regular, weekly main refinancing operations and through the long-term

refinancing operation conducted at the end of September. The Bank of Finland's counterparties have not expressed much need for the additional funding available from the central bank.

In recent months, banks' overnight deposits with the Bank of Finland have grown, at times amounting to as much as several billion euro. Overnight deposits refer to deposits with the central bank with next-day maturity and in excess of the mandatory minimum reserve system. The volume of overnight deposits was highest in the monthly balance sheet for June. The rate of interest payable on overnight deposits is low, in recent months only 0.25%, which indicates that the high volume of deposits may be a sign of both ample liquidity and provision for future needs.

The liquidity situation may become more restrained if the demand for funding increases in step with the economic recovery. Due to government indebtedness, bond issues may be expected to increase, which may make it more difficult for banks to issue their own debt instruments.

Growing credit risks

Liquidity risks related to problems within the financial sector have declined, whereas credit risks arising from problems of the global and national economy have risen. Hence, banks' risk outlook is increasingly dependent on the macroeconomic outlook and continuation of the recession. Already in the first half of 2009, the gross volume of new loan losses suffered by the Finnish banking sector was manifold compared to the equivalent months of 2008, although it needs to be pointed out that

loan losses were low to begin with. Loan loss recoveries increased only slightly.

Corporate loans have been the major source of credit risk for banks. According to Statistics Finland, the number of companies filing for bankruptcy in January–September increased by 31% from the year before. The staff size of bankrupt companies was 44% bigger than in the year before, pointing to a growth in the average size of bankrupt companies.

On average, corporate indebtedness is currently lower than before the recession of the 1990s. There are only a few SMEs with debt other than euro-denominated debt, which has kept the level of foreign exchange rate risk low. These factors contribute to reducing risks of loan losses substantially.

The findings of a survey conducted by the Finnish business and credit information company Suomen Asiakastieto Oy, published in September, indicate that around 0.3% of corporate liabilities will turn into bankruptcy liabilities in the course of the next 12 months. Finnish monetary institutions' claims on domestic companies amounted to a little less than EUR 45 billion at the end of August; 0.3% of this would be a little over EUR 100 million. Payment difficulties were most common in companies in the hotel and restaurant business, whose level of indebtedness is, however, traditionally low. By contrast, credit volumes are higher in industry and trade but bankruptcy risks are lower.

Many banks calculate the capital charge for credit risk using the Internal Ratings Based Approach. For them, the average risks of corporate loan portfolios may grow in cyclical downturn. However,

at least so far there are no signs of a substantial deterioration in banks' capital adequacy for cyclical reasons, but economic cycles may affect risk weights with a lag.

The debt servicing ability of households has weakened but remains good.⁴ Interest rate and amortisation payments on household loans may be delayed but household loans are only seldom left unpaid indefinitely. A very substantial part of the household lending stock is mortgage-backed, which, in light of past experience, is not related to any serious loan loss risk.

In household lending, unsecured consumer credits are the major source of problems. The volume of total household consumer credit has increased strongly over the past few years, at times at an annual rate of over 20%. According to Bank of Finland statistics, consumer credit granted by Finnish monetary institutions amounted to approximately EUR 12.5 billion at the end of October 2009. However, the resulting loan loss problem is not a major issue for the banking sector overall.

Many banks have recently negotiated changes in repayment schedules with their customers, if the original repayment schedule no longer seems realistic. The findings of a survey conducted in October 2009 showed that nearly one-fifth of debtors had, in the current year, entered into special arrangements to ease their debt servicing burden.⁵ As a result, loan loss provisions have declined.

⁴ Herrala, R. 'Household indebtedness and payment defaults in Finland'. Euro & talous (4/2009) (in Finnish) and the section on Operating environment in this publication.

⁵ Consumer credit and confidence survey conducted by the local cooperative banks (27 October 2009).

Most Finnish loans are floating-rate loans, with changes in the level of interest rates influencing debtors' ability to service their debts. The low level of interest rates has reduced loan losses. Credit risks are highest in a situation where the economy is pushed into recession, while the level of interest rates is rising. This is an unlikely scenario. However, if the level of interest rates were to start to rise globally, while the recession continues in Finland, the loan loss situation could well deteriorate. Under such circumstances, also housing prices would fall and the risks of credit loss for household loans, hence, increase.

The macroeconomic factors behind an increase in loan losses are typically mutually strengthening, and the effect of the recession on loan losses will intensify as the difficult times persist.⁶ Currently, there are hardly any macroeconomic factors strengthening the effect of the recession on loan losses. Thus, loan losses will not present nearly as pressing a problem as in the early 1990s, unless the recession is greatly prolonged.

The prevailing low level of interest rates may result in loan losses in the long term. The availability of low-priced loans may attract customers whose ability to meet interest rate and amortisation payments would be poor in the context of more normal interest rates. Consequently, due assessment of customers' creditworthiness is now even more important than usual.

At the Bank of Finland, future developments and uncertainties related to key

profit and loss items in the banking sector are analysed for example through simulations accounting for both unpredicted macroeconomic fluctuations and other uncertainties surrounding income and expense items. In light of the simulations, banks' aggregate loan losses would probably amount to a little over EUR 1 billion in 2010. While in 2008 incurred loan losses represented slightly less than EUR 300 billion, more than EUR 700 million had been incurred by September 2009. These figures include both Finnish credit institutions and the Finnish branches of foreign banks. In light of the simulations, the risk for incurred loan losses exceeding EUR 1½ billion next year represents around 16%, whereas the risk for loan losses in excess of EUR 2 billion is as low as 5%.

Market risk

Banks' equity risks have been reduced for example by the disposal of shares, while risks stemming from share price fluctuations have declined, as market volatility has fallen to more or less normal levels.

According to the analysis⁷ of the Financial Supervisory Authority, developments in capital charges for market risk were uneven in the first half of 2009. Capital charges declined overall but increased for banks actively involved in securities trading.

Contagion risk

Banks often hold substantial claims on other banks, which are a potential source of credit loss risk. The findings of a recent survey conducted by the Bank of Finland indicate that such risks are

⁶ Jokivuolle, E. – Virén, M. – Vähämaa, O. 'Transmission of macro shocks to loan losses in a deep crisis: The case of Finland'. Forthcoming in Rösch, D. – Sceule, H. (eds.) 'Model Risk in Financial Crises - Challenges and Solutions for Financial Risk Models'. Risk Books.

⁷ Financial position and risks of supervised entities 2/2009, page 15.

Chart 10.

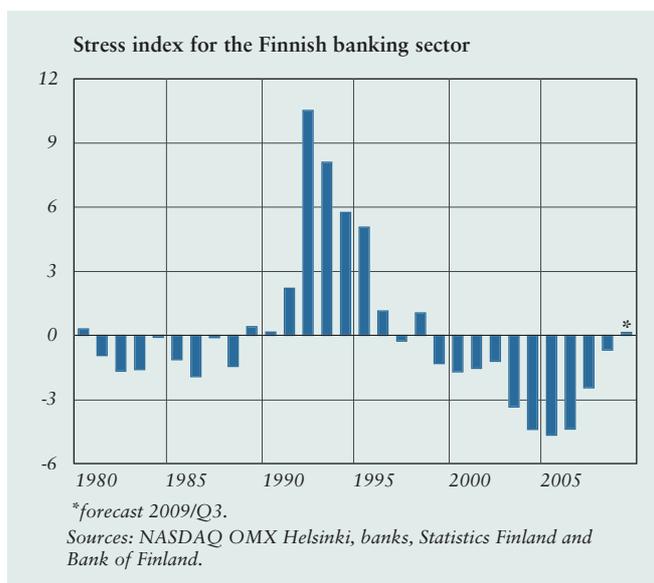
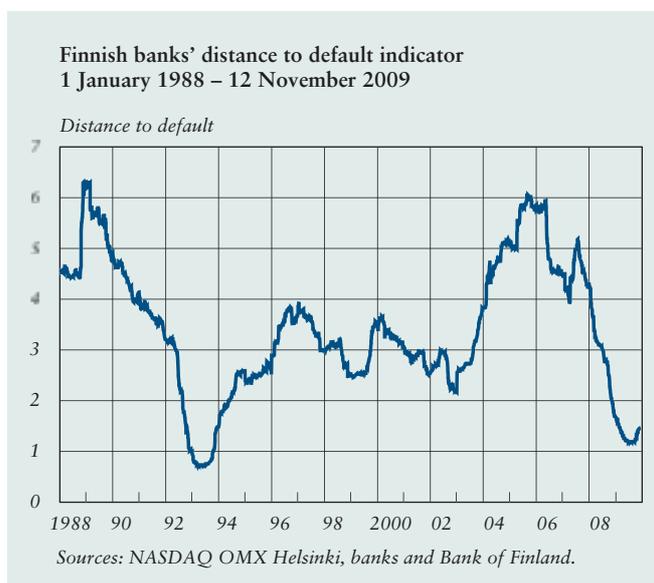


Chart 11.



unlikely to materialise in the Finnish market.⁸

During the peak of the financial market turmoil in winter 2009, foreign banks appeared a more hazardous poten-

⁸ Toivanen, M, 'Is the Finnish banking sector prone to contagion risks?' Euro & talous 3/2009, pp 11–19 (in Finnish).

tial source of counterparty risk than had been the case before. The major part of the foreign claims is related to Nordic banks. With the improvement in banks' situation, this risk has been reduced. The risk is also reduced by the reduction in the volume of loans granted to foreign monetary institutions by 16% from September 2008 to the end of September 2009.

Banking sector risk situation in the light of indicators

Bank share prices, interbank deposits, profitability, equity and loan losses make up the index denoting the banks' stress situation (Chart 10). In the index, each of the variables carries the same weight. A higher index value represents a higher risk. The index points to a slight deterioration in banks' situation in the first half of 2009 but, in light of the index, the situation continues to be far more consoling than in the crisis years of the early 1990s.

