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The cover picture depicts the national motif on  
the Greek 1 euro coin: Athenian owl.

# Preface

Soundly functioning financial and payment systems are essential to the entire national economy. A stable financial system is capable of operating beyond reproach, of handling its basic tasks, such as the undisturbed transmission of finance and payments, pricing of financial instruments and efficient distribution of risk. Furthermore, the risk-bearing capacity of the financial market agents and public confidence in financial institutions and the financial markets must be sufficient to endure even large 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 evaluate the stability of the financial system, as a whole. The Bank evaluates the most significant potential threats to stability in the operating environment of financial institutions and financial system, the state of the principal borrower sectors, the risk-bearing capacity of financial market participants and the reliability and efficiency of the underlying payment and settlement systems.

The international financial system's recovery from the world-wide economic and financial crisis will take its own time. The weakening of national economies due to the recession was a phenomenon experienced around the world. A lack of confidence in the most highly indebted European countries' ability to service their debts shook the financial markets first in the spring of

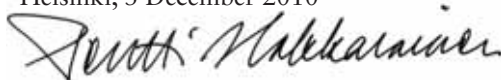
2010 and again at the end of the year. The financial sector's risk-bearing ability has been improved by applying both state and banking sector's own measures, but there are large differences in the development between various countries and banking groups.

The Finnish economy experienced a sharp downturn last year, mainly as a consequence of the disturbances on the international markets. However, the Finnish financial system withstood the crisis well and was able to prevent a bad downward spiral from taking hold. The robustness of Finnish financial institutions has the effect of reducing the contagion of economic problems from indebted countries, to Finland's financial system. This is vital to Finland, as Finland is not immune to international economic and financial system disturbances.

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 and stability outlook into account in their operations.

The Bank of Finland has published its assessment of financial stability since 1998. Information presented in this report is based on data available on 15 November 2010.

Helsinki, 3 December 2010



Pentti Hakkarainen,  
Member of the Bank of Finland Board  
Deputy Governor of the Bank of  
Finland

# Summary

The shrinkage in taxation revenue, expansionary fiscal measures and bank support using public funds all following on the heels of the global financial crisis and its subsequent recession have rapidly weakened many countries' financial position around the world. A lack of confidence in the most highly indebted European countries' ability to service their debts came to a head in the spring of 2010 and again at the end of the year. Prolongation or further tightening of the debt crisis remains a threat to the recovery of the European economy and to the world economy overall as well as to financial system stability. The world economy is still on fragile footing.

The bulk of Finnish banks' and other financial institutions' claims on the most indebted European countries are relatively small, which reduces the risks that there would be direct contagion of these countries' problems to the Finnish financial system. Finnish banks have survived the financial and economic crises relatively unscathed and their profitability and capital adequacy have remained strong. Bearing the depth of the recession in mind, if the Finnish economy grows as forecast, loan losses to the banks caused by the recession would appear to remain fairly small.

However, the Finnish economy is highly export-driven, meaning that the disturbances in the international financial system and the difficulties in financial intermediation are reflected more than average in Finland's economic growth.

The average Finnish households' level of indebtedness illustrated by the household sector's borrowing stock in relation to disposable income increased in

2010 to record levels, to an estimated 109 percent. On top of which, the relative number of households that became deeply indebted in relation to income grew considerably during the first decade of the 2000s. However though, with interest rates remaining low, the household debt servicing burden has been small in historical terms.

The growth in the level of indebtedness is not expected to pose an immediate threat to financial stability in Finland; although it can be seen as having an accelerating effect on rising housing prices in Finland. The spike in housing prices, experienced in the spring of 2010 was a warning signal of how asset prices have a tendency to be susceptible to forceful fluctuations and exaggeration. The latest economic crisis has also shown the massive risks associated with an uncontrolled rise in asset prices.

On the whole, the payment and settlement systems have functioned fairly reliably over the last year. Internationalisation of the Finnish financial market's infrastructure has made the country's payment and settlement systems part of the pan-European financial market infrastructure. Payments are in the process of becoming transmitted via a pan-European clearing house, and securities exchanges and market places as much as central counterparty clearing and custody services are all either part of an international enterprise or are handled abroad. This development is a natural progression from integration, which is expected to bring economies of scale and scope. At the same time, above all, the authorities seek to ensure that the functions essential to the domestic financial markets are secured, in such a way that

consumers' needs in terms of quality, efficiency, availability and price are all met.

Loss of both operating potential and the power of influence over domestic markets present the major potential threat to Finnish financial infrastructure. The regulatory changes underway are a very important pre-emptive measure against the materialisation of this threat. For exercise of the power of influence, a common national understanding of future developments in infrastructure is necessary.

The major risks to financial stability in Finland in 2011 are:

1) Escalation of the sovereign debt crisis depresses international financial markets, which is reflected in tighter availability of financing and funding to Finnish actors, too.

2) The sovereign debt crisis takes global recovery to a standstill, slowing consumption, investments and export demand and weakening the operating environment of financial companies.

3) Ongoing growth in the indebtedness of Finnish households will make households increasingly vulnerable to rising interest rates and undesired economic surprises.

Following the teachings from the financial crisis, measures to tighten financial regulation considerably have been introduced. The major new regulatory change so far, the Basel III reform prepared by the Basel Committee on Banking Supervision, was adopted in November 2010. The Basel III reform will raise banks' resilience to institution-specific as well as macroeconomic shocks.

The global reforms of financial regulation are largely in line with Finnish interests. They serve to reduce the threat

of global financial crises, which hit export-dependent economies like Finland the hardest.

In the effort of strengthening the resilience of the financial system and further improving financial regulation, the Bank of Finland wishes to emphasise the following aspects:

1) The sovereign debt crisis has highlighted how a lack of confidence in the management of public finances can shake the stability of the financial system. Maintaining the sustainability of public finances and a moderate level of indebtedness in the Finnish economy also serves the interests of national financial stability.

2) There are structural elements present in Finnish housing markets that increase price fluctuations and, hence, expose the financial system and the economy to disruptions. In Finland, an exceptionally large proportion of mortgage rates are tied to short-term market rates. Households must measure the amount of housing loan against their debt-servicing ability and prepare for the risks related to the interest rate option chosen.

3) Authorities currently do not possess adequate measures for intervening in exaggerated rises in asset prices or excessive growth in lending and indebtedness. Central banks should in future have a central role in putting into use measures whose effect is in calming excessive lending and indebtedness, ie so called macroprudential policies.

4) At the global level, systemically important financial institutions must be subjected to tighter financial regulation and supervision than other financial undertakings. In the future, no financial institution should be considered too big to fail.

## Stability map representation of the financial stability situation

This Box discusses developments in the key indicators underlying stability in the Finnish financial system over the years 2008–2010, in light of Chart A.<sup>1</sup> In the chart, the external point values represent a weaker macroeconomic outlook, higher risks and higher stress.

The point values are based on their underlying variables, with its conceptual centre point (origo) and the outer edge representing the two extremes of each time series. The grey zone portrays the two middle quarters of the time series, ie the area which the value of the variable hits 50% of the time.

Of the indicators of the stability situation, the macro economy is of crucial importance to the financial system, as strong economic growth could fuel

overheating in financial markets, whereas rapid deterioration of the macroeconomic situation may cause financial system stress for example in the form of loan losses. The upper point of the chart illustrates the macroeconomic situation in Finland. The score for the macroeconomic dimension is derived from the Bank of Finland's GDP growth forecasts for the present and following year.<sup>2</sup>

Being an export-driven country, Finland is sensitive to disruptions in the global economy. Still, with all its drama, the effects of the financial crisis on economic growth in Finland have been difficult to predict. In 2008, the macroeconomic projections for that and the following year only pointed to a

slightly worse than normal outlook. The impending collapse of GDP in 2009 was not yet in sight. In 2009, however, forecasts rapidly turned very gloomy.

Despite the highly dramatic effects of the crisis, it looks as if it will not be as drawn out as previously thought. In 2010, forecasts of economic growth for the present and following year have returned to normal levels, so to speak, hovering around 2.5%. It should, however, be borne in mind that the uncertainty surrounding forecasts of economic growth remains higher than normal. Moreover, bridging the production gap caused by the downturn presents a major challenge, the signs of recovery notwithstanding.<sup>3</sup>

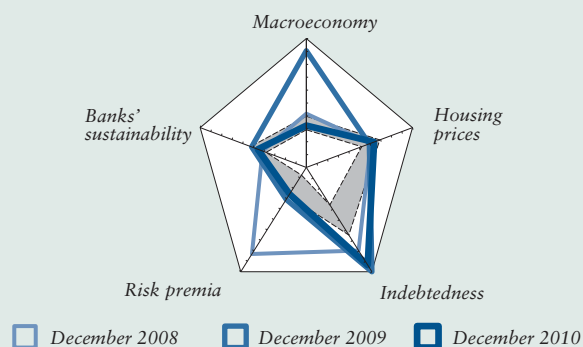
Several studies<sup>4</sup> have demonstrated that over-indebtedness and overheating housing markets may predict future financial market crises. Hence, the two right-hand side points of the chart illustrate mounting threats to stability: developments in real housing prices and private sector indebtedness. Both figures are calculated as deviations from the long-term trend.

<sup>1</sup> For details of the indicators and technical design of the chart, see Kaukoranta, I (2010) *Rahoitusmarkkinoiden vakauden visualisointi (Visualisation of financial stability)*. BoF Online 8/2010.

<sup>2</sup> In contrast to other dimensions, the dimension of the macroeconomic situation is forward-looking. The scores for the other dimensions of the chart are experience-based.

Chart A.

### Financial stability map for Finland



Sources: Merrill Lynch, NASDAQ OMX Helsinki, banks, Statistics Finland and Bank of Finland.

<sup>3</sup> For details of the macroeconomic situation in Finland, see the section *Operating environment* (p. 10) and the special issue of the *Bank of Finland Bulletin, Economic Outlook 2/2010*.

<sup>4</sup> Eg Borio, C. – Drehmann, M. (2009) *Towards an operational framework for financial stability*. BIS Working Papers No 284.



Developments in housing market prices in Finland have displayed a strong positive trend since the meltdown in the 1990s. Housing prices are high compared to long-term averages, but in the absence of signs of an actual strong deviation from the trend it is difficult to identify the point at which the price level starts to present a threat to financial stability. The chart illustrating financial stability shows that the risks associated with developments in housing prices have increased slightly since 2009, although the observations from all three years of comparison fall within the so-called normal range.<sup>5</sup>

By contrast, the second measure of threats to financial stability, ie private sector indebtedness, has been higher than normal over the whole period under review, 2008–2010. The level of household indebtedness has risen continually ever since the late 1990s. Similarly, corporate indebtedness has also been steadily growing, but at a more moderate pace. The threat posed by private sector indebtedness to financial stability was higher than ever before in 2009, having decreased only marginally in 2010.<sup>6</sup>

<sup>5</sup> See the section *Operating environment* (pp. 13–14) for a more detailed discussion of price developments in Finnish housing markets.

<sup>6</sup> For details of household and corporate indebtedness, see the section *Operating environment* (pp. 11–12 and 14).

The two left-hand side points of the chart denote actual stress in financial markets. Risk premia reflect the availability of funding. The underlying measure is represented by the interest rate spread between companies with credit rating AAA and credit rating BBB.

Following the emergence of the financial crisis, the availability of funding deteriorated rapidly, which was reflected in a steep increase in the risk premia charged from companies. In response to the recovery of international capital markets in 2009, risk premia were restored to more moderate levels, having dropped further in 2010, although still remaining higher than in pre-crisis years.<sup>7</sup>

The upper left-hand side point of the chart illustrates banks' sustainability, which is measured by the Bank of Finland's stress index for the banking sector.<sup>8</sup> The Finnish banking sector has suffered only minor damage in the highly challenging environment witnessed over the past few years. Finnish banks suffered most badly under the financial crisis in 2009, but even then the stress level in Finnish banks was only slightly more elevated than

<sup>7</sup> For details of the availability of funding to Finnish companies, see the section *Operating environment* (pp. 14–17).

<sup>8</sup> The stress index is calculated on bank share prices, interbank deposits, profitability, regulatory capital and loan losses.

what is understood to be the normal level.<sup>9</sup>

Overall, the financial crisis was reflected in a steep increase in risk premia on corporate loans in 2008, whereas the solid Finnish banking sector did not suffer any exceptional stress during the crisis. By contrast, the crisis had a strong effect on the macroeconomic situation in Finland, causing extreme changes in GDP growth. However, the macroeconomic situation seems already to have entered the path to recovery, although remaining sensitive to the uncertainty surrounding global economic developments.

In the domestic environment, private sector indebtedness currently forms the biggest threat to financial stability. The growing debt burden increases the vulnerability of the private sector and the economy especially in the context of interest rate changes or other economic disruptions.

In addition to the domestic operating environment, the situation in global financial markets also has a bearing on financial stability in Finland. Furthermore, regulatory and supervisory changes also bring challenges to the financial sector.

<sup>9</sup> For details of the sustainability of Finnish banks, see the section *Banking and insurance sector* (pp. 18–29).

# Operating environment

Uneven global economic growth presents challenges to financial market stability. In Europe, exposure to disruptions is increased by the debt problems of certain countries. Growing government debt is a threat to global economic stability. In Finland, households' vulnerability to an increase in unemployment or higher interest rates has grown with the rise in their debt burden. Non-financial corporations' availability of financing has improved, but uncertainty in the financial market may rapidly shorten the supply of financing.

## Economic growth uneven in the major economic regions

In the first half of 2010, many economies experienced stronger-than-expected growth, which was partly due to sizeable economic support measures. The phase of rapid expansion turned out to be fairly short in some countries, eg the United States and Japan. In the

course of the year, the main concern in the financial markets has been the sovereign debt problems of Greece, Portugal, Spain and Ireland that have escalated rapidly. The uncertainty concerns the governments' debt-servicing capacity and the increased exposures of their financial sectors.

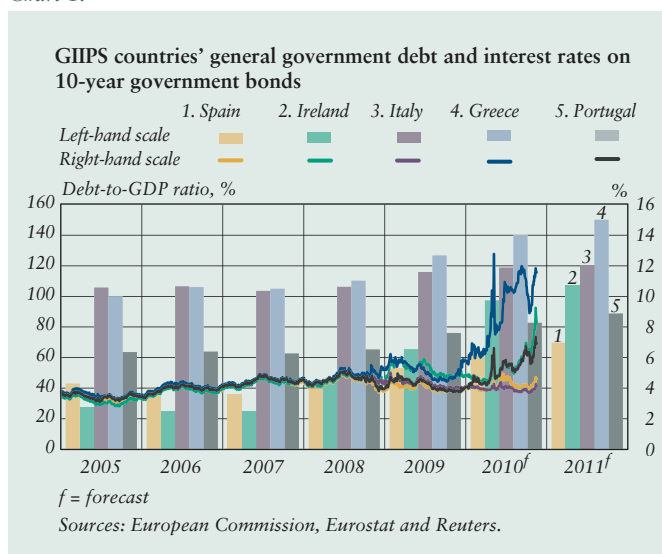
Even though the growth outlook for the world economy in the next few years has remained cautiously positive, growth is expected to be significantly slower than in the pre-recession period of strong economic expansion. Exit from stimulus measures and the tighter lending standards of the engines of current economic growth, eg China, will contribute to slower growth. Growth will nevertheless continue to be focused on the emerging economies.

Indebted countries face the risk of slower-than-expected growth, which may weaken their debt-servicing ability. Concerns about the repayment targets turning out to be overly ambitious have been reflected in the risk premia of the countries considered vulnerable (Chart 1). The increase in government debt entails the risk that the failure of governments to service their debts would cause financial market instability, followed by contagion to the banking sector. The scale of the Irish banking crisis proved to be unbearable for public finances, which caused resurgence in market uncertainty after the disruptions in spring.

## *The impact of low interest rates not only stabilising*

In an environment of relaxed monetary policy, interest rates in developed

Chart 1.





economies have remained extremely low. Low interest rates have been reflected in the channelling of investments to instruments with a higher yield. Demand and issuance of corporate bonds, for example, has been record high in 2009 and 2010. The improved economic outlook and strong demand have contributed to shrinking the risk premia on corporate bonds (Chart 2). The search for yield is due to investors' yield targets which are still at pre-crisis levels. If protracted, this type of search for yield can endanger the fair pricing of risks and, at worst, give rise to a pre-crisis phenomenon in which, in an environment of low interest rates, investors searched for yield for example in high-risk securitised instruments.

An environment of low interest rates creates also other types of threats. Countries in which the impact of the international recession remained minor or short-term are already now experiencing rapid growth. Capital in search for yield is thus channelled to countries with rapid growth, which boosts their exchange rates and stock market valuation. There is a real risk of overheating. Valuation risks in the property market also grow. Ample liquidity and an increase in prices and valuations in these markets as a result of debt leverage increases fears about low-yield investments and future loan losses. Foreign investments in emerging economies, eg BRIC countries,<sup>1</sup> have increased robustly in recent years (Chart 3). At the same

<sup>1</sup> BRIC countries are Brazil, Russia, India, and China.

Chart 2.

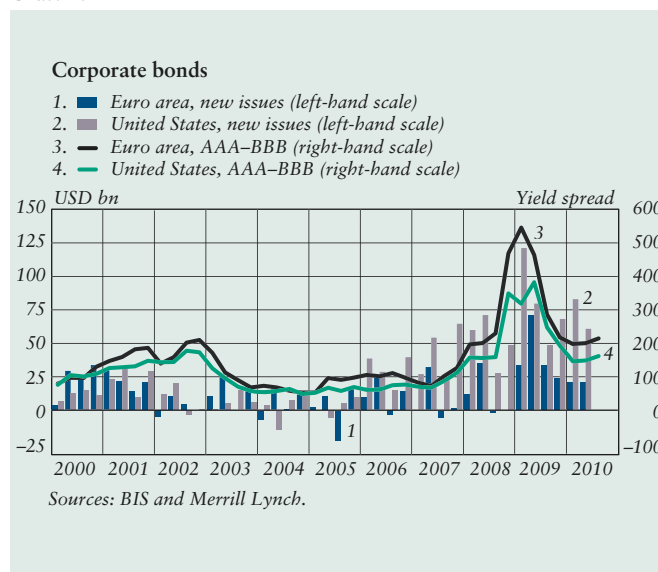
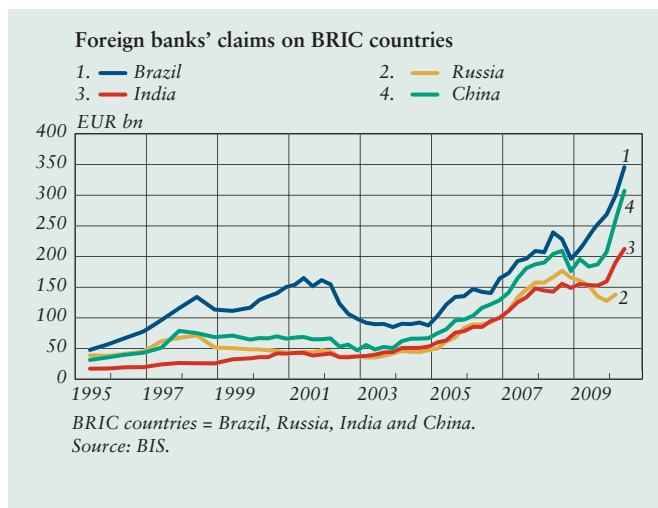


Chart 3.



time, share prices have risen sharply and the external value of the currency has strengthened in these countries. Countries have sought to restrain the inflow of capital by protectionist measures as a change in foreign investors' risk-bearing capacity easily turns the direction of investment flows, which could increase price volatility in emerging markets.

