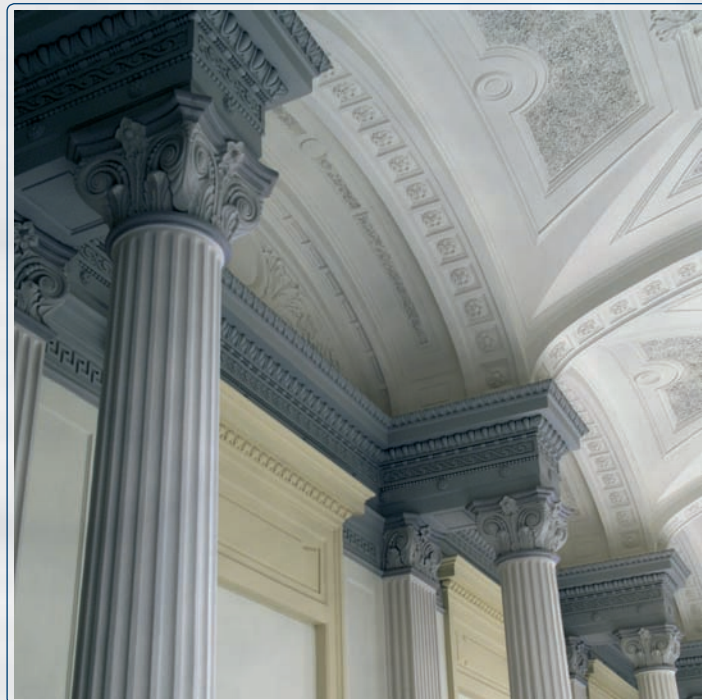


BANK OF FINLAND  
**BULLETIN**

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FINANCIAL STABILITY

SPECIAL ISSUE • 2006



EUROJÄRJESTELMÄ  
EUROSYSTEMET

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Financial stability • 2006  
(Special issue, published annually)

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**Printed**  
by Edita Prima Oy, Helsinki 2007

The contents of the Bulletin may be  
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ISSN 1796-539X (print)  
ISSN 1796-5578 (online)

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# Preface

One of the key tasks of the Bank of Finland is to participate in maintaining the reliability and efficiency of the payment system and overall financial system and to contribute to their development. These tasks are closely interlinked with the objectives of the European System of Central Banks in the area of the European Union. In accordance with its strategy, the Bank of Finland's activities are directed at promoting price stability as well as the stability and efficiency of financial systems and payment systems in addition to integration of European financial markets.

The Bank of Finland pursues its financial stability task in close cooperation with other authorities. Similarly to other central banks, the Bank of Finland analyses in particular the financial system in its entirety and the impact of general economic developments on the state of the financial sector. The primary task of financial supervisors is to monitor the risks and legality of operations of individual institutions. At the same time, the competence to draft legislation concerning the financial system is vested with the relevant ministries.

The financial system is stable and reliable when it is able to conduct its core tasks – including the intermediation of financing, transmission of payments, pricing of financial instruments and allocation of risks – smoothly. In addition, the risk-bearing capacity of major financial institutions and the financial market infrastructure as well as public confidence in financial institutions and infrastructure must be sufficient to withstand even severe disruptions in the environment.

This report analyses the most significant threats to stability in the operating

environment of financial institutions, the state of the principal borrower sectors, the risk-bearing capacity of financial market participants and the reliability and efficiency of the underlying systems. This report also discusses various measures by authorities and other participants aimed at promoting financial stability and efficiency.

The Financial Stability report has the following main objectives: to inform financial market participants, other authorities and the public on the risks within the financial systems and threats to financial stability as well as the measures conducted in order to prevent these threats from materialisation. It is used to increase understanding of new and less controllable risks within the financial system and to promote discussion about financial stability issues. This report also seeks to highlight development needs in the financial system to promote stability and efficiency. Finally, the report functions as an instrument for reporting on the accountability of the Bank of Finland.

The Bank of Finland has published its assessment on financial stability in the Bank of Finland Bulletin biannually on a regular basis, since 1998. A separate financial stability report released as a special issue of the Bank of Finland bulletin has been published since autumn 2003. Information presented in this report is based on data available on 23 November 2006.



Helsinki, 23 November 2006.

Matti Louekoski

Deputy Governor of the Bank of Finland



# Summary

The current state of the Finnish financial system is stable and would likely withstand even considerable disruptions in the operating environment. The expected economic developments continue to make a solid foundation for financial stability. Problems in the world economy and international financial system could have a rapid impact on Finnish financial institutions, but a severe crisis endangering the operation of the financial system would additionally require shocks to be specifically focused on Finland.

The greatest vulnerabilities in the global operating environment are related to the imbalance of saving and investments in the main economic areas and exceptionally low risk premia. There is a threat that problems in the international real economy or other disruptions could launch an uncontrolled unwinding of global imbalances, leading to sudden shifts in capital flows, exchange rates and asset prices.

In such a disruptive situation, fluctuation in asset prices would be worsened further, if leveraged investors unwound their similar positions on a large scale. Furthermore, the operational capacity of the international financial markets in severe disruption situations remains to be tested – now that new participants have entered the market and the markets have changed due to increasing use of new, innovative financial instruments. However, the probability of these threats materialising is relatively low.

The state of the domestic corporate sector continues to be strong, and financial institutions' credit risks

from the sector are quite moderate. Vulnerability of the household sector to external shocks has increased as the growth of indebtedness has remained brisk. However, overindebtedness and related problems still only concern a small minority of households. In light of forecasted economic developments, the state of the household sector will remain good. Even clearly weaker economic developments than forecasted would not result in significant problems for the debt-servicing ability of households in the short term. However, households are best advised to use common sense in borrowing and also consider shocks that potentially face their financial position.

Profits of banks and insurance companies are solid and their risk buffers are growing. Solid performance will continue in light of expected economic developments. Many indicators paint a favourable picture of the state of the Finnish financial sector. The most significant internal risk factors within the financial sector are related to rapid structural change. Due to increasing cross-sector and cross-border linkages, potential problems are channelled ever more rapidly. Developments may include risks that are not completely understood. Regulation and supervision of complex and multinational financial groups pose significant challenges for the authorities.

Many significant initiatives have been introduced within a short period of time aimed at developing the financial market infrastructure. However, it is difficult to see what the optimal structure of the infrastructure

would be, when development is so rapid at both the European and global level with the Nordic integration as an additional element. The infrastructure of the Finnish financial markets is already one of the most integrated in Europe. Acceleration of structural change and use of new technologies seeking efficiency also pose threats to the reliability of the financial system. Yet another significant emerging issue is the role of authorities and market participants with respect to concretely improving the safety and efficiency of the financial market infrastructure. There are also gaps in the functionality of cross-border supervision in respect of financial market infrastructure.

The main issues related to the development of financial markets regulation are concerned with how international regulation can keep pace with the accelerating integration of the financial markets. The main issue in supervision is the development of cooperation between home and host country supervisors, as ever larger multinational financial institutions and systems become more common. Work by the EU's so-called Lamfalussy committees on the convergence of supervision methods and the creation of a uniform European supervision culture has made some progress, but not as fast as hoped for. Conflicts of interests between home and host country supervisors are exacerbated in crisis situations, and therefore development of cross-border crisis management cooperation is key.

To promote financial stability and efficiency, the Bank of Finland places particular emphasis on supervisors requiring financial sector participants conduct stress tests; the role of which will increasingly be highlighted due to significant structural changes. Central banks and other authorities have the important task of developing stress tests that can be used to analyse both the impacts of macroeconomic developments on the financial sector and interlinkages between financial sector participants. Stress tests must also be used to examine how the debt-servicing ability of households will take the impact of various macroeconomic shocks, such as significant increases in interest rate levels.

In developing crisis management among domestic and foreign authorities it is essential to agree in advance on the principles concerning the division of work and burden sharing and to practice cooperation between authorities so that the rapid decision making required in crisis management would be possible.

Over the next few years, the most important objectives in relation to the financial market infrastructure are improvement of the interoperability and efficiency of European central securities depositories and promotion of efficient European payment services. The Bank of Finland continues to make efforts to increase the spread of digitised payment services based on open, common standards, throughout the euro area and the EU.

# Operating Environment

Expected economic developments continue to provide a solid foundation for the stable operation of the Finnish financial system. The probability of severe disturbances in the real economy or uncontrolled international capital movements that could shake the financial system is low. Diversified and integrated international financial markets have withstood recent disruptions well. However, it is possible that the new market characteristics would accentuate the fluctuation of asset values in connection with extreme disruptions. Results indicate that international banks and insurance companies are in good shape. In Finland, the susceptibility of households to external shocks has increased due to a rapid growth of indebtedness, but at the level of the whole sector, there are no problems in sight. Solid profitability developments have strengthened the balance sheets and risk-bearing capacities of Finnish nonfinancial companies.

From the viewpoint of the stability of the Finnish financial system, the economic environment in which banks and other companies in the financial sector operate is crucially important. The economic situation – in particular the financial position of households and companies – has an impact on the demand of financial services and the losses incurred by banks and other financiers through defaults by their credit customers. Disruptions in the world economy are effectively transmitted to the small and open

Finnish economy, and thus they also have a bearing on the domestic financial sector.

Securities markets and other capital markets are part of the financial system, and the functionality of the markets in itself is an important part of financial stability. The smooth conduct of financial intermediation and correct pricing of risk support the general economic development and, thus, indirectly the financial sector, too. In addition, the availability of finance and the development of asset prices in the markets have a direct impact on the risks borne by banks and other financial institutions. Due to the connections between financial institutions, international banks and insurance companies are an important channel through which potential disruptions spread to the Finnish financial system.

The forecasted economic prospects in Finland and the rest of the euro area continue to be problem-free from the viewpoint of the financial system, although growth is expected to slow down.<sup>1</sup> The Bank of Finland forecasts real economic growth in Finland to stand in 2006 at 5.4% and to decelerate in 2007 to a good 3%. At the same time, growth of the world economy is expected to slow from 4.6% to 4.1%. The focus of growth is shifting from the United States to Europe and Asia. Economic developments in early 2006 were characterised by a clear acceleration in economic growth particularly in the euro area.

*Forecasted economic growth supports financial stability...*

<sup>1</sup> More detailed discussion about general economic prospects in Bank of Finland Bulletin 3/2006 and 4/2006.

*...but risk factors include severe economic shocks...*

*...and uncontrolled unwinding of global imbalances.*

In the Bank of Finland forecast, economic growth in the EU15<sup>2</sup> is expected to stand at 2.6% in 2006 and to slow down to a good 2% by 2008. Along with Finland, other Nordic countries have also experienced relatively rapid economic growth. In Iceland, rapid lending growth has resulted in current account deficit growth, and the inflation rate has also clearly risen. In the Baltic countries, economic growth has continued to be strong. The vulnerability of the financial systems of the Baltic countries to economic disruptions continues to be accentuated by long-term current account deficits and growth in the indebtedness of companies and households.

Despite favourable overall conditions, the general economic outlook contains some significant risks to the Finnish financial system. Severe problems could be caused by clearly weaker-than-expected international development, but sudden disruptions specifically relating to the Finnish economy are also possible. A

<sup>2</sup> Euro area countries, Great Britain, Sweden and Denmark.

steep economic downturn would cause difficulties to companies and households, increase banks' credit risks and reduce the demand for financial services. Problems in the real economy would also increase uncertainty in the financial markets and affect the development of asset prices. It is important that the financial system has sufficient tolerance for even severe disruptions, even though the probability of such disruptions is low.<sup>3</sup>

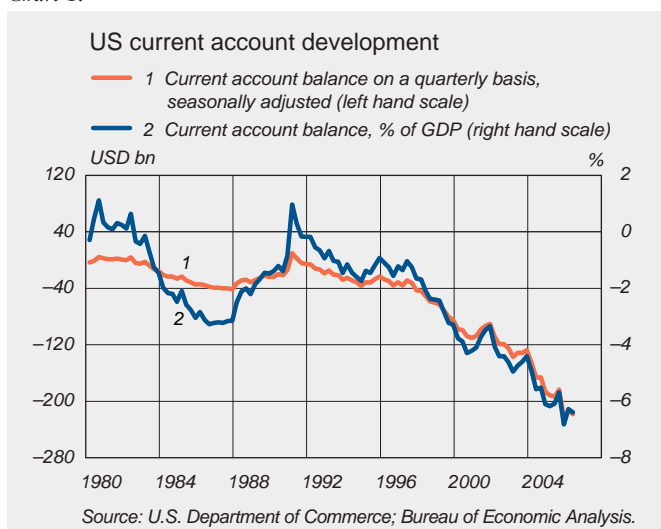
One potential source of international economic difficulties is the United States, where growth problems could culminate, for instance, if the woes in the housing market are exacerbated and the signs of decline in house prices are confirmed. Problems in the US would be transmitted to the economic growth in Finland and the rest of the euro area resulting in at least a slowdown in world trade, probable depreciation of the dollar and a decline in stock prices.

Another significant risk factor in the international economy continues to be a steep increase in the price of oil and other energy commodities due to some serious supply shock. On the other hand, worries related to a rise in oil prices are soothed somewhat by the adaptation of the world economy to oil price developments in recent years and the decline in oil prices in autumn 2006.

Constant growth of the US current account deficit (Chart 1) has been the most visible sign of global imbalances in savings and investments. The current account deficit has been funded by investors in Asian countries, and in

<sup>3</sup> The impacts of real economy shocks on the condition and risk-bearing capacity of banks operating in Finland are assessed in the chapter on the banking and insurance sector.

Chart 1.





recent years, increasingly by investors in oil exporting countries. So far, the funding of the deficit has run smoothly. The risky scenario is that a slowdown in US economic growth or other shocks would lead to an uncontrolled unwinding of the imbalance and thus cause sudden shifts in international capital flows and exchange rates. Materialisation of the risky scenario would exacerbate the abovementioned problems in the real economy and result in disruptions in the financial markets. A key question is whether the financiers of the deficit will trust that the current account will steer in the long run towards equilibrium in a controlled fashion. Hopes of a gradual correction of the problems have increased as differences in growth rates between economic areas have become more balanced, and there have been signs of a slowdown in the deepening of the US current account deficit and of a contraction in public deficits in the country.

The development of international and domestic financial markets has continued to be mostly favourable, albeit May–June 2006 saw a brief uncertain period when securities prices generally declined. Yet the development of asset prices and other market developments show characteristics that add to the vulnerability of the financial system to various shocks.

The yields on major government bonds increased from summer 2005 until summer 2006, after which they have trended downwards somewhat. Notwithstanding the changes, interest rates on long-term loans are still, by historical standards, at a low level. The

spread between long and short loans has narrowed, and for example in the United States, long-term interest rates have remained below short-term rates. The low level of interest rates has increased indebtedness in different countries and thus increased the vulnerability of borrowers to shocks.

As the yields on low-risk government bonds remain low, the demand for riskier corporate and emerging market debt has continued to be strong. The yield spreads between moderately rated (BBB) corporate bonds and government bonds have broadened slightly in the last year, but they have still remained fairly low (Chart 2). Meanwhile, yield spreads on corporate bonds rated lower than above (B) have remained almost stable in the US and even narrowed in the euro area (Chart 3). Yield spreads on emerging market bonds have also narrowed further. The low level of yield spreads is partly explained by the fact that the risks assumed by investors from investing into companies

*Yield spreads on long-term bonds have remained narrow.*

Chart 2.



*Economic shocks may lead to sudden changes in interest rates or yield spreads.*

and emerging markets have been estimated lower than before. On the other hand, yield spreads have also been compressed due to investors' desire to seek additional returns in higher-risk investments. One explanation to the search for additional returns is the need on the part of investors to achieve their return targets, which has become increasingly challenging due to the particularly low return on low-risk investments.

Chart 3.

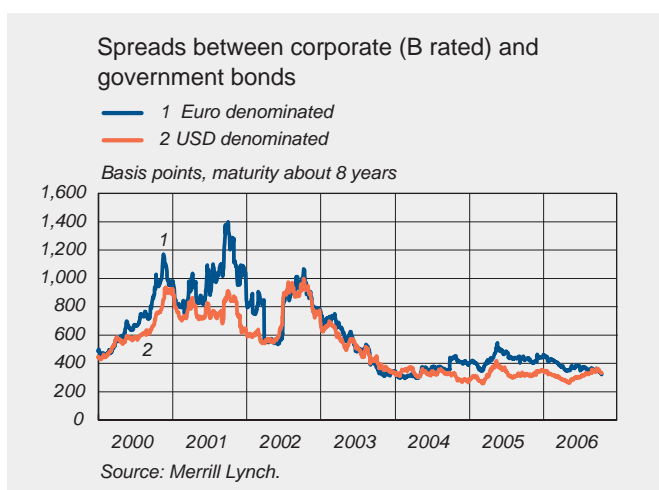
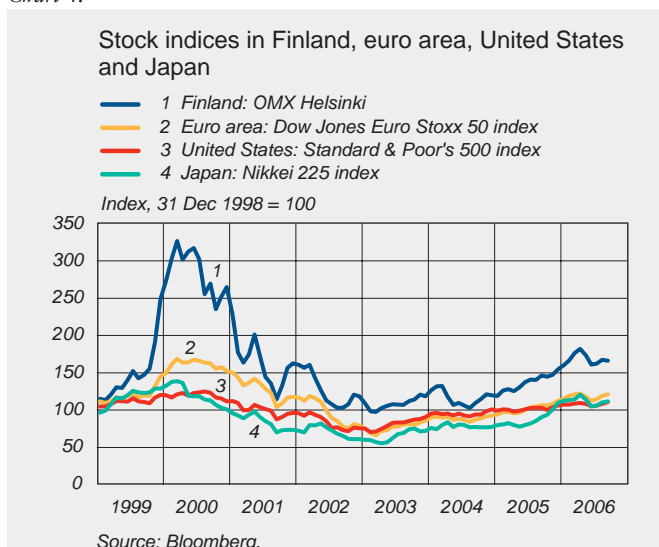


Chart 4.



Materialisation of international economic threats could change, for example, assessments of inflation or credit risk development so that the yields on long-term government bonds or spreads between different types of debt would increase suddenly. Such changes would hinder the intermediation of finance, and a rise in uncertainty would make investment decisions more difficult. These sudden changes would affect the Finnish financial sector through the financial state of their customers but also through impairments of their holdings.

Stock prices have risen already for years both in Finland and in the main economic areas (Chart 4). In May–June 2006 there was a period of higher uncertainty, when stock prices declined and volatilities rose. After June, stock prices have generally begun to rise again, and volatility has decreased. Stock price developments in relation to companies' earnings per share have not changed in a manner giving inarguable rise to concern about an overvaluation of stocks. In a study conducted at the Bank of Finland, methods for the assessment of existence of rational price bubbles in the markets are examined.<sup>4</sup> The results of this study also indicate that the market valuations in 2006 in the Finnish and US stock markets did not deviate from a level justified by economic fundamentals.

However, if a shock similar to those outlined above were to face the international economy, stock prices in

<sup>4</sup> More detailed information on the results of the study in the article by Melolinna and Taipalus in Bank of Finland Bulletin 4/2006.

different countries would be likely to decline and the volatility of prices would increase. The risk premia required by stock investors might also rise due to world political uncertainty or a sudden rise in oil or other energy prices. Since the correlation between stock prices for example in the US and the euro area is very high, the stock markets would be one of the main links, through which problems would spread into Finland.

In addition to securities' prices, disturbances in the stability of the Finnish financial system may be caused by the prices of housing and other real estate. Residential real-estate is a major application of household loans granted by banks, and is also used as collateral for these loans. A significant proportion of corporate loans are directed into the real estate business. In addition, banks possess real-estate holdings, although their amount has been decreased to a fraction of the holdings during the banking crisis at the beginning of the 1990s.

The annual rate of growth of housing prices in Finland slowed down to 6.9% in the third quarter of 2006.<sup>5</sup> The Bank of Finland has forecasted that price growth will continue but slow down to about 3% in 2008.<sup>6</sup> Preliminary data on a decrease in the number of housing transactions in January–September 2006 from the corresponding period in 2005 also points to a moderation in the housing markets.

International comparison shows that recent cyclical trends in the housing markets exhibit considerable variation

across countries. For example, in the Great Britain and the Netherlands, the rapid housing price boom is gone but prices have continued to rise moderately. In the United States, the housing markets have cooled down after steep price rises in 2005. In the second quarter of 2006, the rise in prices was the slowest so far in the 21st century.

Recent development in prices of other real estate also displays clear

Chart 5.

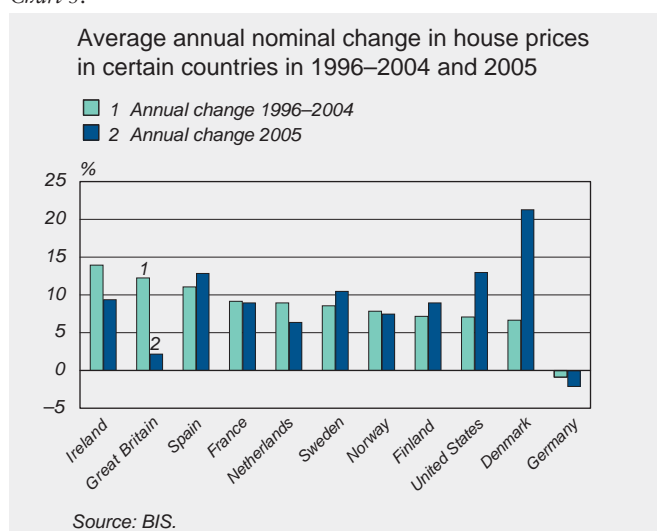
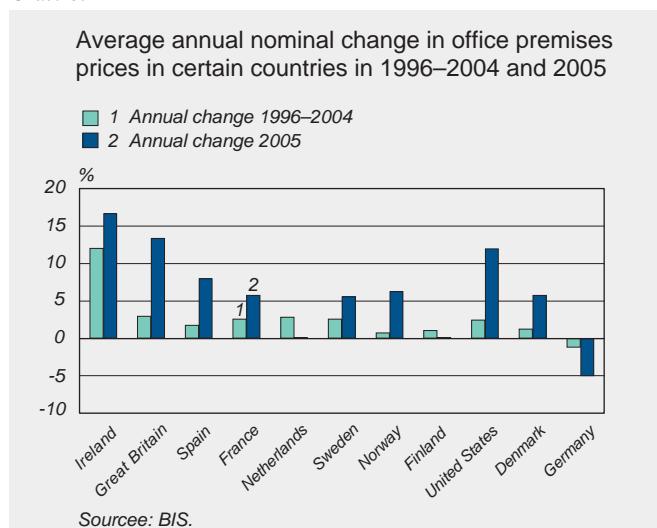


Chart 6.



<sup>5</sup> Row houses and apartments (condominiums).

<sup>6</sup> Bank of Finland Bulletin 3/2006.

*Increasingly versatile financial markets have withstood recent shocks well...*

*...but the functionality of the markets in extreme situations is yet to be tested.*

international differences. However, the rise in the prices of office properties in many countries has exceeded the average of the last decade (Chart 6). In recent years, total returns in the Finnish commercial, office and industrial property markets have remained at 5–10%. Returns have been generated mostly from leasing, since changes in property values have been very low. Liquidity has improved in the Finnish real estate markets as international investors have become increasingly interested in the Finnish markets. Returns on stocks in real estate companies have been higher than on direct real estate investments. At the same time, however, stock returns have shown stronger short-term fluctuation than property yields.

Investment options offered by the international financial markets have become greatly more diversified while new service providers have entered the markets. Integration between different market segments has also continued. In addition, different instruments are constantly being developed in the markets providing the investors with new, partly highly complex means to assume different types and degrees of risk. Particularly in the credit markets, new derivatives have been developed recently that enable the transfer of credit risks from one investor to another. The new financial instruments, and correspondingly, the spread of securitisation have helped in the diversification of risks. At the same time, the financial markets have deepened and broadened, and their liquidity has improved. So far, these developments seem to have

increased the financial markets' flexibility and tolerance for disruptions.

However, modifications of the markets also bring along problematic characteristics. New complex financial instruments may increasingly mask similar investor behaviour, which would mean intensification in systemic risk in the markets. Secondly, risks are swelled by increased interest in the use of leverage, as instruments and service providers (including certain hedge funds) offer more opportunities for that than before. In the event of severe disruptions, uncertainty in the market will increase considerably, if leveraged investors begin to unwind their crowded positions at the same time. Adding to the potential problems is also the fact that risk management relating to the new instruments is very challenging. In addition, risks have increasingly been taken by investors with relatively limited risk management resources. Assumptions made in risk management on the liquidity and correlations of investments may not necessarily hold in difficult market situations. With regard to some of the new investments, there is no experience yet about the accuracy of the assumptions. In assessing the total risk related to the markets it must also be noted that market segments have become integrated and their correlation has increased.

All in all, how the evolved markets would react to very severe shocks, such as an extensive slowdown in economic growth and uncontrolled shifts in international capital flows, still remains to be tested. It is possible that in certain extreme situations, the new characteristics would accentuate market reactions

to shocks and thus increase the volatility of asset prices. Assessment of the impacts of the changes is made more difficult by the fact that in some respects there is less information on the risks taken in the financial markets, as financing is increasingly mediated outside public markets and banks. In particular, information on risks taken through new types of financial service providers is limited.

#### International financial institutions

Globally, profits in the banking sector have been good in recent years and in 2005 they typically improved further (Chart 7). Profitability has also improved in countries where banks had widespread profitability problems a few years ago. Rapid growth of the world economy and ample liquidity are the fundamental reasons for the sound profit performance.

In the US, loan demand has remained solid despite increases in the interest rate level. This has supported growth in banks' profits. At present, the amount of non-performing assets within the US banking system is very low: 0.46% of the total asset stock for commercial banks and 0.23% for savings banks.<sup>7</sup>

Estimates on non-performing loans at Chinese banks vary a lot between 9–40% of GDP. At any rate, the amount exceeds the banks' equity. According to official data, profitability of the Chinese banking sector is in order.<sup>8</sup>

<sup>7</sup> Federal Deposit Insurance Corporation, Quarterly Banking Profile (second quarter 2006).

<sup>8</sup> See eg IMF, The Global Financial Stability Report, Statistical Annex, Financial soundness Indicators 2006.

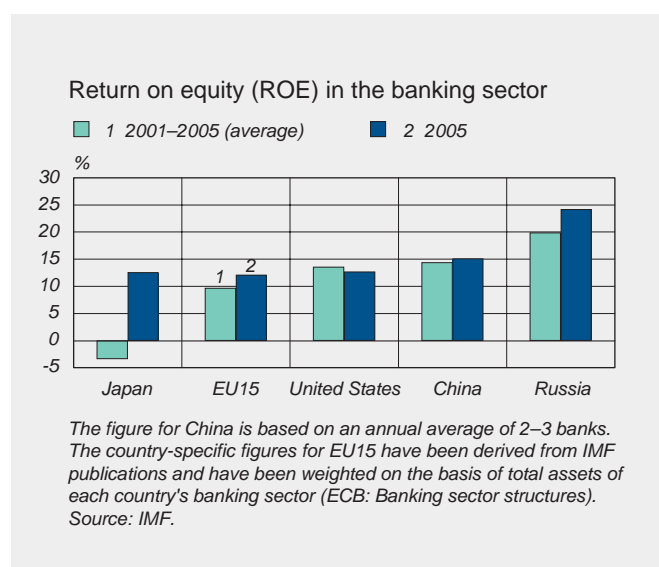
In Russia, banks have posted solid results for years. The rapid economic growth and strong increase in companies' revenues have supported banking and its profits. In recent years, the number of banks in Russia has decreased. The amount of non-performing loans within the Russian banking sector at the end of 2005 was 3.1% of the loan stock.<sup>9</sup>

In Japan, banks' profits have reached normal international levels, and the amount of non-performing assets is no longer a major issue within the banking system. However, there continue to be challenges relating to profitability, since the profitability improvements seen in large Japanese banks in the last financial year were largely based on recoveries of assets previously recorded as credit losses and impairments.