An index denoting banks' average distance from default may be calculated on share market and balance sheet data (Chart 11). The indicator shows that banks have become clearly more exposed to risk in 2008 and in the first half of 2009. The situation has improved somewhat since then, but still remains clearly below the long-term average. Similarly, according to this index, the situation for banks is better now than in the crisis years of the early 1990s, although, admittedly, the difference is not as clear as in the light of the above-mentioned stress index.

The financial crisis rattled the insurance sector

The financial crisis interfered with the operations of insurance companies in a number of ways. The major problems

Stress tests and stress test scenarios

In summer and early autumn 2009, stress tests were conducted concerning the banking and insurance sector in Finland. These tests assessed banking and insurance institutions' ability to cope with economic developments that were significantly worse than the most probable near future situation. In contrast to previous years, the Financial Supervisory Authority had the supervised entities carry out calculations relating to their ability to cope with the fictitious situation.

The scenario of bleak economic developments, used as the basis of calculations, was produced by the Bank of Finland. Recently institutions around the world have increasingly begun stress tests with macroeconomic calculations. The Aino model¹ simulating the Finnish economy was used to produce a scenario of deep recession for 2009–2011, in which total output would contract rapidly. Export demand would weaken exceptionally intensely, and households and enterprises alike would become unusually cautious in their consumption and investment decisions. GDP would contract by over 10% in two years.

¹ The Aino model has been discussed in article 'Aino: the Bank of Finland's new dynamic general equilibrium model of the Finnish economy' by Juba Kilponen, Antti Ripatti and Jouko Vilminen in the Bank of Finland bulletin 3/2004 and in the article 'Suomen Pankin yleisen tasapainon malli (Aino) ja reaalisten subdannevaihteluiden teoria' (Bank of Finland's general equilibrium model [Aino] and real business cycle theory) by Juba Kilponen and Antti Ripatti in the Finnish Economic Journal 4/2006.

A macro model depicting the economy forms a rational foundation for stress calculations because it produces an internally coherent picture of macroeconomic developments. For instance, there is a clear connection between employment and GDP growth, and it would not be meaningful to create stress scenarios where the relation between these key variables would be clearly different than in the recent past.

On the other hand, these kinds of dynamic general equilibrium macro models have been designed for other use, not for simulating unlikely extreme situations. Macro models do not necessarily cover all variables needed in a stress test. For example, the Aino model does not capture share prices, use-related real estate prices or the development of interest rates on bonds with different credit risk levels. These variables had to be calculated separately for the stress tests.

In several cases it is easy to find strong statistical relations that have prevailed in the past between the required additional variables and factors included in the macroeconomic model. A specific formula was created for each additional variable, according to which each variable's value in the scenario developed as a function of the macroeconomic factors calculated by the Aino model. In some cases, for example in respect of the prices of business

and office premises, formula estimation had to rely on fairly few observations which naturally weakens the reliability of the formula used. In the fictitious situation it was even more difficult to assess interest rates of bonds with credit risk below that of government bonds, since it was not possible to find a clear statistical correlation in the past between macroeconomic developments and these interest rates.

In addition to the main calculation, supervised entities also evaluated their risk-bearing capacity with two sensitivity calculations which assumed either higher or lower interest rates than in the basic scenario. No model was used for calculating these interest rates.

The results of the calculations were introduced in the Financial Supervisory Authority's publication 'Financial position and risks of supervised entities 2/2009'. In the fictitious scenario, net interest income would fall below 1% of balance sheet total and impairment losses would increase considerably relative to the stock of credit. However, the results show that financial sector capital adequacy would be sufficient in the case of very weak economic developments and a difficult operating environment.

The authorities also conducted their own calculations on the effects of the scenario. The results of supervised entities' and authorities' calculations are broadly consistent.

were due to a collapse in asset values – especially share prices – but problems in the economy have also contributed to the difficulties. Problems in investment markets were reflected in slower growth in the volume of voluntary life and pension policies, whereas growth in premiums written by employee pension companies was held back by rising unemployment. Following the share price rise that began in spring 2009, insurance companies' investment income turned positive again, bolstering the companies' profitability and solvency that had been sharply deteriorating.

Driven by strong growth in premiums written by pension providers in 2008, aggregate premiums written for the insurance sector increased by more than 6% to EUR 16 billion.

Premiums written by non-life companies rose by 4%, still unaffected by the economic problems emerging towards the end of the year. Premiums written by life insurance companies posted a negative growth rate of around 6%, as sales of unit-linked life and pension policies were struggling in the wake of the share price crash. Consequently, in 2008 the contribution made by unit-linked life and pension policies to premiums written was lower than that of guaranteed-return policies. Growth in premiums written on traditional life insurance remained subdued in the current year, but total premiums written by life insurance companies, nevertheless, increased by roughly 8% in January–September. Life insurers have put strong effort into the sales of capitalisation agreements, now also marketing them to private individuals as well as to companies and other organisations. After

years of robust expansion, premiums written on employee pensions are posting relatively subdued growth this year.

Problems in investment markets kept the performance of insurance companies down in 2008. In life insurance companies, the loss of profitability was also related to the actual insurance business. The financial loss suffered by life insurers stood at more than EUR 1 billion. Together with the valuation loss on investment, the total result of life insurance companies posted a loss of EUR 2.5 billion. The balance on technical account declined as the damages and surrender values paid by life insurance companies exceeded premiums written by approximately EUR 1 billion.

Following valuation losses and losses of equity capital, the solvency of life insurers deteriorated, with solvency margins falling by close to EUR 1.5 billion. The total solvency rate for life insurance companies fell to 11.7% by the end of 2008. To buoy solvency levels, some life insurance companies received an additional injection of capital during the crisis. Following the rise in asset prices, solvency strengthened considerably in the second quarter of this year, standing at 14.2% in June.

The solvency of non-life insurance companies has remained satisfactory, and their technical profitability slightly positive. The combined expense ratio for non-life companies stood at 99.7%, which is slightly more than in the year before. The combined expense ratio for large non-life companies has been clearly above the average. Non-life companies also posted losses on investments, which were, nevertheless, limited by the small volume of share holdings. Investments

depressed the total result for the business, which showed a loss of roughly EUR 0.2 billion, while the total result less valuation differences showed a loss of more than EUR 0.3 billion. Following the loss on investment, solvency declined and solvency ratios moved slightly down. The insurance technical business of non-life companies has remained profitable in the year, with a slight improvement in the combined expense ratio for large companies. The appreciation of investments has contributed to an improvement in solvency margins and solvency ratios.

The collapse of asset values was especially strongly reflected in the operations of employee pension companies. Following the fall in share prices, their average investment income turned negative, standing at –15% in

2008.⁹ Investment losses reduced the solvency margins of employee pension companies by a little less than EUR 9 billion last year, with the solvency of the companies declining considerably towards the end of the year. In response to this decline, the authorities intervened by legislating a temporary act amending the solvency regulations for employee pension companies. The temporary act, which will remain in force until the end of 2010, serves to boost the long-term investments of employee pension companies and avoid forced sales of share holdings. Following a rise in share prices and the relief provided by the temporary act, the solvency of employee pension companies was restored to a highly satisfactory level already in

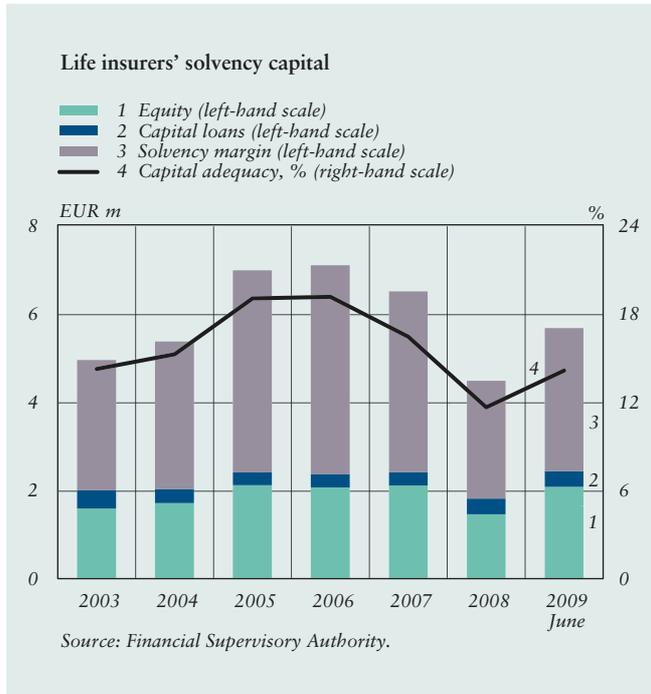
⁹ Finnish Centre for Pensions (2009); Financial statements of employee pension providers 2008.

Table 2.

Solvency of life, pension and non-life insurers					
	12/2005	12/2006	12/2007	12/2008	6/2009
Life insurers					
Equity, EUR m	2,135	2,088	2,127	1,475	2,100
Solvency margin, EUR m	4,572	4,727	4,096	2,665	3,237
Solvency capital, EUR m	4,715	4,893	4,274	2,864	3,441
Solvency margin, % of minimum amount	422.2	423.2	358.8	242.9	297.7
Solvency capital, % of technical provisions	19.1	19.2	16.5	11.7	14.2
Employee pension insurers					
Equity, EUR m	270	295	311	325	327
Solvency margin, EUR m	14,650	17,107	17,663	8,952	10,739
Solvency margin, % of minimum amount	371.4	338.1	289.7	767	895
Solvency margin, % of technical provisions	29.1	31.3	29.9	15.3	17.9
Non-life insurers					
Equity, EUR m	1,487	1,465	1,686	1,387	1,528
Solvency margin, EUR m	2,181	2,064	2,244	1,760	1,975
Solvency capital, EUR m	3,792	3,814	4,184	3,784	4,050
Solvency margin, % of minimum amount	388.7	353.9	374.8	288.5	324.6
Solvency capital, % of technical provisions	59.1	56.2	59.4	51.8	50.3
Solvency capital of premiums earned over 12 months	136.3	132.0	145.7	126.9	133.8

Source: Financial Supervisory Authority.

Chart 12.



summer 2009.¹⁰ The insurance technical business of employee pension companies remained profitable in 2008, but the collapse in investment income resulted in a total loss of EUR 11 billion for the pension companies overall.

