



# FINANCIAL STABILITY

2011 • 1

## Contents

- 3** *Foreword by the Governor*  
Still dealing with the consequences of the financial crisis  
*Box:*  
Main vulnerabilities and resilience factors **5**
- 7** *I. Financial markets*  
Weak markets
- 13** *II. Financial companies*  
Multiple uncertainties remain  
*Boxes:*  
Central Bank of Iceland Rules on Foreign Exchange Balance and Liquidity Ratio **20**  
Banks' service locations and ATMs **27**  
*Appendix:*  
DMBs' balance sheets 31 March 2011 **31**
- 43** *III. Payment systems*
- 51** *IV. Macroprudential policy*  
*Appendix:*  
Principal regulatory and statutory amendments related to the financial market 2010-2011 **62**

Financial stability means that the financial system is equipped to withstand shocks to the economy and financial markets, to mediate credit and payments, and to redistribute risks appropriately.

The purpose of the Central Bank of Iceland's *Financial Stability* report is:

- To promote informed dialogue on financial stability, i.e. its strengths and weaknesses, the macroeconomic and operational risks that it may face, and efforts to strengthen its resilience;
- To provide an analysis that is useful for financial market participants in their own risk management;
- To focus the Central Bank's work and contingency planning;
- To explain how the Central Bank carries out the mandatory tasks assigned to it with respect to an effective and sound financial system.

Published by:

The Central Bank of Iceland, Kalkofnsvegur 1, 150 Reykjavík, Iceland

Tel: (+354) 569 9600, fax: (+354) 569 9605

E-mail: [sedlabanki@sedlabanki.is](mailto:sedlabanki@sedlabanki.is)

Website: [www.sedlabanki.is](http://www.sedlabanki.is)

Editorial staff:

Tryggvi Pálsson, chairman

Bryndís Ásbjarnardóttir

Gerður Ísberg

Gudmundur Kr. Tómasson

Jónas Thórdarson

Rannveig Sigurdardóttir

Sturla Pálsson

Tómas Örn Kristinsson

Thorsteinn Thorgeirsson

Thórarinn G. Pétursson

Vol. 8 31 May 2011

Printing: Ísafoldarprentsmiðja

*Financial Stability* is also published on the Central Bank of Iceland website.

ISSN 1670-584X

Material may be reproduced from *Financial Stability* but an acknowledgement of source is kindly requested.

Icelandic letters:

ð/Ð (pronounced like th in English this)

þ/Þ (pronounced like th in English think)

In *Financial Stability*, ð is transliterated as *d* and þ as *th* in personal names, for consistency with international references, but otherwise the Icelandic letters are retained.

## *Foreword by the Governor*

### Still dealing with the consequences of the financial crisis

Measures aimed at stabilising the Icelandic economy have yielded significant results in the recent term. GDP has begun to grow, albeit relatively weakly, considering the spare capacity in the economy. Nevertheless, the repercussions of the financial crisis present continuing challenges. The currency crisis is unresolved in that the króna is subject to capital controls and access to foreign credit markets is limited; however, the prospects for both have improved recently. Various after-effects of the banking crisis remain, even though Iceland's banks have been reconstructed with relatively high capital ratios and ample liquidity. There are a number of imbalances in the banks' balance sheets, however, including foreign exchange and indexation mismatches between assets and liabilities, and these exacerbate the risk they face. Considerable progress has been made in reducing the foreign exchange imbalances, however, partly through the currency swap agreements the Central Bank made with the banks at the end of 2010. There is also considerable uncertainty about the banks' asset portfolios and therefore about their actual capital ratios. Non-performance of loans is quite widespread, although measured non-performance ratios are difficult to interpret because they reflect not only borrowers in distress and delays in debt restructuring but also borrowers who have decided to stop paying because of legal disputes about their loans. There is still considerable work to be done on debt restructuring for companies and, to a lesser extent, households. This prolongs uncertainty about the quality of the banks' assets and impedes investment and output growth, which in turn has an adverse effect on the banks' asset portfolios. One of the most important tasks of the coming months is to follow up on this restructuring.

A better balanced economy, not least an underlying current account surplus, the progress made in the plan to achieve a surplus in public sector finances in coming years, and sizeable foreign exchange reserves have set the stage for the first steps in removing controls on foreign currency outflows. A new capital account liberalisation strategy was issued in late March. The strategy divides the liberalisation process into two main phases, with Phase I dedicated to unwinding offshore króna positions, partly by allowing owners to exit through auctions or long-term investment in the Icelandic economy. Once these measures have generated acceptable results, the controls on residents' capital outflows will be lifted. The first auction according to the strategy has already been advertised, and the outcome will be clear in early June.

The strategy has been designed and will be executed with an eye to financial stability, as the so-called offshore krónur are now part of both the Treasury and the banks' funding. In this context, the impact on three risk factors in particular must be considered: the bond market, the banks' liquidity, and the exchange rate and foreign exchange reserves. The authorities can minimise this risk by dividing the first phase of the strategy up into smaller steps, prefunding the Treasury and lengthening its maturity profile in the first steps, and not using the Central Bank's foreign exchange reserves except as an exchange forum for owners of Icelandic krónur. Furthermore, the Central Bank will ensure, as before, that financial system liquidity is compatible with the intended level of monetary restraint at any given time. Before general controls are lifted from residents' capital outflows, precautionary rules will be formulated so as to limit foreign exchange risk and restrict cross-border operations of domestic banks, but these risks proved to be key factors during the financial crisis.