*Rapid growth of the world economy and ample liquidity are the fundamentals behind strong profitability.*

<sup>9</sup> The Central Bank of the Russian Federation, Financial Stability Review, Annual 2005.

Chart 7.



*Loss-carrying capacity increased on the back of good results.*

In the euro area and rest of Europe, profit performance of banking and financial groups has also been favourable for a long time, and results from the first half of 2006 indicate that the same trend has continued. Almost all large European financial groups improved their results in the first half of

2006.<sup>10</sup> The temporary dip in stock prices last spring caused no significant setback to the results of banking groups. Revenues have developed favourably as the groups have benefited from their extensive income base and, for example, growth of the loan stock. Tough competition for loans has narrowed interest rate margins, but increases in other income have offset their impact on the bottom line. Profitability and capital adequacy key figures have improved at large financial groups (Charts 8 and 9). Increase in the capital adequacy ratios indicates that the loss-bearing capacity of large financial groups has improved due to good profits.

Banks in the euro area have kept their credit criteria mostly unchanged over previous quarters,<sup>11</sup> although the battle for market shares has been intense. Credit demand is expected to intensify further in the near future, although the interest rate level in the euro area has already risen for a year and according to market expectations will continue to rise in 2007.

Impairments on the loan stock recorded by banks in Europe have been very low, which reflects a good credit risk situation. However, the strong growth of the loan stock in recent years means an increase in future

Chart 8.

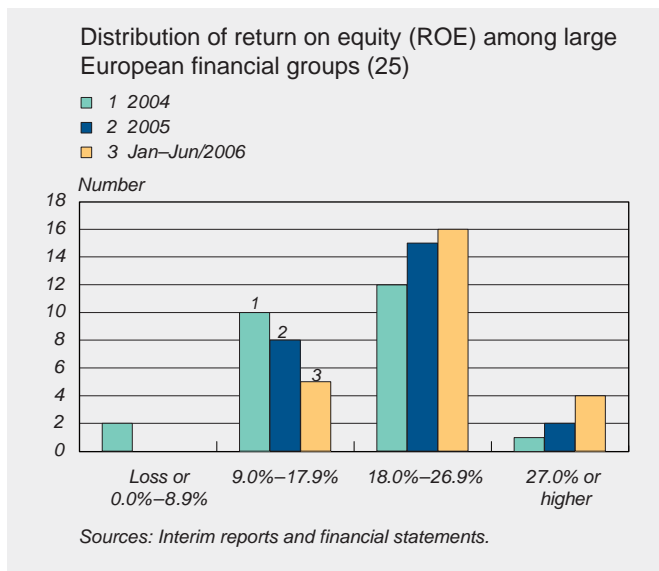
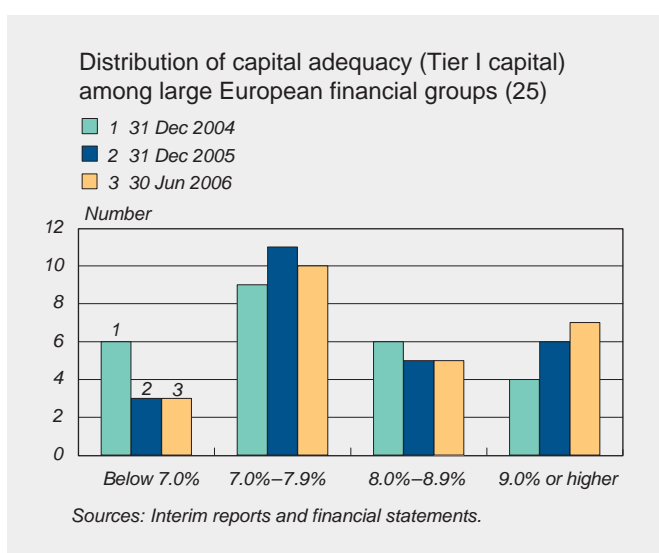


Chart 9.



<sup>10</sup> The Charts include data from the following 25 European financial groups in a descending order of total assets: BNP Paribas, Barclays, UBS, HSBC, ING, RBS, Credit Agricole, Deutsche Bank, ABN AMRO, Societe Generale, Credit Suisse, HBOS, SCH, UniCredit, Fortis, Commerzbank, RaboBank, Dresdner, Dexia, Lloyds TSB, BBVA, Banca Intesa, Erste, AIB and Millenium bep. The key figure data used are derived from interim reports published in July-September 2006 and previous financial statements.

<sup>11</sup> ECB, Bank Lending Survey, October 2006.

impairments. Impairments recorded in the euro area this year at large financial groups have been typically 0.1–0.2% of the loan stock, which may be considered very low in light of the economic cycle over the last few years.

Interest rate risks assumed by the banking sector may mean lower net interest income accumulation in the future for the banks. Banks are fighting an intense battle over market shares and margins. Furthermore, the flat or even inverted yield curve poses challenges to the banks. Its impacts differ across countries depending on the type of interest-rate linkages used for loans and deposits. At the European level, the state and risk-bearing capacity of large groups and the entire banking system are considerably solid at the moment.

The same global trends in the economic environments of banks and financial groups also prevail in the Nordic countries. The balance sheets of the ten largest European financial groups have grown rapidly in 2006 (Chart 10).

The most recent data from January–September 2006 indicate that profit performance has remained good, although differences across groups are large, and the profits show a lot of variation from quarter to another. Profitability has no longer improved materially from last year. Behind this development, there are many group-specific factors, but ultimately the issue is sluggish net interest income development as interest rate margins have been competed more narrowly than before (Charts 11 and 12).

Chart 10.

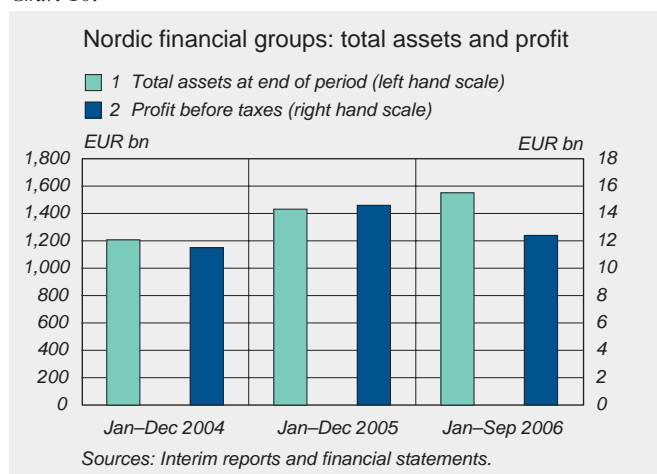


Chart 11.

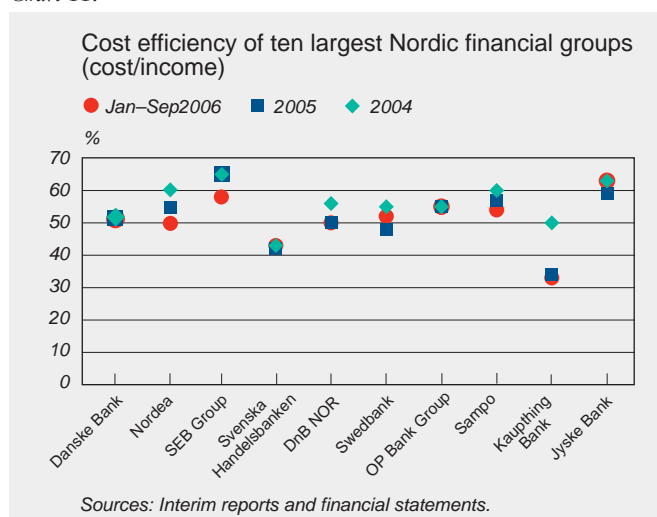
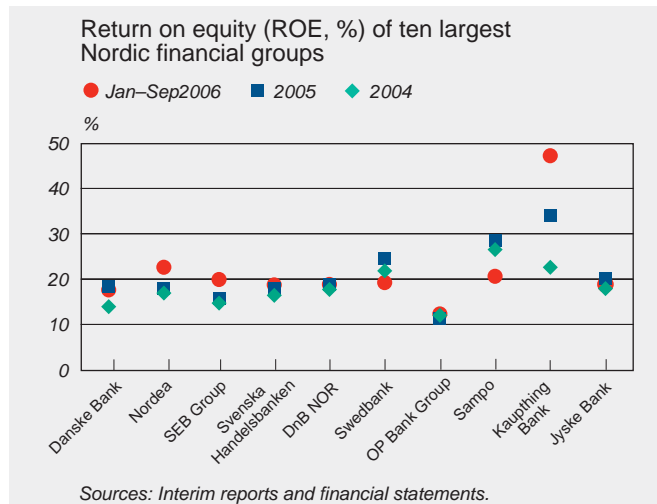


Chart 12.



*Capital adequacy of life and non-life insurance companies has improved.*

Loan stocks have grown much faster than net interest income. At the same time, a stock market correction took place in the second quarter, which had a negative impact on quarterly profits. The growth of expenses has been rapid, even at about 10% in the first half year. Profits have also been supported by the diminutive level of impairments and losses due to the favourable operating environment. The capital adequacy ratios of Nordic groups<sup>12</sup> indicate that loss buffers, in terms of euro, amount to several billion.

On average, 2005 was a considerably good year also for the insurance sector. An increase in investment returns supported profitability, and solvency improved. Again the exception was the reinsurance sector, where claims incurred in 2005 clearly increased from last year, due to a multitude of natural disasters.

The increase in asset values was shown in an improvement of the profits and solvency of European life and non-life insurance companies. The profits of European life insurance companies were also supported by a pick up in premiums paid. The structure of premiums paid to life insurance companies is evolving in many countries from guaranteed-return insurance policies to unit-linked policies. The return requirements of existing guaranteed-return policies often exceeded the yield in the bond market, which caused a lot of problems for life companies. The interest rate

level in the euro area continued to be considerably low with a view to the existing guaranteed-return life insurance policies.

European insurance companies have increased their participation in the markets of different new investment instruments in recent years. Banks are selling their credit risks, for instance, to insurance companies or hedge funds.

The development of profits indicate, that international banking and insurance operations are in good shape at present and can withstand even major shocks in the international financial markets.

#### **State of the corporate sector**

Rapid growth of the world economy and international trade, along with brisk domestic economic developments, has supported the profitability of Finnish companies. Profitability of the corporate sector was solid in 2005, and this year, results are expected to improve further. According to preliminary data, the aggregate results of publicly quoted companies in the first three quarters of 2006 show a significant improvement over the figures from the corresponding period last year. However, profitability of Finnish companies varies across sectors. Profitability of the forestry industry has been weak already for years, and intense streamlining efforts have been launched within the sector to improve profitability and cut overcapacity.

Thanks to the long period of solid profitability in the corporate sector, companies' balance sheets on average are strong and their cash position is

<sup>12</sup> In September 2006, Tier 1 capital adequacy in large Nordic groups ranged between 6.3–12.4%.



sound. Backed by their strong balance sheet, companies are in a position to withstand result deteriorations caused by a potential recession and potential rises in financial costs without incurring any significant problems to their financiers.

The near-term cyclical picture<sup>13</sup> continues to be favourable, and for example in the capital markets there are no expectations of significant changes in companies' profitability in the near future. According to cyclical surveys,<sup>14</sup> companies' prospects are bright, and confidence stronger than the long-term average. The order backlog is at record levels in many industries. For example, the order backlog of the machinery and metals industry in the autumn was 50% higher than in the previous year.<sup>15</sup>

The outlook is good also in light of market indicators, such as stock prices. After the dip in the spring, stock prices in many industries have recovered to previous levels due to improved profits.

The growth rate of the loan stock of domestic companies has risen slightly over the past year due to rapid growth of foreign loans. The stock of loans obtained domestically by companies (excl. housing companies) amounted to almost EUR 44 billion in June, ie growth over the corresponding period in the previous year was about 3%. Structural change of the domestic loan stock has also continued. The growth rate of bank loans granted to companies was a good 7% in June,

while loan stocks of other domestic lenders have grown slowly or even deflated. The stock of loans from insurance institutions has contracted by a good 6% over a year. A good 75% of companies' bank loans are floating-rate loans. Floating-rate loans are mostly linked to Euribor rates. In line with the

*The role of banks in domestic corporate finance is on the rise.*

Chart 13.

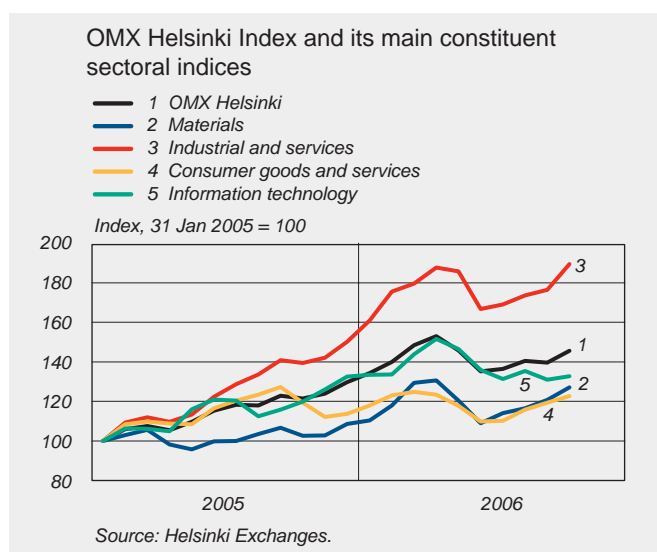
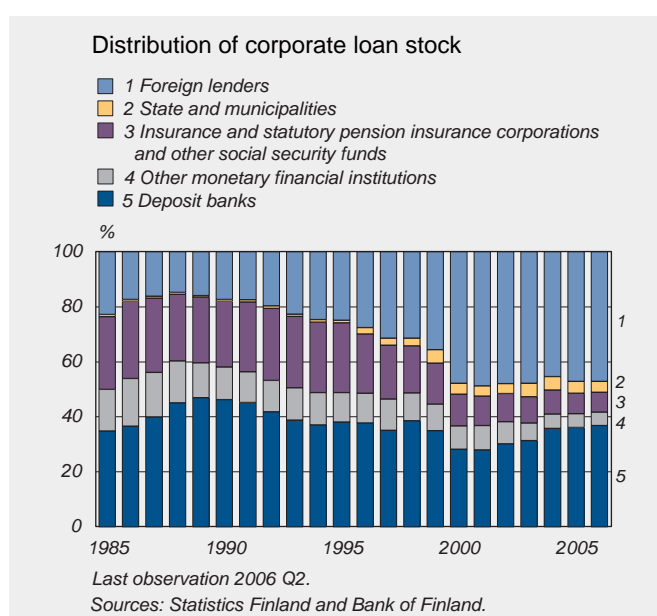


Chart 14.



<sup>13</sup> Finnish economic developments in more detail in Bank of Finland Bulletin 3/2006.

<sup>14</sup> Business confidence surveys (September 2006).

<sup>15</sup> Technology Industries of Finland Economic situation and outlook (3/2006).

*Credit risks caused by the corporate sector still considered moderate.*

change of market rates used as reference rates, the interest rate level on loans taken by companies from banks has begun to rise. The average rate on companies' new bank loans has risen a percentage point over a year and stood at 4.5% in August.

Foreign borrowing by Finnish companies has started to increase rapidly over the last year. In June, the

year-on-year growth rate jumped to a good 14%. Utilisation rates of companies' international credit facilities have gone up, and financing from the international market has been drawn particularly from the euro bond markets.

Although companies' domestic borrowing has continued to focus on the banking sector, credit risks caused by companies to banks are still assessed as being moderate. The number of bankruptcies filed has been decreasing over a long period of time (Chart 16). However, when economic growth slows down, problems related to corporate loans are expected to increase slightly.

The EDF (Expected Default Frequency) figures calculated on the basis of stock prices and published financial statements information and describing the probability of bankruptcy for Finnish companies are presently at the lowest level in the 21st century (Chart 17).<sup>16</sup>

The amount of funds raised by Finnish companies from the stock markets has remained low during these first years of the 21st century. Over the past year, however, a few companies have been listed into the Helsinki Exchanges.

Companies' fund raising from the domestic commercial paper and bond markets is reviving, but the largest companies are raising their funds

Chart 15.

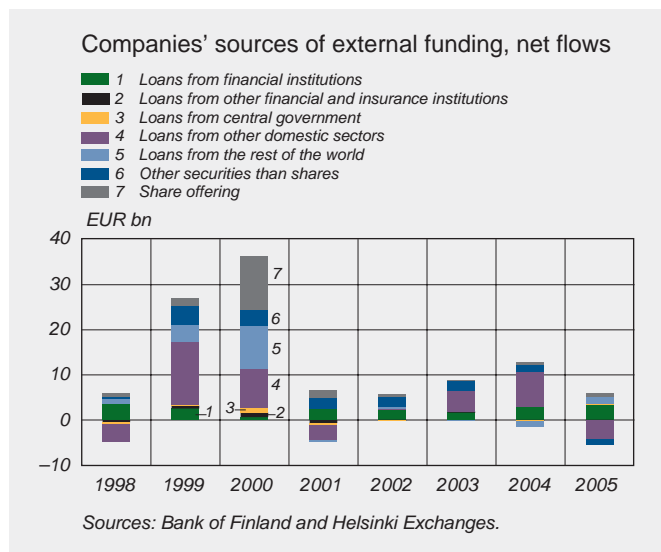
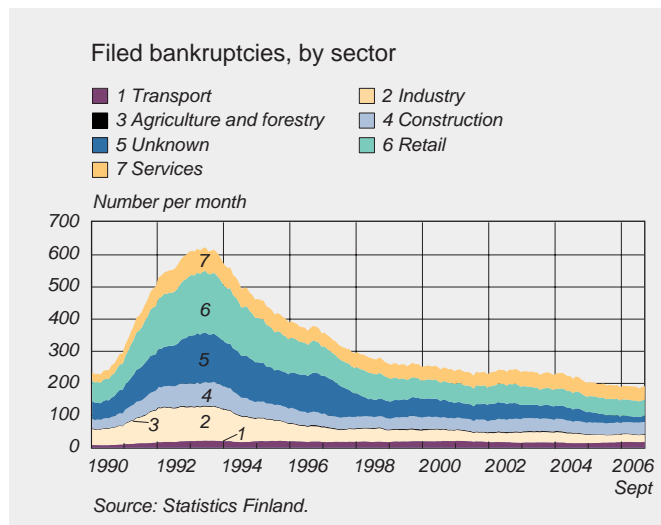


Chart 16.



<sup>16</sup> The EDF figure calculated with options pricing methods for a year's period measures the probability that the market value of the company's total assets decreases below the nominal value of its debts. The market value and volatility of the company's total assets necessary in the calculation are derived from the market value and volatility of its shares and the nominal value of the debts.

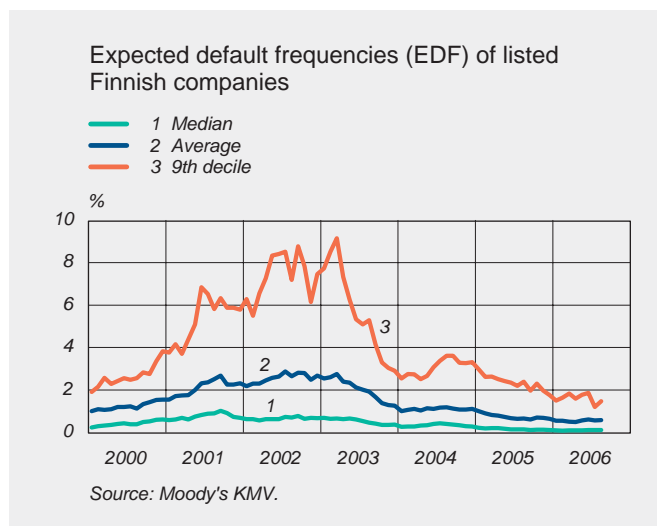
mostly from the international financial markets. The credit ratings and rating outlook of many Finnish companies have improved over the last year.

Funding from venture capitalists began to increase in 2005. In line with the international practice, most of the venture capital has been directed into buy-outs. Pension companies and other insurance companies are one of the main types of venture capitalists in Finland. In 2005, insurance companies accounted for a good third of all new capital raised. The proportion of banks as a source of funding in Finland is low: banks accounted for only 4% of the new capital raised in 2005. At the same time, the public sector accounted for about 7%.

The amount of loans drawn by companies from financial institutions in the euro area began to rise in 2004, and since then the rate of growth has speeded up continuously. In August 2006, the growth rate of lending to companies by euro area banks had reached almost 12%. Besides investments, credit demand has been strengthened among other things by increased M&A transactions financed in addition to loans drawn from financial institutions with bonds and venture capital. The increase in M&A in Europe is also shown in a rapid growth of venture capital markets in Europe over the past few years, while they have been previously rather subdued.

Similarly to Finland, corporate profitability has exceeded expectations almost everywhere. In the fixed-income markets, this has been seen among

Chart 17.



other things in the risk premia, which have been low for a long period of time. Defaults by debtors have been scarce in the international loan markets. However, rating agencies are foreseeing some degree of deterioration in both credit outlook and credit quality.<sup>17</sup> Deterioration in corporate loans is also predicted by the recent increase in rating downgrades in relation to upgrades.<sup>18</sup>

<sup>17</sup> Standard & Poor's (August 2006) Quarterly Default Update & Rating.

<sup>18</sup> Standard & Poor's (2006) Global Corporate and Sovereign rating Actions (Q3).

*Trend shift in housing loan growth rates and interest rates.*

### State of the household sector

Favourable developments of the Finnish economy have also had a positive impact on the financial position of the household sector and on consumers' confidence in the future. Growth of loans granted to households has slowed down slightly from 2005 but continues to be fast. In September, the annual nominal growth rate was 13.7%, while at its fastest in 2005 it was over 15%. Growth of the housing loan stock began to slow down with a lag after interest rates on new housing loans took an upturn in autumn 2005 (Chart 18). In September, the growth of housing loans decelerated to 14.4% from almost 17% in the previous year. In contrast, the growth of other loans has picked up to 12.0%, which means that credit demand is now spread more evenly with different purposes.

Households' willingness to borrow is expected to remain broadly

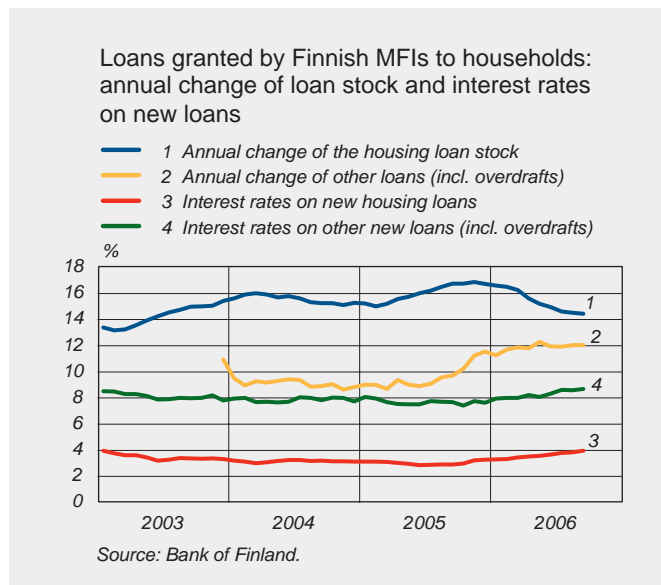
unchanged over the next year.<sup>19</sup>

Consumers assess that the economics of borrowing have weakened during 2006, but a majority still think it pays to borrow.<sup>20</sup> The Bank of Finland has forecasted that the loan markets will gradually cool off over the next few years.<sup>21</sup>

Over 90% of household loans are floating-rate loans, so a majority of the debtors themselves bear the risk of an increase in interest rates. In September, the average interest rate on the housing loan stock was 0.8 percentage point over the lowest level in 2005 due to an increase in short-term market rates. A majority of households with housing loan select the interest rate linkage on the basis of the lowest reference rate on the contract date. A majority of households' housing loans are linked to Euribor rates, but the popularity of banks' own reference rates has increased while the 12-month Euribor has increased faster than the prime rates (Chart 19). The prime rates generally follow market rate developments with a short lag.

The proportion of fixed-rate loans of new housing loans has remained in recent years at a little less than 5%. Households may hedge against the impacts of interest rate increases through hedging products, such as interest rate cap options, but there is no detailed information on the popularity of these products. According to the Finnish Financial Supervision

Chart 18.



<sup>19</sup> The bank barometer of the Finnish Bankers' Association (September 2006).

<sup>20</sup> Statistics Finland's consumer survey (October 2006).

<sup>21</sup> Bank of Finland Bulletin 3/2006.

Authority, the interest rate cap is a relatively expensive and non-transparent option for a borrower.<sup>22</sup> In addition, comparison between different reference rates and repayment plans is difficult, since it is impossible to forecast the developments of market rates in the long term.

Everyone with housing loan should themselves calculate the impact of a potential interest rate increase on their personal finances and make a plan for an increase in debt-servicing expenses. According to the Finnish Bankers' Association, about every fourth person with housing debt had not prepared for a potential increase in their loan interest.<sup>23</sup> The most common reasons for the lack of preparedness were a small loan sum, high income levels and faith in interest rates staying stable or not rising significantly. Preparedness for risks has increased slightly in recent years, which is also indicated by the increasing popularity of loan payment protection insurances particularly in large housing loans.

Nominal house prices in Finland have increased on average 7% annually after the dip in 2001. According to recent studies, the present price level is largely consistent with the economic fundamentals and other principal factors.<sup>24</sup> One way of assessing the price level in the housing markets from

<sup>22</sup> FSA Newsline online publication 5/2006 and FIN-FSA's article 'Asuntolainojen maksutapojen vertailu ja suojausautuminen korkojen muutosten vaikutuksilta' (27 September 2006).

<sup>23</sup> Finnish Bankers' Association survey on saving and use of credit (April 2006).

<sup>24</sup> See eg OECD (2005) Economic Outlook No. 78 and Elias Oikarinen (2005); Is housing overvalued in the Helsinki Metropolitan Area? ETLA, Discussion Papers No. 992.

the viewpoint of households is to compare developments in housing prices and household income. In Finland, housing prices have risen in recent years in relation to wage and salary earnings. The ratio is higher than on average after 1985 but clearly lower than at its peak in 1989 (Chart 20).

*Relative to income and rent levels, housing prices are below peak year 1989.*

Chart 19.