Potential threats to the insurance sector

The major risks present in the insurance sector are related to their investment activities. A steep fall in share prices rapidly feeds into insurance companies' solvency margins and solvency ratios.

¹⁰ Financial Supervisory Authority (2009) Financial position and risks of supervised entities 2/2009.

In such a situation, employee pension companies with substantial share portfolios are hit the hardest. The solvency regulations for employee pension companies are likely to be adjusted particularly in respect of the role of share holdings, but also other investments, in the context of solvency margins and solvency regulations.

Major fluctuations in interest rates may also present challenges to insurance companies. On the one hand, a rise in long-term interest rates would reduce the market value of bonds, whereas, on the other hand, a low level of interest rates may also present a problem to life insurance companies with a large portfolio of old guaranteed-return life and pension policies. With the introduction of the Act on long-term restricted savings for pension purposes, and related amendments to the Income Tax Act, life insurance companies will face a new operating environment in 2010. In the future, schemes for long-term restricted pension savings may be provided by banks, investment firms and fund management companies as well as life insurance companies. Savings may also be directly invested in securities markets. The Finnish insurance sector is highly concentrated, and competition in the field has not pressed down the prices of voluntary policies too low in relation to risks. In addition, statutory contributions account for nearly 70% of premiums written in the Finnish insurance market, which lowers the threats posed by potential price competition.

Financial market infrastructure

During the current period of market turbulence, the financial market infrastructure has proved its ability to function reliably. However, while the smooth functioning of the infrastructure has contributed to the creation of global markets, it has also facilitated the creation of new risks and channels of contagion, by enabling remote membership, as well as via standardisation and the transfer abroad of system provision. System operators' business risks have also increased as a result of large development projects. Good governance is one of the tools available for reducing the risk exposure of the infrastructure and its users; market participants' and authorities' access to information, in particular, must therefore be ensured.

Transparency of financial markets must be ensured as market structures change

Transparency is an essential part of the stability and reliable functioning of financial markets. Financial markets function most efficiently when market participants have timely information on the risks involved in their operations and on the risks affecting their service providers. This enables participants to adapt their risk management to financial market requirements.

As a means of promoting efficiency, over the years authorities have divested the majority of their holdings in financial market infrastructure. It is particularly important to obtain information on entities that dominate the market or those who provide services for which there are only few real alternatives. An advanced infrastructure in which precautions are taken against the impact of risks supports the stability of the financial system.

The financial market infrastructure has functioned smoothly throughout the crisis. A lack of transparency, particularly causing problems in the OTC derivatives market, is nevertheless considered to be one of the reasons behind the crisis. Introduction of central counterparty clearing, aims at increasing transparency by for example making methods for collateral requirements calculation public as opposed to bilateral clearing, and to promote the restoration of market confidence.

Already in its 2008 stability assessment the Bank of Finland noted that the management of entire infrastructures and transparency of systems must be the focus of increased attention in both market participants' development projects and requirements imposed by authorities. Concern over the management of entire infrastructures and market transparency is still justified and underlines the need for dialogue on the objectives of system development.

Reliable and efficient functioning of the infrastructure can be ensured only by making the entire services' value chain transparent. Authorities define the boundaries of activities by issuing legislation, standards and recommendations on the operating environment. Operations between the system provider and system participants must be transparent, and the end users of infrastructure services must ultimately benefit from this transparency.

In June 2009, the Eurosystem and the Committee of European Securities Regulators (CESR) adopted recommendations¹ directed at EU authorities. The

¹ So-called ESCB–CESR Recommendations: Recommendations for Securities Settlement Systems and Recommendations for Central Counterparties in the European Union.

objective is to promote a competitive, efficient, safe and sound pan-European post trading infrastructure by decreasing market rigidity without imposing undue costs on market participants. The recommendations facilitate the oversight of central securities depositories and central counterparties, thereby enhancing transparency.

The importance of this approach is underlined particularly in the structural changes of the post trading infrastructure. Securities clearing and settlement systems are undergoing major changes, both on the domestic and European level. Major development projects are currently underway, and the challenges focus on system functionalities and their cost impact. The challenge is to achieve a balance between appropriateness, risks and reasonable costs.

Pan-European initiatives which promote efficiency include the commitment of European central securities depositories, including Euroclear Finland, to the TARGET2-Securities (T2S) project,² the development of collateral management and the introduction of central counterparty clearing in equity and OTC derivatives trading. Within these initiatives, it is particularly important to ensure transparency of costs and flow of information between the various stakeholders, thereby ensuring that the functionalities provide maximum benefits to users, including cost savings. The pricing of infrastructure services is one of the key factors shaping market structures.

The payment infrastructure is developing towards harmonised European

payment methods. As practices and procedures are standardised and European markets become increasingly integrated, ensuring transparency becomes essential. Without it, there is a danger that the benefits of developing new practices and procedures are not channelled to domestic banks and consumers.

It is important to understand that payment infrastructure can be developed by means of modern technology, innovative services and business models.³ This then allows us to explore most appropriately what we can afford to commit ourselves to and what is in Finland's interest in the long term. This consideration is also supported by a study on the social costs of retail payments to be conducted in Finland in 2010. The study will be coordinated by Eurosystem central banks, and the objective is to identify the net costs incurred to the entities in the payment chain. This is thus far the most extensive study on the social costs of payments, broken down by payment instrument.

The new act on payment services will reform card payments,⁴ as the owner of the card scheme may no longer prevent merchants from charging their customers a separate card payment fee. If the costs of accepting a payment card are smaller than those of other payment methods (cash, credit transfer, direct debit), the merchant may continue to include the costs of card payments in the product or services prices. If the merchant charges its customer a separate fee on card

² The TARGET2-Securities project creates a single technical infrastructure which will enable central securities depositories to settle securities transactions in central bank money and conduct both securities and cash settlements on a single technical platform.

³ The Bank of Finland promotes the development of a modern infrastructure and cooperation of market participants in its annual payments forum. See http://www.suomenpankki.fi/fi/rahoitusmarkkinat/km_yhteistyomaksufoorumi_2009.htm (in Finnish only).

⁴ On the fee structure of card payments, see Box 3.

Fee structure of card payments

The bank card launched in Finland in spring 1980 is as the national debit card scheme, now giving way to other payment cards. The objective of the Single Euro Payments Area (SEPA) is to harmonise European payments, including card payments. As the domestic bank card does not fulfil the requirements on SEPA payment cards banks are encouraging their customers to change over to SEPA-compliant cards. In light of the upcoming regulatory revision, and as the composition of the card market changes, it is important that consumers and decision makers obtain an overall picture of the fee structure in the card payment value chain.

Types of payment cards

The fee structure of card payments depends on the card scheme and the characteristics of the payment card. Debit cards are account-linked payment cards issued by banks and used for paying for goods and services and for ATM cash withdrawals. The difference between online debit cards (Maestro and Visa Electron) and offline debit cards (Visa Debit, Debit Master Card and bank cards) is that when a customer pays with an offline debit card, the merchant does not have to establish an online link with the bank's account system for authorisation. A credit card is a card that entitles the card holder to pay for goods and services, using the line of credit granted.

A credit card can be referred to as a charge card if the card holder pays the balance of the purchases in full, eg at the end of the month. A combination card has the features of two different payment cards.

There are two types of international card schemes: open network (Visa and Master Card) and proprietary network (eg American Express). In addition to the international card schemes, domestic bank cards are still used in Finland. The bank card transactions are exchanged via bilateral communication links between banks, based on multilateral agreements. The bank card is being replaced mainly by the above-mentioned open network cards.

Fees and cost items in an open card network

An open network consists of the card scheme owner, ie card association or company, and several participants. In addition to card holders and merchants, participants include card issuers, ie the card holders' financial institutions, and acquirers. Acquirers provide services to merchants by processing (authorisation, clearing and settlement) the card payments.

The card scheme owner is responsible for the functioning, development and marketing of the network. The owner also defines the rules of the scheme. The card issuer, on the other

hand, attracts customers, maintains the card database needed for eg authorisation, and charges the payments from the card holder's account. The issuer also covers the credit losses and some of the costs arising from card fraud. In Finland, the card issuer is usually a bank.

After the customer has made a card payment, the merchant sends the card transaction data to the acquirer who then settles the amount payable to the merchant. An open network typically has a small number of acquirers since their operations require large investments and the majority of costs are fixed. In Finland, the majority of card transactions in an open network are acquired by Luottokunta, a card payment service company.

Aside from the card holder, the participants of an open network seek to cover their costs with fees charged from the other participants. The owner of the card scheme covers its costs with licence fees and commissions paid by issuers and acquirers. The acquirer not only pays the owner, but also the issuer. The acquirer pays the issuer an interchange fee to balance the costs and revenues of the network. The amount of the interchange fee depends on the type of card, and country.

The merchant pays the acquirer a merchant fee for processing the card payments and related risk management services. The merchant also incurs

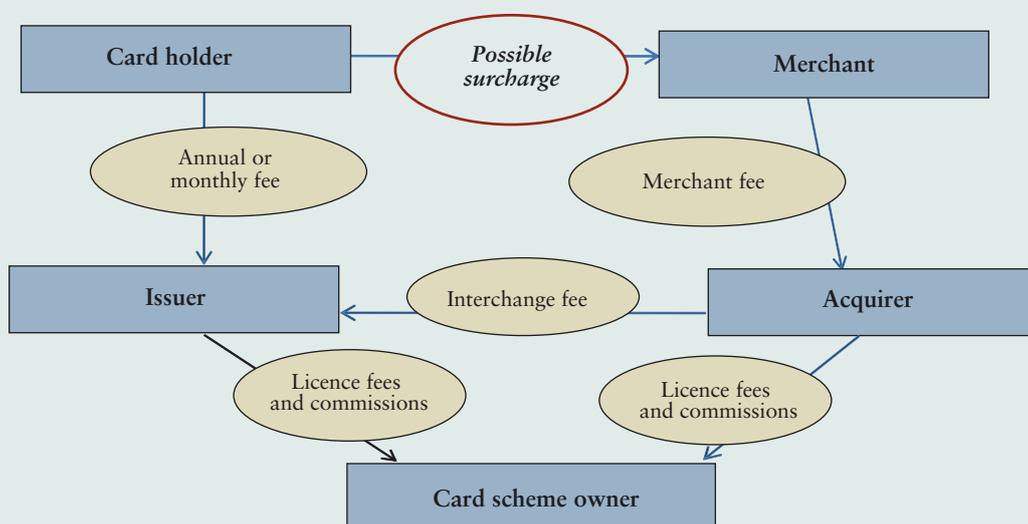
financing costs during the payment settlement period and costs from the point-of-sale (POS) terminal. On the other hand, the merchant may save on costs related to cash payments. In SEPA, the merchant is also liable for damage caused by card fraud if the point-of-sale does not have a chip payment terminal and card fraud could not have taken place had there been one.