The conditions that create the premise for removal of the capital controls have prepared the way for Iceland to regain access to foreign credit markets, where the Treasury will have to take the lead. For a while it appeared as though there would be a setback following the national referendum on the deposit insurance agreements with the UK and Holland, as rating agencies had stated that rejection by the electorate could prompt a sovereign rating downgrade. But the

agencies decided not to change Iceland's ratings when it became clear that the Nordic countries would continue their bilateral funding of the Government-IMF programme and that the fifth review of the programme would not be unduly delayed. Positive developments in other areas, including a new report demonstrating that Iceland's debt would be manageable for the long term and information on dramatically improved recovery from the Landsbanki estate, which will be used to repay the UK and Holland, were contributing factors as well. The offer to repurchase, at par, the foreign Treasury bonds maturing in late 2011 and early 2012 was a positive development as well. The Icesave dispute will probably be heard by the EFTA Court, and its potential impact on financial stability will be manageable, provided that the Emergency Act passed in the fall of 2008 is deemed legitimate, as is expected.

The banks' operating results for 2010 indicate a sound position as regards profit and capital. They are coloured by transitory effects of asset write-ups, however. It must also be borne in mind that even though most indicators suggest that the banks fulfil the Financial Supervisory Authority's capital adequacy requirements, there is still considerable uncertainty concerning loan quality. This uncertainty stems from the fact that debt restructuring is not yet complete and there is still legal uncertainty about exchange rate-linked loans, particularly corporate loans. The economic outlook is uncertain as well, and economic developments will be a major determinant of asset quality. Furthermore, it has yet to be determined whether, and to what extent, possible changes in Iceland's fisheries management system will have on the financial system. The assessment of the banks' position is also complicated by the fact that they use differing methods to recognise increases in the value of loan portfolios purchased from the old banks at a discount. It is critical to harmonise these methods so that differences in operating results primarily reflect the actual difference in the banks' operations and position.

At the beginning of the year, major changes were made in Iceland's payment intermediation architecture, and infrastructure and competitive activities were separated from one another. The Central Bank will operate and maintain systemically important infrastructure and has established a separate company, Greiðsluveitan, for those operations. In addition, the Central Bank will continue to carry out its regulatory, supervisory, and developmental role in the field of payment intermediation. Efforts to improve the effectiveness and security of payment systems will continue. The Rules on Settlement of Payment Card Transactions will be reviewed in the near future, with the aim of moving card settlement into Iceland, as an element in ensuring that foreign entities cannot disrupt domestic payment intermediation. Also under scrutiny are the advantages and disadvantages of adopting the European Central Bank's proposed securities settlement system and connecting Iceland's commercial banks with a centralised settlement system for foreign exchange transactions, which would reduce settlement risk, one of the problems still unresolved in the aftermath of the banking collapse.

The financial crisis highlighted the need for more co-operation and exchange of information between financial supervisors and central banks. At the beginning of the year, the Financial Supervisory Authority and the Central Bank of Iceland signed a new co-operation agreement extending the two institutions' collaboration as far as the current statutory framework allows. In addition to shared databases, exchange of information, and consultation on the adoption of rules, the agreement assumes that the two institutions will hold joint meetings at least twice a year in order to assess risk in the financial system. The first such meeting, held just recently, was successful, and some of the results are presented in this issue of Financial Stability. However, a number of improvements in supervision and regulatory framework have yet to be implemented, with the lessons learnt from the crisis as a guideline. This issue of Financial Stability focuses on evaluating and responding to risk in the financial system as a whole – the so-called macroprudential approach.



The tables below indicate the main risk and resilience factors in the current situation, as has been done in previous Central Bank reports. The global financial market situation is delicate, due in part to the debt refinancing issues faced by banks and several of the smaller euro area countries. The Icelandic financial system is working through a range of problems stemming primarily from the poor quality of a large share of the banks' and savings banks' debt. It is necessary to restructure a sizeable share of the banks' loans and change their funding structure. In addition, activity in key financial markets is limited, which means that the markets in question cannot adequately carry out their role of diversifying risk and channelling equity and credit. On the other hand, the Government's economic programme and monetary policy have delivered a stable exchange rate, lower inflation, and stronger public sector finances. Work is continuing on the public sector framework, as well as on supervision and payment system infrastructure.