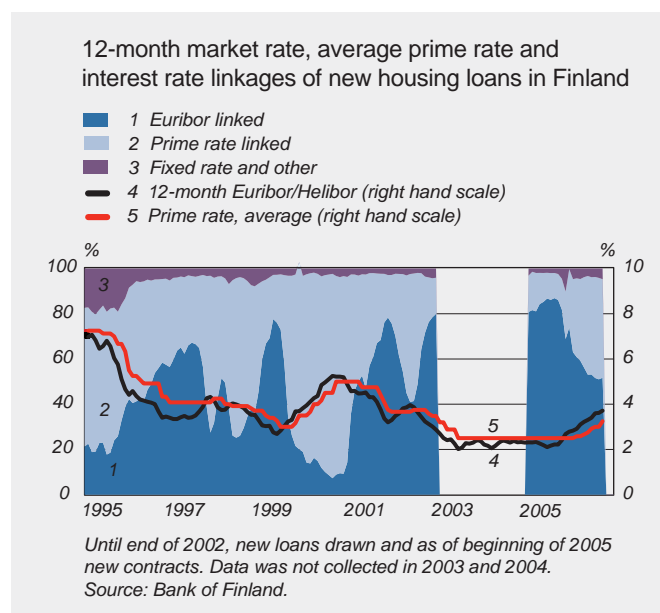
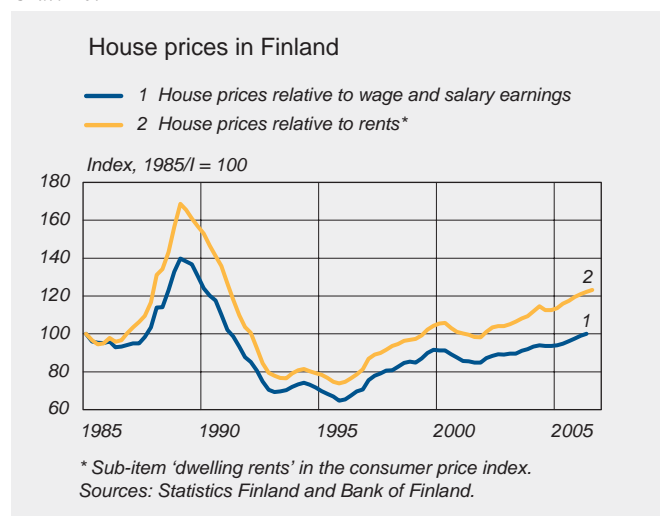


Chart 20.



*Indebtedness at record levels but interest expenses very small.*

Another commonly used indicator for the valuation level of housing is the ratio of house prices to rents, which is in a way, a P/E-ratio for the housing market. In Finland, housing prices have risen in recent years in relation to rents, but this ratio also is below the peak in 1989. In addition, the ratio has recently increased significantly more slowly than at the end of the 1980s.

At the end of 2005, households' debt ratio – the ratio of debt to disposable annual income – stood at a record 90% (Chart 21). The ratio is 10 percentage points higher than a year ago and almost 3 percentage points higher than in the previous peak year 1989. In contrast, the proportion of interest expenses of households' disposable income was very low in 2005 and significantly lower than at the beginning of the 1990s. The underlying factors include the low level of interest rates, narrow loan margins and increase in disposable income. The proportion of housing loans in the whole loan stock has increased steadily and stood at 72% at the end of June 2006.

The average maturity of new housing loans has lengthened to 17 years from 11 years eight years ago, and almost half of the loans taken over the past two years have had a maturity of at least 20 years.<sup>25</sup> This significant change has enabled the increase in average loan amounts without an increase in the monthly debt-servicing expenses in relation to disposable income. However, due to the longer loan periods, the debt burden will take its toll on consumption over an ever-lengthening period.

The real value of the average gross wealth of households increased in 1998–2004 about 47% (Chart 22).<sup>26</sup> About a quarter of the increase was attributable to the value increase of owner-occupied housing property. At the same time, the average household

Chart 21.

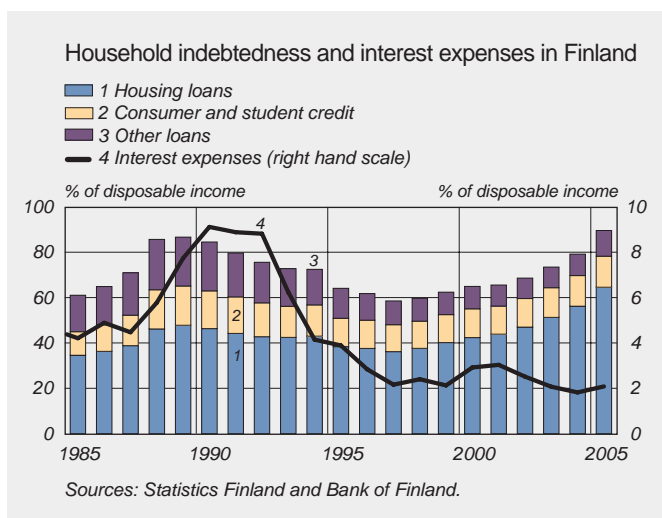
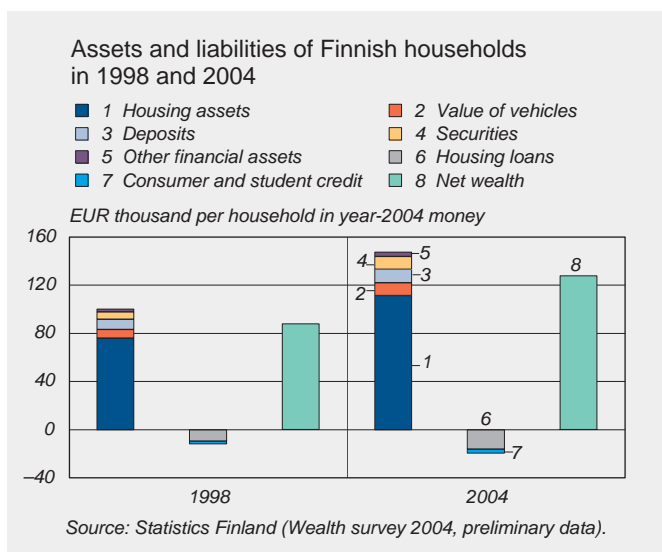


Chart 22.



<sup>25</sup> Finnish Bankers' Association survey on saving and use of credit (April 2006).

<sup>26</sup> Preliminary data from Statistics Finland wealth survey for year 2004.

debt increased by 61% and net wealth by 45%. The average debt burden, ie debt in relation to wealth, increased by a percentage point, to 13%. A majority of households' wealth consists of housing property, so housing price developments are important to households. In addition, vulnerability to market risk has increased, since mutual fund saving and voluntary pension insurance have made significant gains in popularity over the past few years.

It is difficult to estimate, how extensive indebtedness the household sector is able to sustain in the long term. Aggregate household debt in relation to financial assets has grown, but the liquid financial assets in the sector continue to be higher than debt (Chart 23). However, there is significant variation across households,<sup>27</sup> so debt-servicing and risk-bearing capacities depend on the distribution of debt, assets and income between households. Typically the largest debts are incurred by the highest-income-and-wealth households, but in recent years the relative indebtedness of young people, aged 25–34, has increased by far the most.

In international comparison – for instance relative to other Nordic countries – the indebtedness of Finnish households is fairly low (Chart 24). However, structural differences between the financial systems make comparison between the countries difficult.

There are no comparable overall statistics on payment defaults by individuals from the past two years, but

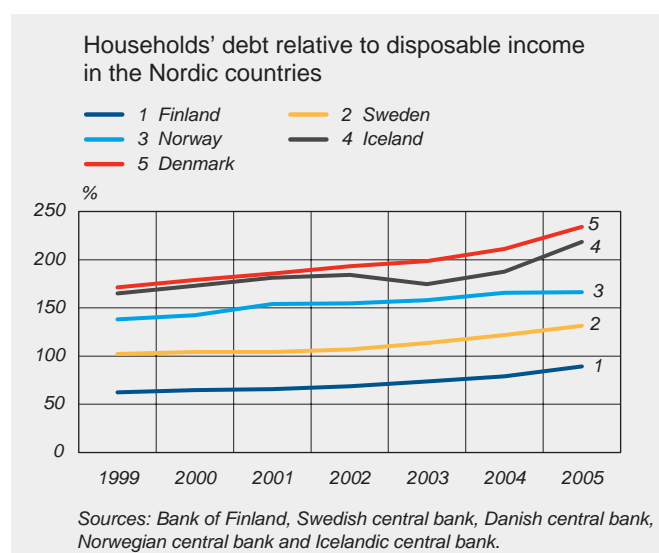
in light of available data, defaults have slightly increased.<sup>28</sup> According to Suomen Asiakastieto, new payment default entries in 2004–2005 increased on average by 3.1% from the entries in

<sup>28</sup> The information system reform at the execution institution created a backlog of execution issues in 2004, which is why more than twice the amount of entries were made in 2005 concerning insolvencies or other hindrance to foreclosure than in the previous year.

Chart 23.



Chart 24.



<sup>27</sup> In more detail in Box 1 of this Chapter and Box 2 of Bank of Finland Bulletin 3/2006.

### Household indebtedness in 1998–2004 in light of household-level data

The aggregate debt of Finnish households has been increasing consistently since 1998, when loan demand began to pick up. In the following, household indebtedness and its main trends in 1998–2004 are reviewed using the service data on income distribution gathered by Statistics Finland.<sup>1</sup> Since household debt has also grown strongly after 2004, the picture given by the data is not completely up to date.

The proportion of indebted households of all households has increased relatively slowly. In

<sup>1</sup> See also Bank of Finland Bulletin 3/2006, Box 2.

2004, about 53% of Finnish households had debt (Table A). 30% of households had housing loans, 12% had student loans, and 31% had other loans, such as consumer credit.

An increasing number of households with housing debt also have other debt. The proportion of these so-called multi-debtors of all households with housing debt rose in 2004 to about 53% from 46% in the previous year.

Despite the increase in indebtedness, the proportion of over-indebted households and those with debt-servicing difficulties of all households with

debt has decreased from the situation at the end of the 1990s. Correspondingly, an ever fewer number of households with housing debt expends a significant share of its disposable income in the servicing of housing loans.

The median amount of debt among households with housing debt in 2004 was over 1.5-fold in comparison to the figure in 1998.<sup>2</sup> Housing debt has also increased rapidly in relation to disposable income. In 2004, the

<sup>2</sup> The figures in euro used in this Box have been deflated into the money of 2004 using the cost-of-living index.

Table A.

#### Indebtedness of Finnish households in 1998–2004

	1998	1999	2000	2001	2002	2003	2004
<i>% of all households</i>							
Households with debt	50.1	50.9	50.2	49.8	49.3	51.2	52.9
Households with housing debt	27.3	26.7	26.1	26.6	27.0	27.7	30.3
Households with student debt	12.9	12.3	11.8	11.5	11.3	10.9	12.4
Households with other debt	28.3	29.4	29.2	28.3	27.4	29.1	31.4
Households with housing and student or other debt	13.3	12.6	12.6	12.6	12.4	12.8	16.1
<i>% of households with debt</i>							
Over-indebted households <sup>1</sup>	9.0	8.0	8.7	7.8	7.3	5.9	5.8
Households with debt-servicing difficulties <sup>2</sup>	–	12.2	10.8	11.0	9.2	9.0	7.6
<i>% of households with housing debt</i>							
Households whose housing debt servicing costs exceed 20% of disposable income	30.3	25.4	25.2	24.3	23.6	22.7	18.0
Households whose housing debt servicing costs exceed 20% of disposable income	9.3	6.2	6.3	7.1	5.6	5.7	5.7

<sup>1</sup> Household has been in a situation where the amount of debt has exceeded the point of survival.

<sup>2</sup> Household has been in a situation with insufficient money to pay amortisation or interest.

Sources: Statistics Finland and Bank of Finland.

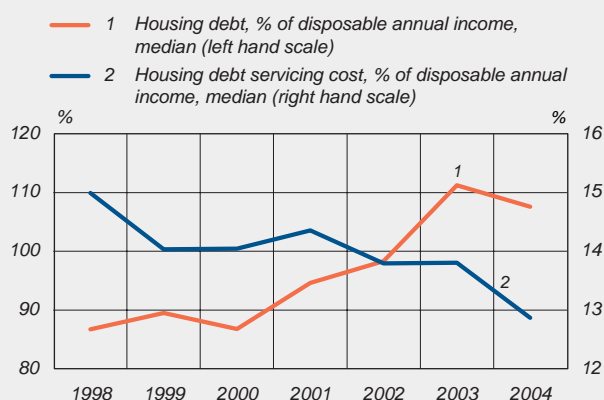


median debt burden<sup>3</sup> of households with housing debt was almost 110%, whereas only in 1998 it had been less than 90% (Chart A). In contrast, the median debt-servicing burden<sup>4</sup> had decreased in 2004 to a little less than 13% from the 15% six years before.

In 2004, approximately 12% of indebted households had debt in excess of EUR 100,000 (Table B), while in 1998 the corresponding figure was only 3%.<sup>5</sup> At the same time, the proportion of households whose

Chart A.

Typical debt and debt-servicing burden on households with housing debt



Sources: Statistics Finland and Bank of Finland.

<sup>3</sup> Housing debt as a percentage of disposable annual income.

<sup>4</sup> Housing debt servicing expenses as a percentage of disposable annual income.

<sup>5</sup> See comparable figures for 1998 and 2003 in Risto Herrala's article in *Bank of Finland Bulletin* 1/2006.

debt was over three times their disposable annual income had risen from 5% to 9%. These

heavily indebted households accounted for about 29% of the households' total debt in 2004.

Table B.

Distribution of indebted households and debt by debt ratio<sup>1</sup> (%) and amount of debt (EUR) in 2004

	Less than EUR 20,000	EUR 20,000–60,000	EUR 60,000–100,000	EUR 100,000–150,000	EUR 150,000–200,000	EUR 200,000–300,000	EUR 300,000–400,000	More than EUR 400,000	Total
<b>% of indebted households</b>									
Less than 100%	46.3	13.2	0.9	0.1	0.0	0.0	0.0	0.0	60.4
100–199 %	1.1	9.6	7.4	1.4	0.2	0.1	0.0	0.0	19.7
200–299 %	0.1	1.9	4.5	3.7	0.6	0.2	0.0	0.0	11.2
300– %	0.0	0.6	2.0	2.8	1.9	1.0	0.3	0.2	8.7
<b>Total</b>	<b>47.5</b>	<b>25.3</b>	<b>14.7</b>	<b>8.1</b>	<b>2.7</b>	<b>1.2</b>	<b>0.3</b>	<b>0.2</b>	<b>100.0</b>
<b>% of debt</b>									
Less than 100%	7.4	9.7	1.4	0.3	0.0	0.0	0.0	0.0	18.8
100–199 %	0.3	9.3	12.8	3.7	0.6	0.3	0.1	0.1	27.2
200–299 %	0.0	2.1	8.4	10.3	2.4	1.1	0.2	0.0	24.5
300– %	0.0	0.6	3.7	8.1	7.4	5.2	2.1	2.4	29.5
<b>Total</b>	<b>7.8</b>	<b>21.7</b>	<b>26.3</b>	<b>22.4</b>	<b>10.4</b>	<b>6.6</b>	<b>2.3</b>	<b>2.4</b>	<b>100.0</b>

<sup>1</sup> Debts, % disposable annual income.

Sources: Statistics Finland and Bank of Finland.

*Threats unchanged but risks minor in light of forecasted economic developments.*

2003. A more reliable indicator of payment default developments than overall statistics is the number of new court orders on payment defaults, which increased 2.2% from 2004 and was almost the same as in 2001–2005 on average. At the end of 2005, the number of persons with payment defaults stood at 2.8% higher than a year ago but still lower than in 1996–2002.

According to Statistics Finland, credit losses related to credit card accounts and payment defaults in relation to credit card accounts increased in 2005 from the previous year. On the other hand, the total amount of credit losses was only less than 1% of the loan stock, and the proportion of accounts terminated due to payment defaults a little over 1% of the total number of active accounts.

Households' disposable income is expected to grow at a rate of about 3% in the next few years, and the unemployment rate is expected to decrease slightly.<sup>29</sup> In light of the forecasted economic developments, household indebtedness does not appear alarming at the level of the whole sector. In the long term, however, the rapid increase in indebtedness adds to the risk of over-indebtedness and households' vulnerability to external shocks.

From the viewpoint of individual households, the biggest risks relating to indebtedness are concerned, in the long term, with a sudden and prolonged decrease in income for example due to unemployment or illness. A significant

rise in the interest rate level would rapidly affect almost all indebted households and could cause payment difficulties to those who are at the limits of their debt-servicing capacity. A significant drop in house prices would result in problems, particularly for those debtors who would be forced to sell their residences at a lower price than the debt amount due to concurrent debt-servicing difficulties.

According to estimates calculated at the Bank of Finland,<sup>30</sup> even large shocks would not increase households' financial difficulties significantly in the short term. Over the period of a year, households' solvency is slightly more vulnerable to a rise in interest rates than a corresponding increase in the unemployment rate. In light of the results, credit risks incurred by banks due to households are low in the short term. However, the situation may change quickly, if the rapid increase in indebtedness continues and general economic developments deteriorate to a significant degree.

*Households able to withstand even large shocks in the short term.*

<sup>29</sup> Bank of Finland Bulletin 3/2006.

<sup>30</sup> Calculations are based on Statistic Finland's household-specific service data on income distribution and models based on it forecasting the number of indebted households in financial plight.

# The banking and insurance sector

Owing to a favourable operating environment, banking and insurance businesses continue to report good results. Banks' operating profits improved with higher net interest income and net fee income. Earnings performance was also supported by several one-off items. The main risks to the operating environment of the Finnish banking and insurance sector are related to the threat scenarios concerning global economy and financial markets. Within the sector, attention should be paid to the risks relating to rapid structural change, and growth in banks' liquidity risk. At the current juncture, however, the general risk situation can be assessed as good.

## Condition of the banking and insurance sector

In January–September 2006 total operating profits of financial conglomerates<sup>1</sup> operating in Finland were EUR 4,631 million (Table 1). Operating profits were boosted by increasing and expanding business operations, several one-off items and items measured at fair value in accordance with the International Financial Reporting Standards (IFRSs). In addition to banking operations, financial conglomerates also reported earnings from life and non-life insurance business as well as the sale of investment products. In January–June 2006 insurance business accounted for 73% of Sampo Group's

<sup>1</sup> Savings banks, Aktia Savings Bank plc Group, local cooperative banks, Bank of Åland plc Group, Evli Group, eQ Online Group, OP Bank Group, Sampo Group and Nordea Group.

and 17% of OP Bank Group's operating profits. As for the Nordea Group, however, insurance accounted only for a small part of operating profit (Table 2). Since the shares of banking and non-life insurance business differed across groups, individual financial conglomerates' results were, to very varying degrees, dependent on interest rate and share price developments.

Nordea Group's operating profit improved due to higher net interest income, fee income and gains on items measured at fair value. Nordea also recorded recoveries in respect of earlier loan losses and one-off capital gains on the sales of shares.

OP Bank Group's profit before taxes improved. However, Pohjola Group is not included in OP Bank Group's income and expenses in January–September 2005, leading to weak comparability of figures.

Sampo Group's operating profit increased slightly in the first three quarters of 2006. Results from banking and investment services as well as life insurance operations grew, but operating profits from non-life insurance business decreased. Underlying the weaker results in this segment was smaller net income from investment operations. However, the core non-life insurance business continues to be profitable. In future the financial conglomerate comprising Sampo Group will disperse when Danske Bank becomes the owner of Sampo Bank (Box 2).

## Banking business profits from favourable operating environment

The favourable development of the domestic operating environment has

*Operating profits continued to grow.*

Table 1.

Operating profits of banks and financial conglomerates				
(EUR m)				
	2005	1-9/2005	1-9/2006	Change, %
Nordea Group	3,048	2,300	2,853	24.0
Retail and corporate banking	2,757	2,026	2,604	28.5
Life insurance business	146	116	81	-30.2
Nordea's retail banking in Finland	600	408	513	25.7
Sampo Group	1,295	1,007	1,019	1.2
Banking and investment services	316	229	279	21.8
Insurance business	1,034	812	747	-8.0
OP Bank Group	579	452	598	32.3
Retail and corporate banking	-	429	473	10.3
Non-life insurance business	-	-	58	-
OKO Bank Consolidated	150	115	166	44.3
Savings banks (excl. Aktia), total	53	41	52	27.0
Aktia Savings Bank plc (Group)	49	34	46	34.1
Local cooperative banks, total	33	26	34	30.4
Bank of Åland plc (Group)	19	14	17	20.3
Evli Group	8	6	2	-67.8
eQ Online Group	6	4	11	169.1
1. Finnish banking business	-	1,191	1,426	19.7
(incl. Nordea's retail banking in Finland)				
2. Financial conglomerates operating in Finland	5,090	3,884	4,631	19.2

1. Includes savings banks, Aktia Savings Bank Group, local cooperative banks, Bank of Åland Group, Evli Group, eQ Online Group, OP Bank Group's retail and corporate banking, Sampo Group's banking and investment services and Nordea's retail banking in Finland.

2. Includes Finnish banking groups, Sampo Group and Nordea Group.

Source: Banks' interim reports.

supported growth in banks' business operations during the past year, leading to exceptionally good evolvement of banking business results. In January–September 2006, profit before taxes for the Finnish banking business<sup>2</sup> increased by 20% and totalled EUR 1,426 million.

Net interest income has increased. Interest income has continued to grow along with expanding loan stock and higher interest rates. Housing loan volumes have increased further, although the pace of growth has slowed slightly over the past year. As the most commonly used lending rates – Euribor and prime rates – have risen, interest income from individual loans has also been increasing simultaneously. However, net interest income has not risen precisely in line with loan stock growth, since interest rate margins on loans are narrower than a year earlier. Interest expenses have risen more slowly than interest income, because deposit rates follow movements in market rates more slowly than lending rates. On the other hand, as market-based funding increases, banks pay more for raising funds, and the positive effect of a rise in market rates on net interest income is smaller than before.

Banks' other income has increased considerably. Underlying this development was particularly the growth in net fee income and net gains on items measured at fair value. Growth in net fee income was attributable to fees on mutual funds and asset

<sup>2</sup> Includes savings banks, Aktia Savings Bank plc Group, local cooperative banks, Bank of Åland plc Group, Evli Group, eQ Online Group, OP Bank Groups' retail and corporate banking, Sampo Group's banking and investment services and Nordea's retail banking in Finland.

Table 2.

Operating profits of Nordea Group, Sampo Group and OP Bank Group in January–September 2006 by segment		
<i>(EUR m)</i>		
	<i>Operating profit 1–9/2006</i>	<i>Share in operating profit, %</i>
<i>Nordea Group</i>	2,853	
<i>Retail banking</i>	1,896	66.5
<i>Corporate and institutional banking</i>	708	24.8
<i>Asset management</i>	135	4.7
<i>Treasury</i>	120	4.2
<i>Life insurance</i>	81	2.8
<i>Other</i>	–87	–3.0
<i>Sampo Group</i>	1,019	
<i>Banking and investment services</i>	279	27.4
<i>Life insurance</i>	244	23.9
<i>Non-life insurance</i>	503	49.4
<i>Other</i>	–11	–1.1
<i>OP Bank Group</i>	598	
<i>Retail banking</i>	405	67.7
<i>Corporate banking</i>	68	11.4
<i>Asset management</i>	69	11.5
<i>of which life and pension insurance</i>	46	7.7
<i>Treasury</i>	82	13.7
<i>Non-life insurance</i>	58	9.7
<i>Other</i>	–84	–14.0

*Source: Banks' interim reports.*

management. Net gains on items measured at fair value increased in turn as a result of fairly favourable stock market and share price developments in 2006.<sup>3</sup> Volumes of new products such as index-linked loans, share deposits and capital-protected funds have also increased. In addition, some banks have received one-off capital gains on the sale of shares and investment property.

Improvements in banks' financial results have been shadowed by a growth in expenses. Staff costs have

*Income has risen strongly.*

<sup>3</sup> According to the International Financial Reporting Standards (IFRSs) introduced in 2005 banks need to measure securities at fair value instead of reporting their nominal values. Consequently, market price changes are also reflected in listed companies' results.

## The sale of Sampo Bank plc to Danske Bank

The Danish Danske Bank A/S (Danske) and Sampo plc announced, on 9 November 2006, that they had signed a share purchase agreement for the sale of Sampo Bank plc to Danske for EUR 4.05 billion. The transaction is subject to the approval of the relevant authorities, ie the European Commission competition authority, the Finnish Financial Supervision Authority and its Danish counterpart, the Finanstilsynet. The deal has considerable impact on the seller's and buyer's business activities as well as the Finnish banking business. It will also bring about a fundamental change in the competitive situation in the market area formed by the Nordic and Baltic countries.

Once the transaction is executed Sampo plc will be an insurance group comprising If, the largest non-life insurance company in the Nordic countries, and Finland's third largest life-insurance company, Sampo Life. Following the sale of banking and insurance activities, Sampo Group's total assets will decrease to under half of its present level.

Sampo Group will book a capital gain of EUR 2.9 billion on the trade and increase the group's equity capital to EUR 7.5 billion. This is a considerable sum compared with the scope of the Sampo Group's activity.

The deal will provide Danske with a 13–15% market share for Finnish retail banking and close to 20% market share for fund activities. Previously Danske has only had a branch in Finland that was mainly focusing on corporate banking. Danske will also get Sampo Bank's business operations in the Baltic countries where, for instance, Sampo's market share for housing loans has been about 10% in Estonia, about 17% in Lithuania and about 2% Latvia. Danske will also get Sampo Bank's recently acquired banking licence in Russia.

Sampo Bank is fairly small relative to the entire Danske Bank Group. The purchase will increase Danske's balance sheet by about 7%. The synergy gains from the deal are estimated at EUR 82 million per annum and will mainly originate in the rationalisation of IT and administration functions. This corresponds approximately

to the estimated synergy benefits (EUR 91 million) generated from OP Bank Group's acquisition of Pohjola a year before. The purchase will also give Danske an enhanced opportunity to compete for the supply of financial services for large Finnish companies.

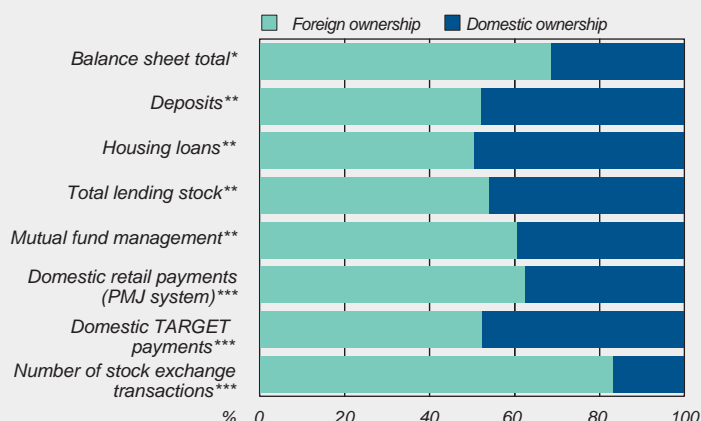
As a result of the deal, foreign operators' aggregated market share in Finnish financial market will increase (Chart A). About half of deposits are held at and lending is granted by banking groups owned by foreign companies, and their market share for fund activities in Finland is about 60%. Foreign operators' market share for payment transfers is about 50–60% and that for stock exchange business is over 80%.