The costs evident to the card holder are the annual or monthly fees the card issuer charges the card holder for the payment card. In Finland, this fee is not always transparent as customers often pay the bank a monthly fee for their banking service package, which also covers for example the cost of the card. With regard to credit cards, the consumer also pays interest on credit, an over-the-

limit fee and a fee for cash withdrawals. With the introduction of the payment services act on 1 May 2010, the merchant is allowed to surcharge all card payments, and hence also the merchant, in connection with the payment transaction, can charge the card holder a fee for using the card.

Chart A.

Fees in the card payment value chain



payments, the card holder pays twice for using the card. In addition, the card holder still pays the costs incurred to the merchant from the use of other payment instruments in the product price.

Market transparency contributes to ensuring the continuity and reliability of operations. This is particularly important when infrastructures are transferred abroad as it involves changes in the contagion channels and related risks. A single market also needs public minimum requirements on continuity arrangements. There is scarcely any need to prepare new common requirements for those domestic systems which will be replaced as a result of the introduction of the Single Euro Payments Area (SEPA). Ensuring the Finnish authorities' opportunities to obtain adequate information is of key importance to prevent possible problems created abroad from spreading to Finland.

Good governance improves infrastructure's risk bearing capacity and efficiency

In addition to efficient risk management and thoroughly-specified criteria for participation, the risk exposure of infrastructures – for example payment and securities clearing and settlement systems and communication network services – can be reduced by good governance. Good governance refers to structures and arrangements for organising the management and control of institutions and the planning of operations in a way which takes into account the needs of stakeholders.

An increasing number of recommendations on financial system infrastructure – eg the BIS Core Principles, oversight

standards for euro retail payment systems, standards on card payment schemes, and the ECSB–CESR Recommendations – highlight the need for good governance. An optimal structure for organising governance has not been defined. The recommendations however emphasise in general such issues as requiring that a proportion of the board members responsible for the functioning of the infrastructure should be independent. It should be ensured that the interests of users are taken into account in decision making. The recommendations also emphasise accountability to the wide user community as this is a prerequisite for establishing appropriate management incentives.

The integration of infrastructure important for the Finnish financial system into large European infrastructures is a welcome development from the perspective of efficiency. System users and end users – consumers, card holders, securities issuers and investors – should nevertheless be given adequate opportunities to express their needs, in advance. In addition, central banks and other competent authorities should be provided with sufficiently comprehensive information so as to be able to assess the interdependencies of systems and the risks that may threaten the functioning of the infrastructure as a result of structural changes, in a timely manner.

In practice, it is difficult to balance the interests of the various stakeholders. For example, it is difficult to ensure fair treatment in pan-European or multinational infrastructure harmonisation projects while balancing the interests of small and large users on the one hand, and the interests of users and owners on

the other hand. It has proven a challenge to justify the needs of small local markets and the views of users if they conflict with the views of entities operating in large markets.

Institutions providing infrastructure services should report more consistently to key stakeholders on their future plans. Stakeholders' adaptation and change management is hampered by the current situation, in which infrastructure operators' vision of securities settlement systems is poorly communicated and the timetables as well as milestones of the ongoing projects are undefined. The integration of markets should be speeded up. It is however clear and in the interest of all stakeholders to avoid interim solutions. With regard to payment infrastructure, the national SEPA migration would seem to have a better foundation than that of the securities market infrastructure. The possibility to exercise influence and express extensively the views of stakeholders in a national SEPA forum is a major step forward for the SEPA project.

The T2S project provides a pan-European solution for the settlement of securities transactions. The initiative

promises multiple important benefits.⁵ Users have been given the opportunity to participate extensively in the specification phase of T2S. The possibility to exercise direct influence on the change management of the T2S services is important for the successful completion of the project. One of the key objectives of supervision and oversight is to ensure objectivity required by good governance. Objectivity can be ensured and conflicts of interests can be avoided only by simultaneous and timely reporting to stakeholders. The Finnish national central securities depository, as a member of the Euroclear group, is about to draw up a plan on adapting to T2S services. Migration to the T2S system means in practice, adapting to major outsourcing of operations.

⁵ The benefits are described on the website of the European Central Bank. See <http://www.ecb.int/paym/t2s/about/why/html/index.en.html>.

Financial system policy

The problems and shortcomings that surfaced during the financial crisis are being tackled across a broad front, with focus on prevention and mitigation of systemic risk. Macroprudential supervision designed to prevent systemic risk is growing in importance, while cross-border supervisory cooperation in the field of institutional supervision is being enhanced. The capital adequacy requirements for banks will be tightened and countercyclical elements built into the framework. Better scope for more timely supervisory intervention in the operations of legacy banks will also be provided, while, at the same time, setting up arrangements that will allow even the largest banks to fail without seriously damaging the financial system. Many of the reforms planned will also have consequences for the operation and supervision of banks in Finland.

The financial crisis exposed serious shortcomings in the supervision and regulation of the financial system. In the run-up to the crisis, the authorities failed to pay sufficient attention to identification and mitigation of vulnerabilities threatening the stability of the financial sector. Consistent with their mandates, national regulators focused their efforts on supervising the risk-taking behaviour and regulatory compliance of domestic financial institutions. Not enough resources were devoted to cross-border cooperation in the supervision of large banking groups with global operations. Although analyses of the threats to financial stability were undertaken by central banks, their approach was national and, hence, too narrow in scope, with warnings of the threats to stability proving insufficient. Moreover, being of a general nature, the warnings did not lead to the necessary proactive countermeasures against the vulnerabilities.

The following measures will be taken to improve financial supervision and regulation:

Prediction of systemic risk through macroprudential supervision

- **Macroprudential supervision** is enhanced to allow for identification of the systemic risks to the stability of financial systems and national economies, as well as timely supervisory intervention.
- The **European Systemic Risk Board (ESRB)** is set up to identify systemic risk and issue recommendations for pre-emptive measures.
- **Microprudential supervision** is strengthened through the establishment of a European System of Financial Supervisors (ESFS).

New regulations to prevent build-up of systemic risk

- **Capital requirements for banks** will be strengthened by revising the provisions on the amount and quality of capital to be held under the Basel II framework. There are also plans for introducing countercyclical capital buffers, provisions for expected loan losses and regulations on the leverage ratio.
- **Liquidity risks** will be reduced by imposing quantitative limits on banks' liquid assets and sources of financing.
- **Financial reporting regulations** will be reformed through closer convergence of national rules.
- Special requirements will be designed for **systemically important banks** in order to reduce inherent risks.
- The **range of regulation** will be enlarged to cover gaps external to banks.

Establishment of an EU crisis management framework will provide supervisory authorities with broader powers of intervention in the operations of legacy banks

- **Early intervention** comprises a set of regulator measures designed to restore the operations of an ailing bank back to normal before it is driven into liquidation.
- **Harmonisation of resolution proceedings** to cover the entire banking system, whatever the structure of the bank, would create better scope for cross-border cooperation between supervisory authorities.
- **Provision of a special insolvency regime for the banking sector** would, in turn, permit the consideration of the special characteristics of banking, as well as the financial stability aspect, in the arrangements for legacy banks.

Reform of financial supervision and regulation will take a long time. The short-term agenda of central banks and governments is to decide on strategies and timing for exiting the extraordinary monetary policy measures and financial system support measures introduced to tackle the financial crisis (see Box 5).

Macroprudential supervision to prevent systemic risk

One major reason for the financial crisis was the failure of financial supervision to predict and prevent systemic risk. Measures must be taken to enhance the supervision of large, systemically important institutions, in particular, and to step up international supervisory cooperation.

The primary objective of supervisory reform is to reinforce macroprudential supervision, which is designed to identify and prevent risks to the stability of the entire financial system or an integral component thereof. Measures to enhance macroprudential supervision have been taken at both international and national levels. As one of its tasks, the Financial Stability Board (FSB) set up by the G20 countries will cooperate with the International Monetary Fund (IMF) to identify potential threats to the stability of the global financial system.

As part of the redesign of financial supervision, the decision was taken at EU level to set up a European Systemic Risk Board (ESRB) to strengthen macroprudential supervision within the EU. The Board will be assigned the task of issuing risk warnings and recommendations for action, with a view to preventing or mitigating systemic risks to financial stability. The Board's recommendations may be taken as a starting point for

proposals for EU regulatory reform, for example, initiated by the European Commission, or for actions by national regulators to contain growth in legacy loans. Although the Board lacks binding decision-making power, a national regulator that fails to comply with its recommendations should give sound reasons for inaction. The Board may also publish the warnings and recommendations issued. Meetings of the Board are attended by representatives of EU central banks and supervisory authorities, the European Commission and the Economic and Financial Committee.

EU supervisory authorities for stronger institutional supervision

Alongside the improvements in the macroprudential regime, redesign of the microprudential regime, ie supervision of financial institutions and markets, is also underway within the EU. With a view to improving cooperation and information sharing between supervisory authorities, a European System of Financial Supervisors (ESFS) will be established, consisting of the national regulators and three new European supervisory authorities to be set up for banks, the insurance sector and the securities markets. These new authorities will take the place of existing European Committees of Supervisors. Their tasks will include formulation of technical standards, promotion of harmonised application of EU regulations and settlement of any disputes between national authorities. The EU supervisory authorities will also assume a coordinating role. The new authorities will develop the exchange and collection of supervisory data also for the needs of macroprudential supervisors.