*Macroeconomic situation uncertain*

According to the VIX index<sup>2</sup> which is considered a gauge of market nervousness (Chart 4), the markets are no longer as explosive as they were when the financial crisis escalated. Despite this, uncertainty increased again, triggered by the debt crisis in summer 2010, and has been reflected in eg strong investment flows to instruments considered safe havens (eg. gold and US and German sovereign debt) and stronger-than-normal volatility of prices in various asset classes.

Instead of general nervousness, measured by the VIX index, uncertainty has recently creasingly focused on European countries with a debt problem: the higher risk premia on

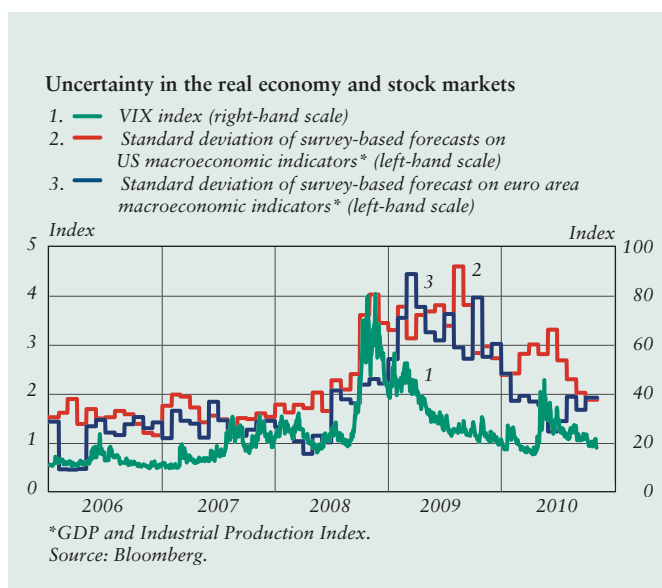
<sup>2</sup> VIX index is calculated using the implied volatility of the Standard & Poor's 500 index. It shows investors' expectations of 30-day volatility.

their government bonds and the rapid rise and volatility in credit derivatives prices suggest a lack of confidence in the ability of these governments to service their debt.

Uncertainty has a negative impact on the real economy as, for example, it dampens financial institutions' propensity to lend, postpones companies' investment decisions and reduces household consumption. Uncertainty over macroeconomic developments can be described by examining the standard deviation of forecasts on macroeconomic indicators (eg GDP and industrial production) (Chart 4). The bigger the disagreement between the survey respondents on the development of the real economy, the higher the uncertainty levels.

Uncertainty over US macroeconomic fundamentals increased as the financial crisis escalated in 2008, whereas in Europe, the crisis affected the macroeconomic expectations with a six-month lag compared to the United States. The debt crisis in summer 2010 also increased uncertainty over macroeconomic developments, and this continued to be reflected in the deviation of euro area forecasts in autumn 2010.

Chart 4.



*Sovereign exposures strain banks' funding*

As a result of the massive stimulus measures and support of the banking sector, many European countries have witnessed a rapid increase in general government debt. Governments and central banks have now taken the first steps in exiting from the support

measures as banks' shock-absorption capacity has strengthened, due to the improvement in financial performance and the easing of funding. Rapid action by the authorities, eg the decision to establish a European Financial Stabilisation Mechanism and the creation of a European Financial Stability Facility, and the Europe-wide stress testing exercise, contributed to reducing market uncertainty. Government debt nevertheless still poses a significant risk to the global banking system.

Due to the close linkage in the international financial system, the debt problems of individual European countries pose a threat also to other European countries. Fears concerning counterparty risk will trigger a rapid cross-border spreading of the debt problems if banks have large claims on the countries with the largest debt. The contagion risk would also be reflected in the interest rates of countries with a high credit rating and also in the funding of banks operating in Finland (Box 2 discusses the impact of government debt and the investment risks of Finnish financial institutions).

A growing supply of bonds in the capital markets is competing for investment flows which may, in the next few years, crowd out banks' funding and raise the cost of funding in all sectors. Over the next few years, government borrowing will coincide with the massive refinancing needs of other sectors (Chart 5). Banks' refunding needs are partly directed to the capital markets as banks seek to decrease financial risks by extending the average maturity of debt financing.

Banks' funding position differs from previous years as the securitisation market is not fully functioning.

European banks' financial performance has improved over the year. Developments in loan losses have been more positive than expected and there has been a decrease in credit risk, particularly in that arising from lending to small companies. While the recovery is still fragile, macroeconomic shocks may cause an upturn in unemployment, payment defaults and banks' loan loss provisions. Income and costs are weighing on net interest income. In an environment of expected sluggish economic growth, lending growth is subdued and banks' funding costs are strained by a competition for deposits and an increase in the cost of borrowing.

Money market conditions and banks' liquidity have improved slightly since spring, but the situation has not returned to normal. The fact that governments' financial risks become

Chart 5.

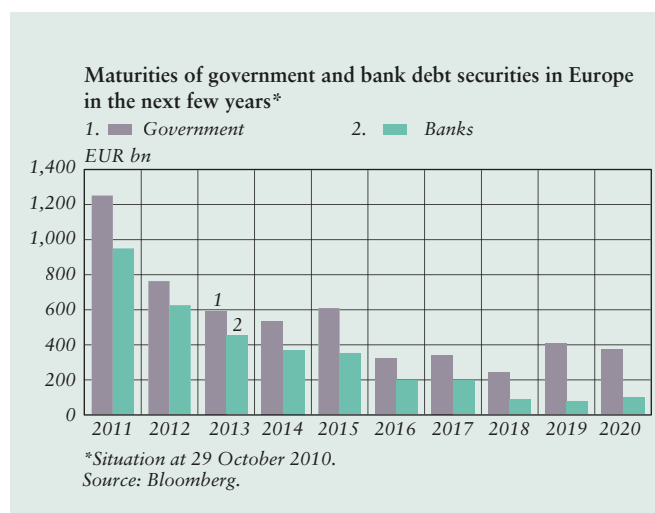
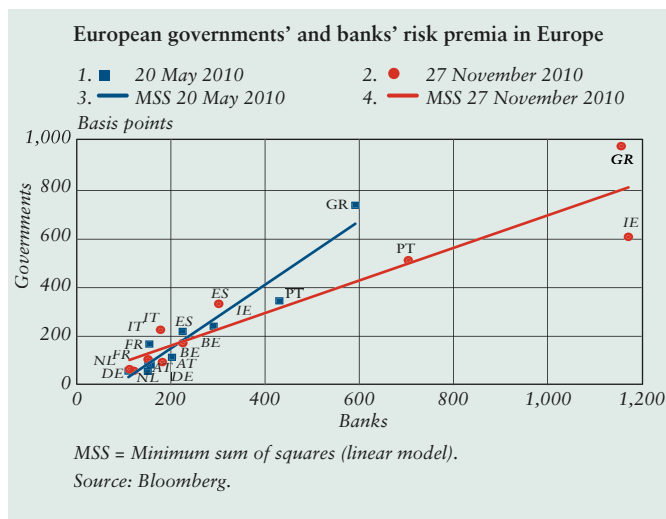


Chart 6.



banks' funding problems is reflected in banks' risk premia particularly in the countries that are struggling with a large general government deficit (Chart 6).

The weak parts of the banking system are a risk to the entire European financial system even though euro area banks are financially sound on average. There are indications of mixed developments in the soundness of banks as the same group of banks is affected by many of the profitability, income formation and funding problems. If the solving of structural problems in the banking system is delayed, there is the threat of increasing indebtedness, due to governments' support commitments. If a number of European banks remain dependent on public support, it will slow the markets' return to normal operation and distort competition. Measures that were initially intended to be temporary have become long-term. There are clear adverse effects on the international financial system, which will increase its vulnerability to crises.

### *Financing reshaped by changes in financial regulation*

Changes in financial regulation will reshape financial companies' operating environment in the years to come. Tightening regulation will affect the share of traditional bank lending and market financing, and shift the focus towards market-based financing if the future tighter banking regulations decrease banks' willingness to lend. This would reshape the European financial system more towards the US financial system in which market financing traditionally plays a large role. Tighter banking regulation entails the danger of the creation of a new shadow banking system and of financing and risks being channelled past traditional supervision.

### *Finnish economy recovers slowly with the global economy*

The Finnish economy is recovering from a deep recession. The recovery was delayed because Finnish exports have traditionally focused on capital goods. Domestic demand has been supported by household consumption demand and housing investment. The housing market has been boosted by exceptionally low interest rates and government action to support housing production.

Relative to the significant changes in output growth, employment in Finland remained stronger than expected. The Finnish economy is not expected to grow at a particularly strong pace in the near future as global economic growth slows. Although growth in Finland is expected to run at just a good 2½ per cent per

annum in the immediate years ahead,<sup>3</sup> the drop in output caused by the recession will be closed slowly.

### Household debt continued to grow despite the recession

Finnish consumer confidence in the economy has strengthened in 2010 and was very strong in the autumn.<sup>4</sup> Confidence has been boosted by the improved outlook for the Finnish economy and employment. Households' confidence in their own finances has also improved and returned to its long-term average.

The indicator of Finnish households' average indebtedness, ie the ratio of households' loan stock and annual disposable income, will in 2010 rise record high, to around 109% (Chart 7). The debt ratio has continued to rise since the late 1990s, and Finland is in the middle range by European comparison.<sup>5</sup>

The largest debts and highest debt ratios are concentrated on a fairly small number of households. About 40% of households have no debt, and over half of households have a debt ratio below 100%, ie these households' debts are lower than annual disposable income (Chart 8).<sup>6</sup> The number and importance

of heavily indebted households relative to their income have increased in the current decade. At the end of 2008, for 9% of households (16% of indebted households) the amount of debt was

Chart 7.

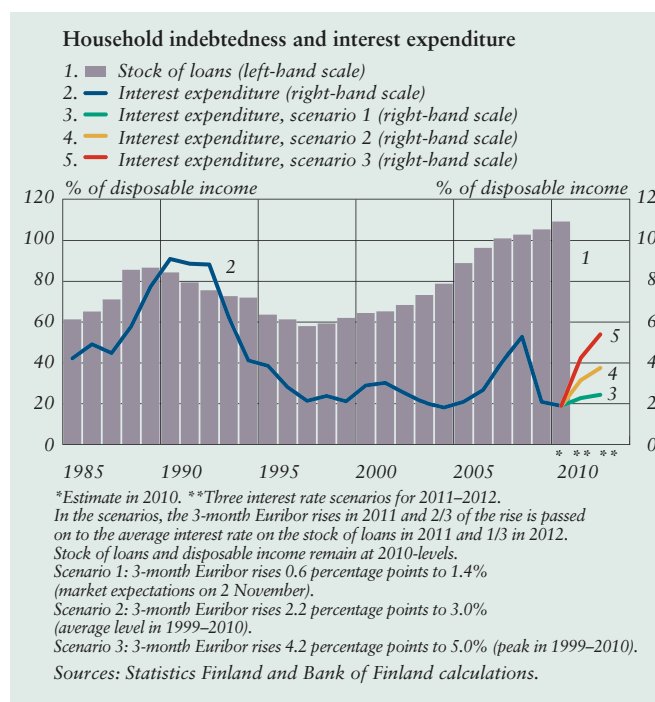
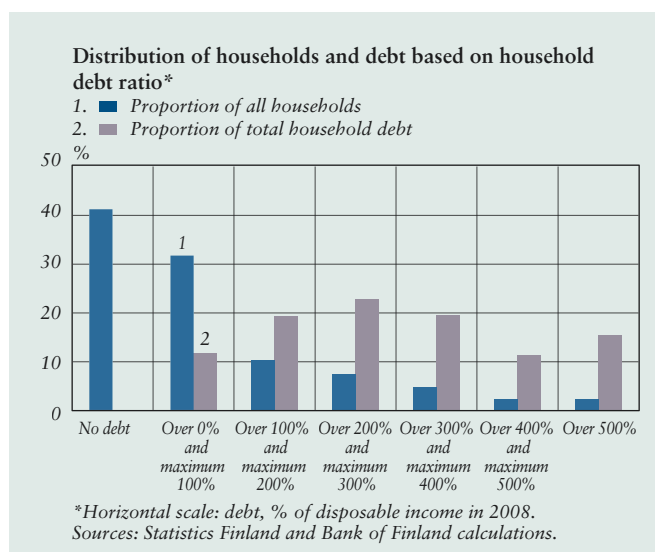


Chart 8.



<sup>3</sup> For more details, see Economic Outlook 2/2010, the special issue of the Bank of Finland Bulletin.

<sup>4</sup> Statistics Finland's consumer confidence indicator (October 2010).

<sup>5</sup> See also Box 3 "Household debt" by Risto Herrala in Economic Outlook 2/2010, the special issue of the Bank of Finland Bulletin. The examined debt ratio does not include households' estimated share in housing company debt.

<sup>6</sup> The figures are based on the latest data by Statistics Finland on household debt; the data on household debt refers to 2009 and the data on debt ratios refers to 2008.

over three times as high as their annual disposable income. These households account for as much as 46% of total household debt. In 2002, the share of households similarly highly-indebted was 4% (8% of indebted), and they accounted for 26% of the household stock of debt.

Chart 9.

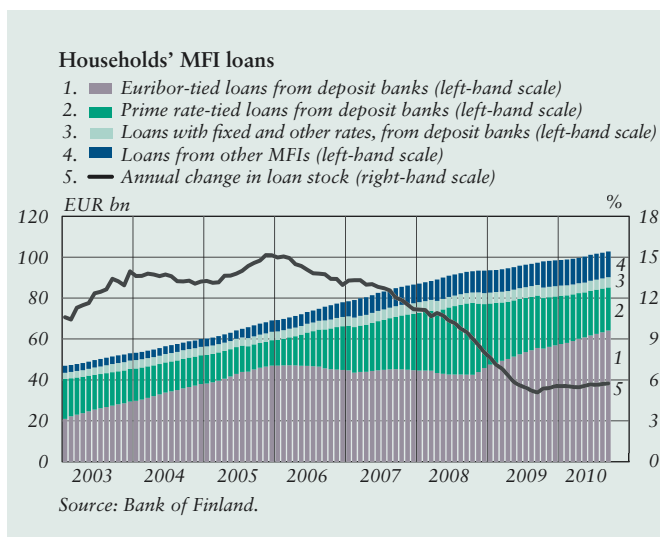
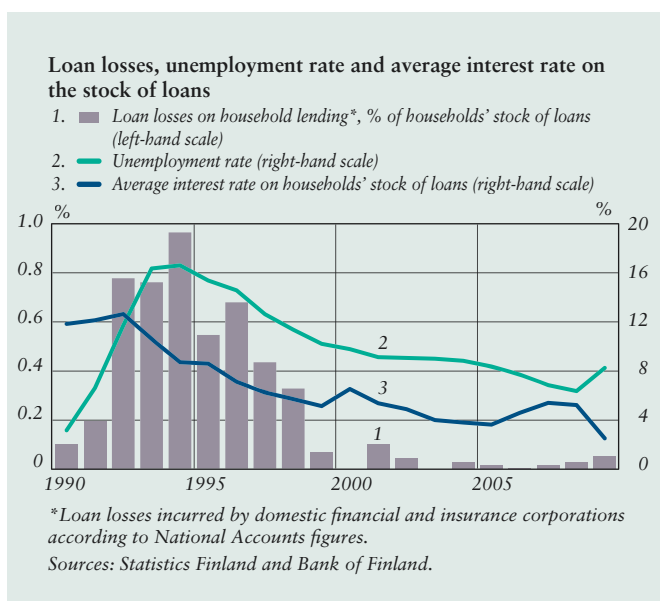


Chart 10.



Finnish households have continued to accumulate debt, despite the deep recession of the Finnish economy. MFI lending to households has grown at an annual rate of just under 6% in 2010 (Chart 9). Demand for credit has been sustained by low interest rates and the continued good employment situation considering the recession, which has boosted housing prices. Risks associated with indebtedness are linked to the development of these same factors. Thus far households' debt-servicing ability has remained good, and the amount of impairment losses recognised on household loans has remained minor. The proportion of household sector loan losses of the stock of loans remained fairly small also during recession in the early 1990s (Chart 10).

*Growing debt burden underlines the importance of interest rate risk*

The majority of bank loans to households are variable-interest-rate (Chart 9), and hence changes in market rates are quickly passed to the interest rates on household loans. In 2009–2010, the average interest rate on the stock of loans to households was below 3% and the interest burden has remained very low by historical standards (Chart 7). At the same time, growth in indebtedness has however increased the sensitivity of the debt-servicing burden to a rise in interest rates.

A sensitivity calculation (Chart 7) illustrates how a rise in interest rates in 2011 would affect households' interest expenses relative to income in 2011 and



2012.<sup>7</sup> According to market expectations, short-term interest rates will rise moderately in 2011, which would keep the interest rate burden low (Scenario 1). History has however shown that households should be prepared for a considerably higher level of interest rates and bigger interest rate expenses (Scenario 2 and Scenario 3). A significant increase in the interest burden would decrease household consumption and possibly increase the debt-servicing problems.

#### *Fall in employment decreases risks to income*

During the recession, employment in Finland has held up better than expected, partly due to companies' use of layoffs. The unemployment rate rose, but it remained notably lower than in the early 1990s (Chart 10). In 2010, unemployment has started to decline, which reduces the risks to household income. The recovery of the economy continues to be surrounded by uncertainty and it will take years before employment returns to pre-recession levels.