The deal, once realised, has no direct effect on Finnish customers. Over time the effect may be reflected in tightened competition in the household and corporate lending market, changes in distribution channels or new products and services for customers. Competition within the banking business will put a greater emphasis on cost management in Finland as well as other Nordic countries. The effects of the deal on domestic insurance business are primarily indirect. From the viewpoint of Finnish customers, access to high-quality financial services plays a key role. The need for cross-border cooperation between authorities will become still more important.

After the deal has been finalised there will be two distinctively large competitors in the Nordic-Baltic markets: Danske and Nordea. Danske is the largest, in terms of total assets, but Nordea is greater as regards market value. Competition for market shares and customers is likely to intensify in all business segments.

Chart A.

Foreign and domestic ownership in Finnish financial markets after sale of Sampo Bank Group to Danske Bank A/S



\*30 Jun 2006

\*\*30 Sep 2006

\*\*\*Jan–Sep/2006

Sources: Banks' interim reports, Financial Supervision Authority, Central Securities Depository and Bank of Finland.

risen along with increases in wages and performance-linked bonuses. Moreover, banks have recruited more staff. In terms of man-years, banking personnel<sup>4</sup> increased by 1,250 persons by the end of September 2006 from the corresponding period in 2005. Banks' personnel structure is also changing gradually, with banks recruiting new customer service and sales personnel at the same time when the number of personnel in support services is decreasing. Growth in other expenses is mainly driven by bank-specific factors. The most common factors are however higher business volumes, increased focus on sales and marketing, and expansion of business operations to new areas.

<sup>4</sup> Nordea Group, OP Bank Group, Aktia Savings Bank plc Group, Sampo Bank plc Group, local cooperative banks, Bank of Åland plc Group, Evli Group and eQ Online Group.

In January–September 2006 recoveries in respect of earlier loan losses exceeded new loan losses for most banks. Consequently, this profit and loss item had a positive impact on banks' operating profits.

Despite higher expenses banks' cost efficiency has generally improved (Table 3). Efficiency and profitability in the banking business are currently mainly based on growth in income. It is notable that only few banks emphasize cost control, as just a year ago.

Banks' cost efficiency as measured by the cost-to-income ratio was 52% on average in January-September 2006. Accordingly, for each euro spent, banks receive income of about EUR 1.92. There are however considerable differences between banks as regards cost efficiency. The cost-to-income ratio

*Banks' expenses have been increasing.*

Table 3.

Banks' profitability and cost efficiency	Profitability: return on equity, (ROE), %		Cost efficiency: costs, % of income	
	2005	1–9/2006	2005	1–9/2006
Nordea Group	18.0	22.6	56	51
Nordea's retail banking in Finland	38.0	38.0	49	47
Sampo Group	28.4	20.6	–	–
Sampo Group's banking and investment services	23.1	25.2	57	54
OP Bank Group	11.2	12.3	55	55
OKO Bank Consolidated	22.3	9.1	46	41
Savings banks (excl. Aktia), total	–	–	67	61
Aktia Savings Bank plc (Group)	16.3	17.7	57	58
Local cooperative banks, total	–	–	73	62
Bank of Åland plc (Group)	12.5	14.3	64	63
Evli Group	11.3	2.4	91	100
eQ Online Group	13.0	21.7	80	70

*Savings banks and local cooperative banks do not publish ROE data. ROE percentages are calculated by banks themselves and are not fully comparable.*  
Source: Banks' interim reports.

*Banks' capital adequacy has remained good on average.*

of the weakest bank was 100% and that of the best bank was 41%.

Profitability as measured by return on equity (ROE %) has generally improved when compared to 2005. ROE percentages reflect banks' choices on the amount of own funds as well as the development of operating profits. Operating profits in January-September 2006 were positively affected by growth in profit from banking operations and one-off capital gains.

Banks' capital adequacy ratios and buffers against losses are almost at end-2005 levels (Table 4). Growth in operating profits has increased banks'

own funds. At the same time, however, risk-weighted assets have increased on account of the growth in housing loan stock.

Financial conglomerates encompassing both banking and insurance operations calculate their capital adequacy in accordance with the Act on the Supervision of Financial and Insurance Conglomerates (Box 3). After the acquisition of the Pohjola Group, the OP Bank Group has reported capital adequacy figures both in accordance with the Credit Institutions Act and the Act on the Supervision of Financial and Insurance Conglomer-

Table 4.

Banks' capital adequacy and buffers against losses						
<i>In accordance with Credit Institutions Act</i>	<i>Capital adequacy with core capital (Tier1), %</i>		<i>Capital adequacy (Tier1+Tier2), %</i>		<i>Notional buffer for 8% capital adequacy, EUR m</i>	
	12/2005	9/2006	12/2005	9/2006	12/2005	9/2006
Nordea Group	6.8	6.9	9.2	9.5	1,965	2,805
OP Bank Group	13.1	12.4	14.6	14.0	1,993	2,004
OKO Bank Consolidated	9.6	8.2	12.8	12.7	500	558
Savings banks (excl. Aktia), total	16.2	16.2	18.4	18.5	312	337
Aktia Savings Bank plc (Group)	9.8	10.0	15.1	15.1	162	179
Local cooperative banks, total	20.0	19.1	20.0	19.1	203	202
Bank of Åland plc (Group)	7.0	6.9	11.3	11.1	40	39
Evli Group	16.4	18.9	16.4	18.9	24	29
eQ Online Group	17.1	18.1	17.1	18.1	18	21
<i>In accordance with Act on the Supervision of Financial and Insurance Conglomerates</i>	<i>Group's capital adequacy ratio. %</i>		<i>Group's own funds exceeding the minimum amount of own funds. EUR m</i>			
	12/2005	9/2006	12/2005	9/2006		
Sampo Group	196.1	209.7	2,124	2,533		
OP Bank Group	169.0	153.0	1,799	1,554		

*Capital adequacy in accordance with the Credit Institutions Act is measured by the relation of own funds to risk-weighted assets. Capital adequacy in accordance with the consolidation method is measured by the relation of group's own funds to the sum of business sector-specific requirements.*

*Sources: Banks' interim reports and Bank of Finland.*



ates. The transaction arrangements have weakened the group's capital adequacy ratios calculated under both Acts. The minimum amount of own funds as specified in the Act on the Supervision of Financial and Insurance Conglomerates refers to the amount of capital available to cover the entire group's losses.

The current quality of credit portfolios can be assessed as good. Both nonperforming assets and loan losses are small, since bank customers have been able to service debt under favourable economic conditions. Deposit banks' nonperforming assets totalled EUR 434 million at the end of September 2006 (EUR 438 million in September 2005). At the same time, deposit banks reported net recoveries in respect of earlier loan losses amounting to EUR 31 million. A year earlier deposit banks' net loan losses totalled EUR 24 million.

The share of nonperforming assets and loan losses in banks' stock of lending has decreased further.<sup>5</sup> In June 2006 nonperforming assets accounted for 0.31% of the stock of lending and guarantees. Nonperforming assets consisting of credit to households accounted for 0.34% of the stock of lending and guarantees to households. The share of corporate sector nonperforming assets was 0.33%. The largest losses in relative terms originated from credit to the construction, hotel and restaurant sectors as well as to the wholesale and retail trade.

<sup>5</sup> See also article 'Lending quality high, but risks for mortgage holders increasing' in the Financial Supervision Authority's online publication FSA Newline, No. 4/2006.

### **Insurance companies' financial performance was good**

Favourable developments in the operating environment have also been reflected in improved profitability and solvency for insurance companies. For Finnish insurance companies, 2005 was a clearly better than average year.

Finnish insurance companies' aggregated premiums written grew in 2005 by almost 8%. The importance of statutory insurance is one fundamental feature of the Finnish insurance market. About 65% of all premiums written by insurance companies come from statutory pension, motor liability and non-life insurance. Another feature typical of the Finnish insurance market is concentration. In 2005, about 80% of all premiums were written by the four largest insurance groups.

Premiums written for non-life insurance grew by about 10% in 2005. Unit-linked life insurances continued to grow strongly, and their share in the aggregated life insurance savings is increasing. Growth in life insurance premiums written was fuelled exceptionally by the transfer of provisions of voluntary group insurances from pension funds to life insurance companies. Many new voluntary group insurance contracts were entered into, but with smaller contributions collected, and therefore growth in premiums written remained slow. Voluntary pension insurances are also moving increasingly towards unit-linked insurance contracts.

Premiums written by non-life insurance companies grew by more than 6% in 2005. This was attributable to increases in payments on statutory motor

*Quality of banks' credit portfolios has remained good.*

### Financial conglomerates' capital adequacy

In addition to business sector-specific regulations, financial conglomerates comprising banking groups and insurance companies are governed by laws and regulations pertaining to the conglomerate as a whole and based on common European legislation. Such regulations have also been issued for capital adequacy calculation concerning conglomerates.

The calculation of financial conglomerates' capital adequacy is regulated in the Act on the Supervision of Financial and Insurance Conglomerates, and a specific Council of State decree.<sup>1</sup> The said Act defines the principles of capital adequacy assessment and determines the calculation of the conglomerate's own funds and minimum amount of own funds. The Act also provides that a conglomerate's own funds shall cover the minimum amount of own funds required and that the conglomerate shall at all times have a plan to maintain capital adequacy. The Council of State decree in turn contains more detailed provisions on capital adequacy calculation methods and the application of general requirements.

The capital adequacy ratio resulting from a capital adequacy calculation denotes the

<sup>1</sup> Act on the Supervision of Financial and Insurance Conglomerates (2004/699) and the Council of State decree on the calculation of the capital adequacy of a financial and insurance conglomerate (2004/1193).

ratio of a financial conglomerate's own funds to the minimum amount of own funds. A conglomerate's own funds are derived by summing up the own funds of companies belonging to

the conglomerate and deducting therefrom the intra-group own funds of companies belonging to the conglomerate and the internal profit from intra-group transactions. In this respect, the

Table A.

#### Calculation of a financial conglomerate's capital adequacy in accordance with the consolidation method

<i>Balance sheet equity of a conglomerate's parent company</i>	
+	<i>Sectoral own funds not included in parent company's equity</i>
-	<i>Goodwill and intangible assets</i>
-	<i>Distribution of profit from past and current financial year</i>
-	<i>Insurance companies' own funds exceeding the minimum amount of their own fund but which, in problem situations, are not transferable for the benefit of conglomerate's financial sector companies</i>
-	<i>Tax liabilities associated with insurance companies' valuation differences</i>
-	<i>Financial sector companies' own funds exceeding the minimum amount of financial sector companies' own funds but which, in problem situations, are not transferable for the benefit of conglomerate's insurance sector companies</i>
-	<i>Such own funds exceeding company's minimum amount of own funds that are not transferable (eg. certain capital loans)</i>
=	<b><i>Conglomerate's own funds, EUR</i></b>
	<i>Minimum amount of credit institution's own funds (8% of credit institution's risk-weighted assets and commitments)</i>
+	<i>Minimum amount of non-life insurance company's own funds (= whichever sum of premiums written or average claims incurred is larger)</i>
+	<i>Minimum amount of life insurance company's own funds (= sum of premium reserves and pensions commenced)</i>
+	<i>Minimum amount of own funds of companies belonging to the conglomerate and operating in other sectors</i>
=	<b><i>Minimum amount of conglomerate's own funds, EUR</i></b>
	<b><i>Conglomerate's own funds, EUR</i></b>
./.	<b><i>Minimum amount of conglomerate's own funds, EUR</i></b>
=	<b><i>Conglomerate's capital adequacy ratio, %</i></b>

Source: Council of State decree on the calculation of the capital adequacy of a financial and insurance conglomerate (2004/1193).

normal consolidated financial statements principle of the elimination of intra-group items is applied. The minimum amount of own funds is in turn derived by summing up the minimum amount of own funds of each company belonging to the conglomerate. When calculating data on individual companies, the respective sectoral provisions shall apply. For example, credit institutions calculate their figures in accordance with the Credit Institutions Act and life and non-life insurance companies in accordance with the Insurance Companies Act.<sup>2</sup>

Capital adequacy can be calculated in three different ways: the accounting consolidation method, the deduction and aggregation method and the book value / requirement deduction method. A conglomerate can also apply a combination of these methods if it fulfils the requirements stipulated in the above-mentioned Council of State decree. In January–September 2006, both OP Bank Group and Sampo Group used the accounting consolidation method. The calculation formula of the consolidation method is presented in Table A.

Capital adequacy ratios (%) concerning conglomerates

<sup>2</sup> *Credit Institutions Act (1993/1607) and the Insurance Companies Act (1979/1062).*

appear to be much higher than those calculated compliant with the Credit Institutions Act. In actual fact, however, these capital adequacy ratios should not be compared in such a straightforward manner, since the percentages are expressions of different outcomes. The capital adequacy ratio accordant with the Credit Institution Act refers to the relation of own funds to risk-weighted assets and commitments. According to the Act on the Supervision of Financial and Insurance Conglomerates, capital adequacy ratio is the ratio of own funds to the minimum amount of own funds required.

In practice, regulations and provisions on capital adequacy calculation concerning financial and insurance conglomerates are often stricter as regards own funds than rules on the consolidated capital adequacy calculation concerning individual business sectors. For this reason euro-denominated own funds of a company belonging to a conglomerate can even be lower than own funds calculated in accordance with sectoral regulation.

Financial and insurance conglomerates' capital adequacy ratios are strongly influenced by insurance companies' own funds, ie solvency margins. Solvency margins are currently being increased by previous years' profits and large investment

portfolios. Along with the application of the International Financial Reporting Standards (IFRSs), investment portfolios are increasingly being measured at fair value. For this reason share and interest rate market developments are reflected in the value of investment portfolios and therefore also in the book value of insurance companies' balance sheet and the amount of their solvency margins. In response to fluctuations in solvency margins, financial and insurance conglomerates' notional capital adequacy ratios can also fluctuate considerably. Share prices have risen over the past year, and hence insurance companies' solvency margins have also increased.

Assessments on economic capital complement the official capital adequacy ratios calculated in compliance with the accounting consolidation method. Financial sector companies have in recent years developed risk management techniques used to assess risk exposures and capital needed to cover them. The driving force behind this development is the revision of the existing capital adequacy framework (Basel II). In future, both official capital adequacy data and the amount of economic capital will be emphasised in the supervision of financial conglomerates' capital adequacy.

*Results improved owing to good investment returns.*

liability and accident insurances owing to changes in legislation, resulting in higher premium flows for non-life insurers.

Premiums written by companies engaged in statutory pension insurance business increased in 2005 by over 7%. The driving force behind this growth was the improved employment situation, coupled with a rise in the level of earnings. Premiums written by pension insurers have continued to grow at a brisk pace in 2006.

Insurance companies' operating profits and total results improved considerably in 2005. In addition to better results for investment activity, many companies have also managed to increase the efficiency of their operations and cut expenses relative to the scope of their activities. Insurance products are increasingly being sold through networks of financial conglomerates, which helps to enhance expenditure structures. About 80% of premiums written by life insurers and more than half of premiums by non-life insurers are collected through companies belonging to financial conglomerates.

Insurance companies' earnings performance has varied in the first half

of 2006 depending on the composition of investment portfolios. The rise in long-term interest rates and the sharp fall in share prices weakened insurance companies' results in the second quarter. However, the results improved again in the third quarter in response to share price recovery. The composition of insurance companies' portfolios by investment categories varies, with for example non-life insurers having clearly smaller equity holdings than life and pension insurers. The rise in the share of unit-linked insurances is increasingly reflected in the composition of life insurance companies' portfolios. As for pension insurers, the relative share of equity investment has increased. However, this growth is primarily based on higher share prices and less on increased net investments. The regulatory framework governing pension insurers' investment activities was reformed at the beginning of 1997, after which pension insurers have raised the risk level of their investments primarily through equity investments. Although investment returns fluctuate considerably in the short term, the longer-term returns

Table 5.

Operating profits and premiums written in the insurance sector				
<i>Operating profits in the insurance sector (EUR m)</i>	2002	2003	2004	2005
<i>Life insurance companies, total</i>	284	997	658	934
<i>Non-life insurance companies, total</i>	236	200	501	540
<i>Employee pension insurance companies, total</i>				
<i>total result</i>	-1,026*	2,263*	2,242*	4,333*
<i>Premiums written in the insurance sector (EUR m)</i>	2002	2003	2004	2005
<i>Life insurance sector, total</i>	3,263	2,911	2,907	3,194
<i>Non-life insurance sector, total</i>	2,796	2,855	2,957	3,125
<i>Employee pension insurance companies, total</i>	6,431*	7,116*	7,494*	8,046*

\* Excl. Etera Mutual Pension Insurance Company.  
Sources: Federation of Finnish Insurance companies and employee pension insurance companies' press releases concerning financial statements.

on pension insurers' investment have been fairly good. In the period from early 1998 to the end of 2005 the average annual real return on pension insurance companies' investment was over 5%, which clearly exceeds the minimum return requirement on funded assets.

Owing to solid insurance performance, insurance companies' average solvency has risen to a fairly good level.<sup>6</sup> Life insurers' solvency capital grew in 2005 by one-third to EUR 4.7 billion, whereas their solvency ratio<sup>7</sup> rose by 3 percentage points to 19%. Life insurers' solvency improved primarily on account of growth in

valuation differences. Changes in asset values weakened solvency in the first half of 2006 to over 17%. The solvency ratio of the weakest company was slightly over 10%. Finnish life insurance companies' average solvency buffers are fairly solid.

Non-life insurers' solvency capital grew by over 14% to EUR 3.8 billion in 2005. The main contributor was growth in capital and reserves, but growth in equalisation provisions and valuation items also contributed to improved solvency. Non-life insurers' total ability to bear financial obligations, ie solvency capital as a percentage of the amount of premiums written over 12 months, was almost 138% at the end of 2005.

Employee pension insurers' solvency has improved due to good

<sup>6</sup> Insurance Supervisory Authority press release 5/2006 on the solvency of insurance companies, company pension funds and industry-wide pension funds, 30 June 2006.

<sup>7</sup> Solvency ratio = solvency capital as a percentage of technical reserves.

Table 6.

Insurance sector solvency					
	12/2004	12/2005	6/2005	6/2006	Change, %
<b>Life insurance companies</b>					
Capital and reserves, EUR m	2,048	2,428	2,345	2,392	2.0
Solvency margin, EUR m	3,342	4,572	4,437	4,159	-6.3
Solvency capital, EUR m	3,504	4,714	4,601	4,304	-6.5
Solvency margin, % of minimum amount	332.4	422.2	438.8	383.0	
Solvency capital, % of technical provisions	15.3	19.1	19.5	17.3	
<b>Non-life insurance companies</b>					
Capital and reserves, EUR m	1,376	1,592	1,430	1,600	11.9
Solvency margin, EUR m	1,849	2,181	2,114	2,069	-2.1
Solvency capital, EUR m	3,311	3,792	3,615	3,775	4.4
Solvency margin, % of minimum amount	349.7	388.7	394.1	362.5	
Solvency capital, % of premiums earned over 12 months (total ability to bear financial obligations)	130.1	136.3	136.3	133.4	
<b>Employee pension insurance companies</b>					
Capital and reserves, EUR m	220	270	229	281	22.7
Solvency margin, EUR m	9,614	14,650	11,760	13,887	18.1
Solvency margin, % of minimum amount	352.4	371.4	376.5	316.1	
Solvency margin, % of technical provisions	23.0	29.1	27.1	26.5	

Reported figures for capital and reserves also include subordinate loans, if any.  
Source: Insurance Supervisory Authority.

*Banks' structural liquidity risk has increased.*

returns on investment. Solvency margins grew by over 50% to EUR 14.7 billion in 2005. The turbulence of investment markets in spring 2006 weakened solvency to some extent, but the solvency position has remained strong.

### Risk outlook

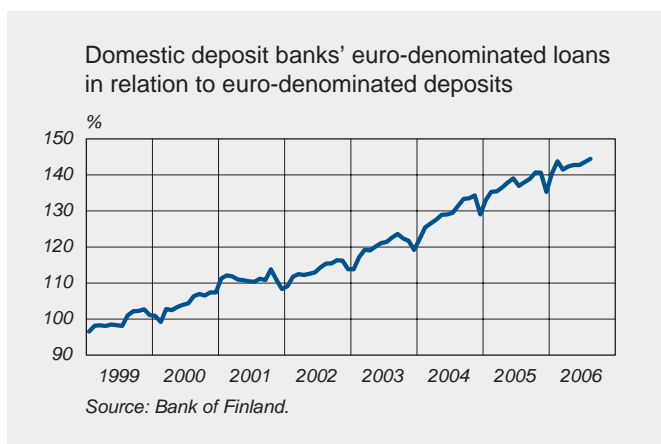
The stock of loans granted by Finnish monetary financial institutions (MFIs) has continued to grow. In September 2006 MFI credit to the public grew by 12.3% on the previous year. The sectoral breakdown reveals that the stock of credit to financial institutions and insurance companies has grown particularly strongly, while growth in credit to households and general government has slowed slightly over the past year. As regards household credit, especially growth in the stock of housing loans has decelerated during the past year as a result of higher interest rates. By contrast, growth in consumer credit and other lending has accelerated slightly. Consumer credit growth was driven by both banks' increased sales and marketing efforts and consumers' willingness to take

consumer credit under favourable economic conditions.

Deposit growth has not been as fast as credit growth. In September 2006 the stock of deposits held at MFIs grew annually by 9.7%. The stock of deposits from households increased by 6.4%, and households have recently made fixed-term deposits in particular. However, competition between banks has not been reflected in deposits on a larger scale. There have only recently been signs that sales campaigns have been launched to tempt consumers into taking fixed-term deposits.

As deposit and lending stocks grow at differing paces banks' balance sheet structures will also undergo changes (Chart 25). In order to cover the difference between assets and liabilities banks, in addition to financing through deposits, have to seek other funding to operate. Accordingly, banks have increasingly acquired financing from the money market and issued debt securities. In the aggregated balance sheets of Finnish MFIs, debt securities issued and liabilities outside the euro area increased by 18.5% compared with September 2005. While the volume of debt securities issued has grown steadily, their maturity structure has changed. An increasingly large proportion of debt securities issued consists of long-term debt securities (with a maturity of over 2 years). Banks have also acquired long-term debt financing through mortgage banks. Over the past year Aktia Real Estate Mortgage Bank and Sampo Housing Loan Bank have issued mortgage-backed bonds.

Chart 25.



Banks' short term liquidity has remained strong, and no shortcomings have been detected in the organisation of monitoring of liquidity risks. However, there is still scope for improvement in contingency planning concerning the acquisition of financing.<sup>8</sup> Contingency planning is particularly important with respect to disruptions, since securing liquidity can be more complicated in disruption situations than in normal situations.

Banks obtain financing mainly from Finland, but they also resort to the international money market. The acquisition and provision of financing outside Finland exposes the Finnish financial sector to international disturbances. However, exposures of the Finnish financial sector and the key transmission channels have changed only marginally in the past year. The

<sup>8</sup> See article 'Deposit banks' liquidity risks decreased' in FSA Newline 4/2006 and article 'Banks liquidity risks under control' in FSA Newline 5/2006\*.

Nordic countries continue to account for the largest share of foreign assets and liabilities, while connections with emerging markets are limited. At the end of September 2006, of Finnish MFI loans to MFIs and other sectors, 73.9% were granted to Finland, 9.7% to Sweden and 7.4% to Denmark. At the same time, 70.2% of deposits held at Finnish MFIs were from Finland, 4.2% from Germany and 3.9% from Sweden.

The importance of liquidity risks has been emphasised in response to changes in balance sheet structure. However, increasing long-term financing can be considered positive because it decreases the maturity mismatch in balance sheets. In addition, the price of long-term financing is more stable than that of short-term financing. Banks' credit ratings have remained at high levels, which is important since good credit ratings denote lower costs from the acquisition of financing (Table 7). Intensified interbank

Table 7.

Ratings of Nordic banks, 21 November 2006						
	Moody's		Standard & Poor's		Fitch Ratings	
	Short-term loan	Long-term loan	Short-term loan	Long-term loan	Short-term loan	Long-term loan
<i>Aktia Savings Bank plc</i>	P2	A3	–	–	–	–
<i>Aktia Real Estate Mortgage Bank plc</i>	–	Aa2	–	–	–	–
<i>OKO Bank plc</i>	P1	Aa2	A1+	AA–	F1+	AA–
<i>Sampo Bank plc</i>	P1	A1	A1	A	–	–
<i>Sampo Housing Loan Bank plc</i>	–	Aaa	–	–	–	–
<i>Nordea Bank AB</i>	P1	Aa3	A1+	AA–	F1+	AA–
<i>SEB AB</i>	P1	Aa3	A1	A+	F1	A+
<i>Svenska Handelsbanken AB</i>	P1	Aa1	A1+	AA–	F1+	AA–
<i>Swedbank AB</i>	P1	Aa3	A1	A+	F1	A+
<i>Danske Bank A/S</i>	P1	Aa1	A1+	AA–	F1+	AA–
<i>Jyske Bank A/S</i>	P1	A1	A1	A	–	–
<i>DnB NOR Bank ASA</i>	P1	Aa3	A1	A+	F1	A+
<i>Kaupthing Bank hf.</i>	P1	A1	–	–	F1	A

Source: Moody's, Standard & Poor's and Fitch Ratings.

*Credit risks continue to pose an important risk group for banks.*

competition for deposits would lead to higher costs from the acquisition of financing.

The majority of Finnish deposit bank group credit is granted to households (Chart 26). The bulk of household loans consist of housing loans. Although long-term and sizable housing loans may cause problems for individual households, it is unlikely that, should the economy develop as

forecast, housing loans cause significant loan losses for banks. However, the fact that banks have partly loosened collateral requirements on housing loans increases the risk of credit losses.

Lately banks have increased their efforts to sell consumer credit, leading to an annual increase of 13% in the stock of consumer credit granted by MFIs. Part of consumer credit is collateralized and part is uncollateralized, but on the whole consumer credit is riskier for banks than housing loans. Nevertheless, similar to housing loans, consumer credit hardly leads to loan losses threatening banks' stability, at least in the near future.

At the end of June 2006 credit to non-financial corporations accounted for about one-third of Finnish deposit bank groups' total lending, with the stock of corporate credit increasing annually by 7.4% on average. Bank credit to manufacturing corporations has hardly increased, while credit to construction and property businesses is growing at a clearly above average rate. Therefore, the risk profile of banks' credit to non-financial corporations is changing.

Corporate lending has, by historical standards, been considerably riskier in nature than credit to households. However, the economic situation does not indicate that banks' risks relating to corporate lending would materialise, at least in the short term. Banks have also actively sought to manage corporate lending risks by closely monitoring the quality of investment portfolios. The upcoming revision of the capital adequacy

Chart 26.