## Main vulnerabilities and resilience factors

**Table 1 Main vulnerabilities**

<i>Risk</i>	<i>Explanation</i>
DMBs' asset quality	The assessment of the banks' and savings banks' assets is still subject to considerable uncertainty, and balance sheet mismatches remain. The banks' financial statements are affected by sizeable estimated items and it is difficult to make comparisons. Debt restructuring has proceeded slowly and has been concentrated in extension of loan duration. Uncertainty about exchange rate-linked items has diminished, but new uncertainty has developed because of proposed changes to the fisheries management system. The financial position of households is weak following a prolonged economic contraction, but companies' position varies from sector to sector.
Funding and limited market activity	Sight deposits are the mainstay of the banks' and savings banks' funding. They are usually a more reliable source of funding than short-term borrowings in the market, but transfers of deposits between institutions can take place. Funding is now protected by the capital controls and by Government declarations of a full deposit guarantee. The interbank, bond, equity, and currency markets are weak. Foreign direct investment and access to foreign credit markets remain limited.
Flaws in regulatory framework and supervision	The collapse revealed a number of flaws in regulatory instruments and financial supervision. Correcting them has taken time. A strategy to combat systemic risk has yet to be formulated, as has the future institutional framework for such a strategy. It is desirable that the strategy be developed before the capital controls have been fully lifted.

**Table 2 Resilience**

<i>Resilience</i>	<i>Explanation</i>
Economic outlook	The Government's economic programme and monetary policy have delivered a stable exchange rate, lower inflation, and stronger public sector finances. The Treasury has taken on substantial financial burdens as a result of the collapse, but its debt is man-

ageable. An external trade surplus is the foundation of exchange rate stability in the years to come.

Financial system reconstruction

The large commercial banks' loans were transferred to them at large discounts. There are substantial secure liquid assets to cover possible withdrawals of deposits. The activities of currently operating banks and savings banks have been scaled down from previous levels. Action has been taken to reduce foreign exchange imbalances.

Institutional and supervisory framework and payment systems

A long-term plan for improving the international regulatory framework for supervision based on the Basel III criteria is in preparation. The same is being done within the EU/EEA. Legislation on financial stability and supervision of financial system activities is scheduled for review. In keeping with international developments, it is necessary to implement improvements in Iceland so as to guarantee that financial supervision aims at preventing the accumulation of systemic risk, that the division of tasks and responsibility is clear, and that financial supervisors have the necessary authorisation to take countervailing action. A new structure for the core and support systems for payment intermediation took effect at the beginning of 2011.

# I. Financial markets

## Weak markets

Europe's financial markets still show the signs of the financial crisis. The natural disaster in Japan and the economic problems faced by debt-ridden countries have exacerbated problems and lengthened the crisis. Ireland, Portugal, and Greece have received assistance from the EU, and their CDS spreads have risen so far in 2011. The financial markets are still tight, the cost of capital is higher than before, and financial institutions are still dependent on central bank facilities. Ever since the 2008 collapse, Icelandic financial institutions have been weak. They are sheltered by the capital controls, and there is little connection between foreign and domestic markets. The reorganisation of the banking system has taken a long time and is not yet complete. The position of the domestic markets varies, and the problems are not always the same everywhere. The bond market is most effective of them, but non-residents are still locked into króna positions and hold a large share of the short-term securities in the market.

## Foreign financial markets

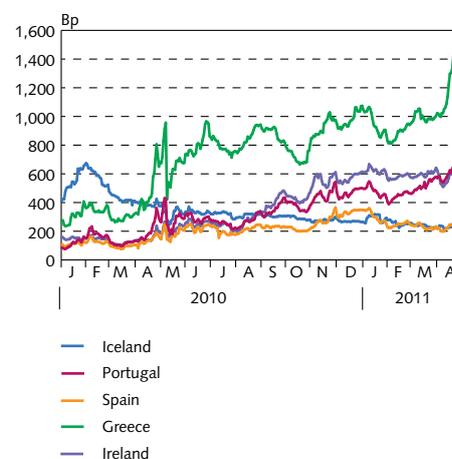
The global financial markets have been uneasy in recent months. Uncertainty about the difficult debt situation faced by several EU countries, the natural disaster in Japan, and the possibility of a downgrade of the US' sovereign credit rating have prevented a turnaround in the financial markets. Countries have had varying levels of success in reducing debt, and unemployment is high in many places. In comparison, emerging economies by and large escaped the crisis and are experiencing strong GDP growth.

In order to prevent the debt problems of individual countries and financial institutions from spreading, the EU, the European Central Bank (ECB), and the IMF have assisted distressed countries. Greece, Ireland, and Portugal have received emergency loan facilities from these entities. Since the beginning of 2010, the countries characterised by the greatest uncertainty have seen their CDS spreads rise sharply. Greece's spread reached 1354 points at the end of April, whereas Germany's was just over 43 points.

Since the latter half of 2007, the ECB has given financial institutions ready access to liquidity facilities more than to conventional facilities, which have a maximum duration of 12 months. The ECB has stopped granting loans for periods longer than three months and will reduce further facilities as the financial markets normalise. For a while, when investors were holding back, the bank was a large purchaser of covered bonds. The ECB raised its interest rate by 0.25 percentage points at the beginning of April due to increased concern about the possibility of rising inflation. Its interest rate had been 1% for nearly two years.