#### *Cooling of the housing market positive in terms of price risks*

The decline in housing prices that started in mid-2008 was short-lived; lasting only three quarters of a year. The prices returned to their early-2008 levels in autumn 2009, and they rose at a rapid pace until mid-2010. Housing prices levelled off in the third quarter of

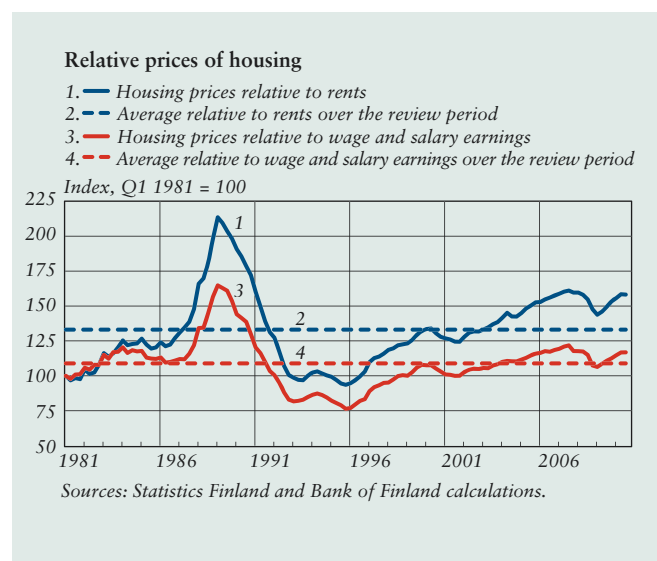
<sup>7</sup> The calculation does not account for differences in repayment methods and reference rates, possible changes in payment schedules, or other discretionary factors.

2010: housing prices in the whole country were 7.8% higher than a year earlier, but only 0.4% higher than in the previous quarter. The decline in the number of housing transactions also point to a cooling down of the housing market in the summer and early autumn.

Prices in the housing market can be assessed by comparing long-term developments in housing prices and rents or housing prices and wage and salary earnings.<sup>8</sup> Both indicators were in the third quarter of 2010 higher than the long-term average, but clearly lower than during the 1989 peak in prices (Chart 11). Following the dip at the turn of 2008, the ratios have risen close to pre-crisis levels, but developments in

<sup>8</sup> The ratio of housing prices and rents is the P/E ratio of the housing market; it shows the development of the valuation of dwellings relative to the benefits of owning a dwelling: either the rental income, or rent that the holder of owner-occupied housing avoids paying. The ratio of housing prices and wage and salary earnings reflects developments in the affordability of housing.

Chart 11.



autumn 2010 show positive signs of levelling off.

The rapid rise in housing prices in early 2010 was a warning sign of the tendency of asset prices to fluctuate strongly and overreact. The biggest threat in the housing market is a vicious circle in housing prices, followed by a drastic collapse, in which the authorities do not have the powers to intervene (see chapter Financial system policy).

Financial Supervisory Authority (FIN-FSA) has drawn attention to large housing loans and emphasised that in order to reduce the risk associated with a decline in housing prices the size of the loan should be reasonable, taking into account the purchase price of the house. FIN-FSA has encouraged banks to put emphasis on an adequate self-financing share for customers and to be cautious about personal customer housing loans with loan-to-value (LTV) ratios exceeding 90%.<sup>9</sup> According to information available to FIN-FSA, 28% of the new housing loans granted by Finnish banks had in May 2010 a LTV ratio exceeding 90%.<sup>10</sup> Other available data show that the use of LTV ratios exceeding 85% has increased since 2007.<sup>11</sup>

#### *Overall assessment of households' risks*

In light of economic forecasts, there are no indications of major changes in the

<sup>9</sup> FIN-FSA Supervision release 20/2010.

<sup>10</sup> FIN-FSA (2010) Valvottavien taloudellinen tila ja riskit 2/2010 (Financial position and risks of supervised entities 2/2010, in Finnish only).

<sup>11</sup> Federation of Finnish Financial Services (spring 2010) Saving, borrowing and payment methods in Finland.

financial position of the household sector, and households' debt-servicing ability is expected to remain good. Households' vulnerability to economic disruptions, eg a strong increase in unemployment or a considerable rise in interest rates, has however increased due to the growth in the debt burden. Households should prepare for the risks by ensuring that the size of the debt and debt-servicing expenses are reasonable relative to their income and collateral, by calculating the effect of an interest rate rise on debt-servicing expenses or the loan repayment period and by keeping a sufficient financial buffer against a rise in interest rates or unexpected expenses.

#### **Non-financial corporations have survived the recession better than expected**

Finnish non-financial corporations seem to emerge better from the exceptionally deep recession that followed the financial crisis than from the recession in the early 1990s. Stimulus measures by several governments and the replenishment of the international corporate sectors' inventories that were depleted during the crisis have recently boosted exports and non-financial corporations' order books. Finnish non-financial corporation confidence indicators thus started to rise rapidly in 2009. The focus of the recovery in demand has however varied between sectors. At best, order books are thinner than before the crisis.

In response to domestic stimulus measures, housing investment has resumed growth in 2010. In contrast,

the industrial sector's order books are thinner than normal and the amount of spare production capacity is relatively large. The recovery in industrial confidence indicators thus seems to have come to a halt, at levels close to the long-term average. Service sector companies' sales have been growing and growth is expected to continue.<sup>12</sup>

The corporate sector's debt ratio was relatively low when the recession hit. Average corporate profitability has remained good for a number of years, and sluggish investment activity dampened the growth in debt. Solvency of the SME sector was also good on average at the onset of the crisis. Half of the SMEs are practically debt-free.<sup>13</sup>

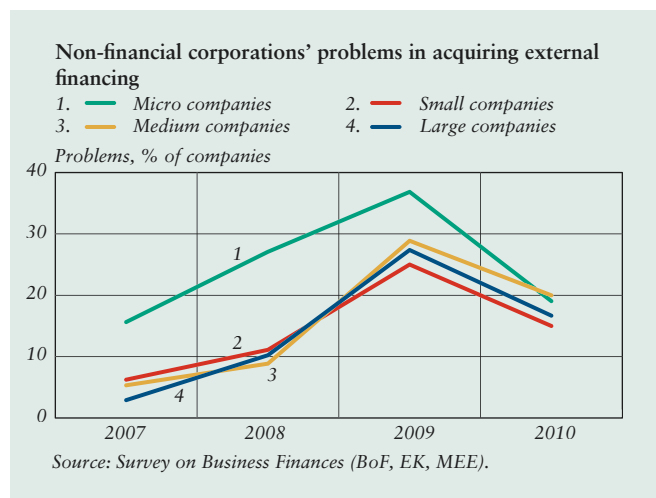
Finnish non-financial corporations' availability of financing deteriorated suddenly at the onset of the financial crisis as international investors withdrew from small markets and financial institutions focused on inter-mediating financing to their domestic customers. As foreign financing dried up, large non-financial corporations sought to ensure financing by increasing borrowing, both from domestic banks and employee pension companies.

The pickup in the capital markets in early 2009 facilitated large non-financial corporations' access to financing from the capital markets and at the same time boosted smaller non-financial corporations' domestic financing. This is also reflected in the improved access to corporate funding

<sup>12</sup> Confederation of Finnish Industries EK (November 2010) Business outlook indicator.

<sup>13</sup> Federation of Finnish Enterprises (autumn 2010) Pk-yrityysbarometri (SME confidence indicator, in Finnish only).

Chart 12.



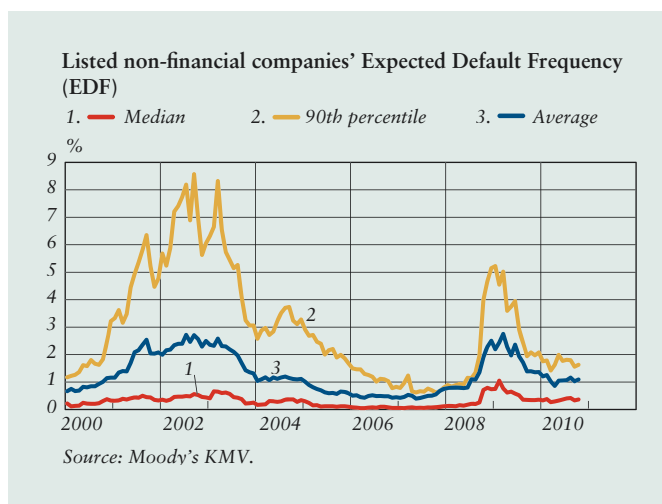
in 2010 (Chart 12).<sup>14</sup> Demand for corporate sector funding has been dampened by companies' moderate investment plans. As a result of the sluggish demand for corporate sector funding, banks' stock of corporate loans has grown at a slow pace.

The easing of banks' own funding has improved the availability of corporate loans and alleviated the credit terms. Banks' margins on corporate loans have narrowed, but they are clearly wider than pre-crisis. The risk premia on corporate loans acquired from the capital markets have also decreased, and they are also currently bigger than pre-crisis.

Banks' loan losses on corporate lending seem to remain considerably smaller than expected. Corporate bankruptcies increased significantly in 2009, but since then their number has been declining substantially. Non-financial corporations' probability of bankruptcy

<sup>14</sup> Confederation of Finnish Industries, Ministry of Employment and the Economy, and Bank of Finland (2010) Yritysten rahoituskysely (Business financing survey, in Finnish only).

Chart 13.



also decreased in 2010, close to pre-crisis level (Chart 13). In contrast, non-financial corporations' payment difficulties and payment defaults are still rising, particularly the payment defaults of smaller companies.

The majority of Finnish non-financial corporations' bank loans are variable-interest-rate. Interest rates on corporate loans have in recent years been lower than in Europe on average. The rise in short-term market rates rapidly increased Finnish non-financial corporations' financing costs. Similarly, an increase in banks' funding costs is likely to be reflected in a future rise in the costs of corporate loans. Tighter banking regulation is also likely to affect the price and availability of corporate loans. The reform of banking regulation may have a larger-than-average impact on Finnish non-financial corporations as banks are their main source of financing. Finnish non-financial corporations' possibilities to raise financing directly from the capital markets are limited, due to their small

size, and Finnish non-financial corporations are also in future forced to resort to banks as their source of working capital and investment financing.

### Domestic stock market as a funding channel

Robust capital markets are one of the pillars of corporate financing. They will be needed in future as investment activity restarts and banking regulation probably tightens the terms of bank financing. The securities market infrastructure lays the foundation to the operation of the capital markets.

The directive on markets in financial instruments (MiFID) opened share trading for a new type of competition as a large number of new pan-European marketplaces were established. Technological advances have in practice removed all the barriers to the cross-country integration of infrastructure.<sup>15</sup> Integration continues to be affected by future regulation and the Eurosystem's TARGET2-Securities project.<sup>16</sup>

In the Finnish financial system, international integration has in recent years been everyday life. From the technical point of view, the location of an infrastructure is of minor importance to investors and securities issuers. Investors want to trade on specific securities and minimize the costs of trading, whereas the issuer is interested in the cost-effective and

<sup>15</sup> See chapter Financial market infrastructure.

<sup>16</sup> The TARGET2-Securities project creates a single technical infrastructure which enables CSDs to settle securities transactions in central bank money and conduct both securities and cash settlements on a single technical platform.

reliable management of book entries, corporate actions and transmission of information.

In stock exchange and central securities depositories' operations, fixed costs account for a large portion of total costs. Economies of scale can be gained to some extent by merging several marketplaces and settlement infrastructures. The harmonization of EU regulations also supports this development.

Competition between trading places is also reflected in the operations of the Helsinki Exchange. A significant proportion of trading in listed shares has moved to alternative trading facilities, particularly that of the more liquid shares.

Listing activity is slowly restarting globally. The impact of the financial crisis was particularly strong in 2009 as listing activity collapsed compared to 2008: 12 companies listed on the Nasdaq-OMX Nordic exchange, and only 2 companies on the Helsinki exchange.<sup>17</sup> Subdued listing activity is likely to be partly explained by the decline in investments in an environment of weak economic growth in recent years. On the other hand, the low level of interest rates has kept the price of borrowed money relatively inexpensive compared to share issuance. As the economy picks up, the increase in financing needs (eg investments) and the rise in interest rates will boost the attractiveness of other forms of financing. To ensure that the capital markets are a functioning

channel of funding for domestic companies, market participants should know how to take advantage of the European infrastructure and safeguard the functionalities that are of national importance and the possibilities to influence also in the new environment. Domestic interest groups share the concern over maintaining the competitiveness of the Finnish capital markets.

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<sup>17</sup> Nasdaq-OMX.

# Banking and insurance sector

The low level of interest rates has reduced banks' net interest income, but loan loss experience has not been as bad as projected. Losses on household loans, in particular, have been low. Although credit institutions' claims on the most indebted euro area countries are rather limited, contagion risks to the Finnish economy and financial system through indirect channels are a cause for concern. Finnish banks have good credit ratings and are, hence, able to raise funding in the market. The solvency of insurance companies has improved quickly, but considerable investment risks remain.

## Profitability of banking

Banks have faced a highly challenging international operating environment over the past few years because of the global financial crisis, the deep recession of the real economy following in its wake and the subsequent sovereign debt crisis.

The risks related to banking can be divided into liquidity risk,<sup>1</sup> market risk, credit risk, contagion risk and other

risks. Several of these risks materialised during the crisis, though with varying timing and effects on profitability. Banks met with refinancing difficulties, suffered investment losses, a decline in net interest income and higher loan losses. The above risks will be discussed later in this section. Here, we will focus on the past and projected future development of banking sector profitability.

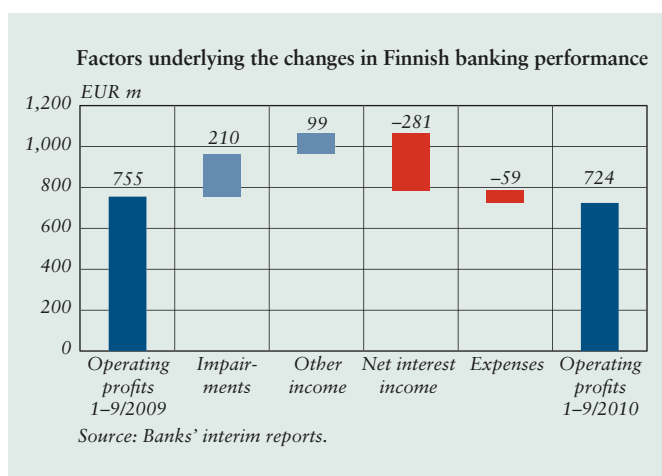
## *Developments in fee income and loan losses turned positive*

The decline in the performance of the Finnish banking sector<sup>2</sup> slowed considerably in the course of 2010. Total operating profits for January–September amounted to EUR 724 million (Chart 14), which was roughly EUR 30 million less than in the corresponding period in the year before. Although the result was close to that of the previous year, it had changed considerably in structure. The result was depressed by a reduction in both net interest income and net income from trading and investments. This was, however, offset by lower loan losses and higher net fee income compared with the year before.

Net interest income declined further as the fall in market rates that had started towards the end of 2008 was fully passed on to banks' lending rates to customers. The decline was mostly related to the record contraction of the deposit margin, which even turned negative at times. This narrowing of the

<sup>1</sup> See the Box on page 37.

Chart 14.



<sup>2</sup> Banking operations of the Aktia group, Evli Bank group, the banking operations and investment services of OP-Pohjola group, local cooperative banks, savings banks, the Ålandsbanken group and the banking operations of the Nordea and Danske Bank groups in Finland.



margin is partly related to the fierce competition for deposits, but is also an ‘automatic’ consequence of the fact that rates on transaction accounts, which were very low to begin with, could not fall at the same pace as market rates without turning negative.

Net interest income was also depressed by a reduction in lending margins. Margins on housing loans narrowed in the course of 2010, while growth in the margins on corporate loans came to a standstill. Growth in lending and deposit volumes was also clearly more sluggish than in pre-crisis years, when banks showed record levels of profitability.

The loss of net interest income was partly offset by the favourable development of net fee income, particularly securities-related fee income, which increased strongly in response to the share price rise that stimulated trading activity and increased managed assets. Also fee income from payments and lending grew.

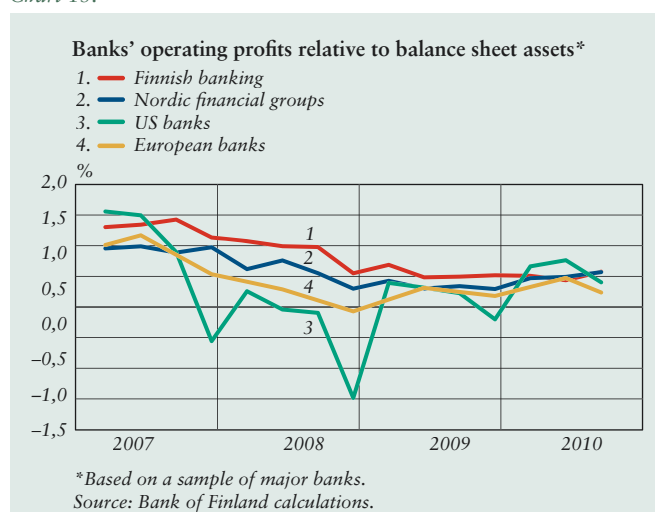
Banks’ expenses remained unchanged. This was hardly surprising, considering that expenses are practically the only income statement item the size of which banks are able to determine themselves, whereas other items are much more dependent on the operating environment and competition. In the challenging operating environment prevailing over the past few years, banks have sought cost savings by closely reviewing their expense structures, having gained substantial savings through efficiency measures.

International comparisons bear witness to the stable performance of Finnish banks (Chart 15). Total return

on equity for Finnish banking has hovered around 0.5% ever since spring 2009. In terms of profitability, Nordic financial groups have drawn level with Finnish financial groups in the course of 2010. The profitability of US banks has fluctuated much more than that of Finnish and Nordic banks. This is partly explained by the relative importance of investment banking, which is much higher in the United States than in Finland and the Nordic countries. The performance of investment banks is more sensitive to cyclical fluctuations than that of traditional banking.

The capital adequacy of the banking sector remains strong. The amount of regulatory capital held by banks is well above regulatory requirements, and the capital is of good quality. At the end of September 2010, the capital adequacy ratio for the banking sector stood at 14.5%, on average. The amount of regulatory capital held by banks amounted to EUR 21.4 billion, exceeding minimum capital requirements by EUR 9.6 billion.

Chart 15.



The Tier 1 capital adequacy ratio averaged 13.7%. The median of the Tier 1 ratio for the entire banking sector was, at 21.4%, considerably above the average, reflecting the strong capital adequacy ratios and high number of large local banks. In addition, the regulatory capital in the banking sector is mostly made up of common equity, the importance of which is emphasised in the Basel III regulatory reform.

#### *Banks' results improving in 2011*

Banks' operating profits are expected to remain unchanged in 2010 but start to increase in 2011 and continue to grow in 2012. The decline in net interest income came to a halt in the second half of 2010, when short-term market rates turned up. Quotations of interest rate futures signal that markets expect interest rates to continue to rise over the next few years. Notwithstanding this, market rates are expected to remain rather low compared to the level witnessed over the past decade.

In response to the rise in market rates net interest income for banks will improve. The deposit margin will broaden as the increase in deposit rates, especially on transaction accounts, lags behind the rise in market rates. However, banks' competition for market shares is projected to reduce lending margins somewhat. The overall margin is expected to broaden slightly but to remain much below the average for the first decade of the 2000s.

Other income is projected to show mixed development: while net fee income will post steady growth, net income from trading and investments

will fall short of the exceptional peak witnessed in 2009–2010.