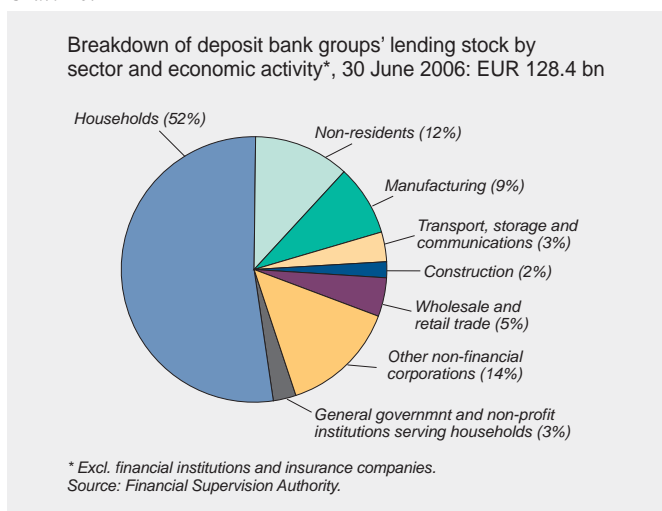
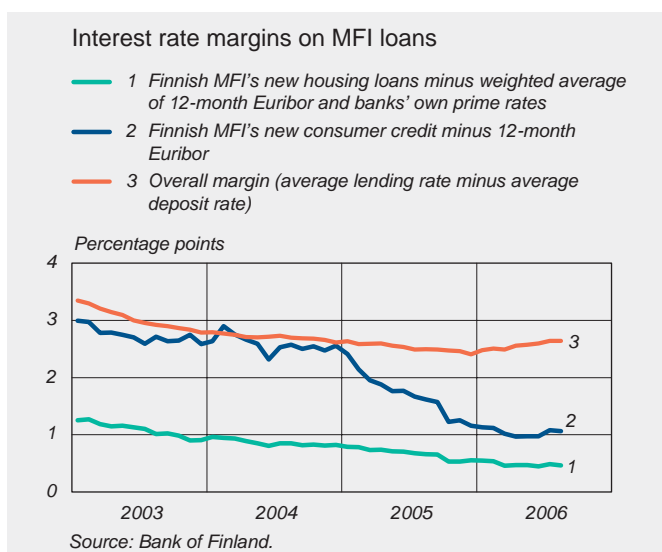


Chart 27.





framework (Basel II) also provides incentives for banks to improve their risk management practices. In addition, market development has also enabled more efficient diversification of credit risks.

The ongoing interbank competition for market shares has had an impact on interest rate margins on loans granted to households. Both housing loan and consumer credit margins have narrowed further from the past year's levels (Chart 27). However, in 2006 they have hardly narrowed at all. Already about half of new housing loans have been granted with interest rate margins of under 0.6 percentage points.<sup>9</sup> In the long run, narrow interest rate margins can neither wholly cover operational costs nor risks, let alone profit margins, if banks cannot manage to raise compensatory income from other services.

Credit risks continue to constitute a major risk group for banks. Banks' short-term credit risks have remained small, thanks to favourable domestic operational environment and stable situation for banks' most important debtor sectors.

Major structural changes in the Finnish financial market are visible, among others, in the great differences between groups' balance sheet structures. They reflect the diverging emphasis put on domestic and foreign activities as well as diverging business models and strategies. For this reason groups' risk profiles also differ considerably (Charts 28 and 29).

<sup>9</sup> FSA Newslines 4/2006.

Financial conglomerates' and banks' strategies crystallize in the acquisition of new customers, seeking of rapid growth and the increase in market shares. Banks' good financial performance in recent years has largely been based on rapid growth in business

Chart 28.

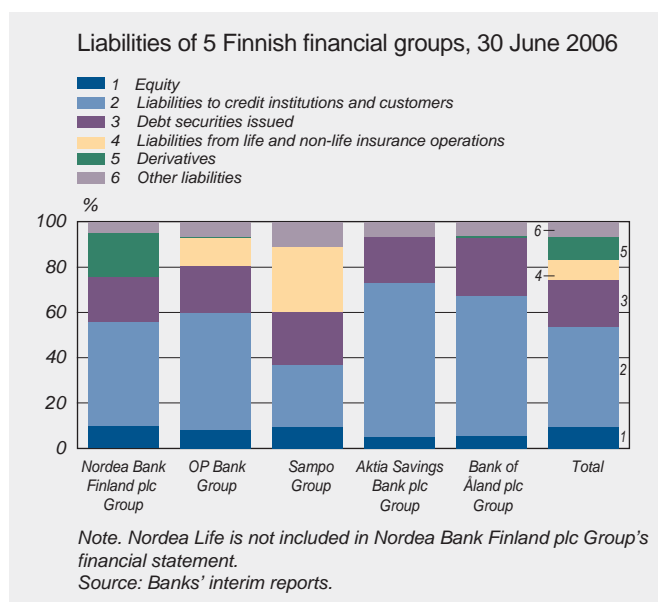
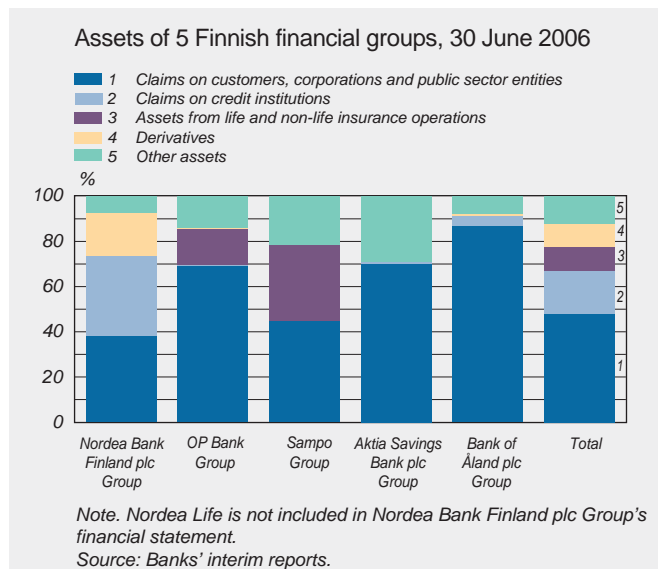


Chart 29.



*Conglomerates' operational risks are significant*

operations and the broadening of their income base. Banks have for example been able to compensate for the narrowing of housing loan margins in their financial results. Considerable deceleration of growth constitutes an evident risk in the strategy chosen. Should growth come to a halt, earnings performance would weaken rapidly. However, the probability that this risk realises in the Finnish financial market is currently small.

The structural change has led to increased operational risks. With sectoral overlap and increasing internationalisation, burgeoning links as well as common systems and processes are transmitting potential problems fast and further. Operational risks can be realised in large costs as a result of, for example, problems relating to payment systems or telecommunications.

Threats arising from fast and strong structural change are also connected with supervision, regulation and crisis management. Cooperation between banks and insurance companies manifests in many ways. Monitoring developments in different forms of cooperation poses a challenge for authorities. It is most important to ensure that no dead zones are formed in supervision. Authorities have signed Memoranda of Understanding (MoUs) in case of the realisation of risks and crisis situations, and they have carried out exercises based on different crisis scenarios at the domestic and international level.

Banks' income risk arising from changes in market interest rates has remained relatively unchanged over the

past year.<sup>10</sup> Should market interest rates rise by one percentage point, banks' net interest income would increase by EUR 300 million year-on-year (balance sheet interest rate risk). By contrast, the interest rate sensitivity of banks' trading portfolios has increased, and an interest rate rise of one percentage point would lead to impairment losses of more than EUR 400 million. Banks have, to some extent, increased the use of interest rate derivatives for hedging against interest rate risk. The exchange rate risk has increased slightly as a result of growth in open foreign exchange positions.

Insurance companies' investment risk is also relatively significant. A rise in interest rates or a large fall in share prices would weaken financial sector results considerably.<sup>11</sup> In addition, insurance companies are increasingly exposed to risks in other market segments. Owing to low interest rate levels, insurance companies have begun to spread risks by investing more on new products, such as private equity and hedge funds. For instance, pension insurers' investment in these investment types increased to about EUR 5 billion in June 2006, which is over 7% of their total investment.

Stress tests (Box 4) and indicators describing the condition of the banking system (Box 5) point to a favourable situation of the Finnish financial sector. Financial sector share prices have developed positively. However, the rise

<sup>10</sup> Article 'No change in Finnish deposit banks' aggregate income risk' in FSA Newline 4/2006.

<sup>11</sup> Estimations (incl. VaR figures) of the impact of interest rate and share price risks on banking and insurance operations in supplementary financial information to Nordea Group's and Sampo Group's interim reports and their financial statements.

in the sector's share prices has not fundamentally deviated from the average share price developments. In 2006 there have been no changes in Finnish banks' credit ratings, which are roughly as good as those of other large European banks.

The situation for the Finnish banking and insurance sector is stable. There are no significant threats endangering the sector's stability in the short term. Banks' aggregated financial results are likely to improve in 2006 compared with the 2005 level, unless some unexpected negative events occur before the end of the year.

### Stress test of the Finnish banking sector

The Bank of Finland and the Financial Supervision Authority (FIN-FSA) have cooperated in calculating estimates of the impact of macroeconomic disturbances on the condition and risk-bearing capacity of the banking sector. The impact has been estimated using models in which macroeconomic factors are assumed to affect banks and their customers as they have, according to statistical analyses, affected them in the recent past. The estimation of effects also makes use of data collected by the FIN-FSA on the sensitivity of banks' balance sheet items to changes in market interest rates and market prices. The calculations have been prepared for the largest banking groups.

The simulation has commenced with an imaginary scenario of weak economic growth, covering a period 2006–2008.<sup>1</sup> The scenario assumes

<sup>1</sup> The stress calculations have been made in spring 2006 and they are based on data available at the time.

that the Finnish economy experiences a strong negative shock including, at first, a considerable weakening of household confidence and a little later a collapse in the demand for Finnish exports. The weakening of confidence is reflected in a rise in investors' return expectations (risk premium), which in turn strongly decreases both private consumption and investment. The export shock is assumed to hit Finland hard (for example the ICT sector) but have only a slight effect on other euro area countries.

The scenario also contains an assumption of rising short and long-term interest rates leading to a steepening of the yield curve. Growth in risk premium and permanently higher market interest rates will have a negative impact on housing prices. Housing (and business premise) prices will clearly fall in 2006, slightly more in 2007 and remain unchanged

in 2008. The scenario also assumes that share prices crash in 2006 and fall further slightly in 2007 and 2008. According to simulation calculations performed with the Bank of Finland macroeconomic model, real GDP growth would be slightly negative in the stress scenario in 2006–2007 and turn only slightly positive in 2008. The unemployment rate would increase by 3 percentage points compared with 2005. However, the assumed negative economic development would not be as extreme as the recession of the early 1990s in Finland. The estimated development of the stress scenario's key variables during the period under review is shown in Table A.

The estimated impact of the stress scenario on banks' net interest income is fairly small. According to the calculations, growth in the stock of bank lending would come to a halt in 2006 and lending stock would decrease in 2007–2008.

Table A.

#### Development of key variables in a stress scenario

	2005	2006 <sup>f</sup>	2007 <sup>f</sup>	2008 <sup>f</sup>
GDP, vol. % change	2.9	-0.3	-0.2	0.7
Unemployment rate, % of labour force	8.4	11.3	11.4	10.5
3-month Euribor, % *	2.2	3.0	3.3	3.6
5-year interest rate, % *	2.9	3.9	4.3	4.8
Share prices, % change	22.1	-35.0	-5.0	-5.0
Property prices, % change**	9.0	-15.0	-5.0	0.0

<sup>f</sup> = stress scenario forecast

\* Annual average

\*\* Housing price index: whole Finland

Source: Bank of Finland's calculations.

However, banks' net interest income would only weaken in one year, fuelled by a clear contraction in lending volumes. The assumed rise in short-term interest rates would improve banks' net interest income relative to 2005. Higher market interest rates would have a greater impact on banks' interest income than on interest expenses, although banks have become more dependent on market-based funding. Bank deposits continue to be the main source of bank funding, and interest rates paid on deposits do not rise in full with increases in market interest rates. In addition, when lending decreases, banks could replace part of the market-based funding by deposits, which are cheaper than money obtained from the market.

Banks' other income would develop clearly much more weakly than expected in the stress scenario. The halt in lending growth, weakening of economic activity and a plunge in share prices would lead to a decrease in banks' fee income from share trading, asset management and payment transfers as well as income from securities brokerage. In addition, higher long-term interest rates and lower share and property prices would result in impairment losses in all years under review. The stress

calculation assumes that banks are unable to notably cut costs during the review period and that costs would remain at the 2005 level.

Loan losses would increase immediately in 2006, on average to 0.8% of credit stock, and would increase further to 1.1% in 2007.<sup>2</sup> This increase is estimated to come to a halt in 2008, based on the assumption that banks and other economic agents would be able to gradually adapt their activities to weakened economic conditions. Loan losses are expected to originate, in accordance with the distribution of loan losses realised in recent years, primarily in corporate credit.

Banks' operating profits are estimated to decrease considerably in the stress scenario, but remain mainly positive in the entire period under review. The negative impact of shocks would be visible particularly in 2006. This would be the primary year for the realisation of impairment losses in respect of debt security and share portfolios, and at the same time loan losses would begin to increase rapidly. According to the calculations, banks' profit growth would turn positive again already in 2007

<sup>2</sup> A typical feature of stress test calculations is that banks' loan losses are expected to be realised exceptionally fast compared with previous experiences. The calculations tend to exaggerate the stress caused to banks by the assumed shocks, rather than underestimate it.

when losses arising from market risk would decrease clearly. On the whole, however, banks' operating profits in 2006–2008 would only make a fraction of profits recorded in 2005, and banks' profitability would weaken considerably.

Economic development in line with the stress scenario would not lead to wide-ranging problems in the Finnish banking sector in the period under review.

## Indicators for measuring the condition of the banking system

The financial stability analysis uses so-called stability indicators<sup>1</sup> to help in the performance of ongoing surveillance. They can be divided into indicators describing historical development on the one hand and forward-looking indicators on the other. Stability indicators can be individual variables (such as indebtedness for the economy) or they can be constructed by combining several individual variables.

The condition of the banking sector is in a key position as regards financial stability. Accordingly, a significant part of stability indicators refers to the banking sector. This box deals with two banking sector indicators in particular and the picture they give on the development and the current situation of the Finnish banking sector.

### Stress index for the banking sector

The Bank of Finland has developed a composite indicator applicable to describe the situation in the Finnish banking sector, so-called stress index.<sup>2</sup> Unlike the traditional binary banking crisis indicators, this

stress index is quantitative and it measures the evolvement of banks' condition on a continuous scale. The method combines into one index several types of variables selected on the basis of previous research results. The purpose of developing the composite indicator is to better enable the description of banks' condition and changes in these conditions than what is possible by assessing individual variables.

The stress index includes five underlying variables:

1. Banks' profitability (operating profit / balance sheet)
2. Equity / balance sheet
3. Banks' credit losses / balance sheet
4. Changes in interbank deposits<sup>3</sup>
5. Change in share price index for banks<sup>4</sup>.

The link of the first three variables to stress in the banking sector is highly evident: good profitability, solid equity and small loan losses reflect soundness of the banking sector. Interbank deposits were incorporated in the index because well-informed banks are typically most sensitive in reacting to

other banks' or banking groups' problems and limit their counterparty risk by cutting credit limits. Changes in share price index for banks describe in turn investors' views on the state and future prospects of the banking sector. This is the only forward-looking variable in the stress index. All other variables describe historical development. The index is computed by using annual data.

The underlying variables incorporated in the stress index were ultimately determined by data availability and the ability to describe the banking crisis experienced in Finland in the early 1990s. The index has been computed by using the simple variance-equal weight method, a common technique in constructing similar indicators.<sup>5</sup>

Chart A illustrates an annual stress index for the Finnish banking sector in 1980–2005. High index values denote high stress for the banking sector. The Finnish banking crisis years of 1991–1995 are clearly visible in the chart. For these years the stress index shows considerably high levels. 1992 was the hardest crisis year according to the index. The stress index indicates that the current situation for the Finnish banking sector is stable.

<sup>1</sup> See the list endorsed by IMF on key stability indicators (core set of financial soundness indicators) [<http://www.imf.org/external/np/sec/pn/2003/pn0371.htm>].

<sup>2</sup> The Bank has used as an example the stress index developed by Hanschel and Monnin for the Swiss National Bank (Measuring and Forecasting Stress in the Banking Sector: Evidence from Switzerland. BIS Papers 2005).

<sup>3</sup> The largest relative negative change in the total amount of deposits between banks in 12 months. Includes also bank holdings of certificates of deposits issued by other banks.

<sup>4</sup> The largest relative change in financial sector share index in 12 months.

<sup>5</sup> The variables are first standardised by dividing the deviation of each observation from the mean by the standard deviation of the variable, after which the standardised variables are aggregated into one single index by using identical weights.

Decomposition of the stress index helps to identify factors contributing most to the banking sector stress. Practically all variables in the index pointed to increased stress during the banking crisis years (Chart B). Large loan losses and weak profitability were the main contributors to stress. Finnish banks' strong capitalisation in particular has contributed to the favourable condition of the banking sector prevailing in recent years.<sup>6</sup>

The index depicts the situation at the respective points in time and does not carry forward-looking information on stress developments. However, it is observed (Chart A) that the stress index tends to remain positive (negative) for several years if it has gained positive (negative) values, which means that banking sector conditions typically change relatively slowly. This does not however exclude the possibility of very sudden changes.

Since financial statement information is needed to build the index, values can only be calculated for the index with a time lag, which restricts the usability of the index. The Bank of Finland continues to develop the stress index further to improve its precision.

<sup>6</sup> The picture of Finnish banks' strong capitalisation is partly erroneous. It is based on the Nordea Group's internal arrangements to allocate more capital to Nordea Bank Finland than other segments of the group.

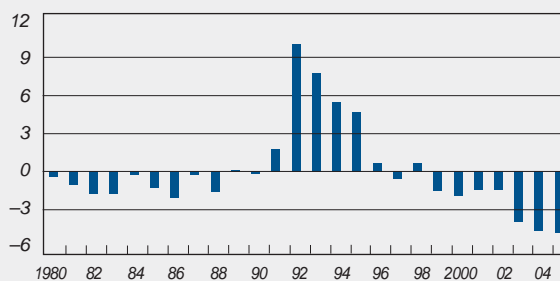
### Banks' distance-to-default indicator

The Bank of Finland also uses indicators based on market information in monitoring the condition of the banking sector. The interest in using such indicators in banks' stability analysis has increased consider-

ably in recent years. In efficient markets, prices of financial instruments basically contain all relevant information on market participants' economic situation and prospects. For this reason market-based indicators should react to changes in a company's situation earlier than traditional

Chart A.

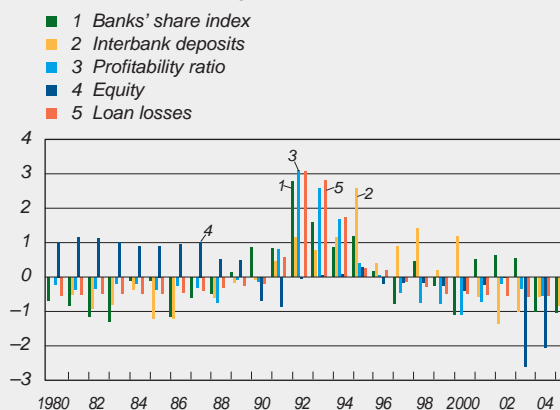
Stress index for the Finnish banking sector, 1980–2005



Sources: Helsinki Exchanges, banks, Statistics Finland and Bank of Finland.

Chart B.

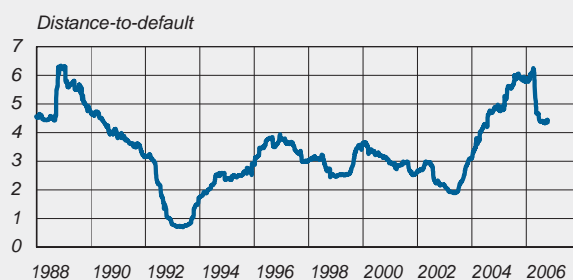
Decomposition of the stress index for the Finnish banking sector



Sources: Helsinki Exchanges, banks, Statistics Finland and Bank of Finland.

Chart C.

Distance-to-default indicator for Finnish banks,  
1 Jan 1988–15 Nov 2006



Sources: Helsinki Exchanges, banks and Bank of Finland.

indicators based on financial statement information.

One widely-used market-based measure is the distance-to-default indicator (the DD indicator). It is based on an option pricing model,<sup>7</sup> in which equity is seen as an option to a company's entire assets. According to this thinking, information on share prices and balance sheet liability items can be used to make a market assessment on how close a company is to a point at which its market value falls below the nominal value of its liabilities (default).<sup>8</sup>

<sup>7</sup> Black, F – Scholes, M. (1973) 'The Pricing of Options and Corporate Liabilities'. *Journal of Political Economy*, 3.

<sup>8</sup> See for example <http://www.moodyskmu.com/research/whitepaper/ModelingDefaultRisk.pdf>.

The DD indicator can be calculated for individual listed banks and, by combining data on individual banks, for the whole banking sector. Chart C presents the balance sheet-weighted aggregated DD indicator for Finnish banks in 1988–2006.<sup>9</sup> A high indicator value reflects a sound banking sector. The DD indicator shows that the turning point predictive of the banking crisis was in early

<sup>9</sup> Calculating the DD indicator requires determination of the volatility of equity's market value. This calculation method has a considerable impact on the behaviour of the indicator. A long period in the determination of volatility leads to more stable behaviour than a short period, albeit that means the indicator reacts with a time lag. Share market liquidity should also be considered when choosing the time period. The DD indicator in Chart C is based on the volatility of equity calculated as the standard deviation of return observations in the 12 previous months.

1989. The indicator fell smoothly thereafter until mid-1992, when the decline accelerated. The DD indicator suggests that the Finnish banking sector was most vulnerable in 1993, after which the situation improved. Starting from mid-2003, the DD indicator points to a considerable improvement in the Finnish banking sector's condition, and even though the indicator has fallen in 2006, banks' position remains strong.

The fact that the DD indicator is based on share price information, which is primarily forward-looking in nature, supports the use of the indicator in banks' stability analysis. Research conducted until now also supports the forward-looking strength of the indicator. In addition, the DD indicator can also be calculated at frequent intervals, unlike other balance sheet-based indicators.

Indicators presented in this box are used as tools in the Bank of Finland's financial stability analysis. Both indicators give a similar picture on the development of the Finnish banking sector from the banking crisis to the present situation. They paint a favourable picture of the present condition of the banking sector.



# Financial market infrastructure

The infrastructure providing basic services to the financial markets is adapting to the global economy. The future developments are however, not yet clear, and from the perspective of individual market participants the operating environment will be facing major changes. Promoting efficiency of euro area payment transmission is one of the key policy objectives, and making too many compromises would be disastrous for the development and integration of the economic area. Efforts to improve efficiency of payment flows are justifiable, due to the current solid operational reliability of the systems. The payments area initiative and plans to integrate the securities markets infrastructure nevertheless involve major challenges for Finnish and Nordic market participants. Does global and EU-wide integration leave room for any other regional markets?

## Payment systems

### Oversight assessment

The efficient and reliable operation of payment systems as well as clearing and settlement systems is a prerequisite for financial stability. These systems ensure that the settlement of payment transactions and securities trades are completed according to instructions and are final. The Bank of Finland's statutory task is to ensure – as part of its oversight activities – that the systems fulfil the requirements set. This section

assesses the state of and changes implemented or planned in payment systems important to the Finnish financial markets. Securities clearing and settlement systems are assessed in a separate subsection.

Systemically<sup>1</sup> important payment systems refer to large-value payment systems as well as retail payment systems and instruments important to the general public. The operation of Finnish payment systems and their customers is also dependent on the key international payment systems. The value of cross-border payments and foreign exchange trades is nowadays so high that any threats facing them affect the entire financial market and even the real economy.

The Bank of Finland has assessed the domestic systemically important payment systems against core principles approved by the Eurosystem. The Bank of Finland also continuously monitors the operation of these systems. The assessments show that Finnish payment systems fulfil all the requirements. The development of these systems has taken into account issues required by oversight, and their risks are managed well. Despite the positive general assessment on these systems changes in the operating environment will affect the risk profiles of the systems. The systems are acquiring new members and the number of transactions transferred via them is growing. At the same time, there are major ongoing development projects

*Payment systems are facing major changes.*

<sup>1</sup> A risk is systemic if the inability of one system participant to fulfil its obligations renders also other participants unable to fulfil their obligations. If materialised, a systemic risk may threaten financial stability.

necessitated by integration, which will result in changes in or the replacement of current systems. The payment system infrastructure is entering a new era. It is crucial that the systems operate reliably and efficiently also in times of change.

The Bank of Finland's Real-Time Gross Settlement system (BoF-RTGS) is part of the Eurosystem's TARGET (Trans-European Automated Real-time Gross Settlement Express Transfer) system. It has served the Finnish financial markets well, and the amount and value of payments settled through it have stabilised. By contrast, the number and value of payments sent and received from abroad continues to grow, by almost 10% on average, year-on-year.

Finnish TARGET payments differ slightly from the overall use of TARGET. At the intra-Member State level, on average 63% of total TARGET payments are below EUR 50,000, while 10% are above EUR 1 million.<sup>2</sup> In contrast, of Finnish

<sup>2</sup> ECB Monthly Bulletin (September 2006).

domestic payments, only approximately 38% are below EUR 50,000 and approximately 39% are above EUR 1 million.<sup>3</sup> Finnish participants seem to settle in central bank money only the most significant fund transfers, whereas smaller payments are transferred via POPS (system for interbank express transfers) and retail payment systems. Other euro area countries, with the exception of France, do not have a national system for interbank transfers similar to POPS any longer.

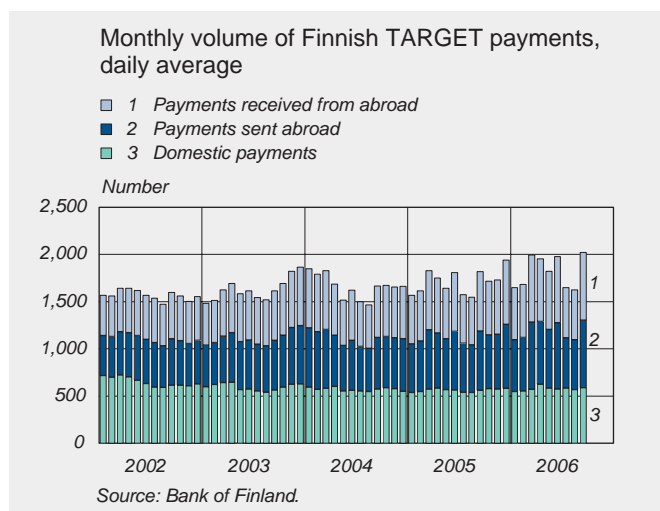
Regarding inter-Member State TARGET payments, it is noteworthy that the proportion of customer payments is increasing rapidly.<sup>4</sup> The system was not originally designed for retail payments. The fact that 52% of payments transferred via the central banks' large-value payment system are customer payments is most probably due to differences in infrastructure of various euro area countries. In addition, of total inter-Member State TARGET payments, 64% were below EUR 50,000, whereas less than 47% of outgoing payments from Finland were below EUR 50,000. It is clear that, in continental Europe, TARGET is currently also a competitive channel for transferring smaller customer payments.

TARGET's overall availability has continued to improve, despite minor disruptions taking place almost on a weekly basis. They have not however, posed a threat to the processing of payments or financial stability. The system's availability has continuously remained close to 99.9%. The availa-

<sup>3</sup> Source: Bank of Finland's BoF-RTGS statistics.

<sup>4</sup> ECB Monthly Bulletin (September 2006).

Chart 30.



bility of the Finnish component has remained good throughout 2006, with the exception of an interruption in July, due to hardware failure. Despite the disruption, payments could be processed, thanks to the well prepared and practiced contingency plans. The critical infrastructure's reliance on information technology is a key question in risk management. Identifying risks and preparing for various types of problem situations is an integral part of the operation of a reliable and efficient payment and settlement system (Box 6).