Macroprudential regime to supplement institutional supervision

Despite the different approaches adopted, traditional microprudential (or institutional) supervision and macroprudential supervision both fundamentally serve the same aim and purpose. Whereas the primary role of microprudential supervision is to monitor the risk-taking behaviour and regulatory compliance of supervised entities, the task of macroprudential supervision is to prevent financial crisis and other major disruption of the financial system. Macroprudential oversight is necessary, as microprudential supervision, however efficient, cannot alone guarantee the stability of the financial system. Threats to stability may derive from the macro or global economy, regulatory gaps or the aggregate effects of the actions taken by financial companies, which are difficult to identify through measures of microprudential supervision.

The macroprudential regime serves to assess the vulnerability of financial companies and their customers, financial markets and financial market infrastructure (see Box 4 for a detailed discussion of the tools of macroprudential analysis). The larger the vulnerabilities that build up, the smaller a shock may trigger a financial crisis, the more pronounced the depth of the crisis may become and the slower the pace of recovery. If the financial system is seriously impaired, even a small shock may be enough to trigger a crisis. For example, the current financial crisis started with problems in the US subprime market, which plays a rather minor role in global credit markets.

Vulnerabilities are often difficult to detect. They typically build up in times of

economic upswing when the stability of financial institutions and markets appears to be stronger than normal. In fact, the seeds of financial crises are sown in good times when the risk-taking of financial institutions or their customers increase, while their risk-bearing capacity declines. Risks often build up quietly, almost unnoticed, beneath the surface. One of the reasons behind the present crisis were the major risks taken in the so-called shadow banking sector, which was out of reach of regulation and supervision and consisted of funds and special purpose vehicles seemingly loosely connected to banks. Similarly, the risks of complex securitised financial instruments were not properly understood until they materialised. Consequently, macroprudential supervision should be most stringent during economic upswing to ensure identification of latent vulnerabilities and timely supervisory intervention.

Financial system vulnerabilities are related to household and corporate indebtedness, which are a potential source of payment difficulties, loan losses and the painful deleveraging. The indebtedness of financial institutions and the growth in short-term borrowing generally following suit may, in turn, generate severe liquidity problems of varying kind, as demonstrated in the course of 2007–2008. Monitoring asset price bubbles also falls within macroprudential supervision, as a strong increase in asset prices may reduce the risk awareness of financial institutions and investors and encourage excessive risk-taking.

The macroprudential regime may be national, regional or global, with

Tools of macroprudential analysis

Key balance sheet figures, market prices and economic models

The development of quantitative tools and indicators for macroprudential supervision is still at its early stages. These tools and indicators can be categorised as tools used for either the identification or mitigation of vulnerabilities.¹ This box discusses the quantitative tools developed for the identification of vulnerabilities.

The simplest tools used in identifying vulnerabilities cover statistics based on financial institutions' balance sheet data and key figures on eg the development of credit stock, capital or non-performing loans. The so-called financial soundness indicators listed by the IMF mostly consist of this data.

However, many balance sheet and income variables are insufficient as macroprudential indicators, since they are mainly retrospective. Problems in the financial system are typically reflected in financial institutions' key figures only after a time lag. Hence, if authorities trust in these indicators alone, their response to imminent threats would be merely responsive rather than proactive. The same criticism also concerns various soundness indices which combine a number

of balance sheet and income variables into one figure.

The question of their backward-looking nature is less of a problem in respect of credit agencies' ratings for customers and various debt instruments, since they are specifically designed to assess customers' expected probability of default. At the same time, credit ratings are also insufficient as macroprudential indicators, because they assess individual targets in isolation. Credit ratings do not take the key issues for macroprudential supervision: interaction between financial institutions and exposures to common risks into account. Nor have they been designed to identify risks threatening the stability of the financial system as a whole.

An evaluation of the vulnerability of the financial system can also build on market-based indicators derived from security prices and volatility. These can be used to derive market price-based estimates of individual institutions' or sectors' probability of default. The best known example of such indicators is the listed companies' expected default frequency, EDF (Chart 7).

However, in the light of the current crisis, even market indicators' prediction ability proved weak. Several indicators such as banks' share prices or credit risk derivative prices reacted only once the problems were already well evolved. Market prices

have the same flaw as macroprudential indicators as for example credit ratings in that the market price of an individual security is mainly based on investors' view of the security's future cash flows and risks rather than on the assessment of the stability of the whole financial system.

It would be useful for the evaluation of the impact of regulatory reforms, for instance, if authorities could use analytic economic models capturing the development and progression of a financial crisis. The work for the construction of such models has already started.²

The construction of contagion models has progressed still further.³ Contagion models are used to simulate the spreading of a financial crisis from a single individual bank to the banking system as a whole. The simulations are based on real data on interbank lending and provide a rough picture of the scope of the contagion risk in national banking markets. However, contagion models need to be developed further in order to pay more attention to shocks threatening the entire banking system, liquidity problems and

² See eg Goodhart (2006) *A model to analyse financial fragility*, *Economic Theory* 27, p. 107–142.

³ See eg Upper (2007) *Using counterfactual simulations to assess the danger of contagion in interbank markets and Toivanen M (2009) Ovatko tartuntariskit mahdollisia Suomen pankkisektorilla? (Is contagion risk possible in the Finnish banking sector)* *Euro & talous* 3/2009.

¹ For tools of macroprudential supervision, see eg Borio – Drehmann (2009), *Towards an operational framework for financial stability: "fuzzy" measurement and its consequences*, BIS Working Paper No. 284.

banks' measures to alleviate the impact of crises.

Macro stress tests and early warning indicators

Macro stress tests⁴ and so-called early warning indicators⁵ are the most important tools of macroprudential supervision. Macro stress tests are typically used to simulate the effects of shocks originating from the macro economy on financial institutions' profitability and capital adequacy. The strength of macro stress tests is in their forward-looking quality and in the combination of macro-level scenarios with institution-level balance sheet data. Hence, they enable a fairly realistic view of the dynamics of crisis arising from the macro economy to be drawn up.

Even so, the drawback of current macro stress tests is that they are not very good at simulating crises developing within the financial system. For this reason, it would have been difficult to predict the current crisis with macro stress tests. Large crises can be simulated with current macro stress models only under the assumption that the macroeconomic shock initiating

the crisis is very large. However, this assumption does not reflect the current crisis particularly well, in that it originated in a relatively small shock and was characterised by problems that were initially transmitted from the financial system to the real economy and not vice versa.

Early warning indicators closely resemble the financial soundness indicators collected by the IMF. The difference is that the early warning indicators selected – after a thorough statistical research – are those that have best warned of previous banking crises and in a timely manner. Recent research indicates that especially the coexistence of exceptionally rapid credit expansion and unusually rapid asset price increases seems to rather reliably predict the building-up of a banking crisis. These indicators have typically warned of earlier banking crises 1–4 years before the triggering of the crises and could also have warned of the current crisis.⁶

Most recent research findings on early warning indicators seem rather promising. Even so, these indicators have also their own shortcomings. Even the most promising indicators fairly often produce false alarms. Nor are there any guarantees that indicators derived on the basis of previous crises would hold true in a future crisis. Moreover, warning indicators

based for example on asset price and lending growth would probably not have warned countries that got caught up in the current economic crisis through stagnation in foreign trade.

All in all, there are various indicators and tools measuring the vulnerability of the financial system, but their development still requires considerable work. Authorities responsible for macroprudential supervision should therefore lean on many different tools.

Identification of vulnerabilities in the financial system is only useful when the financial system or authorities address hazardous developments in a timely manner and with sufficient force. The EU's new institution concentrating on macroprudential supervision, the European Systemic Risk Board, can issue either general warnings or, alternatively, warnings or recommendations for action concerning macroprudential threats relating to individual EU countries. The efficiency of these warnings and recommendations depends on the extent to which authorities wish to or are able to take them into account in their financial system regulation and supervision.

⁴ See eg Drehmann (2008) *Stress tests: objectives, challenges and modelling choices*, Sveriges Riksbank Economic review 2/2008.

⁵ See eg Davis – Karim (2008) *Comparing early warning systems for banking crises*, *Journal of Financial Stability* (to be published soon) and Alessi – Detken (2009) "Real time" early warning indicators for costly asset price boom/bust cycles: a role for global liquidity, ECB Working Paper Series, No. 1039.

⁶ Borio – Drehmann (2009, p. 16).

macroprudential supervisors comparing and integrating data from different national sources or financial markets. Macroprudential supervision must address cross-border risk concentrations and the mutual exposures of financial companies. It should also serve as a tool for analysing the risks inherent in new financial instruments and any regulatory distortion or infrastructural loopholes that pose a potential threat to financial stability. Identification of systemically important financial companies, markets or areas of infrastructure also forms an integral part of macroprudential supervision.

Prevention of systemic risk through regulation

The financial crisis exposed several regulatory shortcomings in the financial system, which need to be addressed in order to avert or alleviate any future crises. Many of the initiatives for regulatory reform include elements designed to prevent the build-up of systemic risk threatening the stability of the financial system.

Improvements to the regulatory framework are currently underway at various levels and through a variety of measures. An important global group is represented by the G20 countries whose leaders have, at their summit meetings, approved the key objectives of the post-crisis regulatory framework for the financial sector. The Financial Stability Board (FSB) has been assigned the important role of coordinator of the regulatory process. Further, it is responsible for conducting analyses of the threats to the stability of the global financial system, in cooperation with

international financial institutions. At global level, regulatory development takes place in several international fora, including the Basel Committee on Banking Supervision (Basel Committee), which issue standards for the financial sector. Although global players play a strong role in directing regulatory development in the financial sector, the final decisions on the introduction of regulations binding on financial system participants are, nevertheless, taken by individual countries or regionally, for example within the EU.