As in previous years, banks' expenses are expected to develop moderately, whereas loan losses are projected to decline considerably. Together with the increase in net interest income, this will restore banks' results to a higher growth path.

Generally speaking, the brighter results prospects means that banks will again have the means for seeking growth opportunities and market shares after having focused on securing their results during the acute phase of the crisis. Signs of dawning competition for market shares especially in housing loans and fixed-term deposits have been visible for some time.

These projected developments in the banking sector are surrounded by uncertainties particularly related to the macroeconomic development. In the event of worse-than-expected economic developments, banks' profitability would be reduced through a number of channels.

Developments in net interest income depend both on the growth in lending and deposit volumes and on future interest rate margins. If economic growth is slower and market rates are lower than predicted, the overall margin between lending and deposit rates will be smaller than expected. This will mean net interest income will be lower than expected as a result of narrower margins and smaller lending volumes. In conditions of weak economic development, asset prices will also decline, which is reflected in lower fee income from investments and impairment losses on investments.

Subdued economic growth means higher loan losses. According to the results of the stress test exercise conducted by the Financial Supervisory Authority (FIN-FSA) in spring 2010, banks would show a slight profit also under a scenario of ‘severe global recession’.<sup>3</sup>

*New liquidity regulations heighten the need for long-term funding*

The amount of central bank financing held by credit institutions operating in Finland started to grow in spring 2008. In June 2008, the amount of long-term operations recognised in the Bank of Finland’s balance sheet increased to close to EUR 4 billion as credit institutions turned to the central bank for large amounts of financing with an agreed maturity of one year at the rate of 1%, which was considered attractive under the current market situation.<sup>4</sup> These volumes have fallen since then, and at the maturity of the above transaction in summer 2010, the amount of funding started to decline substantially. At the end of November, banks’ credit related to monetary policy operations with the Bank of Finland only amounted to EUR 90 million. Hence, the Finnish banking sector is not dependent on central bank financing.

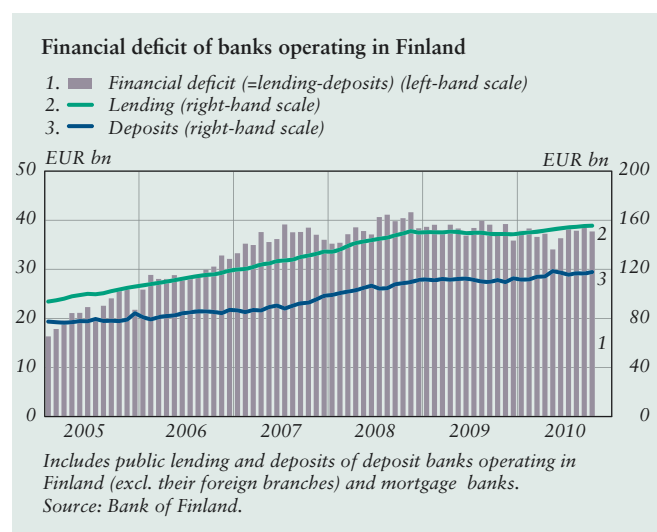
Banks’ need for market funding depends on the gap between public lending and deposits. During the years leading up to the financial crisis, the stock of lending expanded substantially, resulting in a negative balance between

lending and deposits in the Finnish banking sector (Chart 16). With the outburst of the crisis, this balance started to shift towards the deposits as deposits were growing at a higher rate than lending. The ratio has now stabilised at slightly under EUR 40 billion.

The competition for deposits focuses on fixed-term deposit and investment accounts. Still, transaction accounts, which account for roughly 60% of public deposits, are most important for the banks’ financing and profitability. Their low rate of interest and stable development make them excellent credit material. A pronounced rise in the rates on transaction accounts would reduce net interest income, while shifts of funds to competing instruments would increase the excess of lending.

Developments in banks’ liquidity in the euro area have been mixed. Solid banks have been able to raise sufficient funding in the market at competitive rates, whereas struggling banks have had to pay a high price for market

Chart 16.



<sup>3</sup> See FIN-FSA press release of 23 July 2010.

<sup>4</sup> See Valimäki, T. (2010) Rahapolitiikan toimeenpano finanssikriisin aikana. Euro & talous 3/2010 (in Finnish).

funding, or have been refused this funding altogether. Banks operating in Finland have been successful in obtaining long-term financing in the market.

The new liquidity regulations underway are designed to reduce banks' dependence on short-term market funding. The liquidity coverage ratio means that banks are required to build up larger liquidity buffers, whereas the requirement of permanent funding increases the proportion of longer-term permanent financing. Banks are required to raise a considerable amount of new long-term funding in a challenging environment marked by governments seeking substantial amounts of funding to cover their deficits.

Some of the Finnish banks' major international debt securities issues have been effected in the form of covered bonds through mortgage banks. The new Mortgage Bank Act that entered into force in August 2010 extended the right of issuance to deposit banks and credit organisations, with the first covered bond issue by a commercial bank taking place in November 2010, when Nordea Bank Finland issued a covered bond in the amount of EUR 2 billion.

The financial crisis highlighted the importance of liquidity management. The Finnish banks responded to the crisis by strengthening their liquidity buffers. Recent developments have been positive overall. Also long-term market funding at competitive prices is available to banks of good repute. This paves the way for the regulatory changes underway. Nevertheless, the situation in international financial markets remains vulnerable, in that any

new bad news may have an adverse effect on Finnish banks' prospects for raising market funding. For example, escalation of the sovereign debt problems of individual countries may have repercussions on Finnish banks as discussed in Box 2 below.

### **Stronger credit risk outlook, with some uncertainty still remaining**

Finnish deposit banking groups' domestic and overseas lending amounted to a total of EUR 196 billion at the end of September 2010, which is roughly 3% more than in the year before. More than half of the lending volume (EUR 100 billion) was related to domestic households and less than one-third (EUR 62 billion) to domestic companies and housing corporations. By industry, the property and manufacturing industries had the highest loan volume (altogether EUR 33 billion). Lending overseas represented about 15%.<sup>5</sup> The breakdown of the lending stock shows that banks' credit risks are above all related to the financial situation of the domestic debtor sectors. In the banks' credit portfolios, the weight of households has increased in relation to companies, while the proportion of housing loans has risen in relation to other household loans.

Banks' impairment losses on loans and other receivables increased markedly in response to the global financial crisis and the economic downturn following in its wake. In 2009, the net impairment losses of domestic banking groups amounted to more than EUR 800

<sup>5</sup> For more details on the risks related to financial institutions' foreign claims, see Box 2.

million, but this was less than 0.5% of the average stock of lending.

Examined by domestic sector or industry, loans to manufacturing companies have generated the highest losses. Losses on household loans have remained small, with the major risk in household loans being related to unsecured consumer credits, which only account for a minor proportion of the credit portfolio.

Considering the deep downturn of the Finnish economy, materialisation of credit risk has been limited. Loan losses have remained lower than expected, above all because of the low level of interest rates, higher than expected levels of employment and short duration of the economic downturn. Both loan losses and pending bankruptcies will remain much lower than during the banking crisis of the early 1990s.

At quarterly level, banks' net impairment losses were largest for July–September 2009. While in gross terms new loan losses remained at the same level still in the early part of 2010, net loan losses nevertheless declined in response to higher loan loss reversals and recoveries (Chart 18). In January–September 2010, net loan losses were more than one-third lower than during the first three quarters of 2009.

Banks' problem loans have declined in amount in response to the onset of economic recovery. The amount of non-performing assets, ie loans due for more than 90 days, was around 9% smaller in September 2010 compared with the year before (Chart 19). Similarly, the amount of loans due for 30–90 days has been reduced.

Chart 17.

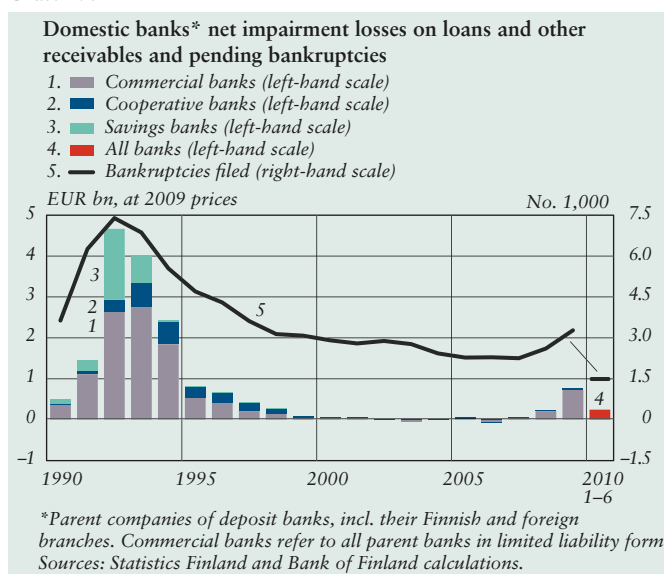
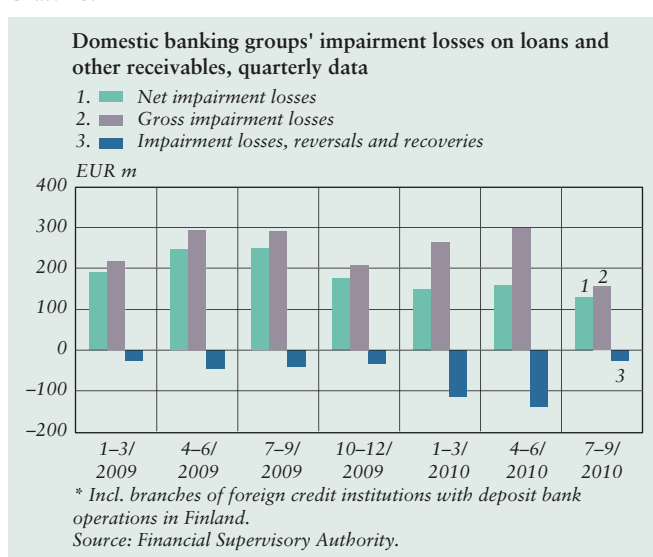
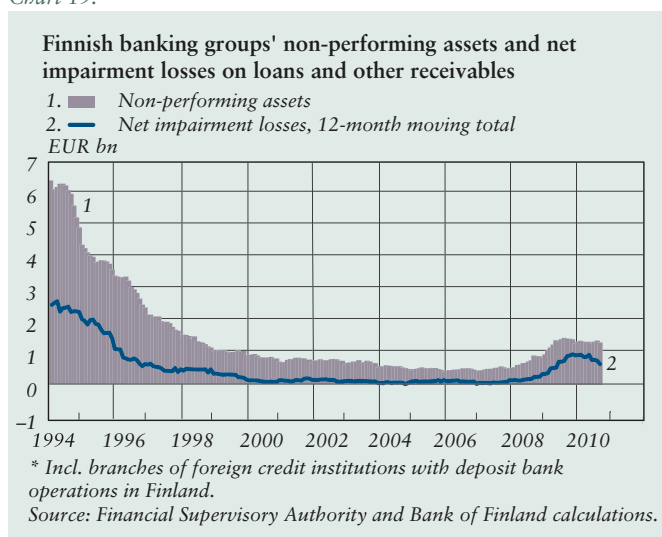


Chart 18.



The positive outlook also appears from the sectoral breakdown. In the case of households, the amount of non-performing assets was 4% and in the case of companies and housing corporations 8% lower at the end of September 2010 compared with the year before. For both sectors, problem loans accounted for roughly 0.6% of the lending stock.

Chart 19.



According to Statistics Finland, the number of new bankruptcies filed over the period January–September 2010 was 15% lower than in the corresponding period a year earlier. In August 2010, the Finnish business and credit information company, Suomen Asiakastieto, projected that the bankruptcies over the next 12 months will entail receivables in the amount of roughly EUR 580 million. Total debts of companies declared bankrupt during the past 24 months amounted to around EUR 1.3 billion.

Economic recovery is still surrounded by some uncertainty, and payment difficulties remain clearly more common in the case of both companies and households than before the recession. In the quarterly reports for January–September 2010, banks projected that their net impairment losses on loans would, in the short term, remain higher than before the financial crisis, but believed that a turn for the better had taken place. In light of the projected economic development,

the debt servicing ability of the domestic debtor sectors is expected to remain good overall, while impairment losses are expected to decline compared with the situation in 2009.

Under the prevailing economic cycle, credit risks do not pose a threat to the stability of the domestic banking sector. Over the next few years, the future amount of impairment losses will, however, be one of the main factors of uncertainty underlying the profitability of the banks operating in Finland. In terms of credit risk, the major threat scenario is represented by a much worse-than-expected development of the global economy and, therewith, the Finnish economy.

### Contagion risks

Banks have substantial mutual receivables the loan loss risks of which are associated with both the size of the receivables and the debt servicing ability of the debtor. During the financial crisis, mutual trust between the banks eroded globally, and in this environment of distrust, banks started to give precedence to central banks as counterparties. Consequently, an increasing proportion of banks' assets were deposited with central banks, while an increasing proportion of funding was raised from central banks. The situation has to some extent been restored, which probably reflects regained trust between the banks and normalisation of perceived counterparty risk.

The restoration of trust in the banking industry is reflected in a narrower interest rate spread between banks' securitised and unsecuritised loans. For euro-denominated loans with a



maturity of three months, the spread was, at most, over 1.5 percentage points during the peak of the financial crisis. In autumn 2010, it had narrowed down to around 0.3 percentage points. Loan availability in interbank markets has also improved.

As the situation of Finnish banks is good by international comparison, foreign banks are likely to present the major contagion risk to the domestic banking sector. Finnish banks' claims on foreign banks decreased slightly during the first three quarters of 2010.

Large-scale materialisation of contagion risk would probably be related to a new wave of the financial crisis spilling over to Finland via the interbank market and, especially, the global economic development. Such a new wave could arise for example from the escalation of the sovereign debt crisis. At the end of September 2010, claims of credit institutions operating in Finland on Greece, Ireland, Portugal, Italy and Spain amounted to EUR 4.9 billion, only part of which was bank-related claims. This amount is clearly lower than the banks' capital buffers, which currently exceed EUR 9 billion. Most of the interbank claims relate to Nordic banks, which have fairly good credit ratings by international comparison.

Large counterparty risks may emerge rapidly in the interbank OTC derivatives markets, as changes in the value of securities, exchange rates and other potential underlying assets cause sudden fluctuations in the prices of derivatives. According to Statistics Finland, the amount of derivative contracts entered as assets in the balance

sheets of domestic deposit banks increased by more than 55% from June 2009 to June 2010. According to Bank of Finland's statistics, foreign claims based on derivatives have increased substantially after the turn of the year, but the figure also includes other than interbank contracts.

#### *Market risks*

Fluctuations in euro area long-term interest rates calculated on German government bond reached their peak in winter 2008–2009, while a more moderate increase in interest rate volatility was witnessed in June 2010. Volatility has also picked up in European share markets, but the situation is not nearly as bad as in the latter half of 2008. In the derivatives market, the implicit volatility of the euro to dollar exchange rate was strongest towards the end of 2008, strengthening again temporarily in early summer 2010, but having receded since then.

According to the press release of the Financial Supervisory Authority (22 September 2010), the amounts of capital to be held by banks to support market risk increased strongly towards the end of 2009, whereas changes in capital requirements have been minor in 2010. The securities and foreign exchange positions of the banks operating in Finland are relatively moderate overall. Banking groups show an appreciable dispersion with respect to the changes in the level of capital held to support market risk. Most of the capital charge for market risk is related to the position risk on interest rate instruments.

Chart 20.

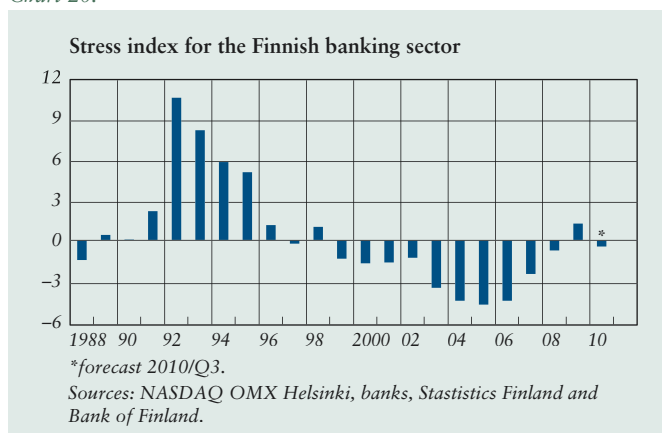
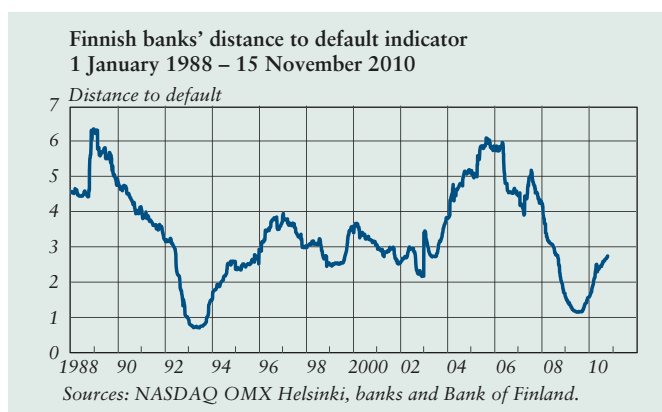


Chart 21.



### *Banks' risks in light of indicators*

The banks' stress situation may be described using an index developed on the basis of the variables of bank share prices, interbank deposits, banks' profitability, equity and loan losses (Chart 20).<sup>6</sup> A higher index value represents a higher risk. The index shows that the banks' situation deteriorated fairly rapidly over the years 2008–2009, but was not nearly as critical as in the early years of the 1990s.

An indicator of the probability of default may be computed on the basis

<sup>6</sup> The methods are discussed in the special issue of the Bank of Finland Bulletin, Financial Stability 2006, pp. 44–46.

of share markets and banks' balance sheet values (Chart 21). According to the indicator, banks experienced the worst situation in 2009, after which the situation started to improve and is already almost normal. Bank share prices have risen and price fluctuations have moderated, which has had a positive effect on the value of the index.

### **Stronger solvency for insurance companies**

Finnish insurance companies, similarly as Finnish banks, have faced a very demanding operating environment over the past few years. The deep economic downturn, low level of interest rates and highly volatile investment markets have presented major challenges for both the underwriting and investment operations of insurance companies. The steep fall in asset prices resulted in a temporary relaxation of the solvency requirements for employee pension companies at the end of 2008<sup>7</sup> to avoid forced sales of the companies' share holdings and the adverse effects such sales would have on share prices. Equities carry less weight in the asset portfolios of life and non-life insurance companies, and, hence, their solvency regulations were not changed during the financial crisis.