Following the decision by the Swedish central bank (Sveriges Riksbank) not to join TARGET2, the ESCB's next generation real-time gross settlement system, several Swedish participants have joined the Finnish component of TARGET. The BoF-RTGS has consequently become an important system for transferring Swedish euro-denominated payments. The integration of these new participants as well as their training, demands resources from the Bank of Finland. With participants operating from abroad, various types of error situations seem to occur quite frequently. Even if the disruptions are not serious, they still cause extra work and thus weaken the efficiency of the system. All the participants of the system must bear the responsibility for the operation of this infrastructure important to society. Disruptions experienced by market participants cause eg manual orders at the Bank of Finland (Chart 31). Developments similar to those in September, if they were to continue, would be alarming.

International payment systems important for the Finnish financial markets have operated well. These systems include EURO1 and STEP2<sup>5</sup> operated by EBA Clearing, as well as systems operated by CLS Bank.<sup>6</sup> SWIFT,<sup>7</sup> on the other hand, is a supplier of critical infrastructure services.

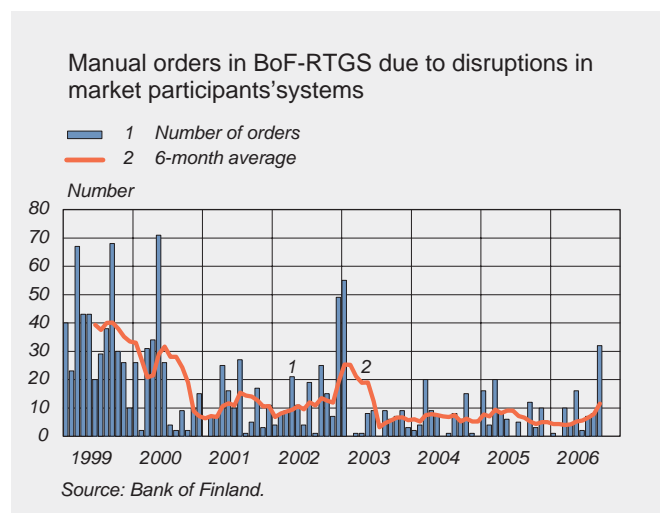
The TARGET2 system, which is being constructed, will replace with a Single Shared Platform the current TARGET system, made up of the national central banks' RTGS systems and the ECB payment mechanism. The market participants will join the new system via national central banks. Finland is scheduled to migrate to TARGET2 in February 2008, with minimum effects on account holders.

The Eurosystem has not yet taken a final decision on the pricing scheme

*Disruptions often become more frequent as the distance between participants grows.*

<sup>5</sup> Large-value and retail payment systems operated by the European Banking Association, see <http://www.abe.org/>.  
<sup>6</sup> CLS Bank is a bank specialised in foreign exchange settlement, see [http://www.cls-group.com/cls\\_bank/index.cfm](http://www.cls-group.com/cls_bank/index.cfm).  
<sup>7</sup> See <http://www.swift.com/>.

Chart 31.



### Information technology makes a good servant but a bad master

Banking and payment transmission are fully dependent on modern information and communication technology (ICT). There is no going back to the cash journal and quill. The management of ICT risks is as integral a factor of the reliable operation of modern day financial market infrastructure as eg liquidity risks.<sup>1</sup>

ICT risks are usually assessed as part of operational risk. The development of risk management is supported by eg the FIN-FSA Standard 4.4b Management of operational risk.<sup>2</sup> It is essential that the risks have been analysed and that the impact assessment and the risk management procedures have been approved by management. Contingency planning and instructions for disruptions are a key part of risk management. International frameworks applied in the inspection of information systems<sup>3</sup> are useful tools also in system development.

Information technology also involves a strategic risk concerning how ICT policy fulfils the business strategy of a company. Strategic areas of ICT

management include architecture, technologies applied, timing and form of system renewal, as well as resourcing, ie sourcing solutions<sup>4</sup>. Strategic decisions are taken when business goals are transformed to information technology requirements.

Decisions are always compromises between perfection and the solutions available. ICT should essentially enable business operations, not steer them.

ICT is used to create efficient processes. Efficiency is assessed based on process completeness and continuity. If the solutions seem efficient on the drawing board but repeatedly require contingency measures, the total process is inefficient. The automation of contingency procedures does not improve the situation. In addition to the applications, the business entity is, as the owner, responsible also for the overall system.

From the perspective of ICT suppliers, the distance between user and production is insignificant. However, as the distance grows, the number of intermediary links used to transfer information increases, as well as the risks. Isolating and removing disruptions becomes more difficult. No global enterprise denies the existence of

cultural differences. All this has to be taken into consideration particularly in global sourcing, in which political and geographical risks have to be assessed regarding both the system and the communication networks. A delay caused by distance, lasting only a fraction of a second, may be crucial in a real-time trading system in which transactions are processed automatically.

Contingency measures for centralised systems processing huge volumes of transactions may prove to be impossible.

Financial markets integration – and the Single Euro Payments Area (SEPA) as part of it – opens up the whole of Europe to payment and clearing and settlement systems. The global economy enables the development or operation of ICT systems from the other side of the world. Investment calculations should also take into account the risks caused by distance and differences in business cultures in order to identify the actual costs. Only the business entity itself can assess the impact of different risk profiles and technological solutions. ICT management must make these differences clear to business management. In a modern operating environment that is fully dependent on information technology and data communication, business must manage information technology.

<sup>1</sup> *The assessment of systemically important payment systems deal with liquidity risks under core principle 2. ICT risks are assessed in paragraph seven under safety and operational stability. See. <http://www.bis.org/publ/cpss68.pdf>.*

<sup>2</sup> *See the FIN-FSA's website [http://www.raboitustarkastus.fi/Eng/Regulation/FSA\\_standards/Standards\\_by\\_date\\_of\\_issue/etusivu.htm](http://www.raboitustarkastus.fi/Eng/Regulation/FSA_standards/Standards_by_date_of_issue/etusivu.htm).*

<sup>3</sup> *Eg ISO, ISF or ISACA.*

<sup>4</sup> *Here sourcing refers to the acquisition and use of resources in general. The concept covers all forms of sourcing ie, insourcing, outsourcing, global sourcing, etc.*

for the use of various TARGET2 services. These decisions will affect the number of payments transferred via it. Some calculations show that the prices for ancillary system settlement, by eg PMJ in Finland, may become so high that these systems could start settling their payments in commercial bank money. This would not be a positive development in terms of risk management.

TARGET competes with commercial payment systems, particularly in customer payments. As a large value payment system EBA Clearing's EURO1 is substantially smaller than the current TARGET. EBA's system for retail payments, STEP2, has grown driven by the fairly rapid increase in the number of its members. The system has been boosted by the SEPA (Single Euro Payments Area) services it offers. In September 2006, Luxembourg banks started to use STEP2 in their domestic credit transfers. Finnish banks have also discussed with EBA Clearing on developing a SEPA-compliant payment transfer system.

PMJ is a critical system for domestic retail payments. Its operation has been stable, and the only problems have been caused by the failure of some participants to deliver settlement data in time. Even in these situations, the system does not cause a systemic risk because, in line with its rules, a bank not meeting all the requirements for settlement will be excluded from it.

The Finnish public's confidence in the payment instruments, such as payment cards and Internet banking services, has remained good. Phishing, ie the stealing and misuse of Internet

banking access codes, which has increased alarmingly worldwide, as well as identity theft has at least so far remained relatively rare. This is mainly due to the small number of Finnish-speaking people (in relative terms) and the awareness of Finnish consumers. Cooperation between Finnish authorities in combating cyber crime seems to be functioning well.<sup>8</sup> It is of utmost importance that the public gets quick and appropriate information on ICT threats and on how to protect themselves.

#### Payment system development

The Single Euro Payments Area (SEPA) is the largest initiative on payment system reform in Europe. The aim is to reform the payment infrastructure so that euro-denominated payments can be transferred in the entire euro area at the very least, in the same way as domestic payments. For this purpose, the European Payments Council (EPC), a joint body for European banks, has developed standards on interbank credit transfer and direct debit. It is also preparing standards on payment cards and the operation of EFTPOS terminals. These reforms require changes in banks' systems and operations. The new SEPA-compatible payment instruments and payment systems will in future be assessed on the same extensive oversight criteria as the current systems. Risk management, security, equal treatment of participants, operational reliability, as well as efficiency, are important features of the future system.

<sup>8</sup> Both the banks and the media, supported by the Finnish Communications Regulatory Authority (Ficora) and the FIN-FSA, have actively informed the general public about such threats.

*Europe needs customer-oriented payment services.*

Compared to continental Europe, Finnish private customers and companies widely use ICT, for instance in banking. The automation degree is high; only about 5% of total payments, including card payments, are paper-based.<sup>9</sup> This enhances not only the operations of banks but also that of each payer and payee. In companies, electronic payments enable the automation of financial administration. The introduction of electronic invoicing, approval of invoices, as well as automated booking of electronic account statements and structured reference numbers, reduces the amount of mistakes and routine work in financial administration, as well as speed up the closing of books and improve the quality of financial information. By adding to automated financial administration also payroll administration, archiving and statutory reporting, companies will improve the productivity of their financial administration and thus be able to allocate resources to its core business. The open standards in payment transmission that have been in use in Finland for quite some time have enabled the provision of multibanking software tailored to companies of different sizes. As a result of electronic invoicing provided by banks, also SMEs can obtain these services.<sup>10</sup> SEPA seeks to ensure the same type of development in the entire euro area. This is a tough challenge because traditionally, Europeans are not very keen on utilising innovations.

<sup>9</sup> The Finnish Bankers' Association, see [http://www.pankkiyhdistys.fi/sisalto\\_eng/upload/pdf/statistics.pdf](http://www.pankkiyhdistys.fi/sisalto_eng/upload/pdf/statistics.pdf).

<sup>10</sup> An electronic invoice aimed at consumers is also already available. It will be launched extensively in early 2007.

In creating a Single Euro Payments Area, the objective has been to develop general EU-wide standards on payment transmission. Barriers to this objective however, still remain. Firstly, the standards already defined apply only to inter-bank transmission of payments – in other words, banks can continue to use their own technical solutions in their customer interfaces. Secondly, several features that have proven efficient in Finnish payments, ie structured reference numbers or recurrent payments, will not automatically be available in SEPA. Instead, they will be additional services. According to current plans, these additional services can be provided only between banks that have separately agreed on it. This may weaken the possibility of customers to tender banks against each other and change banks, which in turn is against the objectives of SEPA.

The positive thing about SEPA preparations is that security of electronic banking (between customers and banks) is becoming a matter to be agreed on jointly. A study by the EPC on customer authentication and communication encryption methods applied in various countries shows that the number of techniques applied is high. According to the study, two-factor authentication of customers will probably be introduced in the near future also in countries in which it is not yet being used. The Eurosystem has emphasised the importance of ICT security and the need to define minimum standards on the security of electronic banking.<sup>11</sup>

<sup>11</sup> ECB (2006) Towards a Single Euro Payments Area, fourth progress report. [Http://www.ecb.int/paym/pol/sepa/html/index.en.html](http://www.ecb.int/paym/pol/sepa/html/index.en.html).

The possibility for banks to accept payment orders from customers based on only the International Bank Account Number (IBAN) is also a welcome development. It would be unreasonable to require that customers provide on all European payments, including current domestic payments, both the IBAN and the international Bank Identifier Code (BIC), instead of the current national account number. Electronic invoicing is not yet that widespread even in Finland that user-friendliness of payments could be ignored.

The use of cards in terminals as well as standards on EFTPOS terminals will be harmonised in SEPA. This harmonisation is based on the EMV chip card standard which has been introduced extensively also in Finland. Banks in several countries have already announced that they will discontinue their domestic card programmes and start offering only cards issued by international brands – which already function both in Europe and globally. This is however, not enough. The use of payment cards involves several functions and costs that are not transparent to card users. The objective of SEPA is to create equal conditions for retailers regarding the acceptance of card payments. Standardisation of EFTPOS terminals and transactions allows retailers to tender also acquirers against each other. Unfortunately the definitions are likely to be finalised only in early 2008, which poses a threat to the timely implementation of the standards.

Finnish banks are well prepared for the introduction of the new

payment instruments. Already in February 2006 the banks issued a national migration plan, which will be updated regularly. Each bank will change over to SEPA services according to its own schedule.

Finnish banks have also actively promoted the development of efficient electronic payment transmission in SEPA. This involves two major challenges. Firstly, banks still have to agree on the production of additional services that would maintain the current level of service and meet customers' requirements also in SEPA. Secondly, payment systems have to be developed so as to enable the cost-efficient harmonisation of current domestic and intra-Europe payment processes. As SEPA services are distinctively European, special national arrangements are hard to justify. On the other hand, several European countries – sometimes even at the initiative of their central banks, have decided to implement transitional arrangements that would allow them more time to upgrade their payment processes.

The banks are now taking major decisions that may have long-term effects on their future development. Implementation of the first phase of SEPA does not seem to fulfil the expected efficiency requirements. The European Commission has thus expressed its preparedness to take action in order to create a more modern payment system.

*Banks must inform market participants how they will implement SEPA services.*

*Would a global  
marketplace  
support  
Nordic market  
needs?*

## Securities clearing and settlement systems

### Operating environment

Structural change in the securities market infrastructure has been less than solid in recent years. This year however, there has been evidence of changes really starting to take place. Current projects include ownership arrangements both at stock exchanges and in post trading industry. At the EU level and in smaller entities preparations are underway for the harmonisation of the industry. One of the most important parts of harmonisation is the removal of barriers identified by the Giovannini Group.<sup>12</sup> Particularly the European Central Securities Depositories Association (ECSDA) and SWIFT have been making efforts to remove these barriers. Moreover, the European Commission has sought to reduce differences in national clearing and settlement systems, in cooperation with market participants.<sup>13</sup> Each separate system involves its own type of risk profile, which requires particular vigilance and foresight from the part of both market participants and public authorities. A harmonised infrastructure would create synergy gains – supervision would be more efficient and operational reliability would improve.

<sup>12</sup> The report 'Cross-Border Clearing and Settlement Arrangements in the European Union' issued by the Giovannini Group in November 2001 lists 15 barriers to the development and efficient operation of cross-border clearing and settlement. A report issued by the same group in April 2003 includes measures to remove these barriers and to increase the efficiency of European clearing and settlement.

<sup>13</sup> Clearing and Settlement Advisory and Monitoring Expert (CESAME), Legal Certainty and Fiscal Compliance groups.

Planned initiatives on the integration of clearing and settlement systems are abundant, but the number of realised projects is thus far low. Ownership arrangements of marketplaces have further increased the need for integration initiatives. Progress is nevertheless hampered by non-harmonised legislation. Thus far the integration of central securities depositories has been driven by changes in ownership structure. The harmonisation of systems has progressed at a much slower pace.

The first stage of the Euroclear group's harmonisation project was completed in autumn 2006. Harmonisation is also the target of a project by the Nordic Central Securities Depository (NCSD) formed by Swedish and Finnish central securities depositories. The project has, however, made slow progress, and it now seems that it will involve only these two participants. The Danish and Norwegian central securities depositories are also planning to improve interoperability between their clearing and settlement systems. The central securities depositories of the Baltic countries are also cooperating with the same objective. In the Greek and Cypriot securities markets, joint clearing and settlement systems were introduced in autumn 2006.

The current operating environment is not balanced from the point of view of stock exchanges. They are seeking major benefits at an accelerating pace, by way of ownership arrangements. Openings by large stock exchanges have already been witnessed in 2006, with stock exchanges seeking solutions



to the question whether to form a global stock exchange or a major European stock exchange. The outcome is not yet in sight. It is nevertheless clear that global competition in the field has started. Year 2007 seems to be decisive in this respect.

The consolidation of these marketplaces has a key impact on the future post trading environment. It is clear that the interoperability and efficiency of European central securities depositories must improve. This is the objective of the Eurosystem's latest initiative, which seeks to integrate into its service concept the securities settlement functions of at least the euro area member states. The initiative is referred to as TARGET2-Securities (T2S). If the Governing Council of the ECB approves the initiative the settlement services of a central securities depository joining the new system would in future be based on the use of a common infrastructure. The final decision is expected in 2007, following consultation with market participants.

The technical harmonisation of current systems would improve the efficiency of securities settlement and result in cost savings. According to the ECB, T2S would also facilitate cross-border management of collateral and liquidity management in the EU. T2S is also a major step towards a single Eurosystem interface with the market participants. If T2S is implemented, it will come into operation in the second part of the next decade. It is therefore important that central securities depositories implement ongoing projects, even if their life cycle remained short.

Mergers between Nordic stock exchanges started already five years ago, and this autumn the aggressive growth strategy continued when OMX acquired the Icelandic Stock Exchange and a small stake in the Oslo Stock Exchange.

A larger market is likely to increase efficiency and enhance the position of the stock exchanges. It will also improve market liquidity, which in turn attracts new operators – including international investors. It must however, be noted that most of the major brokers were members of the Helsinki Stock Exchange already prior to the recent mergers. OMX has achieved efficiency gains also by harmonising its trading rules and systems.

The number of companies subject to public trading as well as that of companies registered in the book-entry system has, however, not grown. In Denmark and Sweden, OMX launched the First North marketplace, an alternative marketplace for small companies. The Finnish asset transfer tax system, which differs from that of the other Nordic countries, does not encourage a speedy launch of the marketplace in Finland. OMX is nevertheless considering launching a similar marketplace also in Helsinki, possibly by the end of 2007.

Overall, the Nordic countries have been considered one of the most integrated financial markets. Nevertheless, based on the balance of payments we can not yet conclude whether the integration of stock exchanges has increased the proportion of Nordic securities in Finnish portfolio investments (Box 7).

*Are actions by central banks needed to remove barriers to integration?*

### Is the integration of Nordic stock exchanges reflected in Finnish portfolio investments?

The integration of Nordic stock exchanges was boosted in September 2003 as a result of the merger of the operators of the Stockholm and Helsinki exchanges. In February 2005, the current OMX Group was combined with the Copenhagen Stock Exchange, and by the end of 2006 the Icelandic Stock Exchange will join OMX. True integration has taken place with the harmonisation of practices applied by exchanges owned by OMX, with the aim of improving efficiency and the attractiveness of the area in the eyes of investors.

The harmonisation of trading practices has gone as far as allowed by national differences in legislation, whereas the harmonisation of disclosure requirements of listed companies and the listing process still continues.

The most important technical change involving trading took place in September 2004 when the Helsinki Stock Exchange implemented a common Nordic trading

platform. Regulations on counterparties currently include common trading rules and membership requirements on brokers. The most recent change – particularly for investors – was the launch of the Nordic List, harmonised indices as well as listing requirements. However, Nordic integration does not always progress in parallel. An example of this is the adoption of the European practice of trading in ‘round lots’ of one share at the Helsinki Stock Exchange in September 2006, whereas the Stockholm Stock Exchange and the Copenhagen Stock Exchange still apply the round lots practice.

An answer to whether integration has influenced the development of markets and ownership structures can be found in the balance of payments statistics, under portfolio investment. Finnish equity investments in the Nordic countries grew by approximately 32% between end of 2003 and the second quarter of 2006. Two-thirds of this is due to changes in the level of valuation of shares.

Of the Nordic countries, Sweden has been the focus of Finnish direct equity investments. In the past three years, the proportion of Sweden of Finnish investments in Nordic countries has been approximately 84% on average, and approximately 17% of total Finnish outward investments.<sup>1</sup> Overall, the country shares have remained fairly stable.

Integration of Nordic stock exchanges has not thus far increased cross-border ownership (Table A). This may be partly due to the higher costs caused to investors by cross-border transactions. One might well ask what the target group of the integrated Nordic market is: is it non-Nordic area investors or local small investors? For example Finnish institutional investors seem to invest in countries that are members of the monetary union. Whether the Nordic List means the end of differences in cross-border direct equity investments remains to be seen.

<sup>1</sup> *The large role of Sweden is due to the high number of ownership arrangements between Finnish and Swedish companies.*

Table A.

#### Finnish outward equity investments, EUR million

	2003Q4	2004Q1	2004Q2	2004Q3	2004Q4	2005Q1	2005Q2	2005Q3	2005Q4	2006Q1	2006Q2
Norway	207	229	295	312	431	510	610	713	853	910	853
Sweden	4,509	3,763	4,011	4,217	4,439	4,707	4,618	4,999	5,259	5,917	5,381
Denmark	346	357	372	355	359	392	385	409	468	439	432
Nordic countries*)	5,062	4,349	4,679	4,884	5,229	5,610	5,613	6,121	6,581	7,266	6,666
Nordic countries, proportion*),%	24.3	19.5	19.9	20.7	21.3	22.0	19.9	19.5	19.8	20.0	20.6
Outward, total	20,794	22,273	23,464	23,556	24,508	25,528	28,148	31,390	33,222	36,306	32 421

\*) Excl. Iceland.

Source: Bank of Finland

### Operational reliability of the Finnish Central Securities Depository

This year, for the seventh time, the bank of Finland assessed the Finnish Central Securities Depository's (APK) securities clearing and settlement system for debt instruments (RM system). The assessment is based on the Eurosystem user standards and its purpose is to ensure that the infrastructure of the financial markets does not itself act as a source of disruptions.

According to the latest assessment, the RM system continues to fulfil all the requirements of the ESCB user standards. If Nordic central securities depositories introduce a common settlement platform, it will also have an impact on the operation of the APK's RM system. In terms of collateral management for central bank credit operations, it is essential that the system is located in the euro area.<sup>14</sup>

In the past 12 months, securities clearing and settlement systems have not experienced serious disruptions and the systems have on the whole operated reliably (Table 8). Particularly the availability of the securities issuance system has been excellent, despite two errors occurring in the book-entry register in the first part of the year. These errors could have had a serious impact on the operation of the markets. In principle, an error in the book-entry register may cause APK major losses because it has strict liability for information in the book-entry register, despite the transaction-specific liability for damage being limited by law.

<sup>14</sup> ECB (15 September 2006) General documentation on Eurosystem monetary policy instruments and procedures, Chapter 6.

In 2006, the on-exchange trades settled in the APK's HEXClear system fulfilled, on average, the recommendations on settlement issued by the International Securities Services Association (ISSA).<sup>15</sup> It could be concluded that the settlement rate of brokers has improved, due to more constant operations and the fact that an increasing number of brokers settle their trades on schedule. The differences between the settlement rates of the most constant and the weakest broker are nevertheless significant. It is somewhat alarming that often the same brokers recorded the majority of below-normal performances (>97.5%, in terms of number of trades).

Assessment of the settlement rate of only remote brokers shows a slightly different trend (Chart 32). Firstly, the number of remote brokers on the

<sup>15</sup> ISSA has issued recommendations on the minimum level of settlement (based on number and value of trades).

Table 8.

Key figures of the Finnish Central Securities Depository's clearing and settlement systems 9/2005–9/2006 (%)			
	Average (12 month)	Range Lowest	Highest
<b>Availability</b>			
RM system (Ramses)	99.95	99.70	100
OM system	99.77	99.00	100
Centralised register	99.88	99.50	100
Issue service	100	100	100
<b>Settlement rate</b>			
RM system (Ramses)	99.60	99.30	100
OM system (HEXClear)	99.30	98.98	99.54
Settlement rate of the slowest and the most constant clearing parties		69.38	100

Source: APK.

*Operational reliability of brokers has improved, but some remote brokers repeatedly settle trades too late.*

Helsinki Stock Exchange has risen, and compared to 2005, a growing number of them fulfilled the ISSA standard on settlement each month. On the other hand, it seems that some remote brokers record below-norm performances more regularly than before, month after month. The results have thus become increasingly polarised. It shows that not all participants use securities lending to prevent or repair settlement failures.

European marketplaces are trying to decrease the frequency of settlement fails by introducing buy-in procedures where they are not yet available.<sup>16</sup> In Finland, the situation in general is good, as shown by the preliminary results of a HEXClear simulation.<sup>17</sup>

<sup>16</sup> If a clearing party's trade is not settled before the deadline, the buy-in procedure is applied to buy the missing shares, at the expense of the failing clearing party.

<sup>17</sup> In the simulations, the Bank of Finland BoF-RTGS PSS2 simulator was used. See [www.bof.fi/sc/bof-pss](http://www.bof.fi/sc/bof-pss).

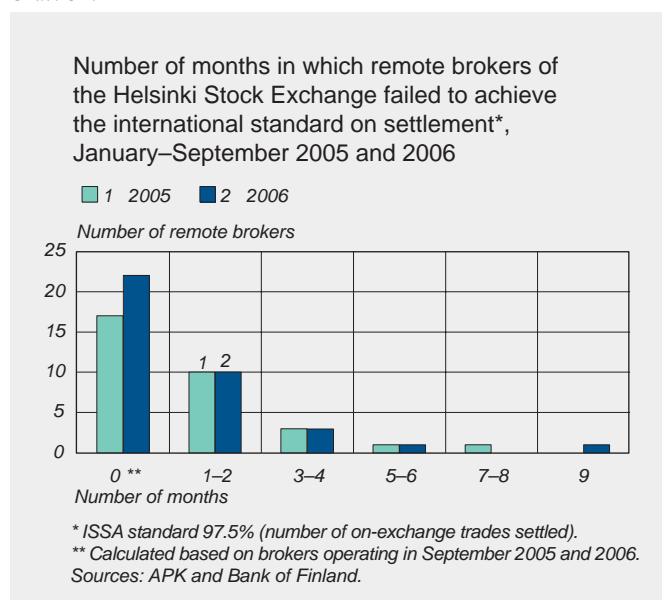
### System efficiency

Measures of reliability (Table 8) show that the APK's systems continue to operate reliably. The performance level has remained broadly unchanged since 2005. Even so, isolated cases of disruptions are bothersome because they require immediate action. That, in turn, requires extra resources in continuity and contingency measures, thereby reducing the efficiency of the financial market.

The number of trades settled in HEXClear has risen considerably in the past year. The APK has successfully increased the processing capacity of the system, and last year it decided to restrict the amount of enrichment data<sup>18</sup> on settlement transactions. Both these changes have proven to be necessary. Restricting the number of accounts to which a settlement transaction can allocate securities and cash may weaken the usability of the system because it forces participants to divide major corporate actions into several entries. The simulation data used by the Bank of Finland nevertheless shows that this type of transactions occur only occasionally.

From the perspective of efficiency, the basic problem of the APK remains the divided structure of the book-entry system. The objective must be to develop a clearing and settlement system for both debt instruments and equities trades. The current divided structure hampers the creation of a settlement system in line with interna-

Chart 32.



<sup>18</sup> Enrichment data is used to define the allocation of settlement transaction entries in the monetary and book-entry accounts of the HEXClear system.

tional models. From a user's perspective, the efficiency of the RM system is hampered by the lack of a modern interface.

In its report, the Giovannini Group, which aims at increasing the efficiency of the financial markets, invited the European Central Securities Depositories Association (ECSDA) to study the removal of three barriers to securities clearing and settlement. Of the total of 15 barriers, thus far only the eighth barrier has been successfully removed (the barriers defined in the report are listed in Table 9).

In its report, the Giovannini Group also noted that intra-day settlement finality is important for the efficiency of clearing and settlement and for decreasing the likelihood of systemic risk (Barrier 4). Adherence to the operating hours of TARGET by the

national central securities depositories (Barrier 7) was also considered necessary. The report also noted that differences in national rules on the processing of corporate actions, beneficial ownership and custody may create barriers to efficient cross-border operations (Barrier 3).