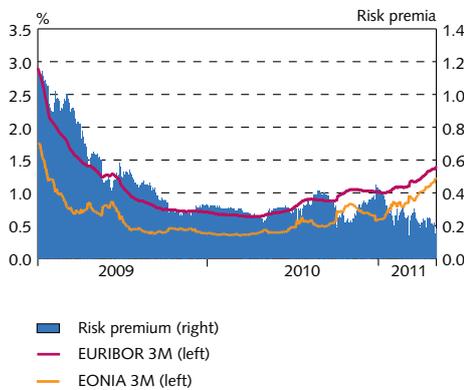
The IMF has pointed out that considerable progress has been made in restructuring the financial system in Europe. The Fund is of the opinion, however, that substantial underlying risk remains. Financial institutions have had varying amounts of success in deleveraging, and there is still uncertainty about the actual value of large institutions' asset portfolios. Uncertainty is especially pronounced in countries whose real estate markets have suffered, such as Ireland,

Chart I-1  
CDS spreads  
1 January 2010 - 27 April 2011



Source: Bloomberg.

Chart I-2  
Interbank interest rates and risk premia<sup>1</sup>  
1 January 2009 - 29 April 2011



1. The risk premium is the difference between 3-month EURIBOR rates and expected overnight rates (EONIA OIS).  
Sources: Bloomberg, Reuters.

Spain, the UK, and the US. It is considered likely that financial institutions have yet to write off a large amount of non-performing and non-recoverable loans. There is also uncertainty about the fate of the government bonds issued by Europe's most embattled countries. Most of those bonds are held in financial institutions' portfolios. European banks' refinancing need is considerable over the upcoming two years, causing upward pressure on financing costs.

Interbank market interest rates have risen during the year, in part because of the rate hike by the ECB. The risk premium, measured as the spread between longer and shorter interbank lending rates, has declined year-to-date, however, although it is still much higher than it was before the liquidity crisis. The banks have stepped up their emphasis on collecting deposits in response to limited funding options, which in some markets has led to stiff competition for depositors and therefore raised the banks' interest expense.

Low short-term rates have also given the banks an incentive to seek short-term funding in the money market, and European banks have obtained considerable funding from money market funds in the US. This could be risky, however, because such funding lines could vanish with little provocation, as recent experience has shown. So far, financial institutions appear to have difficulty funding their operations without central bank liquidity facilities.

Banks' funding costs have risen most in countries where the government's debt burden is greatest, and they are highest in the countries with low credit ratings. Before the liquidity crisis, it was generally thought unlikely that strong financial institutions would fail, and bank bonds were considered a safe investment. The experience of recent years shows that anything can happen, and bank bond yields have moved closer to other corporate bond yields. The principal owners of bank bonds heretofore have been insurance companies and pension funds, which have limited interest in risky investments. It is possible that such investors' demand for bank bonds will be less pronounced in the future.

## Domestic financial markets

Even since the banks failed, the domestic financial markets have been in a slump. They are sheltered by the capital controls, and there is no connection between foreign and domestic markets. The reorganisation of the banking system has taken a long time and is not yet complete. The position of the markets varies, and the problems are not always the same everywhere. Lack of trust is still pervasive in all markets.

The equity market is extremely weak, and at present equity securities can hardly be described as a genuine investment option. There are only a handful of companies in the market, so that it is affected by minimal activity. A prerequisite for stronger markets is a larger number of participating companies. There are various impediments, however; for example, many firms have not yet completed their restructuring following the collapse, and there has been little in the way of news or policy actions to make market listing seem a desirable option. Government actions can have a profound effect on firms'

external conditions. Companies' operating environment in Iceland is difficult, both because of the capital controls and because the regulatory environment is always changing.

As of mid-April, six companies formed the OMX ICE Main List (the OMXI6), and three of those are Faeroese. In mid-March, a shareholders' meeting of Össur hf. approved the delisting of the company from the OMX ICE exchange. Later that month the exchange decided unilaterally to continue trading Össur shares. The OMXI6 index measured 920 points at the beginning of the year and had risen to 998 by the end of April. The increase was due to Icelandair shares, which rose in value by nearly 44% in the first 4 months of the year, and Marel, which rose by almost 29% over the same period. Equity market turnover in the first four months of the year totalled 29 b.kr., which is slightly more than the total trading volume for 2010 and about half of year-2009 volume.

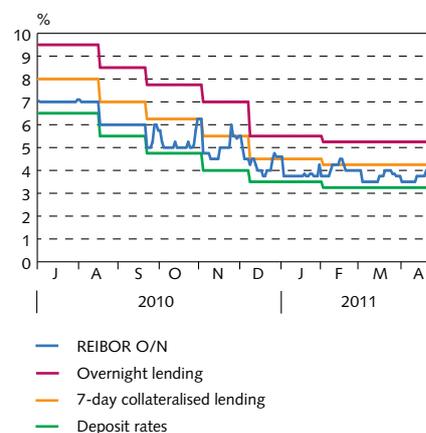
The interbank markets for Icelandic krónur and foreign currency have operated more or less as they did before the collapse. Both markets function in accordance with rules set by the Central Bank in co-operation with market makers, which are Arion Bank, Íslandsbanki, and Landsbanki. Trading contracted or stopped entirely during the collapse. Turnover has increased slightly but is still only a fraction of pre-crisis levels.