Following the recovery of investment markets since spring 2009, the solvency of insurance companies has strengthened. Rising share prices

<sup>7</sup> The provisions on the funding of old-age pensions and the solvency margin for private-sector employee pension providers were temporarily changed, in that part of the provision for pooled claims was subjected to equivalent treatment with the solvency margin, the required minimum amount of which is independent of the pension provider's asset allocation. The Temporary Act will remain in force until the end of 2012.

### Government debt problems and financial stability

Less-indebted countries cannot afford to be lulled into believing that they are safe from the debt crisis storming Europe. Stability problems, even in an individual country, shake the international financial markets and threaten to undermine other countries' economies, too. In the integrated

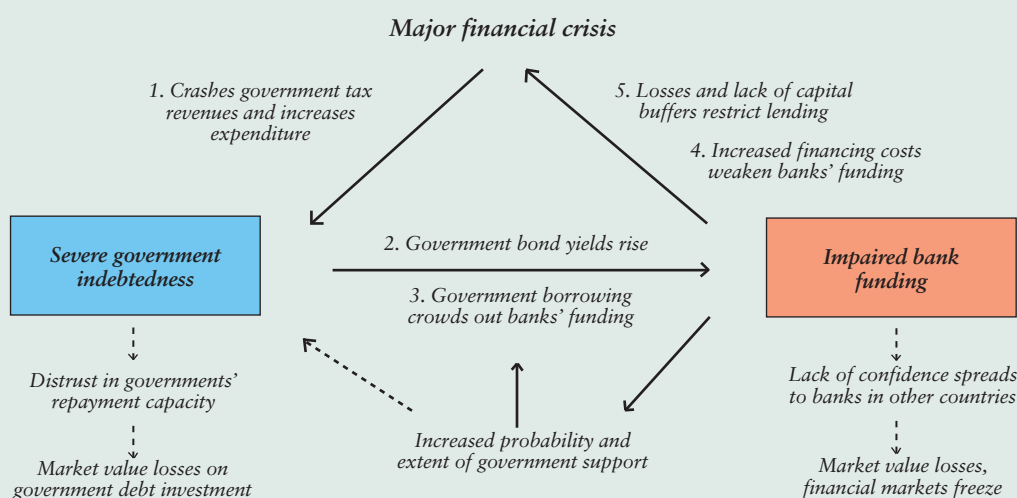
international financial system, a crisis spreads as a contagion directly through impairment of government bond investments, through herd and panic behaviour in the markets, or counterparty concerns in the money market. As a result of slow economic growth, public

indebtedness and the vulnerability of banks' funding, there is the risk of a negative spiral emerging between governments and banks with real economic impacts (Chart A).

The deep recession and support given to the banking system have increased govern-

Chart A.

Destructive dynamics of the government debt crisis and investments of Finnish financial institutions in debt securities of European governments and credit institutions



Stock of foreign debt security investments of major Finnish investor sectors in September 2010, EUR bn

Investments in European government debt securities				
	Credit institutions	Employment pension providers	Insurance institutions	Investment funds
Debt securities, total	2.7	15.4	4.5	5.8
Largest country positions	Germany 1.3 Sweden 0.4 Netherlands 0.3	Germany 5.4 Italy 3.0 France 2.0	Germany 1.2 France 1.0 Netherlands 0.5	Sweden 1.5 Germany 1.0 Italy 1.0
GIIPS positions	Total 0.1 Greece 0 Portugal 0 Spain 0 Ireland 0 Italy 0	4.9 0.6 0.3 0.4 0.6 3.0	1.0 0.2 0 0.2 0.2 0.4	1.6 0.2 0 0.3 0.1 1.0
	28.4			

Investments in debt securities of European credit institutions				
	Credit institutions	Employment pension providers	Insurance institutions	Investment funds
Debt securities, total	12.7	6.2	5.7	9.1
Largest country positions	Denmark 2.4 France 2.1 Sweden 1.9	United Kingdom 1.0 Sweden 1.0 France 0.9	Sweden 2.1 United Kingdom 0.7 France 0.6	Sweden 3.4 United Kingdom 1.1 Denmark 0.9
GIIPS positions	Total 1.4 Greece 0 Portugal 0.2 Spain 0.6 Ireland 0.2 Italy 0.4	1.1 0 0.2 0.3 0.3	0.3 0 0 0.1 0.1	1.0 - 0 0.2 0.4 0.4
	33.7			

Source: Bank of Finland

ments' indebtedness. Higher yields are required from bonds issued by governments struggling with economic difficulties as a compensation for their higher perceived repayment risk. The rise in government bond yields is shown throughout the economy as higher interest rates, which also affects banks' funding. In addition, financial difficulties give rise to concerns about the capability of governments to support domestic banks, if needed. The weaker the state of a country's banking system, the higher the probability of a need for public support, which further undermines government financial position and creditworthiness.

The concerns of market participants are related, in addition to the most indebted countries, to banks with large direct exposures to indebted countries or banks operating in them. Increased counterparty risk is priced immediately in the markets, and yields on bonds issued by banks exposed to debt crisis countries also rise in other countries. Changes in market values cause investment losses to those holding government and bank bonds.

The market risks of Finnish financial institutions related to debt security investments in the most indebted European countries are moderate. According to September 2010 statistics, Finnish financial institutions held a total of EUR 62

billion (Chart A, table) of debt securities issued by European (excl. Finnish) governments and credit institutions, a small proportion of the total stock of investments and assets of financial institutions.<sup>1</sup> A majority of the foreign portfolio assets of employment pension providers, insurance companies as well as credit investments was European. A good fifth of the investments of Finnish investment funds was made in securities whose issuers are based outside the EU.

Employment pension providers' foreign government debt holdings were almost exclusively from Europe. They held a total of EUR 15.4 billion of European government debt securities. About a third of the government debt, EUR 4.9 billion, were government bonds issued by countries with the biggest debt problems, Greece, Portugal, Ireland, Spain and Italy (so-called GIIPS countries). Another third of the bond portfolio consisted of investments in German government bonds. The proportion of Italy was EUR 3 billion.

In 2010, employment pension providers have reduced their investments in foreign credit institutions, and since the escalation of the debt crisis in the spring, also in government debt securities.

<sup>1</sup> The figures only include investments in debt securities. They exclude investments in equities, investment fund units and other investment instruments.

The market value of insurance companies' foreign portfolio investments totalled EUR 23.9 billion, over half of which consisted of debt securities. Insurance companies GIIPS government exposure amounted to a billion euro. The majority of fixed-income investments were in low-return government bonds, with German and French government bonds as the most important investments.

Finnish credit institutions held a total of EUR 2.7 billion in debt securities issued by European general government entities. The probability of the debt crisis spreading through market risks to Finnish credit institutions is low. The investments of Finnish credit institutions in debt securities issued by credit institutions in GIIPS countries exceeded their investments in the government debt of the same countries, but the risks are minor relative to the entire investment portfolio.

The market value of investments by Finnish investment funds in Europe (excl. Finland) totalled EUR 34.9 billion, half of which being invested in debt securities. Finnish investment funds held a total of EUR 9.1 billion in debt securities issued by European credit institutions and EUR 5.8 billion of debt securities issued by European governments. The risk of a decrease in the value of the security assets of investment funds is borne by the unit holder.

and falling risk premia especially in the market for corporate loans has bolstered insurance companies' profitability and solvency that deteriorated during the financial crises. The solvency of employee pension companies has also been supported by the relaxed solvency requirements introduced under the Temporary Act. The favourable development of investment markets continued in 2010, except in the market for government bonds (see the section on Operating environment).

Following the economic recession, growth in premiums written by insurance companies dampened in 2009. With the economic recovery, premiums written have turned up during 2010. Rising share prices have restored policyholders' interest in unit-linked life policies. Their proportion of the life insurance portfolio is steadily growing, as the popularity of policies tied to the interest rate assumption has been fading. Currently, unit-linked policies account for a good third of the life companies' insurance savings, which amount to a little over EUR 32 billion.

Growth in unit-linked policies has been strongest in capitalisation agreements,<sup>8</sup> but premiums written on personal unit-linked life policies have also increased strongly. The investment risks related to unit-linked life policies are borne by the customers, which eases the solvency position of life insurance companies.

Insurance companies' investments generated a high income in 2009, with results remaining fairly positive though January–September 2010. In response to

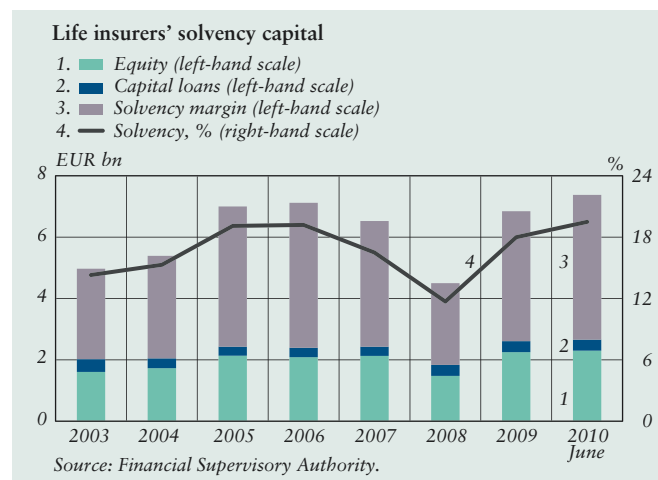
<sup>8</sup> Capitalisation agreements are lump-sum, fixed-term unit-linked policies without insured risk.

this, insurance companies' total results after recognition of changes in market values improved considerably. In 2009, the aggregate total result for life insurance companies exceeded EUR 1 billion, while that for employee pension companies amounted to EUR 5.5 billion. The results improvement was above all related to the strong rise in share prices witnessed in 2009 and 2010. The total result for non-life insurance companies amounted to a little over EUR 2 billion. The smaller results improvement of non-life insurers was related to their lower portfolio share of equities.

Following the financial crisis, the solvency ratios for insurance companies declined considerably. Solvency has been boosted by the rise in asset values and is currently good on average (Chart 22). In September 2010, solvency margins exceeded regulatory minimum levels manifold (Table 1).<sup>9</sup>

<sup>9</sup> Until the end of 2012, the required minimum amount of solvency margins for employee pension companies represents 2% of the technical provisions laying the basis for calculation of the solvency limit.

Chart 22.



*Rise in asset values lowered the risks in the insurance sector*

The risks related to the insurance business are divided into two main categories: underwriting risks and market risks. The risks related to the non-life insurance business include the risk that premiums written are not sufficient to meet claims expenditure or that technical provisions are not sufficient to cover the damages arising under insurance contracts.

The life insurance underwriting risks include interruption and surrender risks and the risk related to higher life expectancy of the beneficiaries. While interruption and surrender risks rarely present major risks to the life insurance business, higher life expectancy may do so. However, the longevity risks

associated with personal pension policies are generally low in Finland as the insurance contracts are mostly made for a fixed term. By contrast, higher life expectancy may mean that payment of disability or sickness benefits under non-life policies will extend beyond the term calculated at the time of pricing the insurance contract.

Life insurance companies determine the rate of guaranteed interest applied to the insurance contract for the entire contractual period. Hence, a fall in market rates during the validity of the contract may require replenishment of technical provisions. Currently, insurance contracts based on the guaranteed rate of interest account for a little over 60% of life insurance policies, which means

Table 1.

Solvency of life, pension and non-life insurers					
	9/2010	12/2009	12/2008	12/2007	12/2006
<b>Life insurers</b>					
Equity, EUR m	2,598	2,252	1,475	2,127	2,088
Solvency margin, EUR m	5,331	4,237	2,665	4,096	4,727
Solvency capital, EUR m	5,503	4,407	2,864	4,274	4,893
Solvency margin, % of minimum amount	488.4	382.4	242.9	358.8	423.2
Solvency capital, % of technical provisions	21.8	18.0	11.7	16.5	19.2
<b>Employee pension insurers</b>					
Equity, EUR m	338	334	325	311	295
Solvency margin, EUR m	17,634	14,681	8,952	17,663	17,107
Solvency margin, % of minimum amount	1,336.4	1,164.5	767	289.7	338.1
Solvency margin, % of technical provisions	26.7	23.3	15.3	29.9	31.3
<b>Non-life insurers</b>					
Equity, EUR m	1,776	1,737	1,387	1,686	1,465
Solvency margin, EUR m	2,646	2,208	1,760	2,244	2,064
Solvency capital, EUR m	4,864	4,381	3,784	4,184	3,814
Solvency margin, % of minimum amount	427.4	360.6	288.5	374.8	353.9
Solvency capital, % of technical provisions	60.8	58.1	51.8	59.4	56.2
Solvency capital of premiums earned over 12 months	157.3	143.9	126.9	145.7	132.0

Source: Financial Supervisory Authority.

that the discount rate risk is relatively high.

Market and credit risks related to the investment business are the major underwriting risks facing insurance companies. Investment risks vary considerably by type of company, reflecting differences in asset allocation. Interest rate risks are highest for non-life companies, with fixed income holdings accounting for nearly 70% of their total investments. Similarly, interest rate risk is also the key investment risk for life insurance companies. Equity risks are clearly higher for pension companies than for other insurance companies. At the end of September 2010, equities accounted for 36% of the risk-based asset allocation of pension companies.

In the context of insurance companies, credit risk refers to losses arising from reductions in the credit rating of, or bankruptcies suffered by, issuers of debt securities held by the insurance company, or reductions in the credit rating of, or bankruptcies

suffered by counterparties to derivative or reinsurance contracts. In the fixed income portfolios of insurance companies, the proportion of corporate debt instruments has been increasing. The profitability of insurance companies has improved, and credit risks in the insurance sector have not taken on alarming proportions.

The liquidity and refinancing risks of insurance companies are much lower than for banks. The Finnish insurance sector is highly concentrated, which means that problems of a large life or non-life company may rapidly spill over to the banking sector, for example through ownership structures.



# Financial market infrastructure

The financial market's infrastructure refers to the payment and settlement systems, through which all the financial market transactions are concretely carried out. In effect, this means that the infrastructure is the backbone of the economy, whose reliable and efficient functioning is essential for both the financial system and society at large. Any possible disruptions can also be discerned at the public's level very quickly. One of the functions of a central bank is to ensure that the payment and settlement systems do not allow or contribute to financial market crises. A number of regulatory projects, initiated in response to the financial crisis, also concern infrastructure, and their aim is prevent crises from arising. Regulation is mainly done at European level as the financial markets infrastructure is widely integrated.

## Highlighting the advantages of integration

Efficiency has been sought through integration of payment and settlement systems. Economies of scale can be achieved in systems that handle large volumes, in terms of numbers of transactions. This is reflected in smaller transaction costs. Less attention is paid to other advantages of integration or possible negative effects. In principle, integration should lead to taking advantage of the best characteristics of different markets. However, the markets are not perfect, which means that the smaller markets often just have to adapt and carry the related costs.

Integration often brings lower service prices and an increasingly competitive operating environment, as

new institutions enter the market. Multinational institutions are also able to save with the possibility to use the same systems and resources on several markets. Integration can also facilitate services for smaller markets, and often at a rapid or timely rate, that would not necessarily be possible otherwise.

Conversely, systems integration also brings the need for compromise and adjustment to solutions that may be no more than satisfactory to all the participants. This may initially bring about a drop in service levels, as routines effective at the national level are surrendered. As integration is intensified, more attention must be paid to equal treatment of the participants and to the standard and quality of services provided; thereby bringing out the benefits of integration over a longer period.

Integration should not lead to a draining of Finland's extensive competence in payment and settlement systems from the country. The disappearance of such competences would make the creation of new innovations and market development more difficult and could easily lead to a turndown in the entire market. This would also mean a reduced ability to take advantage of international infrastructures.

In addition to the integration process, the outsourcing of services and processes has an effect on how the infrastructure functions. When outsourcing, service providers must ensure that as services are outsourced to subcontractors, or as the physical distance to the service provider grows, no problems are discernable by the customer. Overall responsibility vis-a-vis the customer remains with

the service provider, regardless of where the service production takes place. Outsourcing and centralisation are challenges that the Finnish authorities are also faced with and serve to underline the importance of international cooperation.

### Settlement systems trying to find their bearings

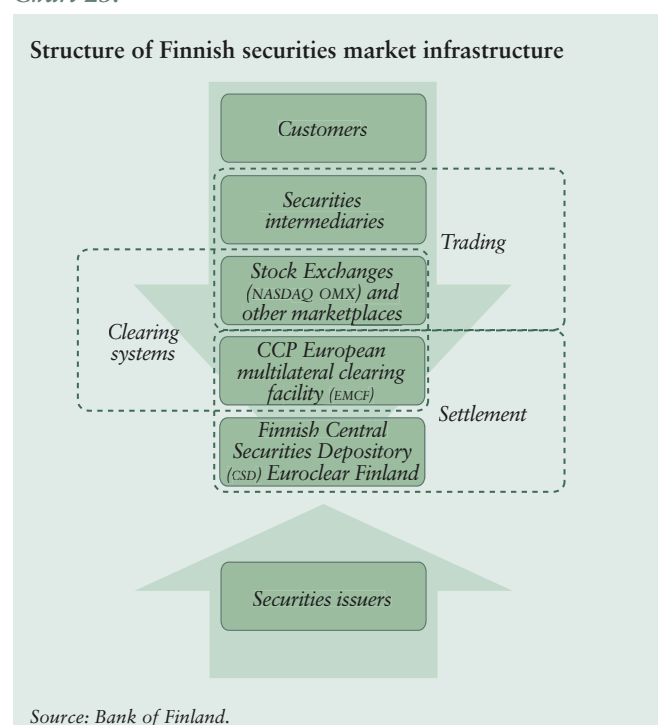
Adoption of central counterparty clearing (CCP) in Finland just over a year ago changed market habits.<sup>1</sup> The introduction of CCP onto the market has gone relatively well. Surprisingly many settlement counterparties have applied for direct membership of the CCP. With the netting that results from the use of central counterparty clearing, the number of transactions settled on the Finnish Central Securities Depository (CSD Euroclear Finland) has declined. Where the majority of transactions were settled according to the delivery vs. payment principle (DVP), these days it is applied only to netted transactions. Against expectations, adoption of the CCP has reduced the settlement rate. Currently the situation is better than it was in the first half of the year. Regardless, market players need to find a means for improving the situation still further. Central counterparty clearing is provided to the Finnish market by European Multilateral Clearing Facility N.V. (EMCF) from the Netherlands. Plans to start up two new CCPs have been postponed. Operations can be started up once the risk management of

links between CCPs is at an acceptable standard. The Bank of Finland takes part in all the oversight activities regarding central counterparty clearance in the Finnish market.

The reduction in volume brought about by the CCP can be seen in the income of the Finnish CSD. In a changing market, it remains in everybody's interest that Finland has an operational, efficient and customer-oriented central securities depository.

Finland's CSD is a part of the Euroclear group. Still at the beginning of the year, Euroclear Finland looked to taking advantage of the IT systems of Ireland and Great Britain. This plan has now been given up and the hunt has returned to finding a more cost-effective solution from an amalgamation of the Finnish and Swedish systems. The

Chart 23.