Revisiting capital requirements

The capital requirements designed to ensure the capital adequacy of banks represents one of the key areas of the financial regulatory framework. The capital adequacy regulations adopted by the EU and several individual countries build on the Basel II framework designed by the Basel Committee. In response to the problems exposed by the financial crisis, several amendments to the Basel II framework have been planned, with a view to improving the quality, and partly increasing the amount, of the capital to be held by banks, and reducing the procyclical effects of capital requirements. Supervision of capital requirements also includes evaluation of banks' remuneration schemes to explore whether they encourage the bank's management and employees to pursue the objective of long-term profitability.

In many respects, reform of the capital requirements is only in the planning stage, but some concrete regulatory measures have already been taken. In July 2009, the Basel Committee adopted stronger capital requirements for

banks' trading book and securitised assets, together with some other enhancements of the Basel II framework.

Similarly in July 2009, the European Commission issued a proposal for a Directive amending the Capital Requirements Directive, designed to implement the amendments to the Basel II framework at EU level.

An initiative that would clearly change the rules of the Basel II framework is the requirement that banks build up dynamic capital buffers above the minimum requirement. The strong dependence of the rate of lending growth on banks' own situation and the prevailing economic cycle is a key example of the procyclicality of the financial system, which has also contributed to the increase in systemic risk. The intended buffer requirements will serve to reduce this procyclicality of the financial system by requiring banks to build up capital in cyclical upswing, which can then be drawn down during downswings. As the cost of issuing equity is higher than that of other financing, stricter buffer requirements will be conducive to lowering banks' incentives to engage in credit exuberance in a boom. Accordingly, by allowing banks to draw on the capital buffers in economic downturn, contraction in credit supply is prevented.

The plan to introduce capital buffers to reduce the procyclicality of lending is most commendable but practical implementation will be highly complicated. It will be challenging to find appropriate criteria for the allowable range of buffer fluctuations with the situation of banks and the economy and to ensure the appropriate effect of buffer requirements

on banks' lending behaviour. One relevant question is whether regulation of the total size of buffers will adequately restrain risk-taking in a boom, if the problems of excessive lending growth are reflected in individual sectors of the economy. Rather than increasing total buffers, a more effective approach in such a situation might be to temporarily tighten capital requirements for loans to potentially problematic sectors of the economy.

Similarly as in the case of other regulatory reforms with due consideration of systemic risk, the question also arises here whether the authorities should be allowed a certain degree of discretion in setting the level of capital buffers. Mere reliance on regulatory buffers is not likely to be an effective choice as they would not be flexible enough to respond sufficiently rapidly to cyclical fluctuations and financial system changes. Without a sufficient degree of independence in relation to financial system participants and the political process, the authorities may find it challenging to consider countercyclical objectives in their discretionary decisions. Special attention should therefore be focused on guaranteeing the operational independence of the authorities. In this connection, it needs to be discussed whether it would be justified to entrust the power of discretion related to the fine-tuning of capital buffers to the new macroprudential supervisory bodies set up for prevention of systemic risk.

In addition to changes in capital buffers, changes in banks' provisioning policies are also underway to better account for expected loan losses under various cyclical conditions and to dampen cyclical fluctuation (dynamic

provisioning). Provisioning policies are addressed both in the Basel II amendments and in the reform of financial reporting regulations.

Proposals have been made for supplementing current risk-based capital requirements with simple regulations on the leverage ratio of financial institutions. The heavy indebtedness of the financial sector is conducive to lowering the resilience of the financial system to potential disruptions. For this reason, it is necessary to explore measures for limiting excessive indebtedness. Fears have been expressed that restrictions on debt leverage would discriminate against some banks, depending on the financial reporting scheme applicable. It has also been estimated that restrictions on debt leverage would be most disadvantageous to financial institutions with relatively low risk exposures, concentrating on traditional banking and relying on financing rather than securitisation to lower their debts. Hence, regulation of the leverage ratio should be implemented on equal terms in the global context, giving due consideration to the concerns raised and focusing on prevention of extreme indebtedness of financial institutions.

Quantitative restrictions on liquidity risk

The global debate following in the wake of the financial crisis has emphasised the need for regulations bolstering not only capital adequacy but also financial system liquidity. The most prominent international initiative for ensuring liquidity through regulatory means is represented by the efforts of the Basel Committee to prepare a proposal for an

international liquidity standard by the end of 2009. The liquidity standard will include provisions on two quantitative liquidity ratios and related requirements for the liquid assets and sources of financing of financial institutions. These requirements will also contribute to the maintenance of liquidity during financial distress. The Committee of European Banking Supervisors (CEBS) has made preparations for development of regulations on liquidity risk in the EU. In autumn 2009, CEBS conducted a public consultation and published its guidelines on liquidity buffers for financial institutions.

It is important that liquidity regulations encourage the countercyclical behaviour of financial institutions in order to ensure that the entire financial system is sufficiently prepared for a liquidity stress. In other words, regulations should provide for the build-up of liquidity buffers by financial institutions under normal conditions, whereas banks would be allowed to draw on the buffers in response to a liquidity crunch in order to solve liquidity problems. Regulations should also ensure sufficient diversification of the sources and maturities of financing.

Reform of financial reporting regulations

In the face of financial market integration and the increasingly global context of banking operations, harmonisation of financial reporting regulations should also be undertaken. A harmonised financial reporting regime creates the foundation for a level playing field for all competitors and provides less scope for taking advantage of loopholes arising

from differences in regulations. Standards on financial instruments for banking (IAS 39) are prepared and issued by the International Accounting Standards Board (IASB). The IASB financial reporting standards constitute the core of the financial reporting framework for banks and are consistently applied worldwide, with the exception of the US, which is the only large country with its own version of standard IAS 39.

The financial crisis also highlighted the need for revision of the financial reporting framework for banks. In fact, IASB has prepared a total reform of IAS 39 in cooperation with the US Financial Accounting Standards Board (FASB). However, this cooperation has not been entirely without problems, and FASB has introduced legislation differing from IASB standards and announced that it is preparing its own broad overhaul of the regulations for financial instruments, introducing provisions that will diverge considerably from the reform package under preparation by the IASB. FASB's new financial reporting regulations are scheduled to take effect already in early 2010. The situation is difficult, to say the least, considering that the rules of conduct for financial instruments cannot differ considerably across countries. Differences in financial reporting regulations impair cross-border comparability and unsettle the level playing-field. As a result, the situation may get out of hand as companies may resort to 'cooking the books' and new risk concentrations may emerge.

Special focus on systemic banks

The financial crisis has fuelled a broad debate over what kind of regulations

should be tailored for large financial institutions assessed to possibly be of such systemic importance that, if threatening to fail, the authorities would introduce special measures to keep them going ('too big and too complex to fail'). As part of the overhaul of capital requirements, the Basel Committee is considering a capital surcharge on top of minimum requirements for these institutions. This is motivated by a desire to lower the incentive of institutions to contribute to an increase in systemic risk and to redirect the costs of systemic risk to their origins. There have also been some ideas such as introducing restrictions on the structure of large financial groups and requirements to put in place contingency plans – a living will – for problem situations and the winding-up of institutions.

Systemic importance may be related not only to individual institutions but also to the state of the entire financial system, with the definition of systemic importance involving a high degree of discretionary subjectivity. In addition to single large banks, for example groups of small, interconnected banks with similar operations may be found systemically important. For these very reasons it is not always possible to clearly designate institutions of systemic importance. Hence, it would be problematic to impose clearly diverging requirements on a limited group of institutions, or require them to make fundamental structural changes. By contrast, the introduction of capital surcharges gradually dependent on indicators that measure the effect of the institution on the build-up of systemic risk, appear highly justified.

Coverage of regulatory gaps

One lesson of the crisis concerning the entire financial system is the need to address existing gaps in the regulatory and supervisory regime. With information available on the entire system, more accurate prediction and prevention of systemic risk is possible. It is also necessary to reduce the scope for evasion of regulation and supervision. Practical measures are being introduced to extend and reform the regulation and supervision of for example hedge fund managers and alternative investment fund managers (AIFM) as well as OTC derivatives and the infrastructure for derivatives trading. In spring 2009, the European Commission issued a proposal for a Directive governing alternative investment fund managers (AIFM Directive). In the course of 2009, the Commission has issued Communications on the regulation of OTC derivatives for comment. In order to address regulatory gaps, it is also important to ensure equality of regulatory implementation across countries and regions. To this effect, the Financial Stability Board will develop a methodology for assessing compliance with international standards by country and region.

The failure of credit rating agencies has been found to have contributed significantly to the emergence of the financial crisis, and they will, therefore, will also now be subjected to regulation and supervision. The European Union has issued a Regulation governing credit rating agencies (CRAs), and regulatory initiatives are also underway in several countries. One cause of concern expressed are potential problems arising from differences in regulatory measures.

New EU crisis management framework for legacy banks

The financial crisis highlighted several shortcomings in both the powers of authorities and insolvency legislation, as encountered when seeking to address the problems caused by crisis-ridden banks. Under existing provisions, reorganisation or winding-up of large, cross-border banks is practically impossible, without financial market disruptions following in the wake. In the absence of common rules of conduct, the actions of authorities are primarily guided by national interests. Potential spill-over effects into the economies of other member states are not – and cannot be – taken into consideration, as existing legislation provides the authorities limited scope of operation. Coordination of measures may be attempted, but in the absence of an EU-wide framework for crisis management this is very challenging.

The European Commission is in the process of setting up a broad crisis management framework for legacy banks, to allow for more efficient supervisory intervention in the operations of ailing banks. Within the new framework, troubled financial institutions could be subjected to wide-ranging measures without causing the present kind of disturbance of financial stability or costs to taxpayers. This is a very ambitious initiative both in terms of legislative procedure and politically. A crisis management framework of the proposed design would provide the authorities with much broader powers and interfere with many traditional principles of insolvency legislation.

In its preliminary opinion, the Commission has outlined that the

creation of an efficient EU framework for cross-border crisis management requires reforms in the areas of early supervisory intervention, bank resolution measures and insolvency proceedings.