Table I-1 Turnover in the interbank market for krónur and foreign currency, 2008-2011

	Turnover in the interbank FX market (m.kr.)	Turnover in the interbank FX market (m.euros)	Turnover in REIBOR market (m.kr.)
2008	7,540,755	64,495	702,402
2009	62,427	359	296,530
2010	45,212	205	398,500
January-April 2010	4,023	23	125,500
January-April 2011	18,674	117	167,300

In the interbank market for krónur, quotes have been maintained at REIBOR rates for periods ranging from overnight to 12 months. Financial institutions negotiate credit lines amongst themselves, and trading has been concentrated at the shortest end of the market. In recent weeks, however, loans have been negotiated for seven days and even for longer periods. Actually, it is not a new development that trading in the REIBOR market should be limited to the shortest end of the market; this was also the case before the banks collapsed. REIBOR rates have often remained unchanged for long periods of time. The market always responds, however, when the Central Bank changes its interest rates, and in the past year, interest rates have moved more than previously, owing to the Bank's liquidity management activities. Since the banks collapsed, REIBOR interest rates have been in the lower half of the Central Bank interest rate corridor, as the banking system as a whole has had an ample króna position. The Central Bank's objective is to keep market interest rates close to the centre of the corridor, in part because this provides clearer signalling from interest rate decisions. One of the major flaws in the market is that there

Chart I-3  
Short-term market interest rates  
and CBI interest rate corridor  
1 July 2010 - 29 April 2011



Source: Central Bank of Iceland.

are only three market makers; therefore, the market is insufficiently effective in directing liquidity from where it is ample to where it is needed, and price formation is faulty as a result. If short-term market rates are to be the Central Bank's target interest rate, the commercial banks and savings banks must be part of the market. As long as reconstruction of the financial market is incomplete and confidence is lacking, the market will probably remain inefficient. One way to improve price formation at the shortest end of the market is to give further support to repurchase transactions. The advantage of such a market is that institutional risk is eliminated by the provision of collateral for the loan. The market would support short-term market interest rates and the Central Bank's interest rate decisions, while simultaneously strengthening the intermediation of liquidity in the market. Other financial institutions would have easier access to the market than those currently operating in the interbank market for krónur.

The domestic foreign exchange market shows the signs of functioning in the shelter of the capital controls. There is little flow in the market, and little is needed to affect the exchange rate of the króna. Ever since the banks failed, financial institutions have tried to net out their foreign exchange flows internally, and they use the market less than they did before the collapse. Financial institutions are limited with respect to what financial products and what kind of transactions they may engage in. Amounts are lower than before the crash, and there is little market activity stemming from foreign borrowings and direct investment.

The Central Bank intervened in the market on an irregular basis from the time the króna was re-floated in December 2008 until November 2009. Since August 2010, the Bank has purchased small amounts each week. The objective of the purchases is to fortify the foreign exchange reserves without having a direct impact on the exchange rate of the króna. The Central Bank has bought a total of 53 million euros in this manner. Foreign exchange market turnover was higher in the first four months of 2011 than during the same period in 2010. Nonetheless, there are often days with no trading at all. The króna appreciated somewhat in 2010, but it depreciated by 4.5% in trade-weighted terms in the first four months of 2011. Trading in the offshore market for krónur has been extremely sparse in recent months, as owners of offshore krónur have little chance to circulate them.

### **The bond market**

The bond market has seen the highest trading volume and frequency. The market is based primarily on trading in bonds issued by the Treasury or the Housing Financing Fund (HFF), which account for about 99% of total trading volume. With the exception of 2008, the year 2010 saw the heaviest volume in the history of organised bond market trading in Iceland. The Treasury and the HFF account for such a large share of market activity because proportionally, they are very large issuers, and they have negotiated with financial institutions for market making, which ensures effective price formation and enhances marketability. Furthermore, market making makes it easier for issuers to obtain market credit on favourable terms. The issuance of listed

bond series generates a yield curve that forms an important baseline for the assessment of yields on other issuers' bonds and facilitates their access to credit. A government-guaranteed yield curve also provides the foundation for pricing of bond-related derivatives, such as interest rate swaps, options, and forward bond agreements.

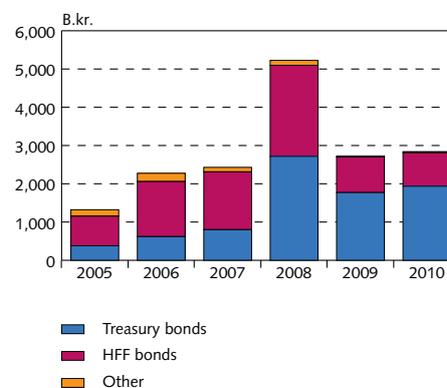
Effective Treasury bond pricing is very important to analysts, as it enables them to assess the economic situation and outlook based on investors' opinions. In the wake of the banks' collapse, the authorities had to take on a number of tasks, including the recapitalisation of the financial system, the Icesave dispute, and the capital account liberalisation strategy. Decisions taken by the authorities in such matters are interpreted by investors through the bond market, among other things. Listed bonds are used as collateral for transactions, including Central Bank loan facilities. An active bond market makes it easier for holders of collateral to sell the collateral at its true value in the event of borrower default. Finally, when the bond market is active and effective, a comparison of nominal and indexed Treasury bonds provides important information for use in deciding Central Bank interest rates.