<sup>1</sup> Myller, M. (2009) Keskusvastapuoliselvitys alkaa Helsingin pörssissä: Mikä muuttuu? BoF Online 12/2009. (BoF Online expository studies: Central Counterparty Clearing starts up in the Helsinki Stock Exchange: What will change?), available in Finnish.

intention has been to harmonise the operating practices and services in these two markets. The process must also take into account that there are changes in the pipeline that affect the whole of Europe.

The Eurosystem's TARGET2-Securities is creating a pan-European clearing facility for securities. The project has already progressed to mid-way and, according to current plans; migration to the system will be completed by 2014. Preparations have progressed in a very open manner and every possibility has been offered, for those who wish to, to express their opinions and influence the project as it advances. The T2S acquisition's key decisions on pricing, its governance and contractual relationships should all be made in the near future. Once the pricing is clarified, it will be time for the domestic participants to select the book-entry securities account model that should be applied in the T2S

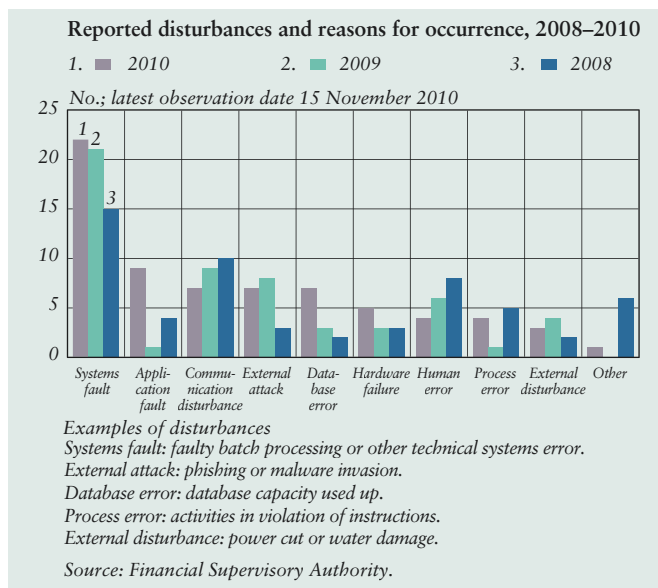
system. There are several alternatives available and are distinguishable from each other by their cost effects. The ongoing amendment of the Securities Markets Act may support an effective operating model. The changes that are currently due to be undertaken need to be examined as a whole, as they will have an effect on the competitiveness of the Finnish markets over the long term.

### Disturbances in customer payments

On the whole, the payment and settlement systems have functioned reliably over the last year. However, in recent months (and in October 2010 in particular), there have been several disturbances in the retail payment systems, which have affected the customers of the banks concerned through delays in processing so-called recurrent transfers such as pension and salary payments. The disturbances are not the result of merely one cause, rather they are due to technical problems experienced in individual banks or the entire system. (For more specific details on the reasons behind any disturbances, see Chart 24, in the Financial Supervisory Authority's report on the disturbances 2008–2010.)

Since implementation of the Payment Services Act,<sup>2</sup> recurrent transfers have been settled at night using the domestic PMJ Interbank retail payments system. This has resulted in payments being made to customers' accounts in the early hours of the morning, a little later than previously. Any disturbances that occur, affecting the night time settlement, can delay payments still further. Intro-

Chart 24.



<sup>2</sup> Payment services Act valid from 1 May 2010.

duction of the Single European Payments Area<sup>3</sup> (SEPA) has meant that domestic recurrent transfers are being cleared and settled in the STEP2 system, maintained by EBA Clearing.<sup>4</sup> All the parties concerned are committed to improving their operations, so that the systems would be free of the kind of disturbances and delays that have been experienced recently. From Finland's point of view, STEP2 is a systemically critical retail payment system and its oversight is one of the Bank of Finland's priorities. There is a particular emphasis on international cooperation. The Bank of Finland takes an active role in the oversight cooperation with the lead overseer, the European Central Bank. Thus it can ensure the opportunity to exert influence and receive adequate information for example on the performance of systems crucial to Finland, as well as on the systems' operational reliability, risk management and future developments.

### Speed needed for SEPA migration

Transition to the Single Euro Payments Area is well under way in Finland in terms of credit transfers, when the majority of companies have updated their banking and related software to be compatible with SEPA. Also the public sector's transition to the new service helps promote efficient migration. However, adoption of SEPA in Europe in general has been slower

<sup>3</sup> For more details on the Single Euro Payments Area, see for example the website of the Federation of Finnish Financial Services at [www.fkl.fi](http://www.fkl.fi).

<sup>4</sup> The European banks' interbank clearing house for euro payments, see [www.ebaclearing.eu](http://www.ebaclearing.eu). It is planned that transition to the system will have mainly been completed during 2010 and will be finalised by October 2011, at the latest.

than planned. For this reason, the European Commission is preparing a Regulation, defining a binding end date for the migration process.

The Regulation needs to succeed in speeding up the migration process throughout Europe, so that the expected benefits of SEPA can be fully achieved. Development work on SEPA has required significant investments from non financial corporations and banks alike. There is a potential risk that the harmonisation of retail payments is not fully achieved, which would mean, among other things, extra costs arising from the running of parallel payment systems. This risk particularly concerns the Finns, who are at the forefront of the migration. Ultimately, the cost of ineffective payment system is filtered down to the system users, consumers and companies.

In Finland, all developments on other payment systems have been, in effect, on hold for some years while preparing for the Europe-wide system. Elsewhere in the world, there have been developments for example in real-time payment systems as well as in mobile and Internet payments. Speeding up migration to SEPA as much as the introduction of new, service providing, payment institutions to the market are, from this point of view, in the Finnish end-users' interest.

### Liquidity positions reveal market confidence

Liquidity is a measure of the reserves a bank has available to secure its payment flows. In order to manage their liquidity, it is commonplace for banks to rely on loans between themselves, on the interbank market.

Chart 25.

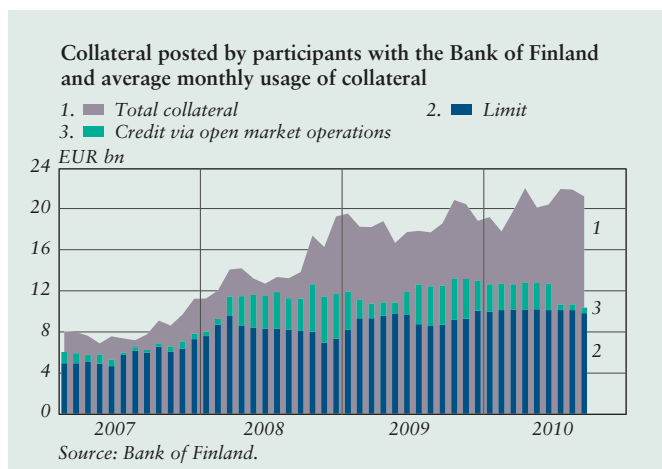
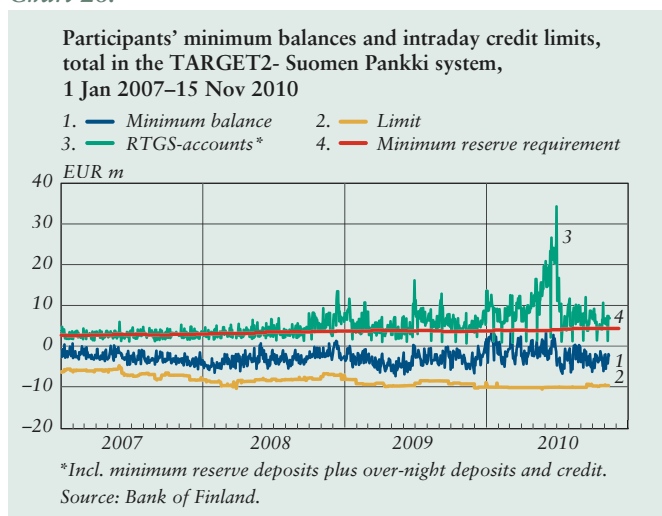


Chart 26.



From the early stages of the financial crisis, these markets petered out, as banks were no longer willing to lend each other funds. Meanwhile, banks had even more liquidity than normal in their TARGET2-Suomen Pankki accounts.

The participants' liquidity is made up of the funds they hold in their central bank accounts and in collateralised limits, which enable them to access intraday credits. The value of transactions made in the TARGET2-Suomen

Pankki system and minimum balances fluctuated since the beginning of the crisis period more than they normally would, but despite that, banks still have plenty of unused limits (Charts 25 and 26). There were considerable amounts of unused collateral, which means that the participants would have had the possibility of increasing their limits still further (Chart 25). Apparently, the counterparties want to secure their extra liquidity by having it in the central bank accounts to ensure the success of their transfers also in such cases where some other counterparty would have problems or where not all payments would arrive on time.

As an alternative to the money markets, banks can invest any excess liquidity as central banks' overnight deposits. The fluctuation in these overnight deposits explains a large part of the fluctuations in central bank account balances, for example in June 2010 (Chart 26). Because of the uncertainties prevailing in the markets and the drying up of liquidity, the Eurosystem used its monetary policy operations to lend banks, against collateral, the funds they need, at a fixed interest rate, since October 2008. Since then, the banking sector has been overly liquid. The majority of extra money is returned to the central bank as overnight deposits. After 1 July 2010, the value of overnight deposits seems to have evened off, at least for the moment. The amount of liquidity in the central bank remains plentiful, which is an indication of the continuing uncertainty and the excessive amount of liquidity in the markets.

### Liquidity analysis as a prudential tool

Taken as whole, the participants to the TARGET2-Suomen Pankki system have managed their liquidity well. There are, however, differences in liquidity management by different participants. Some may actively manage the amount of their liquidity and use intraday central bank credit, while others may hold large deposits on their central bank accounts, as are considered absolutely sufficient for a smooth execution of payments. The low level of liquidity may also point to a participant's problems in meeting its obligations. In the enclosed chart (Chart A), which illustrates actual liquidity management by various participants, black indicates that some participants have drawn down almost all their available liquidity, whereas green shows the proportion of participants who have used a maximum of 30% of their liquidity.

In a normal situation, banks even out their liquidity fluctuations in interbank money markets. If a counterparty has to pay a higher interest rate than others for the overnight credit extended by the counterparties among themselves, it may be a sign of a lack of confidence in that particular counterparty. As such details are not reported, Bank of Finland experts have been developing a method that, on the basis of payment system data, enables assessment of interest rates paid by the participants to

each other for overnight credit (Chart B). When this information is combined with actual liquidity usage, an indicator of a participant that may be running into problems is obtained. If the interest rate paid by a participant were to increase simultaneously with an enlargement of the black area in Chart A, this could refer to distrust and problems. Such an immediately observable change in behaviour could serve as a guide for a closer supervisory scrutiny of the participant involved.

Oversight is evolving to be more quantitative, and the aim is to identify emerging problems as quickly as possible. A tool is needed to analyse payment system data, and the payment system simulator, developed at the Bank of Finland, provides an excellent tool for this purpose. The Bank of Finland's simulator has also laid the basis for the simulator used in the Eurosystem's analytical work, modelling the operation of the TARGET2 system in different situations.

Chart A.

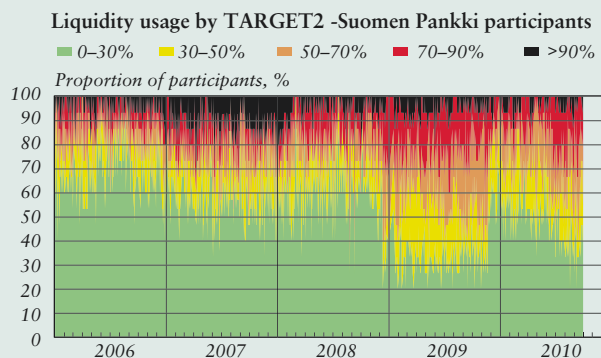
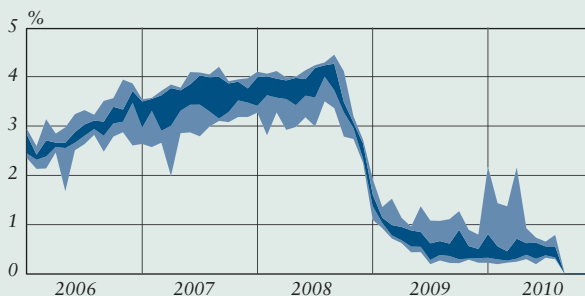


Chart B.

**Spread between minimum and maximum interest rate paid by participants for overnight credit**



# Financial system policy

International reform of financial regulation advances at full speed. The new capital and liquidity standards for banks, Basel III, were approved in November 2010. Financial regulation needs to be tightened in order to reduce the threat of financial crises. Looking ahead, authorities should have stronger mandates and tools to constrain excessive credit growth and accumulation of debt. Central banks should have a central role to play in this macro-prudential policy. In order to reduce moral hazard, no financial institution should be too big to fail in the future.

## Financial regulation to undergo considerable tightening

In general, financial regulation has been tightened after the biggest financial crises. A good example of this is the Glass-Steagall Act, which entered into force in the United States in 1933, and which established a separation between deposit and investment banking functions. Financial regulation was otherwise tight after the Second World War. Tight regulation probably provides at least a partial explanation for the low

frequency of financial crises in the period from the beginning of the 1940s to the beginning of the 1970s (Chart 27).

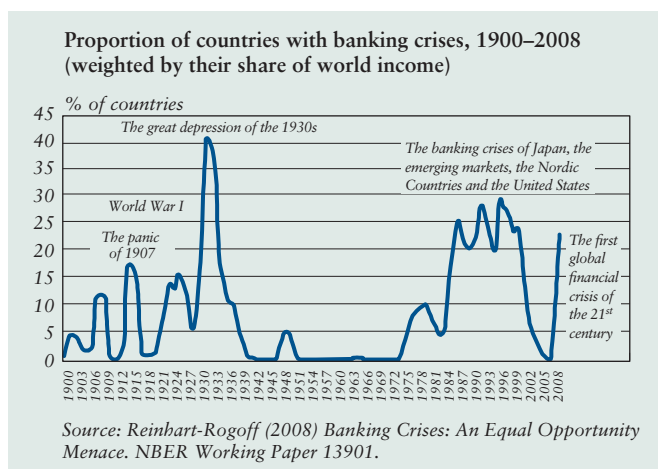
Why is financial regulation relaxed at regular intervals when regulation would seem to be capable of reducing the likelihood of financial crises? First, in boom periods it is typically argued that an excessively regulated financial system is unable to achieve effective financial intermediation, and thereby acts as a constraint on economic growth. Second, financial system participants have always been able to circumvent the rules imposed, which has eroded regulation over time. Regulatory arbitrage may even lead to worse distortions than those that regulation had originally sought to eliminate. Third, political pressures to relax regulation may become excessively strong in good economic conditions. However, in order to prevent financial crises from occurring, regulation should be tightened on a permanent basis.

## The international financial system has become increasingly vulnerable to risks

Governments' implicit promises to rescue financial institutions perceived as being too big to fail have increased banks' risk appetite (moral hazard). The too big to fail problem has become too big a problem. It must be ensured that large financial institutions can also fail without risk to financial stability and without taxpayers needing to bear the costs for the bailout of financial institutions in the future (see section 'The too big to fail problem needs to be mitigated').

Systemic risk has increased in the last few decades, reaching totally new

Chart 27.





dimensions. The interconnectedness of financial institutions has become more widespread and complex, which has increased the risk of contagion. Moreover, uncertainty about the real values and risks of complex financial instruments and about counterparties' credit standards has increased, which, in crisis situations, may lead to a collapse in confidence between market participants. Enhancing transparency is undoubtedly one of the most important

objectives of the ongoing financial reform. Furthermore, exceptionally rapid growth in private sector indebtedness increases systemic risk, as shown by the latest financial crisis (see section 'Macroprudential supervision to be reinforced').

### Ambitious objectives set for regulatory reforms

Financial regulation is being updated in several areas (Table 2).

Table 2.

Summary of regulatory initiatives and their primary objectives								
Regulatory initiative	Objective	Mitigate the too big to fail problem	Reduce systemic risk			Curb risk-taking and increase long-term approaches	Improve crisis resilience	Ensure that taxpayers are not called on to pay the costs
			Reduce interconnectedness of financial institutions	Increase transparency	Flatten out credit cycle			
<i>Basel III</i>								
	<i>Capital adequacy improved</i>					•	•	
	<i>Leverage capped</i>				•	•	•	
	<i>Quantitative liquidity requirements introduced</i>				•	•	•	
	<i>Countercyclical capital buffer requirement introduced</i>				•		•	
	<i>Additional requirements imposed on systemically important financial institutions</i>	•					•	
<i>Regulation extended beyond traditional banking</i>								
	<i>Trading in financial derivatives regulated</i>		•	•				
	<i>Hedge and private equity funds regulated</i>			•		•	•	
	<i>Credit rating agencies regulated and their supervision reinforced</i>			•	•			
	<i>A new crisis management framework to help deal with failing banks</i>	•		•				•
	<i>Tax on the financial sector</i>							•
	<i>Financial institutions' compensation schemes revisited</i>					•		
	<i>Financial institutions required to improve their risk management practices</i>				•	•		

Source: Bank of Finland.

*Capital adequacy regulation for banks to be tightened*

The new capital requirements for banks, the Basel III framework, were approved by the G20 Seoul summit in November 2010.

The reform will tighten the quality requirements for banks' regulatory capital. In the future, banks' holdings of higher-quality common equity, such as share capital, must account for at least 4.5% of their risk-weighted assets, instead of the current requirement of 2%.

Second, the minimum requirement for regulatory capital relative to risk-weighted assets will be increased. In addition to the current 8% minimum capital requirement, a new capital conservation buffer of 2.5% will be imposed on banks. The updated minimum requirements will be phased in gradually, starting from 2013, and banks are expected to comply with them by 2019 (Chart 28).

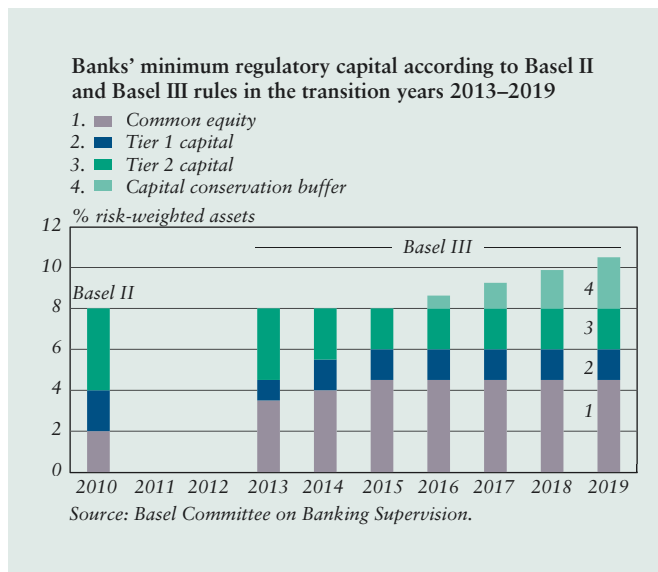
Third, the risk coverage of the capital framework will be strengthened. In particular, there will be a substantial increase in capital requirements for market risks. The treatment of securitised financial instruments in the capital adequacy framework will also be tightened.