Standards prepared by the European Central Securities Depositories Association (ECSDA) promote the removal of barriers to securities clearing and settlement. Members of the association – 17 central securities depositories – have committed themselves to achieving the standards. However, fulfilling the standards by the depositories themselves does not in itself lead to the removal of the barriers. In addition to central securities depositories, also other market participants have to adjust their operating principles to enable the

Table 9.

<b>Giovannini barriers to efficient cross-border clearing and settlement</b>		
<i>Barriers</i>		<i>Responsible</i>
<i>Barriers related to technical requirements/market practice</i>		
Barrier 1	National differences in information technology and interfaces	SWIFT
Barrier 2	National clearing and settlement restrictions that require the use of multiple systems	National governments
Barrier 3	Differences in national rules relating to corporate actions, beneficial ownership and custody	Local agent banks, ECSA, ECSDA
Barrier 4	Absence of intra-day settlement finality	ECSDA, ESCB–CESR
Barrier 5	Practical impediments to remote access to national clearing and settlement systems	National governments, ESCB–CESR
Barrier 6	National differences in settlement periods	More studies required
Barrier 7	National differences in operating hours/settlement deadlines	ECSDA, ESCB–CESR
Barrier 8	National differences in securities issuance practice	IPMA, ANNA
Barrier 9	National restrictions on the location of securities	National governments
Barrier 10	National restrictions on the activity of primary dealers and market makers	National governments
<i>Barriers related to taxation</i>		
Barrier 11	Domestic withholding tax regulations serving to disadvantage foreign intermediaries	National governments
Barrier 12	Transaction taxes collected through a functionality integrated into a local settlement system	National governments
<i>Barriers relating to legal certainty</i>		
Barrier 13	The absence of an EU-wide framework for the treatment of interests in securities	National governments
Barrier 14	National differences in the legal treatment of bilateral netting for financial transactions	National governments
Barrier 15	Uneven application of national conflict of law rules	National governments

Source: The Giovannini Group (November 2001: 'Cross-Border Clearing and Settlement Arrangements in the European Union').

*Harmonisation of settlement operating hours is in the hands of market participants.*

removal of barriers to harmonisation caused by technical requirements and market practice.

In the Giovannini report, harmonisation of the operating hours of central securities depositories was stated as the most important task. In its progress report<sup>19</sup> published in 2005, ECSDA pointed out that the operating hours of six central securities depositories do not comply with those of TARGET, the APK's HEXClear system being one of them. As a member of ECSDA, the APK is committed to adjusting to the operating hours of TARGET. Differences due to the time zone have not caused any problems but Finnish market participants have not been willing to participate in settlement activities on national holidays. In its reply to the NCS D consultation on the Nordic Single, the Bank of Finland stated that compatibility with the operating hours of TARGET is

<sup>19</sup> ECSDA (2005) 'ECSDA final report of WG5 on Barriers 4 & 7', 3 May 2005, see www.ecsda.com.

important, and that the participants should seek harmonisation.

Even though HEXClear uses the continuous settlement model, the delivery of securities versus payment is started later than the TARGET system opens and later than required by ECSDA's standards. There are no technical obstacles for advancing the delivery of securities instead the practise is based on the operation of market participants. Transactions made over cross-border links can nevertheless be executed from the start of the TARGET operating day. They are affected without DVP functionality.

Removing the barriers listed in the Giovannini report is challenging. The initial situation differed considerably across countries. The original deadline of three years for the removal of barriers has proven impossible to achieve. The market participants are, however, committed to improving settlement and have shared the responsibility for achieving the objective, so in that respect the Giovannini reports have achieved their goal.

The settlement of Finnish equities trades is heavily focused on a few clearing parties (Table 10). The situation seems to be getting increasingly challenging each year. Since the biggest clearing parties are also owners of the APK's parent company, it must be ensured that also the other parties' needs are taken into consideration in the management of the systems. All parties must be equally informed of development projects.

The NCS D Group, formed by the Swedish and Finnish securities deposi-

Table 10.

<b>The largest clearing parties' market share in on-exchange trades in volume terms January–August 2004–2006</b>			
<i>(%)</i>			
<i>Clearing party</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>
<i>Nordea Bank Finland plc</i>	34	40	44
<i>Svenska Handelsbanken, Finnish branch</i>	11	9	12
<i>Skandinaviska Enskilda Banken AB, Helsinki</i>	6	9	8
<i>eQ Bank Ltd</i>	7	8	7
<i>Sampo Bank / Mandatum Stockbrokers Ltd</i>	5	5	4
<i>Opstock Ltd</i>	5	5	3
<i>Kaupthing Bank</i>	–	–	3
<i>OMX Broker Services AB*)</i>	11	6	–
<i>Other clearing parties, total</i>	21	18	19

– = Included in the category 'Other clearing parties, total'.  
 \*) Formerly: OMX Back Office and Custody Services.  
 Sources: APK and Bank of Finland.

tories (VPC and APK), is currently implementing a single system platform initiative (Nordic Single). The project, which commenced in 2005, is a natural continuation of the integration development that is aiming at increased efficiency. NCSD seeks also to increase the participants' awareness of future changes in services, structures and systems. Currently, each Nordic central securities depository has its own systems for clearing and settlement operations, book-entry services, and the processing of corporate actions. The synergy benefits achieved by common technical solutions should be clear, and introduction of a single system platform would increase the attractiveness of the NCSD to various participants. Broad-mindedness would be useful at this stage of structural change.

The NCSD should continue to cooperate actively with market participants and authorities in drafting the final version of the Nordic Single model. Based on market participants' views the NCSD issued in early spring 2006 a consultation paper. In May 2006, the NCSD published a description<sup>20</sup> on a model that would provide the optimal conditions for an efficient clearing and settlement system. The description takes into account the views of the private sector project group, the results of the consultation as well as the system assessments.

If the Nordic Single project is implemented by utilising one of the current applications, the solution must

be based on a thorough efficiency analysis. Results of the HEXClear simulation show the modularity and flexibility of the APK's current system. At the same time, the NCSD shall ensure continuous book-entry and clearing and settlement services in Finland under both normal and exceptional circumstances. Moreover, it shall ensure that the new technical solution, consisting of clearing and settlement and account systems, does not involve capacity bottlenecks and that the solution is modern enough.

The ambitious project is based on a vision of the future operating environment of the Nordic securities market. The near future will show whether the plan is too ambitious after all and whether it is suitable for the overall development of European securities markets. Harmonisation of operating principles, systems and risk management may prove to be too challenging to be executed simultaneously. It is worth while keeping in mind that even a small step in the right direction is eventually more useful than hastily prepared, inadequate – and possibly wrong – solutions.

### **System liquidity**

Introduction of the HEXClear system has increased flexibility in the liquidity management of equities market clearing parties. The reliability and efficiency of equities clearing and settlement have also improved. The impact of HEXClear on the liquidity usage in equities clearing and settlement, ie the amount of liquidity tied up in clearing and settlement, was examined in more

<sup>20</sup> NCSD (18 May 2006) 'High level description, Nordic CSD clearing and settlement model', see [www.ncsdgroup.com](http://www.ncsdgroup.com).

*Is Nordic Single  
too big a  
challenge?*

detail in the 2005 Financial Stability report, and neither the system nor the market structure have since undergone major changes. Concentration usually decreases the amount of liquidity needed. In the latest simulations, its impact on liquidity need was, however, not tested.

The clearing and settlement of equities trades in the event of disruptions was modelled using data provided by the APK in 2005. Findings of the simulation show that payments in the BoF-RTGS system would probably not be disrupted even in extreme problem situations involving equities clearing and settlement. This in part reflects the relatively small amount of liquidity tied up in equities clearing and settlement, as opposed to the overall amount of liquidity involved in intra-day liquidity management of the counterparties to monetary policy. The same conclusion can be drawn also from the fact that clearing parties usually withdraw the funds deposited with the system only at the end of the settlement day, although the majority of

trades are settled in the day's first optimisation run at 10 a.m. Different types of test situations and their impact on the HEXClear system are examined in Box 8.

The amount of liquidity tied in the clearing and settlement system for money market and debt instruments (RM system) has decreased as a result of falling trading volumes.



Box 8.

### Stress testing of the APK's HEXClear system

The operation of the Finnish Central Security Depository's (APK) HEXClear system in a disruption situation was examined by simulation. The simulation was based on actual transaction data, covering one month and supplied by the APK. The purpose of the analysis was to identify the type of possible disruptions interfering with settlement and to quantify the extent of these assumed disruptions in view of the structure and method of application of the HEXClear system. In the modelling, the Bank of Finland's payment and settlement system simulator was used.<sup>1</sup>

In the period under review, nearly 906,000 transactions were settled in HEXClear. Of these, on-exchange trades accounted for 83% in terms of number and for 29% in terms of settled book-entries. The rest were other settlement transactions, so-called 05 transactions, which include clearing transfers and off-exchange trades. The majority of on-exchange trades are settled on the third business day following the trade date.

Chart A presents the proportion of transactions that is ready for settlement as the settlement day approaches. Readiness for settlement requires that the transaction data has

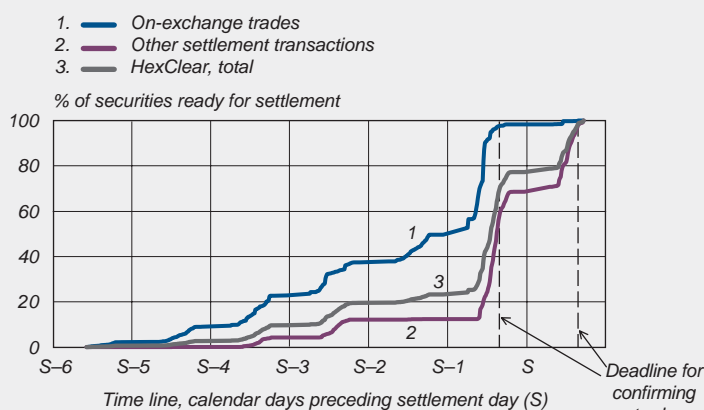
been confirmed and that the clearing parties in question have submitted to the APK all the allocation data on the transaction. Allocation data is used to define the registrations of settlement transactions in the final book-entry accounts of the direct holding account structure. The time line in the chart refers to calendar days, ie it covers the total time available in a disruption for fixing the situation. The y-axis in the chart refers to number of book-entries in transactions ready for settlement to show the impact of large trades as well as the free-of-payment transactions.

Approximately 50% of book-entries in on-exchange trades become ready for settlement only on the day preceding settlement (S-1) and

32% of the book-entries in other settlement transactions only on the settlement day (S). The vertical lines show the deadlines involved in the process. On day S-1, by 3.30 pm, such clearing transfers must be confirmed, which are linked to on-exchange trades and in which the custody of book-entries in the clearing transfer is not one of the clearing parties of the on-exchange trade. Transactions settled on the trade date must be confirmed on day (S), by 3.30 pm. The first deadline makes the clearing parties submit the required allocation data of the majority of 05 transactions. At the same time, also the remainder of the on-exchange trades are made ready for settlement, even if this deadline does not directly apply to them. In this respect, market

Chart A.

Proportion of transactions ready for settlement before start of the settlement day



Sources: Bank of Finland and APK.

<sup>1</sup> See [www.bof.fi/sc/bof-pss](http://www.bof.fi/sc/bof-pss).

practice differs from the rules and regulations of APK, which require that the allocation data be entered as soon as the trade is confirmed – ie in the case of on-exchange trades, two days prior to the actual settlement day (S-2).

The simulation examined a situation in which an operational disruption of the internal systems of one clearing party would, for 24 hours, prevent the delivery of allocation data to the HexClear system. The proportion of transactions that did not become ready for settlement due to the disruption was on average 4% of the total daily value of settlement transactions. The proportion of transactions that remained unsettled due to the disruption was 2–16%, depending on the size of the clearing party experiencing the disruption. Overall, the impact of a disruption on day (S) was limited on average.

When the simulation was based on the assumption that the disruption would take two settlement days, the impact of the disruption was more severe. In this case, the proportion of transactions that did not become ready for settlement was, in value terms, on average 11% (range 5–60%). The proportion of transactions that remained unsettled due to the disruption was on average 13% (range 8–66%). However, of the transactions admitted for settlement, on average only 4% were not completed.

The results of the simulations show that the optimisation process of the HEXClear is able to process the majority of transactions that are admitted for settlement, even if a large proportion of the transactions would be excluded from the settlement causing securities or money shortages on the accounts. The majority of trans-

actions become ready for settlement only during or after the day preceding settlement. It is therefore crucial that the APK's and the clearing parties' systems used in the settlement process follow the deadlines set for them. Also continuity plans must thus be duly made and APK and clearing parties must be able to swiftly switch to standby facilities, when necessary.<sup>2</sup>

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<sup>2</sup> *The APK's information security guidelines require that participants' systems that are significant from the perspective of book-entry register or clearing operations must be doubled and that the backup systems must be ready for operation within 24 hours of the occurrence of a severe error situation.*

# Financial system policy

The likelihood of future financial crises simultaneously involving several European countries has increased in response to the constantly growing number and size of large cross-border financial groups. It is therefore of the essence that regulation and supervision of financial markets effectively prevent international financial crises and that the relevant authorities are well-prepared to address any crisis situations that may emerge. From the point of view of safeguarding financial stability, it is problematic that financial groups and infrastructure operators are increasingly acting in the international forum, whereas their supervision and crisis management within the EU mainly continue to be a national responsibility.

Financial system policy can be defined as measures by the relevant authorities to develop regulation and supervision concerning financial companies and markets, including payment and settlement systems, prevent financial crises and ensure crisis management, and participate in other forms of development of financial markets and infrastructure.

The financial sector is one of the most strictly regulated business sectors. Such broad-based regulation has been motivated in particular by the need to protect the economy against systemic risks. Systemic risks refer to a threat that serious problems encountered by a sub-component of the financial system (bankruptcy of a large bank, for instance) spill over to the other parts of

the system, thereby jeopardising core system operations, such as intermediation of finance and the transmission of payments.

Also one of the main objectives of financial supervision is the prevention of problems experienced by financial companies in order to avoid the emergence of systemic crises that undermine financial stability. To attain this goal, supervisors seek to ensure in particular the adequacy of supervised entities' capital levels and risk management systems.

Financial market participants themselves also need to meet their responsibilities for the functioning of the system. Accordingly, financial markets apply a number of various self-regulatory mechanisms and standards based on voluntary action that complement the official regulatory and supervisory framework.

Nevertheless, the potential emergence of crises that threaten the functioning of the financial system cannot be prevented entirely, not even through effective regulation and supervision. Authorities responsible for financial stability (supervisors, central banks and ministries of finance) therefore need draw up plans on how they should act in the event of a crisis in order to prevent immediate contagion and to tackle the situation. Deposit guarantee schemes, which protect depositor assets up to a certain limit in the event of banks heading for difficulties, are another important aspect of crisis preparedness.

In the current global and integrated world, financial market problems are

*Financial market regulation is increasingly based on international cooperation.*

highly contagious from one country to another. The Asian economic crisis in the latter part of the 1990s, for instance, showed how disturbances in a country's financial markets could filter through countries that had managed their economic policies well.

Following the Asian economic crisis, the issues of financial market regulation and supervision and crisis management rose strongly to the forefront on a number of various fora. In a short period of time, the international community did make a number of decisions aimed at promoting the stability of the financial system. We saw the establishment of new institutions and organisations and the design of systems for analysis and prevention of disturbances in the financial system.<sup>1</sup>

Maintenance of financial stability, financial supervision and crisis management fall within the sphere of responsibility of national authorities, and there are major differences across countries in the organisation of these functions. Integration of European financial markets and strong growth in cross-border and cross-sector business of banks and banking groups pose big challenges to the functioning of national arrangements.

This section examines the current status of regulation, supervision and crisis management concerning EU financial companies and infrastructure, evaluating whether the existing arrangements are adequate in rapidly integrating European financial markets.

<sup>1</sup> Eg Financial Stability Forum, G20, Financial Sector Liaison Committee (IMF/World Bank), FSAP and ROSC programmes.

## Regulation

### **Can international regulation keep pace with accelerating financial market developments?**

The main objective of financial market regulation (and oversight) is to create a system capable of absorbing disturbances that may from time to time threaten the system. The goal may be clear, but goal achievement is by no means straightforward. In practice, financial market regulation also has other objectives, ranging from the effective functioning of the economy to issues concerning consumer and investor protection. Meeting these broadly different objectives is not always possible using similar measures and tools. Tight regulation can be exercised in order to prevent systemic risks, for instance, but it may simultaneously hamper the functioning of the markets and increase excessive risk-taking.<sup>2</sup> Too rigorous regulation may have implications that lead to drawbacks to competition and inefficiencies in market activity. The challenge is to strike such a regulatory balance that enables a smooth functioning of the markets, without causing major losses in terms of efficiency.

Financial market regulation is increasingly developed by various international institutions.<sup>3</sup> Matters are agreed jointly on various fora, with practical implementation ensured by

<sup>2</sup> The 'moral hazard' phenomenon: people are believed to take bigger risks if they do not have to assume (all) losses that may arise.

<sup>3</sup> Eg European Union, Basel Committee on Banking Supervision, International Monetary Fund (IMF), World Bank, OECD, IAIS, IOSCO, FATE.

states or marketplaces. Regulatory development thus occurs through a number of organisations. Prompt integration of financial markets has raised concerns as to who regulates the operations of large international financial institutions and financial conglomerates.

Regulation of multinational financial institutions consists of a wide range of national (and regional) laws and other provisions. No single state regulates their operations as a whole. There are also a large number of financial market participants not governed by market regulation or financial supervision. Many large international (non-financial sector) companies and hedge funds operate in financial markets on a significant scale, but their activities are not regulated or supervised in line with the rules applied to financial markets. This poses a problem from the viewpoint of financial stability.

For the most part, international regulation is not binding, but observance of rules is based on voluntary action. However, a number of international standards, recommendations and instructions are in practice binding, as operating in the markets is impossible without compliance with the same rules as are applicable to others. Pressure to comply with common rules comes from various sources and takes different forms. International organisations, such as the IMF and the World Bank, for example, assess various countries' ability to observe generally recognised standards.<sup>4</sup>

<sup>4</sup> FSAP and ROSC programmes, Article IV consultations.

### **Financial market regulation – competition or cooperation?**

The fragmentation of regulation partly explains why financial market regulation is not always consistent. An activity may be strictly regulated in one country, while almost total absence of regulation may be the norm in another country. The content of regulation may also vary considerably across countries. The EU's own financial market regulation, for example, is largely harmonised, but continues to diverge from corresponding US regulation in many respects.

Divergent and competing rules pose problems in integrated financial markets characterised by fast cross-border capital movements. Capital flows more easily find their way to markets where excessive regulation has not come to act as an obstacle to efficient activity. The European Union is engaged in an ongoing dialogue with various countries for regulatory harmonisation. In particular, discussions with the United States on financial market regulation<sup>5</sup> regained momentum following the Enron scandal. Such dialogue is highly welcome and helps reduce differences in regulatory frameworks between countries as well as reduce the unforeseen elements in regulatory reform.<sup>6</sup> These discussions, however, may often be used as an opportunity of convincing the other party of the superiority of one's own

*Despite increased cooperation, it has not been possible to harmonise all regulation and remove regulatory competition between countries.*

<sup>5</sup> These discussions have mainly been concerned with the international financial reporting standards (IFRS).

<sup>6</sup> As was the case, for instance, in connection with the enactment of the Sarbanes-Oxley law in the United States concerning owner control and disclosure requirement of listed companies.

regulation rather than establishing new practicable regulation for all parties.

Making more efficient use of existing international organs already in advance could provide an alternative to subsequent harmonisation efforts. The more countries commit themselves to proposed standards and recommendations at the preparatory stage, the less there is a need for regulatory harmonisation afterwards.

**The European Union is the front-runner in regulatory development, but is it enough?**

Financial market regulation in the European Union is centralised and in many respects exceptional. Directives and statutes lay the basis for almost all financial market regulation and are binding on member states. Member states bear the main responsibility for transposition of directives and statutes into national law. However, there is not much scope for exercising influence on their content at the implementation phase, and national leeway is very limited.

The current framework for closer integration of the European financial system is largely based on the Financial Services Action Plan (FSAP), adopted in 1999. The key strategic objectives of this plan are the establishment of a single European market for financial services and the safeguarding of financial stability.<sup>7</sup>

Efforts to promote financial market regulation also include the Lamfalussy process, launched in 2001. The process seeks to speed up and

improve regulatory preparation and application through a new procedure involving four levels. The EU's primary legislation (directives and regulations) should focus on key provisions only (Level 1). More detailed technical implementing measures should be adopted through the comitology procedure (Level 2), in which the regulatory and supervisory committees assist the European Commission with proposals for implementing measures. Supervisory authorities should upgrade cooperation and issue common guidelines, recommendations and standards for convergence of supervisory practices (Level 3). Monitoring of compliance with EU legislation is the responsibility of the European Commission, in particular (Level 4).

The revised Lisbon Strategy, published by the European Commission in 2005, and the White Paper on future financial market developments also have a major impact on financial market regulation.<sup>8</sup> Better regulation is among the key objectives of both these strategic guidelines. The revised framework seeks to simplify regulation and avoid unnecessary regulatory burden. Another aim is to promote self-regulation in providing the markets with better chances of developing appropriate rules for themselves. Self-regulation enables formulation of more flexible and timely rules. The new regulatory framework is highly welcome in helping to reduce problems related to official regulation.

While financial market regulation at EU level has made significant

<sup>7</sup> See also Financial integration (2004). Bank of Finland. A:108.

<sup>8</sup> This 'White Paper on Financial Services Policy' is a new five-year plan and continuation of the FSAP.

headway over the last few years, shortcomings and problems still exist. Certain key areas<sup>9</sup> lack regulation almost entirely; nor does the Lamfalussy process always function as smoothly as would be desirable. Integration and cross-border financial activity have advanced very rapidly. In Europe there are currently over 40 banking groups with operations in more than three European countries. This development is likely to accelerate further still in line with new EU legislation.<sup>10</sup>

We can ask whether, despite all efforts, financial market regulation in Europe has been able to keep pace with rapidly evolving markets. The next financial crisis to hit Europe may spread across borders considerably more easily and quickly than we are prepared to encounter on the basis of earlier experience.

#### **Basel II is coming, are the markets ready?**

In 2005 the European Parliament and the European Commission accepted a proposal for a Capital Requirements Directive for credit institutions and investment firms. The directive is based on a Basel II capital adequacy recommendation published by the Basel Committee on Banking Supervision (BCBS). The new capital adequacy framework will mainly become effective in the European Union from the beginning of 2007.<sup>11</sup> The directive will

be implemented in Finland through the simultaneous entry into force of the revised Credit Institutions Act.

The new capital adequacy framework is one of the most important international regulatory initiatives related to the operation of financial markets. The aim is to create a system that better reflects the risks taken by credit institutions. In practice, this means an increasingly stronger move towards an environment where credit institutions need to assume responsibility for the assessment of their own risks. The role of the authorities is to ensure the functioning of credit institutions' risk management models and the correctness of calculations made.

Basel II is expected to encourage companies to implement better risk management. Credit institutions assessing, gauging and managing their risks well are rewarded by a lowering of their capital requirements. Conversely, companies with a poorer risk measurement tools are punished with higher capital requirements. The reform is expected to lead to more stable financial markets capable of better resisting disturbances.

Critique of Basel II finds the reform too complicated and expensive to implement. Those most benefiting from the reform would be large international financial institutions that can afford investment in sophisticated risk management systems. Risk-sensitive models are also believed to promote pro-cyclicality. In addition, some consider complex regulation such as Basel II to be development in the wrong direction.

According to the IMF, a number of its member countries have indicated their

<sup>9</sup> Eg clearing and settlement for securities remains within national-level regulation.

<sup>10</sup> Eg Directive on cross-border mergers and Directive on Markets in Financial Instruments (MiFID).

<sup>11</sup> The Internal Ratings Based Approach (IRBA) and the Advanced Measurement Approach (AMA) to operational risk will not become effective until the beginning of 2008.

*European banking supervision structures were not devised for an operating environment of integrated banking markets.*

intention to implement Basel II recommendations in their respective legislations.<sup>12</sup> Timetables for the introduction of the recommendations vary, however. The EU, for instance, will introduce Basel II recommendations from the beginning of 2007 and 2008. Japan will change over to the new rules in stages 2007–2008. The most notable exception, however, is the United States, which will start applying Basel II rules only to the largest internationally active credit institutions, from the beginning of 2008. Other credit institutions will fall within the scope of application of a Basel I-A version, developed by the United States. Banks cannot choose between various methods for calculating capital requirements either, but they must apply the Internal Ratings Based Approach to credit risk and Advanced Measurement Approach to operational risk.

Discussions and information exchanges between US and EU authorities seek to minimise, among other things, problems arising from differences between Basel II recommendations and the system to be introduced in the United States. It is difficult to evaluate the scale and magnitude of difficulties and credibility gaps that the US own capital adequacy rules may cause to the Basel II framework; it is clear, however, that the implications will not be positive.

#### **Development of supervision**

Since 1989 EU banking supervision has been based on the home country

principle. Under this principle, the banking supervisor of the EU country that has granted authorisation to the bank supervises the banking group as a whole, including the bank's branches abroad. The home country principle, however, does not apply to the bank's foreign subsidiaries, which are supervised by the banking supervisors of their respective countries of location, the 'host countries'.

At the time when the division of responsibilities between home and host country supervisors in respect of supervision of foreign banking operations was agreed, internationalisation among European banks had only just started. Banks scarcely provided cross-border services, and banks' foreign branches and subsidiaries played a minor role compared to their present-day importance. In an environment where banks primarily operated exclusively in their home countries, the preconditions for banking supervision based on the home country principle were good.

The European banking sector, however, has changed considerably in a couple of decades. The importance of cross-border banking groups has grown appreciably. More than 40 banks are currently estimated to have significant business operations in at least three EU countries. Banks' business structure, in turn, continues to divert from their legal structure, as banking groups seek to obtain economies of scale through concentration of operations (eg asset management, liquidity management, risk management, IT operations, etc) on units operating in various countries.

<sup>12</sup> A survey (10/2006) by the Financial Stability Institute (FSI) showed that 86% of non-BCBS member countries intend to implement the Basel II framework.



### **Integration of the European banking sector poses a challenge to the structures and principles of banking supervision**

Banks are thus increasingly operating on an international scale, whereas supervisors and other authorities responsible for financial stability continue to act on the basis of national mandates. As a consequence, the responsibilities and legal mandates of supervisors responsible for banks with operations in several countries are no longer in line with each other, nor have supervisory powers been harmonised within the EU.

The conflict between powers and responsibilities ('home–host problem') becomes most clearly apparent from the supervision of banking groups which act abroad on the basis of a branch structure and whose branches are systemically important in the host country's financial system. The conflict will become critical if such a banking group drifts into liquidity or solvency problems. The bank's home country authorities are seen as having primary responsibility for the management of the crisis. If the banking group is not systemically important in its home country, home country authorities may find it unnecessary to respond to the crisis. In such a case, host country authorities are confronted with a difficult decision. Should they aid the systemically important branch if home country authorities were reluctant to take action? However, if home country authorities were to participate in the management of the crisis, it could be politically challenging to use tax payers' money for rescuing the banking group's foreign parts.