Effective price formation for Treasury bonds is extremely important in relation to the capital account liberalisation strategy, as a large share of the listed short-term Treasury bonds issued in Icelandic krónur are owned by non-residents. In order to assess the real value of the bonds, it is important that there be an effective secondary market. The liberalisation strategy assumes that owners of foreign currency will have the option of buying krónur in Central Bank auctions, provided that they invest them in a new indexed Treasury bond series maturing in 2030. It is easier to price the new bond series when there is an effective market for indexed bonds with various maturities.

The Treasury's debt has grown substantially since 2008, which has led to an increase in bonds with market makers and has lengthened maturities. The increase in the number of series means that market makers in Treasury securities must own more bonds in order to respond to market demand. Longer maturities mean increased interest rate sensitivity, which elevates market makers' risk in owning such bonds. At the same time, market makers' trading books have contracted in accordance with their balance sheets. The uncertainty in the Icelandic economy has caused market makers difficulties in the pricing of domestic bonds.

Bond market volatility is usually easy to explain; for example, as a response to new information. Some price volatility can hardly be considered to stem from anything else but a market malfunction. Market makers are only authorised to hold trading books of limited size. If selling pressure mounts in the bond market, it is the role of the market maker to respond by buying bonds. If the market maker uses its entire authorisation, it must sell the bonds again into the market. This entails the risk of a spiral of rising yields without any visible economic cause, as the market makers are repeatedly trading the same bonds amongst themselves. The spiral can continue until someone other than a market maker is ready to buy bonds or submit a bid. The largest end investors are likely to wait on the sidelines until the spiral has stopped.

Chart I-4  
Bond market trading volumes  
on NASDAQ OMX - Iceland



Source: NASDAQ OMX.



## II Financial companies

### Multiple uncertainties remain

#### 2.1 Deposit money banks and the Housing Financing Fund<sup>1</sup>

Credit risk is the main risk faced by domestic financial institutions on the asset side of their balance sheets, while liquidity risk is predominant on the liabilities side. Credit risk stems primarily from uncertainty about the quality of their loan portfolios. Loan restructuring is taking longer than expected and, until now, has mainly entailed extending loan duration. The large commercial banks' loans were transferred to them at substantial discounts. The banks have therefore had the flexibility to restructure loans, but legal uncertainty, including possible amendments to the Fisheries Management Act, limits them to some degree. Liquidity risk stems primarily from the fact that the banks are mainly funded with sight deposits. Such deposits can prove unstable, including those owned by non-residents. The capital controls will be lifted in numerous increments with the aim of keeping the impact on liquidity within manageable limits. Furthermore, the Central Bank will ensure, as usual, that financial system liquidity is compatible with the level of monetary restraint at any given time.

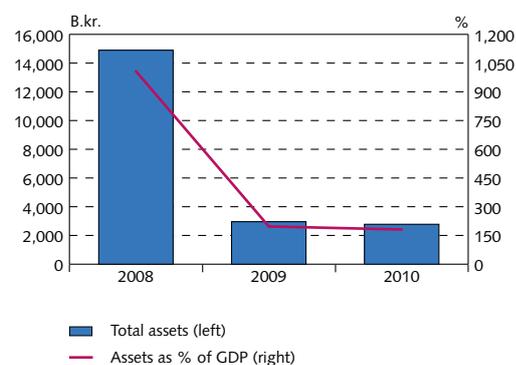
The banks' financial statements contain a number of estimated items – for example, income from the estimated rise in loan portfolio value – which complicates comparison and assessment. In their next financial statements, estimated items will probably be less prominent. Profitable operations of core activities are most important for the long term. The savings bank system has changed radically, with a reduction in the number of banks and a contraction in balance sheet size. Operations are difficult, and streamlining and simplification are needed. In 2010, the Treasury contributed substantial capital to the Housing Financing Fund (HFF). Clearly, it will have to contribute new capital to the Fund or grant it a subordinated loan if long-term capital adequacy objectives are to be achieved by the end of the year. During the upcoming examination of the operations of the Housing Financing Fund and the mortgage lending system, it is important that the Fund's activities be incorporated into the Act on Financial Undertakings. The fact that the new commercial banks are much smaller than their predecessors and are engaged solely in domestic operations reduces the risk to the public sector. Given the high level of uncertainty, it is important that credit institutions maintain sound capital adequacy and liquidity in the quarters to come.