Fourth, bank leverage will be capped. A new requirement in the form of a leverage ratio defines the minimum level for the ratio between banks' regulatory capital and their non-risk-weighted assets. The leverage ratio requirement acts as a backstop for situations where risk-based capital requirements are artificially low. Such a situation is most likely to emerge in a strong boom, where risks are widely underestimated. Consequently, the leverage ratio could at best act as a regulatory instrument to cool down the overheating of the financial system.

Fifth, new quantitative liquidity standards seek to improve banks' ability to withstand liquidity crises. The Liquidity Coverage Ratio (LCR) requires banks to hold in their balance sheets a sufficient amount of assets that can be converted into cash, quickly and at low cost. The Net Stable Funding Ratio (NSFR), in turn, seeks to constrain banks' too quickly expanding accumulation of short-term debt, which could lead to excessive lending and to an unsustainably rapid elevation of asset prices.

Sixth, a requirement of countercyclical capital buffers will be imposed on banks. The primary aim of these buffers is to protect national banking systems against the consequences of excessive aggregate credit growth. Countercyclical

Chart 28.



capital buffers can also contribute to curbing lending and thereby flattening out the credit cycle. Accordingly, in addition to the fixed capital conservation buffer of 2.5%, national authorities are allowed to impose a discretionary capital buffer requirement not exceeding 2.5% on banks, when aggregate credit growth in the country concerned reaches exceptionally high levels. The imposition of the capital buffer requirement should be based on the ratio determined by the Basel Committee on Banking Supervision: the private sector's stock of credit, divided by nominal GDP, relative to this ratio's trend. Applied in a strictly mechanical manner, the countercyclical capital buffer would, according to this ratio, have been set at its highest level in Finland between 1991–1993 and from 2005 onwards (Chart 29).

The Basel Committee on Banking Supervision is also considering, for example, the imposition of capital surcharges and potential other additional loss-absorbency requirements on large, so-called systemically important banks.

#### *New crisis management tools to help deal with failing banks*

In October 2010, the European Commission published a communication concerning an EU framework for crisis management in the financial sector. The communication outlines the principles on the basis of which the Commission will prepare its actual draft directive in spring 2011. The Commission's objective is clear: going forward, it must be possible to allow all financial institutions to fail or to reorganise their operations without risk to financial stability or

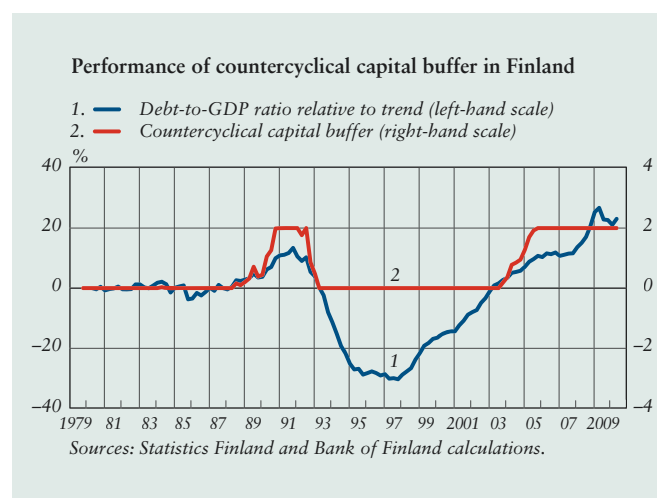
costs to taxpayers. The creation of a harmonised crisis resolution framework for the EU is a prerequisite for a successful crisis management of large cross-border banks.

Authorities need to have adequate tools and powers to take the necessary steps for winding up, reorganising or closing down banks encountering serious problems with the adequacy of their capital positions.

The official crisis management framework planned by the Commission breaks down into three classes of measures. The first category comprises preparatory and preventative measures, including reinforced supervisory action, asset transferability within (banking) groups, recovery and resolution plans ('living wills') and various possibilities to intervene in banks' excessive risk-taking by, for example, restricting lending or prohibiting entirely a bank's business activities.

The second class of measures concerns the powers to intervene early. They would significantly increase the

Chart 29.



authorities' chances of intervening in a bank's activities prior to the bank's running into too big problems. For example, the relevant supervisory authority could replace the bank's management, take over the bank for a limited period or require the implementation of recovery plans.

As regards the third category, ie crisis resolution measures, their primary aim would be the liquidation of a bank's operations under ordinary insolvency proceedings. Should this not be feasible and if financial stability were to be threatened, the bank could be split up and its assets sold or transferred to special 'temporary bridge banks'. As a last resort, debt write-down and conversion of debt to equity are also under consideration. This option could mainly be taken into account in the case of large multinational institutions.

The Commission has proposed the establishment of national resolution funds as a new crisis management measure. The operation of such funds would be funded by ex ante contributions from banks. The assets collected for such funds could be drawn down in connection with crisis resolution measures, but, in order to avoid moral hazard problems, not drawn down for the provision of direct support to failing banks. The establishment of resolution funds would give an assurance that the crisis management framework is a credible tool in practice, too.

#### *Tax on the financial sector*

Besides contributions to resolution funds, taxes on banks are also under consideration. The safety net offered by society to

banks, in other words the deposit insurance and the implicit government guarantees of debt financing by systemically important banks, benefit both banks' shareholders and management. One aim of bank taxes is to tax this indirect public support received by banks.

Alternative tax models are, for example, the Financial Transaction Tax (FTT) and the Financial Activities Tax (FAT), which is suggested to be levied on bank profits or remuneration. The FTT applies to transactions between companies. The drawback of this tax is that it distorts companies' business decisions, which could have a constraining impact on economic growth. There is also evidence that the FTT would bring more volatility to the financial markets, raise funding costs and increase the use of financial innovations with the purpose of tax evasion.<sup>1</sup>

The FAT on bank profits or compensation is a tax comparable to value-added tax. As such a tax is not influenced by the sources of profits or remuneration, it will not distort financial market structures to the same extent as the FTT. A potential tax should be implemented on a uniform basis in different countries, in order to avoid competitive distortions.

#### **Macroprudential supervision to be reinforced**

There were a number of reasons behind the financial crisis, but one of the most significant was the imperfect supervision of systemic risks that threaten the stability

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<sup>1</sup> See eg IMF (2010) *A fair and substantial contribution by the financial sector: final report for the G20*, p. 19–21.

of the financial system as a whole. Financial supervision has been based on supervising individual institutions, with inadequate attention being given to the financial system as a whole. The key task of macroprudential supervision is to identify systemic risks threatening financial stability and to ensure that risk concentrations and interactions between different institutions and markets are understood and possible problems are addressed before it is too late.

The new supervisory system for financial markets, which is due to go live in Europe at the beginning of 2011, will be composed of two parts. The European Systemic Risk Board (ESRB), which is to operate in connection with the European Central Bank, will be responsible for monitoring and analysing the build-up of systemic risks and issuing recommendations and warnings concerning macroprudential stability. Similarly, the European Supervisory Authorities<sup>2</sup> will reinforce the supervision of large financial conglomerates and securities markets. The new EU supervisory organisations were created in response to the need to monitor the financial system as a whole and to deliver a more effective supervision of cross-border financial activities. At national level, preparations are in progress to support the EU supervisory systems and develop corresponding national structures.

### Macroprudential tools taking shape

Macroprudential policy has two general objectives: 1) improving the stability of

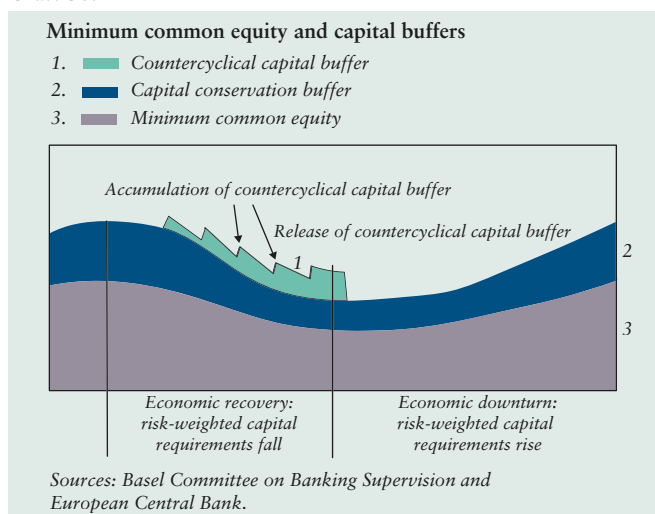
<sup>2</sup> European Supervisory Authorities will be made up of three supervisory authorities: the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA).

the financial system as a whole by identifying risk concentrations and weak points in the financial system, and 2) achieving more stable economic activity, for example, by flattening out credit cycles.

A number of tools are needed to implement the objectives of macroprudential policy. The countercyclical capital buffers included in the Basel III regulatory reform (Chart 30) constitute the most important tool to ensure the adequacy of banks' capital positions during periods of economic downturn (see section 'Capital adequacy regulation for banks to be tightened'). The accumulation of such buffers may also help reduce the procyclicality of excessive bank lending, as higher capital requirements make the provision of credit more costly and thereby constrain borrowing. Conversely, when the economy enters a downturn, capital buffers can be released, thereby halting a further slowdown in lending.

Other means to influence banks' excessive risk-taking or provision of

Chart 30.



credit include the limitation of the debt-to-equity ratio by means of the new leverage ratio requirement, the tightening of collateral requirements for collateralised credit, the imposition of specific capital requirements on certain types of credit and the build-up of larger provisions for loan losses in an economic boom ('dynamic provisioning').

Many of the planned macroprudential tools are indirect in nature, affecting banks' excessive lending or risk-taking with a lag. Authorities need additional tools that, whenever needed, enable prompt intervention in the operations of systemically important banks before these banks endanger the financial stability. In addition to actual crisis management measures, the Commission's framework for crisis management in the financial sector includes a number of preventative measures and powers for early intervention, which could also be made use of (where applicable) in macroprudential supervision. For example, the possibility to restrict lending by systemically important institutions or prohibit activities that include excessive risk-taking would provide authorities with means to prevent the emergence of risk concentrations. However, such a large-scale intervention in the activities of an institution would be an extreme measure and could only be taken on condition that the institution's activities pose a clear threat to financial stability.

*Questions of competence in macroprudential supervision need to be resolved at national level*

The establishment of the European Systemic Risk Board (ESRB) is an

important step towards more effective macroprudential supervision. The ESRB will be a key institution at European level to promote macroprudential stability, and its work will be supported by national central banks and supervisors.

The national organisation of macroprudential supervision has largely been left for consideration by the member states themselves. This enables the setting up of a supervisory system that best suits each country's requirements.

Several EU countries have legislation in place that imposes a general obligation to monitor financial markets on the central bank, but without granting the central bank powers to address the problems detected. This is also the case in Finland. The Act on the Bank of Finland defines the role of the central bank in the supervision of financial markets in highly general terms. The Bank of Finland is responsible for contributing to the reliability and efficiency of the payment system and overall financial system and participating in their development.<sup>3</sup> No particular powers or tools for the discharge of these duties have been provided for. In the future, a similar problem will relate to the implementation of recommendations and warnings that may be issued by the European Systemic Risk Board.

Finnish authorities are committed to taking account of ESRB recommendations in their work, but the implementation of many such recommendations as binding upon financial market participants may prove impossible within the

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<sup>3</sup> Act on the Bank of Finland, Section 3.

scope of current mandates. For example, Finnish authorities currently have no right to require that banks restrict their provision of credit by appealing to overall financial stability, economic overheating or ESRB recommendations.

Macroprudential supervision can be organised domestically in a variety of ways. An effective way of organising macroprudential supervision is to concentrate the necessary tools and powers on one institution. The institution could be a particular single authority or possibly a ‘macroprudential committee’, formed by several authorities. A committee structure would have the advantage of enabling the participation of all relevant authorities in macroprudential decision-making. The establishment of a joint committee would also make it easier to concentrate the relevant powers on a single point of supervision. However, the activities of a committee exercising such extensive powers should meet the requirements of openness and transparency.

Ambitious objectives have been set on macroprudential supervision. The achievement of these objectives requires effective tools and sufficiently extensive official powers. Authorities need to have a possibility to address problems in a timely fashion, and if problems are to occur, the system must also be able to resolve them effectively.

### **The too big to fail problem needs to be mitigated**

Prior to the financial crisis of 2007–2009, markets already believed that many large financial companies had become ‘too big to fail’. According

to this belief, tax payers will bail out systemically important financial companies and their creditors in the event of a crisis. In the light of the recent financial crisis, the belief proved right: of the largest financial companies that had drifted into problems, only the Lehman Brothers investment bank was allowed to fail in autumn 2008. This decision on Lehman Brothers almost led to a collapse of the entire international financial system, after which, practically speaking, public authorities have bailed out all important financial companies that had run into serious liquidity or solvency problems.

It is likely that the too big to fail problem has worsened further still following the financial crisis. The world’s largest banks have become even bigger. For example, the share of the largest 10 global banks in the aggregate assets of the largest 1,000 global banks was 14% in 1999, 19% in 2007 and 26% after the financial crisis in 2009.<sup>4</sup>

The too big to fail problem is particularly serious in Europe, as the banking systems are highly concentrated in most European countries. A few large banks dominate national markets in most European countries (Chart 31).

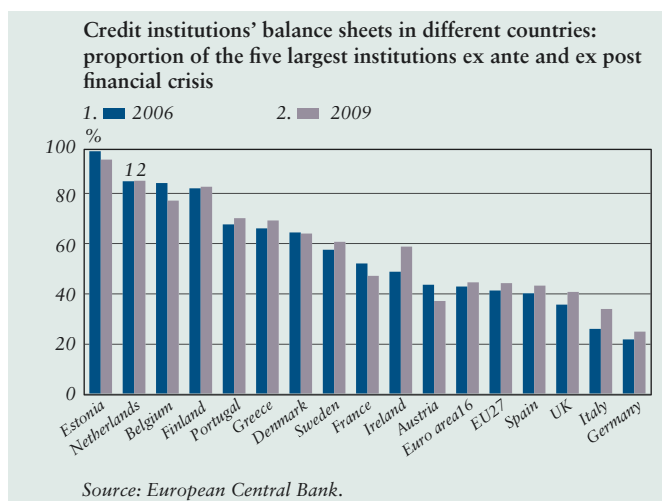
The too big to fail problem impairs the stability of the financial system and the effective allocation of finance, in a number of ways. First, financial companies perceived as being too big to fail distort competition. They can obtain debt financing at artificially low

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<sup>4</sup> Goldstein – Veron (2010) Too big to fail: the transatlantic debate, Peterson Institute for International Economics. Memorandum, p. 3.



Chart 31.



cost, as creditors need not, in earnest, be afraid of losing their investments. Such artificially cheap financing encourages financial companies to expand and incur debt excessively.

Second, these companies have inadequate incentives in place for managing their risks, as they can always rely on governments' implicit promises to rescue them in the case of an emergency. Prior to the financial crisis, it was thought that large financial companies would be safer than small ones because of their better chances of spreading risks. The financial crisis showed that this was wishful thinking: in reality, many of the largest financial companies wasted their risk diversification edge on bolder risk-taking.

Going forward, uncontrolled risk-taking by financial companies that have become even bigger may also give rise to the build-up of financial crises like the one we have seen quite recently. Although there were several reasons for the latest financial crisis, the risks taken by large and complex financial companies

via big leverage were undoubtedly the most important of them.

The too big to fail problem could perhaps be accepted as a side-effect of the financial system if very large banks were significantly more cost effective than small ones, in other words, if considerable economies of scale or economies of scope were attached to their banking activities. However, empirical studies hardly provide evidence of such efficiency gains.<sup>5</sup>

Looking ahead, in order to reduce the huge macroeconomic costs of a financial crisis, it must be possible for even large banks to fail, without jeopardising financial stability and tax payers' money. This is targeted by the European Commission's plan for new crisis resolution mechanisms (see section 'New crisis management tools to help deal with failing banks'). A failure does not need to entail closing down of a bank's all operations. For example, payment services provided by a large bank cannot be suspended for a longer period of time, without causing major costs to society. Even so, there must be the possibility to separate vital operations and the healthy parts of a non-viable bank from its unhealthy parts so that, in the first place, the bank shareholders and creditors other than depositors covered by deposit insurance are called on to pay the costs arising from the reorganisation.<sup>6</sup>

<sup>5</sup> See eg Amel et al. (2004) Consolidation and efficiency in the banking sector: a review of the international evidence. *Journal of Banking and Finance* 28.

<sup>6</sup> In its report Reducing the moral hazard posed by systemically important financial institutions, the Financial Stability Board puts forward detailed recommendations for changes needed in official supervisory tools and cooperation arrangements, in order to enable an orderly failure of systemically important banks at global level.

### *Capital surcharges need to be imposed on systemically important banks*

Revision of the crisis resolution framework concerning failing banks contributes to alleviating the too big to fail problem and improving the prerequisites for market discipline. In any case, crisis prevention will be less costly for society than remedying the consequences of a crisis. Financial regulation should thus encourage financial companies to reduce systemic risks caused by them.

Any upcoming regulation concerning systemically important financial institutions should be tighter than that applied to other financial institutions. Currently, this is not the case. For example, the existing Basel II capital adequacy framework has favoured large banks, because the advanced risk measurement methods they are allowed to apply in their minimum capital calculations have generated lower than average capital requirements. In the future, any capital requirements imposed on large banks should be tighter than those on small ones, since the systemic risks caused by large banks are bigger. The Commission of Experts appointed by the Swiss authorities, for example, proposes that minimum capital and capital buffer requirements imposed on systemically important Swiss banks should be substantially higher than those imposed on other banks.<sup>7</sup>

### *Contingent capital: a device to alleviate the too big to fail problem*

The financial crisis was exacerbated by banks' inability and unwillingness to

raise more capital at a time when they started to make losses and deplete their capital resources. The low level of bank capitalisation was probably due to the rapid reduction in investors' risk appetite and the fact that acquisition of new share capital by banks with weak capital positions would have benefited the banks' creditors more than their old shareholders ('a debt overhang problem').

Recently, much attention has been devoted to a proposal that could ease bank capitalisation in the event of a crisis. According to the proposal, at normal times, banks would be required to issue 'contingent capital', ie debt instruments that would be converted into bank equity in a crisis situation. The relevant authorities could decide when and on which terms such conversion would take place. Alternatively, the materialisation of the terms and conditions of the capital instruments would trigger the conversion.<sup>8</sup>

Contingent capital could prove a new useful tool for capitalising crisis-ridden banks and strengthening market discipline. A working group commissioned by the Swiss authorities suggests that, of the 19% minimum capital requirement proposed for the country's systemically important banks, even 9 percentage points could be composed of contingent capital.