Early intervention

Early intervention comprises the supervisor measures designed to restore the operations of legacy banks back to normal before it is too late. The authorities should have in place the appropriate tools for timely identification of the problems as well as the powers to introduce reorganisation measures before failure of the bank. The current Capital Requirements Directive (CRD) includes certain elements permitting supervisory intervention in the operation of banks before the bank's capital adequacy ratio has fallen below the regulated minimum limit. The measures of intervention available to the supervisory authorities include restriction of the banks' business, prohibition excessive exposure and capital surcharges above the minimum requirements under the Directive. In practice, though, it will be up to the bank's management to implement the required measures, as the authorities do not always possess appropriate powers to ensure sufficient speed and efficiency of implementation. The Commission's proposal outlines harmonised powers for the authorities to perform intra-group asset transfers, require replacement of the bank's management, and require the bank to prepare a plan for closing down and winding up the company.¹ These measures could be launched well in advance of liquidation.

¹ This is referred to as a 'living will'.

Resolution measures

In some member countries, the authorities already have sufficient powers to undertake a controlled closedown of legacy banks, but the bankruptcies of cross-border banks are difficult to handle. The current Directive on the reorganisation and winding-up of credit institutions does not apply to subsidiaries in other countries, although many banking groups with cross-border operations operate as if it were one and the same company. Moreover, the coverage of supervisory powers also varies greatly across member countries, with the powers being exercised by different authorities in different countries. Hence, it is practically impossible to impose such concurrent and consistent regulatory measures on a cross-border banking group as would produce the best possible result overall.

Insolvency proceedings

Closure of business or cessation of government support must not be the only means for addressing problem situations, rather other tools should also be available to the authorities. A better outcome for society is sometimes achieved, for example, by migrating the business of a legacy bank to a bridge bank,² there awaiting sale to the private sector, or by separating good and bad balance sheet items through a so-called junk bank.³ Integration of the deposit guarantee scheme into the crisis management framework for legacy banks

² 'Bridge bank' refers to a temporary arrangement by the authorities for administration of the assets and liabilities of failed banks.

³ Here, 'junk bank' is used to refer to a troubled bank asset management company set up to administer the assets and assets sale of government-supported legacy banks.

would also make the banking sector more closely involved in the arrangements for financial stability. There are several possible approaches suited to different situations, but their deployment requires reinforcement and harmonisation of supervisory powers throughout the EU.

For the cross-border crisis management framework to be efficient, the issues of financing and distribution of costs must also be agreed. Recent arrangements⁴ are striking proof of the practical difficulties that may be encountered in the reorganisation of crisis-ridden banks. So, although the primary objective must always be a private sector effort, involvement of the public sector is often the case in the arrangements for legacy banks. For this reason, member states should be able to agree in advance, at least in principle, on the distribution of the costs arising from the arrangements. Without a code of conduct agreed on in advance, national authorities will not necessarily be motivated to join forces to find a common solution, rather national interests will prevail.

Although some member states have special insolvency legislation for banks,⁵ common provisions for the corporate sector are the rule in most countries. The purpose of general insolvency provisions is to provide creditors with a level playing field and predictable treatment, whereas the special provisions for banks should also address issues like financial market stability and the effectiveness of payment systems. These specific objectives are held to be so significant in

terms of public interest that they will set aside a number of traditional principles governing creditors' rights. Hence, extension of regulatory powers and separation of the provisions for banks from other legislation is not an easy process, considering that both EU and national legislation include several mandatory provisions on the protection of shareholders and creditors. The creation of a tailored insolvency regime for banks would also entail interference with several traditional legal principles.

In setting up an insolvency scheme tailored for banks, the primary objective should be to safeguard depositors' interests and ensure that the bill goes to the shareholders and not the taxpayers. A further requirement is that the insolvency provisions should be sufficiently binding to allow even large banks to be declared bankrupt without the risk of system failure. Member states must be able to have confidence in the equality and fairness of the EU crisis management framework, otherwise the new framework would not deliver the desired result. Regulatory measures imposed on the banking sector mid-crisis are always implemented under very strong political pressure, which makes it, in practice, difficult to carry through measures that infringe on national interests. The higher the benefits at stake, the bigger the temptation to withdraw from commonly agreed principles in favour of national solutions.

There is a need for a crisis management framework tailored to the needs of the banking sector, but common agreement must be reached at EU level on the objectives and provisions of the framework, to avoid a set of provisions that are even less compatible than today.

⁴ For example Fortis and the Icelandic banks.

⁵ For example the United Kingdom.

Consequences of the reforms for the Finnish financial sector

The reforms of the supervisory framework designed at EU level are reflected in the Finnish financial sector in a number of ways. With the improvements in the macroprudential regime, the Bank of Finland's financial analysis will be able to address connections to the real economy and potential threats from the global financial system in greater detail. The stage for cooperation set by the European Systemic Risk Board provides the Bank of Finland and the Financial Supervisory Authority with better scope for developing their own tools for oversight and analysis. Access to more detailed information facilitates the timely identification of systemic risks that represent potential threats to the stability of the Finnish financial sector and the transmission of financing. The European Systemic Risk Board also offers a new channel for communicating national threats to stability and necessary pre-emptive action.

The EU reforms of institutional supervision currently in the making will, in turn, step up cooperation between the Financial Supervisory Authority and other national supervisors within the EU. In the long-term perspective, however, there will probably be a need for more far-reaching cooperation regimes or centralised supervision of EU cross-border financial institutions.

The reform of the regulatory framework for the financial system is designed to dampen the procyclicality of financing and prevent the emergence of hazardous risk concentrations also in Finland.

The crisis management framework for legacy banks would provide

supervisory authorities with broader powers to intervene proactively in the operation of banks and, where necessary, wind up a legacy bank without causing disruptions in financial markets. The mere existence of such powers would make banks less inclined to excessive risk-taking and reduce the moral hazard problem, as it would increase the probability of a legacy bank being wound up rather than rescued with the taxpayers' money.

Introduction of a new crisis management framework would also reduce structural differences between banks with branches, on the one hand, and banks with subsidiaries, on the other. When a banking group runs into difficulties, the same principles would, hence, apply to its foreign operations, whether structured as branches or subsidiaries. The current Directive on reorganisation and winding-up of credit institutions only applies to branches, whereas subsidiaries are governed by national legislation. The new framework would also significantly lessen the possibilities for Finnish authorities to impose national reorganisation measures on the Finnish subsidiaries of foreign banking groups.

Special issues of financial market infrastructure

As a consequence of some long-standing reform projects, core components of Finnish financial market infrastructure are due to be migrated abroad over the next few years. Migration of the first services out of Finland has already taken place. In the long run, it is likely that the information technology necessary for production of infrastructural services will be located abroad or governed by foreign

Considerations regarding policies to undo financial market support measures – exit strategies

The global financial market crisis, together with a deep recession faced by the real economy, gave rise to massive support measures for increasing financial institutions' crisis resilience and to sizeable macroeconomic stimuli in many countries for underpinning demand. Now that the worst phase of the crisis is over, it is time to discuss the exit strategies or the methods which enable withdrawal from this tangle of exceptional forms of support that emerged as a result of measures taken by central banks and governments.

The aim of removing the financial market support measures is to restore the normal functioning of the markets. Such normality does not, however, mean a return to the pre-crisis framework. Instead, it is now characterised by a crisis-induced financial market atmosphere and a regulatory and supervisory environment due to change mainly because of the crisis.

As economic recovery is still highly uncertain and fragile, the correct timing of the exit is very important. Exiting too early may lead to new disorderly developments if the confidence of economic agents is not yet adequately robust. With a renewed bout of distrust, access to finance would be hampered and financing costs would increase, thereby acting as a drag on economic growth. Exiting too late, in turn, might maintain and – at its worst – even 'institutionalise' competitive

distortions. Delayed exit might also encourage excessive risk-taking. Close monitoring and assessment, to the extent possible, of the state of and outlook for the macroeconomy, financial markets and banks provide the basis for good timing.

Some views regarding exit methods

As there are myriad support measures, it is important to consider how their phasing out can be timed in a mutually appropriate fashion. An order of withdrawal, where exiting commences from government guarantee schemes provided to secure banks' market-based funding and central banks' liquidity injections to banks, has gained wide approval. According to this view, for example, exit from macroeconomic stimuli should be considered only later.

Measures defined as temporary will expire automatically, unless their validity is extended in one form or another. Most government support programmes have been defined as temporary, such as government guarantee schemes. Exit decisions made should be announced in good time, in order to avoid unnecessary uncertainty.

Automatic exits may be facilitated by incentives. For example, the costs incurred by recipients of support could be devised so as they increase over time. Unchanging costs have the same incentive effect in situations

where alternative market-based costs decline. This increases the relative costs of support, such as costs related to government guarantee payments.

It is relatively easy to get signalling effects from the discontinuation of less important forms of support or the tightening of their access criteria, as well as from the reduction or phasing out of forms of support which have proved excessive or for which the rationale has become obsolete. The slight changes made in December 2009 to the terms and conditions of the ECB's refinancing operations and the announced tightening of the ECB's collateral policy as from March 2010, for example, could have such an effect.

Exit from support measures cannot be realised at once, but removal takes some time. It is important that action taken at that point is as neutral as possible, so as not to cause, even temporarily, new competitive disruptions. A special problem here is posed by 'addicted banks', which seem financially sound, but nevertheless resort to support. These banks should overhaul their business models or pursue a controlled closing down of operations.

For the same reasons as maintaining a level playing field, exits should be implemented in coordination across countries, however, taking country-specific differences into account. Nor should exits hinder regulatory and supervisory reform.

laws. Basically, this is not due to the inferiority of current Finnish systems but, rather, general market developments and the pursuit of efficiency gains. In the globalisation of financial market infrastructure, it is important to avoid mistakes in the supervision of global banking groups, such as devoting too little efforts and resources to cooperation between competent authorities.

In international markets, financial instruments and operations become standardised, which often entails costly modifications to national systems. Standardisation also allows for concentration of transactions in the systems of a few operators, which delivers benefits of scale. Within the European Union, and more generally in the EEA countries, it is important to make improvements to infrastructure so as to preserve the scope for a level playing field, provide open and equal access to the systems and avoid the build-up of uncontrolled concentrations: one of the lessons learnt from the financial market crisis.