### The financial system

#### Continued shuffling of financial institutions

The total assets of the financial system amounted to 7,600 b.kr. at year-end 2010. Banks and savings banks, collectively referred to as deposit institutions or deposit money banks (DMBs), are the largest entity in the financial system. DMBs' assets totalled about 2,800 b.kr., or just under two times GDP, and declined year-on-year. The savings bank system has contracted sharply in the recent term. When Byr Savings Bank failed in April 2010, its assets were transferred to a new commercial bank, Byr hf. In March 2011, SpKef Savings Bank merged

Chart II-1  
DMBs' total assets, % of GDP<sup>1</sup>



1. DMBs: September 2008, December 2009 and 2010. Parent companies.  
Sources: Central Bank of Iceland.

1. The section on financial companies is divided into two parts. Section 2.1 focuses on the status and operations of currently operating DMBs and the Housing Financing Fund (HFF). Section 2.2 reviews indications of the status of borrowers; that is, businesses and households. Figures in Section 2.1 are consolidated unless otherwise stated. That being the case, discussion of the aggregate position may diverge from that pertaining to individual financial companies. There could be errors or omissions in data received by the Central Bank from financial undertakings and the Financial Supervisory Authority. The Central Bank assumes no responsibility for the presentation of data or conclusions drawn on the reliability of external data, nor does it assume responsibility for any legal uncertainty that may arise.

with Landsbanki.<sup>2</sup> By now, the total assets of savings banks currently in operation account for only about 2% of total DMB assets. Assets of credit institutions other than commercial and savings banks totalled 1,100 b.kr., the bulk of them owned by the HFF. The DMBs being wound up have assets valued at 2,800 b.kr. as of year-end 2010.<sup>3</sup> The bulk of their assets are foreign-denominated loans and marketable securities, but they also have a substantial amount on deposit with currently operating commercial banks.

Table II-1 Financial system assets<sup>1</sup>

Assets (b.kr.)	31.12.2009	31.12.2010
Banking system	3,909	3,891
– commercial banks	2,573	2,644
– savings banks	383	137
Miscellaneous credit institutions	1,194	1,129
– Housing Financing Fund	795	836
Pension funds	1,849	1,992
Insurance companies	129	136
Undertakings for Collective Investment in Transferable Securities (UCITS) and investment funds	200	292
Government credit funds	146	160
Total assets	7,427	7,600

1. Internal transactions are not included. Non-resident entities are not included.

Source: Central Bank of Iceland.

## Commercial banks<sup>4</sup>

At present, there are five commercial banks operating in Iceland. The three largest ones are much larger than other financial institutions, with combined total assets comprising more than 90% of all commercial bank assets. The banks operate almost entirely in the domestic market and are considerably smaller than their predecessors. This is important for financial stability in that the smaller the scope of the banking system and the greater the share of its domestic-currency operations, the easier it is for the authorities to provide them with capital or liquidity facilities if necessary in order to reduce financial instability.

## Operating results<sup>5</sup>

### Uncertainty about actual loan values

The banks' financial statements for 2010 contain a number of estimated items. Chief among them are those pertaining to loan values;

- On 7 March 2011, SpKef Savings Bank merged with Landsbankinn, and the bank took over the savings bank's assets and liabilities. The settlement date of the merger was 1 January 2011.
- Total assets adjusted for netting. DMBs in winding-up proceedings with operating licences from the FME are Glitnir Bank hf., Kaupthing Bank hf., Landsbanki Íslands hf., and Keflavik Savings Bank. The FME has revoked the operating licences from other failed DMBs where a ruling on the winding up of the company has been handed down.
- According to a summary from the FME, five commercial banks were in operation in Iceland in March 2011: Arion Bank hf., Íslandsbanki hf., and Landsbankinn hf., here referred to as "the largest commercial banks"; and MP Bank hf. and Byr hf. The discussion here extends to end-December 2010 unless otherwise specified. When this section was in preparation, Byr hf. had not published its annual financial statements for 2010. The text takes this into account.
- The discussion of operating results is based on the largest commercial banks' consolidated financial statements for the year 2010. At the end of May 2011, the largest commercial banks published unaudited financial statements for Q1/2011. The quarterly financial statements do not change the conclusions drawn in this discussion.

for example, the real value of the transferred loan portfolio, estimated values of exchange rate-linked loans to firms, the use of so-called FX delta coefficients for calculation of the value of some exchange rate-linked loans, etc.<sup>6</sup> The banks' methods for estimating these values vary in many respects, as does the structure of their balance sheets, in part because of settlement with the estates of the old banks. Clearly, there is still considerable uncertainty about the actual value of the banks' loans – and therefore, about operating results, capital adequacy, and financial ratios.

### Interest rate differential and redemption of discounts

The combined calculated return on equity of Iceland's three large commercial banks totalled 20% in 2010. During the period, net interest income totalled 79 b.kr., and the combined interest rate differential was 3.1%. The calculated interest rate differential has therefore risen from its 2009 level of 2.4%. The banks' assets are funded largely through debt at non-indexed interest rates, particularly deposits. The reduction in deposit rates in 2010 increased the interest rate spread. In recent quarters, a portion of interest income has derived from redemption of discounts generated by the purchase of transferred loan portfolios. Methods for estimating the purchase price of the loans varied somewhat from bank to bank. In addition, the banks' methods for redeeming discounts differ, and they carry out the redemption over varying periods of time. Their calculated interest rate differentials therefore differ. These income entries will become proportionally smaller in the near future, and their calculated interest rate differential will decline as well. The banks must therefore ensure that the lending rates on restructured loans are consistent with their cost of capital so as to maintain acceptable profit.