However, the introduction of contingent capital may also entail adverse effects. There may be the

<sup>7</sup> See <http://www.sif.admin.ch/dokumentation/00514/00519/00592/index.html?lang=en>.

<sup>8</sup> Contingent capital according to the former alternative is called 'bail-in capital' and that according to the latter alternative 'contingent convertible capital', ie 'CoCo'.

danger that conversion of debt instruments in the event of a crisis exacerbates the crisis further still. This problem will be of particular concern if investors who have bought these instruments are other banks. Conversion of a single bank's contingent capital instruments may also generate fears of conversion of corresponding instruments issued by other banks, thereby leading to a collapse in the valuations of such instruments. Nor is it clear whether there would be enough demand outside the banking sector for financial instruments with contingency features.<sup>9</sup> Despite these open questions, contingent capital is a tool worth considering for the mitigation of the too big to fail problem.

*Bank levies and taxes non-optimal means to reduce banks' risk-taking incentives*

Bank levies and taxes have recently attracted much attention (see also section 'Tax on the financial sector'). The European Council determined at its June 2010 summit that EU member states should introduce systems for levies and taxes on financial institutions, in order to ensure the financial sector's participation in fair burden-sharing in upcoming financial crises and to set incentives for financial institutions to contain systemic risks.

In the light of economic theory, bank taxes could constitute an effective means for reducing the adverse externalities of banking. Banking brings benefits

<sup>9</sup> For potential problems related to the introduction of contingent capital instruments, see eg the article: Goodhart (2010) Are CoCos from Cloud Cuckoo-Land?, [www.voxeu.org](http://www.voxeu.org).

for bank employees, depositors, borrowers and investors, but, via banking crises, causes major adverse externalities to other parts of society. For example, environmental policy has relied on emissions taxes to reduce the externalities of pollution. In principle, similar taxes could also be used in an effort to reduce the externalities of banking.

However, in the real world, which is full of uncertainty and imperfect information, regulation and direct limitations are more reliable channels for exerting influence on bank incentives. The mechanisms through which bank taxes influence are uncertain. Bank taxes would possibly need to be very high in order to have a significant guiding impact on bank operations.

Another advantage of capital requirements in relation to bank taxes is that capital buffers directly reduce the risk of failure of a single financial institution. By contrast, bank taxes, collected and established as a fund, mean only an ex-post sharing of costs from financial crises between financial institutions and tax payers.<sup>10</sup> Because of the enormous costs involved in financial crises, crisis prevention should be the primary objective of financial system policy. Even if bank levies and taxes were not to prove effective means for reducing the risk of financial crises, they could still have an important role to play in the financing of a bank resolution regime, planned within the EU (see above).

<sup>10</sup> IMF (2010) A fair and substantial contribution by the financial sector: final report for the G-20, Annex 3, provides a more detailed comparison of bank taxes and capital requirements as means to reduce the externalities generated by financial institutions.

### *Restrictions on banking business still under consideration*

In Anglo-Saxon countries in particular, arguments have been put forward to the effect that the financial regulatory reforms now under way are not adequate to solve the too big to fail problem: the only solution would be to radically limit the size, structure or business operations of financial companies that have become too big. Proposals brought forward in these discussions include maximum limits on the size of bank balance sheets and market shares in various business areas, the splitting up of large banks and the separation of deposit and investment banking functions.<sup>11</sup>

The financial regulatory reform agenda adopted in the United States in July 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act, imposes some restrictions on bank size and business operations. Banks are, for example, prohibited from conducting proprietary trading, with certain exceptions. Banks' investments in hedge and private equity funds are also restricted. Deposit banks and other systemically important financial institutions are prohibited from participation in mergers as a consequence of which the total consolidated liabilities of the resulting company would be in excess of 10% of the aggregate consolidated liabilities of all financial companies.<sup>12</sup>

<sup>11</sup> Options to restrict bank operations are discussed eg in a report issued by the Independent Commission on Banking, set up by the UK Chancellor of the Exchequer ('The Vickers Report'), <http://bankingcommission.independent.gov.uk/bankingcommission/>.

<sup>12</sup> For the key contents of the Dodd-Frank Act, see eg Davis-Polk (2010) Summary of the Dodd-Frank Wall Street Reform and Consumer Protection Act. Passed by the House of Representatives on June 30, 2010. Davis-Polk, Washington DC, July.

Attitudes taken towards the restriction of bank operations have been more moderate in Europe than in Anglo-Saxon countries. Banks are of great importance for the financial systems of European countries. Limiting the scale of bank operations is the most rigorous tool for constraining risks related to banking. It is also unclear to which extent the limitation of certain bank operations can reduce the overall risks attached to banks and the financial system. Such restrictions can be either ineffective, because banks are able to increase risk-taking in their other business operations if they wish to do so, or quasi-effective if risk-taking shifts away from the banking sector. A primary concern would be to reduce banks' general incentives for risk-taking, using the tools discussed above.

### **Special issues related to financial market infrastructure**

In the area of market infrastructure, there are significant European and national regulatory initiatives in progress, of which the most important ones concern the Single Euro Payments Area (SEPA), central securities depositories, central counterparties and trading in financial derivatives.

Progress in SEPA has been slow, although it would bring benefits for Europe as a whole. Finland has been determined to promote the single payments area, but asynchronous developments across Europe pose a threat to the efficiency of our markets. It is therefore important to have a legislative deadline in place for SEPA implementation.

Preparations are currently under way to create EU legislation that would remove the remaining legal barriers to securities markets integration. The most important legislative initiatives in the securities field concern central counterparties and central securities depositories. Their uniform regulatory framework provides the legal basis for a level playing-field and cross-border provision of services. Such regulation also seeks to strengthen the capital adequacy of market participants, which promotes financial stability. Although, in practice, infrastructures have functioned smoothly during the crisis, their closer regulation will underpin other regulatory measures concerning financial markets. Central counterparty clearing is encouraged, because it would bring greater efficiency to liquidity usage and facilitate the management of counterparty risks. A further aim is to route financial derivatives, which posed problems during the crisis, through centralised clearing parties in the future. Legislation needs to ensure that central counterparties themselves will not become problematic risk concentrations.

A new supervisory authority, the European Securities and Markets Authority (ESMA), has been created for securities infrastructures. This authority will have a key role to play in the creation of specific EU legislation and the supervision of securities market participants. ESMA will reinforce the supervision of global market participants and promote uniform regulation. Nevertheless, for the sake of supervisory efficiency, it must be ascertained that national authorities

continue to have adequate chances of exercising supervision and exerting influence with respect to all participants relevant for their own markets. At national level, another important aspect is to establish effective cooperation among all competent authorities.

As integration advances, care must be taken to safeguard operational conditions for domestic capital markets. In 2009, the Bank of Finland published minimum requirements for the use of foreign infrastructures in the Finnish markets. According to these requirements, 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.<sup>13</sup> Integration must also benefit end-users: payers, payees and investors alike. Current providers of services in the Finnish markets meet official requirements quite well.

The central securities depository active in Finland has been planning technical integration and functional harmonisation with the central securities depository operating in Sweden. The project can be supported provided that the resulting central securities depository will meet the above minimum requirements and the solution will enable the further development of securities markets. This integration process must make use of the best functionalities of both markets. It should benefit market participants

<sup>13</sup> Bank of Finland Bulletin: Financial Stability, Special issue 2009.

and end-customers, while simultaneously promoting potential future migration to a Europe-wide securities clearing and settlement infrastructure. The best outcome will be achieved if local decision-making powers and equal opportunities to access information and exert influence are safeguarded for both Finnish and Swedish parties.

In the European context, the Finnish securities markets present peculiarities in that our legislation requires ‘direct holding’ of securities from Finnish citizens. Elsewhere in Europe, ‘indirect holding’ is the typical model of holding securities.<sup>14</sup> The indirect holding model would entail undeniable economic benefits, as put forward in the Ministry of Finance Rapporteur’s report.<sup>15</sup> A working group reporting to the Ministry of Finance is currently revising Finnish securities markets legislation. The revision includes a proposal for permitting indirect holding of securities for Finnish investors, too, alongside with direct holding. Indirect holding should be rendered possible for the purpose of safeguarding the efficiency, competitiveness and development of the Finnish securities markets. Even so, authorities’ adequate access to information must be secured to avoid the possibility that permission

for indirect holding would lead to an expansion in the grey economy.

The integration of the Finnish financial market infrastructure into other European structures continues to deepen. Operational conditions for the domestic markets need to be ascertained, regardless of whether a domestic or a foreign infrastructure is used. There must be a common national view of how this will be guaranteed. As regards payments, this type of discussion takes place within the context of the Payments Forum.<sup>16</sup> The future development of the securities markets could be fostered by a similar forum, which would have an adequately broad and high-level representation from all groups important for capital markets, such as infrastructure suppliers, banks, investors, issuers, companies and authorities. The forum would offer a framework for discussion and common policies in respect of issues important for the domestic capital markets.

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<sup>14</sup> Under the direct holding regime, each investor’s securities are held in the investor’s own book-entry account. In the indirect holding option, several investors’ securities are held in one book-entry account (‘an omnibus account’) and the custodian keeps record of each investor’s holdings in the omnibus account.

<sup>15</sup> The economic impact of an expansion of multi-tiered custody and nominee registration of securities. Rapporteur’s report. Ministry of Finance 32/2010, [http://www.vm.fi/vm/fi/04\\_julkaisut\\_ja\\_asiakirjat/01\\_julkaisut/07\\_rahoytusmarkkinat/201006\\_02Arvopa/name.jsp](http://www.vm.fi/vm/fi/04_julkaisut_ja_asiakirjat/01_julkaisut/07_rahoytusmarkkinat/201006_02Arvopa/name.jsp).

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<sup>16</sup> Bank of Finland’s Payments Forum, [http://www.bof.fi/en/rahoytusmarkkinat/km\\_yhteistyoy/maksufoorumi.htm](http://www.bof.fi/en/rahoytusmarkkinat/km_yhteistyoy/maksufoorumi.htm).

### Long-term impact of regulatory reforms probably positive in Finland

The macroeconomic impact of the extensive banking regulatory reform (Basel III) has been evaluated in several studies. The key factors can be broken down into the two following:

1) Since equity funding is considered expensive, tighter capital adequacy requirements will increase bank lending rates, reduce investment and decelerate economic growth in normal times. This was emphasised by the Institute of International Finance in its report from June 2010.<sup>1</sup>

2) Tighter capital adequacy requirements will reduce the probability of banking crises and the associated recessions. The results of an assessment commissioned by the Basel Committee on Banking Supervision suggest that these benefits are the main factor in estimating the long-term impact of the regulatory reform.<sup>2</sup>

Rough calculations have been conducted at the Bank of Finland, in which similar methods were applied on the Finnish economy. The calculations were based on the assumption that the structures of the economy and the banking sector would remain relatively unchanged from the present situation.

Most of the Finnish banks are already sufficiently capitalised. Only two of the five banking groups included in the calcula-

tions would need to increase their capital levels. By contrast, in current state, the banking sector would not meet the future liquidity requirements.<sup>3</sup> It was assumed that all banking groups would need to increase their liquid investments by about a third in order to meet the requirements.

The impact of the regulatory reform on the price of lending was calculated using a model that was also applied in the Basel Committee assessment. The need for two banks to increase their capital and an increase in liquid assets in all banks were incorporated in the calculation framework. The calculation formula assumed that the banks' required return on equity would remain the same as in the past on average. The spread between market interest rates and bank lending rates would widen by about 0.25 percentage point, which is practically completely attributable to liquidity requirements. The change would occur within about four years.

The impact of more expensive bank credit on the economy was calculated using a dynamic stochastic general equilibrium (DSGE) model that has been presented in the Bank of Finland discussion paper 5/2010. As a result of more expensive credit, GDP would remain about 0.3% lower than otherwise for several years, at worst. If bank credit were unexpectedly to

become more expensive, the growth rate of GDP would decelerate by 0.2 percentage point in the first year and by 0.1 percentage point in the second year. If the change were to occur gradually and was anticipated, the slowdown in GDP growth would spread more evenly over several years. The following calculations are built on the assumption that GDP would fall permanently by 0.3 percentage point.

The Basel Committee assessment finds that the capital adequacy requirements have no impact on the severity of banking crises – only on their frequency. If, after a crisis, output returns to the pre-crisis trend trajectory, the cumulative output loss in a typical crisis would be about 20% of annual GDP.

The planned liquidity requirements would reduce the annual probability of a new banking crisis by approximately half a percentage point if banks are as strongly capitalised as in Finland.<sup>4</sup>

The Finnish economy is among one of the most vulnerable to cyclical fluctuations in Europe. Measured by a simple indicator, the intensity of cyclical fluctuations in Finland has been about double that in the current euro area.<sup>5</sup> If this is a structural

<sup>1</sup> *Interim Report on the Cumulative Impact on the Global Economy of the Proposed Changes in the Banking Regulatory Framework.*

<sup>2</sup> *BIS (August 2010) An assessment of the long-term economic impact of stronger capital and liquidity requirements.*

<sup>3</sup> *Financial Supervisory Authority's supervision release 21/2010.*

<sup>4</sup> *See the Basel Committee assessment (Table 3).*

<sup>5</sup> *In the review period the average absolute value of the deviation from trend of the logarithm of real GDP (H-P filter) was 0.021 for Finland and 0.009 for the benchmark group. The quarterly data covered the period from early 1985 to mid-2010.*



feature, in a few years a domestic banking crisis would cause output losses in the amount of 40% of one year's GDP. This means that a half a per cent reduction in the probability of a new crisis would raise the expected value of output by 0.2 percentage point.

The Bank of Canada assessment of the implications of the regulatory reform<sup>6</sup> comes to the conclusion that the lower incidence of foreign financial crises – mostly those in the United States – would affect the expected value of future GDP twice as much as a more robust domestic banking sector would. Finland's export industry also suffers from banking crises in its main market areas, since they easily cause recessions of various degrees and indirectly dampen the demand for almost all goods. The regulatory reform reduces the probability of new crises in the Nordic countries and elsewhere, and both of these factors must be taken into account separately.

If GDP is believed to return to its former growth trajectory and follow its previous dynamics, the Finnish economy will have recovered from the crisis that began in 2007 by early 2014. The financial crisis would generate an output loss in Finland, which would amount to about 31% of the 2011 trend value of GDP. In the light of the Basel Committee

assessment, the regulatory reform would reduce the probability of new crises in the euro area by as much as 3.5 percentage points per year. This would increase the expected value of Finland's GDP by 1.1% if the current crisis is to be considered typical.

Aggregating the impact of the lower incidence of domestic and foreign crises, and subtracting from this figure the loss caused by more expensive investment funding, Finland's average output is about one per cent higher than without the regulatory reform. Compared with foreign analyses, the impact is stronger due to the cyclical sensitivity of the Finnish economy. At the same time, economic cycles would become smoother as the crises became fewer.

These kinds of calculations should be treated with caution, and the end result is only a rough estimate, at best. The applied statistical correlations have been valid in the past, but they can change. The impact of capital adequacy and liquidity on the occurrence of banking crises is not a straightforward question that can be answered absolutely. The relevance of banks' capital adequacy in preventing crises depends on many features in a given economy, and there are hardly any studies on this field. It is also difficult to analyse the impact of crises on GDP. The calculations used assumed a permanent negative effect from higher cost of funding on GDP, contrary to what the applied macroeconomic model would project.

The calculations could not take all of the channels through which the economy is affected into account. For instance, the smoothening of business cycles mitigates investment risks, which in turn accelerates growth.

If a bank's capital adequacy improves, there is more capital to cover business risk. Return on equity becomes more stable, in which case a sensible investor is ready to subscribe to the bank shares, even in an environment of lower return expectations. In addition, a bank with an improved capital adequacy is more creditworthy and is likely to obtain loans on more favourable terms. It can therefore be assumed that the calculation overestimates the impact of the regulatory reform on bank lending rates and investments in normal times.

Tighter regulation can lead to increased financial intermediation outside banks' balance sheets, which can have substantial macroeconomic implications. In the calculations, Nordic banks' Finnish subsidiaries were regarded as separate banks. The treatment of groups as single units could have yielded different results.

The calculations presented above only considered a long-term period and did not deal with a potentially difficult transition period. If banks adapt to the new regulations rapidly by reducing lending substantially, the negative impact from the transition on output is larger than estimated above.

<sup>6</sup> *Strengthening International Capital and Liquidity Standards: A Macroeconomic Impact Assessment for Canada. August 2010.*

# Appendix

## Infrastructure critical to the Finnish financial market

System	Description	Oversight responsibility	Assessment
TARGET2	Eurosystem 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. The system's continuity planning has been assessed as fulfilling the set requirements. Operations have been reliable.
TARGET2-Suomen Pankki-system	Bank of Finland TARGET2 component system.	Bank of Finland oversight; adherence to common principles with other Eurosystem 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 PwP 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 mainly reliable. 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. Overall, the system fulfilled the requirements. A comprehensive oversight assessment undertaken in the course of 2010. Operations have been reliable; no significant disruptions. EURO1 started to provide settlement services as a TARGET2 ancillary system in June 2010.
POPS	Banks' online system for express transfers. Domestic large-value payment system.	Bank of Finland oversight.	Assessed in 2004 as being in accordance with the Core Principles and fulfilling the requirements. An assessment of the system's continuity planning performed in 2009. No flaws identified. Operations have been reliable. Number of payments is declining.
EBA STEP2	Pan-European automated clearing house (PEACH) for euro-denominated bulk payments.	ECB (lead overseer), Eurosystem.	Considered a prominently important retail payment system. Operations have been relatively reliable. In the future, a systemically important retail payment system for Finland. The Bank of Finland takes an active part in cooperative oversight with the ECB and EBA.
PMJ	Domestic retail payment transfer system; operates as an ancillary system to TARGET2.	Bank of Finland oversight.	Assessed in 2004 as being in accordance with the Core Principles and fulfilling the requirements. Critical system for domestic retail payments. An assessment of the system's continuity planning was performed in 2009. Some disruptions of night-time clearing in 2010, causing delays in recurrent payments. Transfer of payments towards EBA STEP2 in response to introduction of 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. Oversight assessment to be completed in 2010. Operations have been reliable.
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 Finlandin (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 jointly with FIN-FSA is due to begin.
Euroclear SA systems	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 challenging project. Oversight of the Group's central securities depositories will remain in the hands of national authorities. 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. Consolidation of the systems of the Finnish and Swedish central securities depositories have been examined.
<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, 2010, p. 99)	SWIFT is a critical provider of services for financial market infrastructure. Its operations have been mainly reliable. In its self-assessment of 2008, SWIFT has stated that it meets the oversight requirements. SWIFT has strengthened operational reliability by establishing a new service centre in Europe.
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

1 November 2010

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Arno Lindgren, Secretary to the Board

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