Financial infrastructural services are a major factor in boosting the economic power and effectiveness of the national economy. The availability of cost-competitive services is, therefore, important. At the same time, reliable transmission of financing and payments must also be ensured for services outsourced to a cross-border provider or provided in another country altogether.

Minimum requirements for foreign infrastructures

Generally speaking, financial market infrastructure should 1) comply with the requirements set by the authorities, 2) secure business continuity and efficient

crisis management and 3) ensure the reliability, efficiency and functionality of national markets.

There are no harmonised EU regulations on financial market infrastructure. In other words, there are no common principles for the requirements to be met by financial markets. The authorities may issue their requirements as binding norms (for example Acts and decrees) or as recommendations. The choice of approach depends for example on national and international decision-making and competence regimes and on differences in legislative cultures. Irrespective of the approach adopted, the requirements, nevertheless, reflect the authorities' views of how to secure the reliability and efficiency of infrastructure for the financial markets and the economy overall.

Finnish transactions processed by foreign systems should be governed by Finnish law. This delivers efficiency gains and legal security for Finnish users, who will not have to analyse the effects of foreign legislation. It also promotes the aim that the protection afforded to users and end customers should remain at least equal to the level of current national protection and that the responsibilities of individual players should be clear in the context of an internationally operating system.

Sufficient arrangements should be in place for key functions to ensure as smooth continuation of the services as possible in problem situations and their flexible resolution. Business continuity generally refers to making provision for technical disturbances, but the concept can also be used in a broader sense to refer to problems of the economy

manifested in for example shortage of liquidity due to the insolvency of a payment or settlement system participant.

Systemic crises, such as the recent financial market crisis, and emergency conditions cause more severe disruptions because of their longer duration and broader contagion effects. Moreover, the causes and effects of systemic crises and emergency conditions are often beyond the reach of individual players. Systems should also prepare for such conditions, together with participants and other stakeholders, for example by devising various stress scenarios and designing related actions for continuation of as smooth operations as possible. The authorities have issued regulations and recommendations to this effect. For example, the central banks have issued recommendations that systemically important systems must have the capacity to restore critical services at the latest within two hours from the disruption and that multilateral netting systems should be able to survive the insolvency of the participant with the largest single net position.⁶

The contingency requirements for infrastructure should be clearly defined in Finnish national legislation. Financial institutions and bodies responsible for market infrastructure should have access to sufficiently timely information on customer asset values (eg details of balances of deposit and securities accounts). Appropriate national back-up systems should also be in place, to allow

for the processing of critical transactions. These considerations should be incorporated in the new pieces of legislation on emergency conditions and securities markets currently underway in Finland.

Competent authorities must cooperate with other stakeholders to ensure maintenance of service levels on the national market. The infrastructure must have the capacity to respond flexibly to the demand for new services to ensure that the Finnish market and Finnish innovations are not neglected and, therefore, wither. As service production migrate abroad largely for reasons of cost savings, end users should also benefit from these savings. Special attention should be paid to the governance structures of players whose services are not readily replaceable, by ensuring the involvement of key stakeholders. The acceptability of infrastructural governance plays a key role in assessing the adequacy of the services as well as business continuity and crisis management measures. In their choice of foreign providers of infrastructural services, Finnish participants should make sure that a sufficient degree of influence for participants is built into the governance structure of the service provider.

Improvement of actions of competent authorities

Migration of infrastructure overseas leaves national authorities without the power to issue binding norms directly on service providers and will not necessarily receive information from them for performance of their statutory tasks. There are two channels available to the authorities for exercise of influence:

⁶ ECB/2006 Business Continuity Oversight Expectations for Systemically Important Payment Systems, ECB, 9.6.2006, <http://www.ecb.int/pub/pdf/other/businesscontinuitysips2006en.pdf> and Core Principles for Systemically Important Payment Systems, January 2001, <http://www.bis.org/pub/cpss43.pdf?noframes=1>.

through international cooperation between the authorities and through system participants. The authorities should improve their own cooperation regimes, for example through the conclusion of Memoranda of Understanding (MoU). The MoUs should, in sufficient detail, define the responsibilities and tasks of involved participants, also including provisions on information sharing and emergency measures. This cooperation should ensure that monitoring by the competent authorities covers the entire value chain from end customer to end customer. MoUs should also incorporate a detailed crisis management guideline.

The very broad powers of the European Systemic Risk Board and three European supervisory authorities in the making also partially cover financial market infrastructure. The new supervisory authorities are to promote the efficient supervision of international service providers by formulating common supervisory standards and processes. Appropriate cooperation schemes between competent financial market authorities are also needed at national level, to ensure smooth communication and appropriate consultation.

If recommendations and cooperation are not enough – if for example the legislation of the home country of the infrastructure does not provide for sufficient user protection – Finland must be prepared to issue appropriate regulations for the Finnish participants of the infrastructure. However, in terms of competition, such provisions may leave Finnish participants in a position inferior to the participants of other countries and should, therefore, be used with the utmost caution. In any case, harmonisation of EU legislation would provide a more sustainable solution for ensuring market efficiency and eliminating competition issues.

Appendix

Infrastructure critical to the Finnish financial market

System	Description	Oversight responsibility	Assessment
TARGET2	New generation of TARGET; technically centralised RTGS-system based on a single shared platform.	ECB (lead overseer), Eurosystem.	In 2009, the ECB Governing Council approved the first comprehensive assessment of system design and implementation in accordance with the Core Principles. An assessment of the system's continuity planning performed in 2009. Operations have been reliable.
TARGET2-Suomen Pankki system	Bank of Finland TARGET2 component system.	Bank of Finland oversight; adherence to common principles with other Euro-system TARGET2 participants.	A risk assessment of the system was undertaken in 2009. Operations have been reliable.
CLS	A significant settlement system for foreign exchange transactions that enables PnP settlement to eliminate settlement risk. In operation since 2002.	US Federal Reserve (lead overseer), ECB (overseer of settlement in euro), G10.	System operations cover 17 currencies and have expanded to include settlement of OTC credit derivatives traded outside the stock exchange. Self-assessment of CLS in 2007 established that the system fulfils the Core Principles. Operations have been reliable, despite some minor disruptions. Heightened importance in the management of risks relating to foreign exchange transactions during the financial market turmoil.
EBA Euro1	EBA Clearing's transfer system for euro-denominated large-value payments.	ECB (lead overseer), Eurosystem.	Assessed in 2001 as being in accordance with the Core Principles. Found to be a systemically important large-value payment system. An assessment of the system's continuity planning performed in 2009. A comprehensive assessment is likely to be undertaken in 2010. Operations have been reliable; no significant disruptions.
POPS	Banks' online system for express transfers. Domestic large-value payment system.	Bank of Finland oversight.	In accordance with the Core Principles, system assessed in 2004 as fulfilling the requirements. An assessment of the system's continuity planning performed in 2009. Operations have been reliable. Number of payments has stabilised. System decommissioning is due to begin in step with SEPA.
EBA STEP2	Ran-European automated clearing house (PEACH) for euro-denominated bulk payments.	ECB (lead overseer), Eurosystem.	Considered a prominently important retail payment system. Operations have been reliable; no significant disruptions. In the future, a systemically important retail payment system for Finland. The Bank of Finland wishes to develop cooperative oversight of STEP2.
PMJ	Domestic retail payment transfer system; operates as an ancillary system to TARGET2.	Bank of Finland oversight.	In accordance with the Core Principles, system assessed in 2004 as fulfilling the requirements. Critical system for domestic retail payments. An assessment of the system's continuity planning performed in 2009. Fewer disruptions in PMJ settlement than in the year before. Transfer of payments towards EBA STEP2 in response to introduction of SEPA. System decommissioning is due to begin in step with SEPA.
ACH Finland	A clearing house set up by some Finnish banks. Operations started in March 2009.	Bank of Finland oversight.	System oversight in progress. An assessment of the system's continuity planning performed in 2009. First oversight assessment is planned for 2010.
European Multilateral Clearing Facility, EMCF	Provider of central counterparty clearing services to the Nordic stock exchanges of NASDAQ OMX.	An oversight group coordinated by the Dutch authorities.	Monitored and assessed jointly by national oversight and supervisory authorities. The Bank of Finland participates in this group.
Euroclear Finland (former APK) systems	A Central Securities Depository operating settlement systems for stock and money market instruments.	Bank of Finland oversight.	Operations have been reliable. The settlement system for debt securities (Ramses) and its collateral management services have been assessed based on the Eurosystem user standards; system fulfilled requirements in 2009. Comprehensive assessment based on ESCB-CESR recommendations to be undertaken jointly with the FIN-FSA in 2010.
Euroclear Single Platform	Longstanding Program of the Euroclear Group for harmonisation of the services of the group's central securities depositories.	An oversight group coordinated by the Belgian authorities.	This is a highly advanced and challenging project. The Bank of Finland participates in the group of national oversight and supervisory authorities responsible for monitoring and assessing the Euroclear group and its projects. The group's securities depositories will remain subject to national supervision and oversight.
<i>Information networks</i>			
SWIFT	Most significant provider of messaging services to the financial markets; an entity managed by its members.	Oversight group headed by the central bank of Belgium (see NBB Financial Stability Review, 2009, pp. 99–100).	SWIFT is a critical provider of services for financial market infrastructure. Its operation has been mainly reliable. In its self-assessment of 2008, SWIFT has stated that it meets the oversight requirements. Oversight pays special attention to the project aimed at ensuring data protection by segregating European and US messaging transfer.
Pankkiverkko 3	Domestic closed interbank network used by for example PMJ and POPS.	Bank of Finland oversight.	Subject to oversight monitoring. Operations have been reliable.
ATM networks	Networks significant for the supply of cash to individual members of the public.	Bank of Finland oversight.	Subject to oversight monitoring to ensure acquisition of data and secure preparedness for crisis management.

Organisation of the Bank of Finland

10 September 2009

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