If a banking group operates abroad through subsidiaries, conflicts of interest

between various national authorities may first appear relatively small. Bank subsidiaries, however, can be almost as dependent on the banking group's parent bank as branches are. If the parent bank were to cease operations, its subsidiary would not necessarily be able to continue as an independent unit. Accordingly, the conflict between powers and responsibilities among various authorities may also be considerable if a banking group operates abroad in the form of a subsidiary.

Another problem in the EU's current supervisory framework is that banking groups operating abroad through subsidiaries must observe a wide range of different national rules and report on their operations to a large number of supervisory authorities in various countries. This regulatory burden may lead to significant costs to banking groups. Regulatory and supervisory differences between countries also hamper cross-border provision of banking services, thereby acting as de facto obstacles to banking competition.

### **European banking supervision is being developed on the basis of supervisors' current division of responsibilities...**

A number of important analyses of development needs concerning regulation and supervision of EU financial and securities markets have recently been undertaken in the EU.<sup>13</sup> These analyses start from the premise

*Potential problems encountered in the supervision of banks operating in a number of countries include conflicts of interest between supervisory authorities and overlapping supervision of banking groups.*

*No change foreseen to the structure of EU banking supervision over the next few years.*

<sup>13</sup> Eg the European Commission's White Paper, released in December 2005, on priorities of European financial services policy over the next five years (White Paper on Financial Services Policy 2005–2010) and reports on development needs in the area of EU financial market supervision, published in 2005 and 2006, by the European Commission and the Financial Services Committee (FSC).

that the basic structures of supervision of EU financial and securities markets remain unchanged at least over the following five years. In other words, regulation of EU financial markets in the next few years will continue to be based on the framework provided by the Lamfalussy process, and supervision on current legal supervisory structures. Supervision will be upgraded through practical measures, without changing the current responsibilities of banking groups' home and host country supervisors. Proposals for such practical measures include broader voluntary delegation of tasks between home and host country supervisors and development of a European supervisory culture through employee exchange between supervisory authorities and common training sessions.

Efficient information exchange between supervisors is indispensable in the assessment of risks of banking groups with operations in various countries. The majority of the practical work for the development of supervision is thus related to the improvement of information exchange between supervisors. The Committee of European Banking Supervisors (CEBS), the Committee of European Securities Regulators (CESR) and the Committee of European Insurance and Occupational Pension Supervisors (CEIOPS) play a key role in the improvement of cooperation between supervisory authorities responsible for EU financial markets, in the convergence of supervisory practices and in the common implementation and consistent application of EU-level legislation.

CEBS, for instance, has issued guidelines on cooperation between banking groups' home and host country authorities, contributed to common reporting by banks and promoted coherent national implementation of the new Capital Requirements Directive.

### **...but still this does not satisfy all parties**

Recently, however, there have been many demands in academic literature, in particular, to the effect that the mere development of current supervisory structures is not enough. Profound changes should also be made to the existing division of supervisory responsibilities.

The options available for the development of supervision can broadly be classified into three groups:<sup>14</sup> i) the home country supervisor is more clearly defined as lead supervisor and supervisors' national mandates are retained, ii) the home country supervisor is assigned the role of lead supervisor with a European mandate and iii) a European supervisory body is established.

The European Financial Services Round Table (EFR) representing, among others, European banks has proposed the introduction of the lead supervisor model.<sup>15</sup> Central to the proposition is that the bank would report to a single supervisory authority, the lead supervisor. In addition to supervisory responsibility for the

<sup>14</sup> The classification is not exhaustive, as all proposed supervisory models cannot be unambiguously placed in any of these three categories.

<sup>15</sup> European Financial Services Round Table (2005). On the lead supervisor model and the future of financial supervision in the EU.

banking group as a whole, the lead supervisor would also be responsible for supervising the individual banks belonging to the group. The bank's host country supervisors would also be involved in group-specific supervisory colleges, which would advise the lead supervisor but would not have the power to make decisions on supervision. In crisis situations, the supervisors would establish a crisis group, coordinated by the lead supervisor.

In practice, the lead supervisor model would strengthen the position of the home country supervisor. The advantages of the lead supervisor model would include smaller supervisory burden on banks and removal of supervisory overlap and duplication. The lead supervisor model would also lessen the problem possibly related to existing supervision that no one banking group's supervisor necessarily has an adequate overall picture of the risks facing the banking group as a whole. From the viewpoint of the stability of the financial system, the lead supervisor model would however be imperfect, as it would not provide a solution to the current mismatch between powers and responsibilities of banks' home and host country authorities.<sup>16</sup>

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<sup>16</sup> The supervisory responsibility of host country authorities would be greater in a network of competent authorities, where a supervisory college composed of various countries' supervisors could be established to supervise important multinational institutions. Cooperation between Nordic banking supervisors in the supervision of Nordea is reminiscent of the network of competent authorities. For more details, see Jännäri – Vesala (2006) *Rahoitusvalvonta Suomessa ja Euroopan Unionissa* (Financial supervision in Finland and the European Union), included in the publication by Pikkarainen and Suvanto (eds.) *Suomen Pankki, EMU ja rahoitusmarkkinat* (Bank of Finland, EMU and financial markets). Bank of Finland A:109.

Under the lead supervisor model, the lead supervisor would act on the basis of a national mandate. As an alternative to this regime, a model has been proposed where the lead supervisor would have a 'European mandate', meaning that, in making decisions, the lead supervisor would take account of the implications of its decisions for the stability of banking groups' home and host country financial systems.<sup>17</sup> But how the lead manager could be induced to assume such mandates is not a matter of course.

An even more radical proposition would involve partial substitution of national banking supervisors by a supranational supervisory body, a 'European banking supervisor', responsible for supervising all subsidiaries and branches of banking groups operating in several countries.<sup>18</sup> The system could also involve a two-level framework within which national banking supervisors would only be responsible for supervising domestic banks operating in their respective home countries.

The model based on a European banking supervisor – as with the other models discussed above – would not give an answer to the question as to who would pay the costs for an eventual banking crisis. If a European banking supervisor assumed responsibility for supervising (large) banks,

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<sup>17</sup> See Schoemaker – Oosterloo (2004) A lead supervisor model for Europe. *The Financial Regulator*, Vol. 9, No. 3.

<sup>18</sup> See eg Srejber – Noreus (2005) The future relationship between financial stability and supervision in the EU. *Bank of Sweden Economic Review* 4/2005.

responsibility for crisis management should ideally lie with a European organisation. Credible crisis management, in turn, would require support from a sufficiently large European budget. No such support exists or is in the offing, however.

#### **Revolution or evolution?**

There are advantages and disadvantages to all the supervisory model options described above. A challenge facing many of these models is that they would require profound changes to the current organisation of European banking supervision. Presently, there is no broad consensus on the direction to which this supervision should be developed in the long run. Even if unanimity could be reached, the implementation of legislative changes, as required by the alternative supervisory models, would probably take a very long time. In such a period of time, political objectives and the operating environment of financial markets could change significantly.

From the perspective of supervisory development, the most realistic option might be to gradually develop existing supervisory arrangements, without nailing down the final goal. Development, in compliance with EU guidelines, of a supervisory model based on current EU structures and principles could suffice under normal circumstances.<sup>19</sup> A more controversial issue is whether the existing official arrangements for European financial markets would be adequate if any of the largest

European multinational banking groups were to run into serious difficulties.

#### **Management of financial crises**

As banking systems were previously mainly national, crises threatening the stability of financial markets also remained mainly national. The internationalisation of banks has led to an increasing threat of international financial crises. If a large banking group with operations in a number of countries were to drift into serious liquidity or solvency problems, the effects would be felt in several countries. Cooperation between authorities across countries is indispensable to manage crises hitting such banking groups. Authorities responsible for safeguarding the stability of European financial markets already cooperate on a wide scale to manage and resolve international financial crises.

The roles that authorities responsible for financial stability need to assume in order to manage a financial crisis are briefly the following. Supervisors' primary task consists of crisis prevention through the exercise of supervision of banks' risk-taking and risk-bearing ability. Assessments of banks' financial standing, undertaken in crisis situations, are also based on information collected by supervisors in daily supervisory work.

One of central banks' key tasks has traditionally been seen in the possibility to provide liquidity support to banks facing temporary liquidity shortages. Central banks are also responsible for assessing the systemic importance of crisis-stricken banks and the impact that an individual bank's

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<sup>19</sup> See eg Mayes (2006) Cross-border financial supervision in Europe: Goals and transition paths. Bank of Sweden Economic Review 2/2006.

problems may have on financial stability. Ministries of finance, in turn, need to consider what action should be taken when a banking group is facing solvency problems.

#### **Do authorities have adequate tools to manage international banking crises?**

Economic history shows that even national financial crises may be very difficult to manage. As the management of a financial crisis concerning only one country probably calls for cooperation between at least three different authorities, the number of authorities participating in the management of an international financial crisis is far larger. Management of a crisis that involves a banking group with operations in three countries alone calls for cooperation between nine or more various authorities. Coordination of cooperation between such a large number of authorities is at worst slow and difficult. As crisis management requires prompt action on the part of authorities, the division of tasks and responsibilities between authorities should be agreed upon and cooperation exercised in advance. Exercises jointly undertaken by authorities are in fact an important element of crisis preparation.<sup>20</sup>

EU-level legislation on the management of banks' financial crises scarcely exists, but cooperation between authorities is largely based on Memoranda of Understanding (MoUs).<sup>21</sup> MoUs are concerned with the principles and practices agreed between

authorities for cooperation in the management of financial crises. Memoranda of Understanding have been signed both between national authorities and between authorities of various countries. They are not legally binding.

Recently, there has been much debate on whether legally non-binding MoUs are adequate as a means of delivering effective cooperation between authorities for management of financial crises. Clearly, MoUs and exercises for crisis situations promote information exchange between authorities and coordination of measures in the event of a crisis. Memoranda of Understanding, however, do not provide solutions to conflicts of interest between authorities.

In crisis situations, home and host country authorities may have differing views of whether a banking group or part of it can be granted liquidity and/or capital support and how the costs of crisis management should be divided between countries. Settlement of such conflicts of interest may lead to complicated negotiations that delay the management of an ongoing crisis, thereby exacerbating the crisis further still.

Drafting EU-level legislation on the management of financial crises is difficult, as financial crises occur seldom and may be very dissimilar in nature. Another challenge is that official arrangements for crisis management should be developed as part of an integrated whole, including organisation of EU banking supervision and safety nets of the financial system, such as deposit guarantee schemes and bankruptcy legislation concerning banks. Authorities in some countries

<sup>20</sup> For more information on the EU's crisis simulation exercises and other crisis management arrangements, see ECB (2006) Financial Stability Review (Section 4A).

<sup>21</sup> See Box 9.

### Bank of Finland Memoranda of Understanding

The Memoranda of Understanding (MoUs) signed between authorities responsible for safeguarding financial stability are an essential element of cooperation between the authorities for management of financial crises.

MoUs are voluntary, legally non-binding agreements focusing, in particular, on information exchange and coordination of measures between authorities in the event of crisis situations threatening financial stability.

Below is a brief description of the Memoranda of Understanding signed by the Bank of Finland.<sup>1</sup>

<sup>1</sup> A more detailed description is available on the Bank of Finland's website ([www.bof.fi](http://www.bof.fi)).

<i>Memorandum of Understanding on cooperation between payment systems overseers and banking supervisors in Stage Three of Economic and Monetary Union (entry into force, 1 January 2001)</i>	An MoU on specific arrangements for cooperation and information sharing between EU central banks and banking supervisors in Stage Three of Economic and Monetary Union in relation to large-value payment systems.
<i>Memorandum of Understanding on high-level principles of cooperation between the banking supervisors and central banks of the European Union in crisis management situations (entry into force, 1 March 2003)</i>	In its report (April 2001) on EU crisis management arrangements, the Economic and Financial Committee (EFC), reporting to the ECOFIN Council, recommended pre-agreement on information exchange and coordination of measures between authorities. The first of the two EU-level MoUs includes a set of principles and procedures for information sharing to enhance cross-border cooperation between EU banking supervisors and central banks in handling financial crises that involve a number of countries.
<i>Management of a financial crisis in banks with cross-border establishments – Memorandum of Understanding between the central banks of Denmark, Finland, Iceland, Norway and Sweden (entry into force, 11 June 2003)</i>	The above EFC report recommended that EU authorities issue regional Memoranda of Understanding that take account of specific regional features relating to crisis management. This regional MoU agrees on cooperation arrangements between Nordic central banks in a situation where a financial crisis threatens a Nordic bank with operations in two or more Nordic countries.
<i>Memorandum of Understanding on cooperation between the banking supervisors, central banks and finance ministries of the European Union in financial crisis situations (entry into force, 1 July 2005)</i>	Parties to this second EU-level MoU include, besides banking supervisors and central banks, ministries of finance. The MoU complements the Memorandum of Understanding agreed on between EU banking supervisors and central banks that took effect in March 2003.
<i>Memorandum of Understanding between the central banks of Sweden and Finland on cooperation in the oversight of the central securities depositories VPC AB and Suomen Arvopaperikeskus Oy (entry into force, 20 January 2006)</i>	The MoU between the Bank of Finland and Riksbanken is a statement of principles for the exercise of oversight over the Swedish central securities depository VPC AB and its subsidiary, the Finnish central securities depository APK OY.
<i>Memorandum of Understanding between the Bank of Finland and the Financial Supervision Authority for financial crisis situations (entry into force, 20 March 2006)</i>	This national MoU deals with cooperation when preparing for crisis management situations, information exchange in connection with a crisis or other disturbance, the tasks of the Financial Supervision Authority and the Bank of Finland in crisis management and the forms of cooperation in crisis situations.

also point out that excessive openness and transparency in respect of liquidity or capital support granted in a crisis situation may encourage banks in difficulties to take excessive risks (moral hazard problem).

Memoranda of Understanding with their voluntary and non-binding features may, however, provide inadequate tools for settling crises of banking groups operating in a number of countries. Pressures for the development of EU-level legislation on crisis management are set to increase, as banking groups' foreign operations continue to expand, in line with the growing number and significance of systemically important multinational banking groups.

### Specific questions relating to financial market infrastructure

Regulation of financial market infrastructure can be implemented in a variety of ways. By varying its intensity, regulation can be adapted to suit each sector's needs as closely as possible. Supervision seeks to ensure that regulatory goals are achieved in practice. The central bank function that focuses on financial market infrastructure is called oversight. As distinct from the Financial Supervision Authority's supervision of individual institutions, the central bank concentrates on the reliability and efficiency aspects of the financial system as a whole, participating in infrastructure development. Oversight is based on international standards, analyses and assessments.

A regulatory approach may rely on models based on direct regulation,

which defines business rules in detail by way of legislation – an approach that is warranted in a situation where markets are unable to function, on their own, efficiently enough to achieve satisfactory results. However, in other types of circumstances, it may be more appropriate to give market participants greater powers to determine the rules themselves.

The strictest form of self-regulation is that prescribed by law. In Finland, examples of this include the minimum content of self-regulation applied by the stock exchange and clearing houses, as defined in the Securities Markets Act, and the corresponding obligations of central securities depositories contained in the Act on the Book-Entry System. With the consolidation of system operators, however, differences in national laws easily become barriers to effective and reliable supervision, oversight and on operations themselves.

When a sector organises itself for joint service production, the regulation of the infrastructure will be based on its own initiative and its activities governed by contractual arrangements between the parties involved. One example of this is the Finnish retail interbank payment system PMJ, the regulation of which is based on the system rules. Compliance with the rules is monitored by the banks' cooperation body, the Finnish Bankers' Association, while the Bank of Finland, in line with its overseer role, assesses the rules of the system and self-regulation based on the rules. In a centralised clearing house structure, a widely used approach in

*How costs arising from management of international banking crises are to be divided between countries remains an unresolved problem.*

other European countries, the clearing house operates as self-regulatory body.

**What type of regulation is effective for financial market infrastructure?**

Sector-specific organisations that agree among themselves on a number of practices and standards concerning the sector as a whole are increasingly assuming a greater role in the development of European financial market infrastructure. An example of this is the SEPA project under which banks develop EU-wide payment products and standards for the core areas of payment services. European banks and bank organisations have established for this development work a cooperation body, the European Payments Council (EPC). The joint organisation of European clearing houses, the European Automated Clearing House Association (EACHA), works in the area of standardisation in order to ensure interoperability between different systems. The European Central Securities Depositories Association (ECSDA), in turn, seeks to harmonise the practices of central securities depositories, amongst others, in an attempt to remove barriers as identified in the Giovannini report. In this day and age self-regulation needs to address the challenge of how to make changes so that wider goals than those of the own sector are taken into account and how to commit rival actors to the implementation of the changes. Evidence shows that it is difficult to accomplish timely and even implementation through self-regulation in a highly competitive environment.

*Sector-specific organisations play a key role in harmonising overall infrastructure; ensuring implementation is difficult, however.*

*A directive on payment services is under preparation; for securities clearing and settlement, however, the Commission wants to have a framework based on market discipline.*

The directive on payment services in the internal market, which has already long been in preparation, is an example of direct regulation. It is one of the most significant legislative initiatives in the area of financial market infrastructure. A harmonised legal framework would contribute to the realisation of SEPA objectives. The European Payments Council has noted that the directive is needed in support of rules established through self-regulation. The aim is to create an integrated payment area where economies of scale and competition between actors would increase efficiency. Enhanced efficiency may be reflected in lower service fees charged to users of services.

As the draft directive aims as far as possible at full harmonisation, member states could not deviate from the directive, except for certain derogations. This would establish clear rules for payments, thereby increasing overall confidence in payment systems and services throughout the EU area.

Under the directive, payment services would become business subject to a specific licence while the terms and conditions on payment services would be subject to harmonised, quite detailed regulation within the EU area as a whole. The biggest problem in the approval process of the draft directive has been how to strike an appropriate balance between banks' and payment institutions' licensing requirements. In fact a clear separation of client funds from the company's own funds would be more important than capital requirements in this activity.



Execution times of payments should be as short as possible in order to improve the overall efficiency of the payment transmission process.

Customers have difficulties in understanding why, in an environment of technological advances, a payment should still need several days to reach its destination. The directive lays the cornerstone for provision of harmonised core payment services.

In contrast, securities clearing and settlement is not included in the EU's directive proposals, although some market participants have already requested similar legislation for this sector. This sector's regulatory development appears to be very different. For this sector the European Commission adopted an approach that is similar to previous regulation concerning telecommunications operators. The Commission takes the view that markets can arrive at a better outcome through self-regulation and market discipline to which market participants are themselves committed. The Commission wants self-regulation to include price transparency and free market access, unbundling of services and a breakdown of services in the books of central securities depositories so as to make costs by service clearly visible (accounting separation).

In other words, the Commission wants the markets to determine themselves the services provided and to commit themselves to the established requirements. The Commission's measures are highly welcome in bringing clarity to this sector's rules, especially when integration needs to be

boosted and market participants should make decisions conducive to efficiency. In addition to the Commission's action, the introduction of the ESCB-CESR standards, jointly issued by the Eurosystem and securities market regulators, should be ensured. Only then can one say that adequately detailed operational principles that are equally applicable to all parties are in place. The biggest problem in the securities market is however inconsistent legislation. Accordingly, the legal certainty of securities holdings should be safeguarded in connection with cross-border transactions.

Of other authorities, at least competition authorities have been active in the financial market sector, even if there has not yet been regulation proper. Competition authorities, in both the Commission and the Nordic countries, have examined retail banking markets and barriers to market entry. According to the Commission, following public consultation, it appears that competition in the retail banking market does not function as well as it should. Nordic competition authorities have also expressed their views on retail banking market structures in their own studies. They recommend that access to payment systems should be as transparent and non-discriminatory as possible. Comparability of service prices and the switching of banks should also be easier for customers.

Analyses by competition authorities are important in order to enhance competition and efficiency. As the functioning of infrastructures is largely based on networks it should,

however be kept in mind that in this sector fostering competition should not hamper cooperative forms of action that essentially belong to network industry such as payment services or clearing and settlement of securities. Common standards, for instance, are a vital aspect in the development of this sector. Effective cooperation may also reduce costs for service provision and fees charged to system users.

#### Update of oversight policy

Making payments is a function that inherently belongs to the basic structures of society and enables the exchange of goods and services. It is thus in the interest of society as a whole to ensure the smooth functioning of the payment system. This task is normally assigned to the central bank and is called oversight. The tools available to central banks for the exercise of oversight include monitoring and analysis of system performance, assessment of systems against established core principles, evaluation of trends and developments, and the defining of policy objectives. The objective of oversight is to ensure the reliable functioning of important payment and settlement systems and that any problems experienced by parties to the systems do not spread to others. Oversight is directed towards crisis prevention, while at the same time being prepared for the management of any crises that may nevertheless arise. Ensuring system efficiency is also an essential element of oversight.

The financial sector is currently undergoing a period of major structural

change. Behind such structural change are overall integration within the European Union, on the one hand, and technological advances and dissemination of the use of new technologies to increasingly broader spheres of society, on the other. This trend is leading inevitably to the development of large, multinational organisations and new ways of working. New operating methods and market structures are, in turn, changing the nature of risks. This is why oversight, too, needs to change. The Bank of Finland has updated its oversight policy to meet these challenges. The new framework for oversight is discussed in more detail in the 2/2006 issue of the Bank of Finland Bulletin.

The scope of oversight and factors having an impact on it are illustrated in Chart 33. In accordance with the division of oversight responsibilities agreed within the Eurosystem, each central bank is responsible for overseeing domestic systems and making formal assessments of them. The Bank of Finland's core oversight tasks include monitoring and analysis of systems such as the domestic TARGET component, the retail payment system and the APK's bond settlement system and subsequent preparation of an oversight assessment. The ECB exercises oversight over euro area-wide systems, in cooperation with the other central banks of the area. This oversight focuses inter alia on foreign exchange settlement and the EURO1 system as can be seen from the chart. Furthermore euro area central banks have worked together to prepare a

*Standards should not be seen as constraints on competition.*

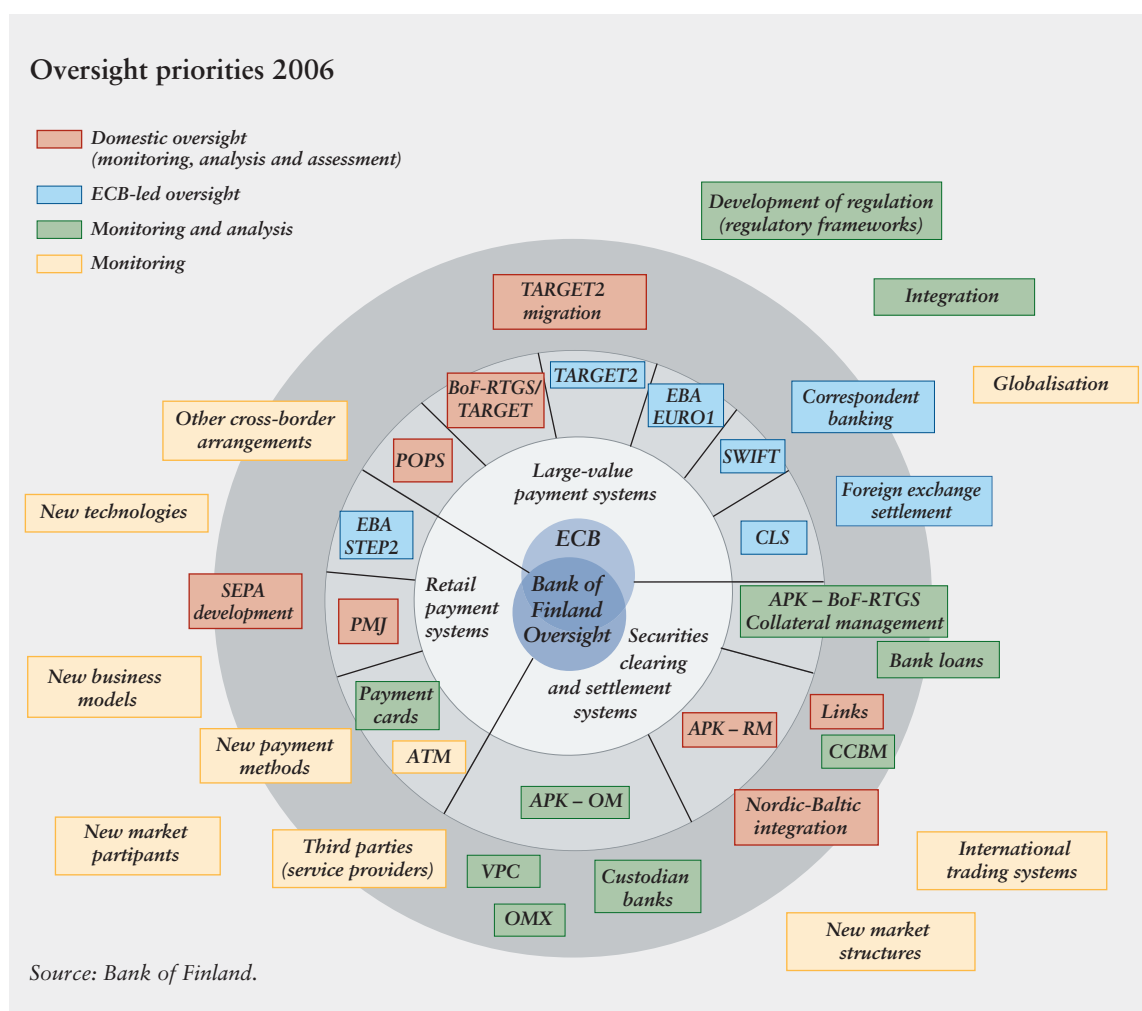
preliminary oversight opinion on the new TARGET2 system. In this context, the Bank of Finland concentrated on the aspects of efficiency.

The Bank of Finland is involved in another kind of cooperation in connection with the oversight of the Nordic Central Securities Depository (NCSD) group which is undertaken with the Swedish central bank. Whereas the activities of the Nordic exchange operator OMX are analysed on the

basis of specific projects. Factors that have an impact on infrastructure and require particular monitoring include new technologies and novel payment methods, including new business models. The areas monitored and analysed are weighed with respect to their importance, and oversight priorities evolve accordingly over time.

As the infrastructure of the financial system has proved reliable, the Bank of Finland can focus its oversight

Chart 33.



*The Bank of Finland's updated oversight policy underscores development function.*

work on contributing actively to financial market development. Owing to major structural changes, however, the aspect of reliability cannot be totally excluded. In performing its oversight function, the Bank of Finland relies on self-regulatory bodies as extensively as possible and maintains an ongoing dialogue with market participants on development needs in financial markets.

Within the development function, which is sometimes called the catalyst role, the Bank of Finland seeks to enhance the stability, reliability and efficiency of the financial system. In this role, increasing emphasis is laid on influencing the Eurosystem's common oversight policy, on ensuring that Finland's technically sophisticated market area retains its chances of

exerting influence on the financial community, and on extending the scope of oversight to cover methods of payment that are important to the general public. National crisis management capabilities also need to be maintained in an integrating operational environment. A good outcome can be reached only through close cooperation with the Financial Supervision Authority and the Ministry of Finance.

# Organisation of the Bank of Finland

17 May 2006

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The Financial Supervision Authority, headed by Kaarlo Jännäri, operates in association with the Bank of Finland.



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