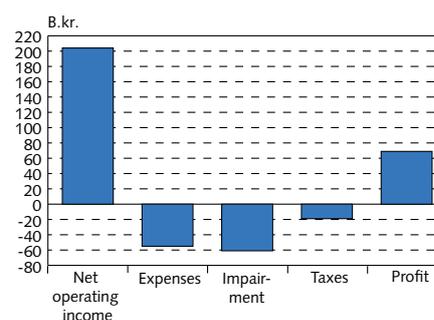
### Substantial income due to write-up of transferred loans

In 2010, the three commercial banks' income from commissions and fees totalled 18 b.kr., and their income from financial operations was about 23 b.kr. There were losses on marketable bonds and gains on equities. In spite of the appreciation of the króna during the year, the exchange rate gain totalled 18 b.kr., due primarily to Landsbanki's financial structure and the use of FX delta coefficients. It is likely that the weight of commissions and income from financial activities will grow as the economy strengthens and financial market turnover rises. During the period, there was considerable income from the appraised rise in value of the loan portfolios the banks took over from their predecessors. The commercial banks' combined capitalisation of the appraised increase in loan portfolio values totalled 78 b.kr., or just under 40% of net operating income.<sup>7</sup>

6. The banks' foreign exchange risk stems from imbalances in foreign-denominated assets and liabilities. Banks divide foreign exchange imbalances into two categories: imbalances related to exchange rate-linked loans to customers with foreign-denominated income and those involving customers with income in domestic currency. In their financial statements, the banks correct for a portion of the exchange rate gain/loss due to the latter imbalance by using so-called FX delta coefficients because they consider that the real value of such loans will not change in accordance with exchange rate movements. The FX delta coefficients are reassessed for each set of financial statements.

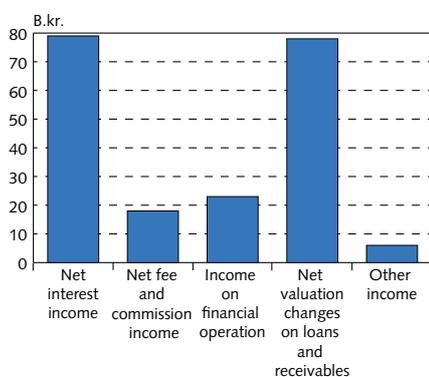
7. Income due to the appraised increase in the value of transferred loan portfolios after adjusting for charges due to changes in the value of asset-linked bonds, etc.

Chart II-2  
Commercial banks' income  
and expenses 2010<sup>1</sup>



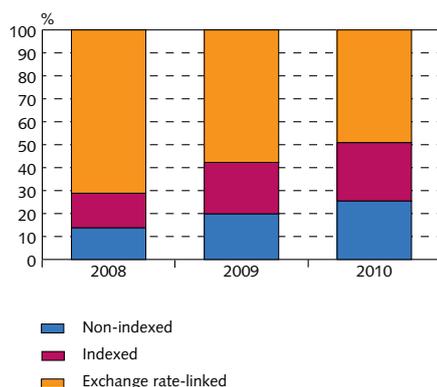
1. Commercial banks' consolidated accounts.  
Sources: Commercial banks' annual reports.

Chart II-3  
Commercial banks' net operating income 2010<sup>1</sup>



1. Commercial banks' consolidated accounts. Assessed increase in value of appropriated loans, adjusted for charges due to changes in value of asset-backed securities, etc.  
Sources: Commercial banks' annual reports.

Chart II-4  
Total commercial bank lending, by type of loan<sup>1</sup>



1. Commercial banks, parent companies.  
Sources: Central Bank of Iceland.

## Operating expenses and new impairment

Excluding income from financial operations and other sources, including write-ups of transferred loans, the banks' operating expenses constituted 57% of their total regular income. It is notable that the banks' operating expenses are virtually the same despite the difference in their size. Various levies on banking operations are foreseeable in the near future, such as an increase in the premium paid to the Depositors' and Investors' Guarantee Fund and a bank tax. Thus it is likely that operating expenses will rise unless the banks streamline their activities. New loan impairment amounted to 61 b.kr. during the period. A portion of that impairment is due to the write-down of exchange rate-linked loans that the Supreme Court has deemed unlawful. The ratio of impairment of loans and advances to net interest income was 77%. Massive impairment is associated with debt restructuring and widespread customer default.

## Loans

The bulk of the commercial banks' assets are in the form of lending. At year-end 2010, the book value of their total loans amounted to about 1,700 b.kr. The commercial banks' loans to companies represented about 56% of total lending, while some 25% of loans were to individuals and 5% to non-residents. Just under half of corporate loans were to service companies, and one-fourth were to fisheries. Half of the banks' loans were exchange rate-linked; however, that percentage has declined sharply in the recent term, partly as a result of the Supreme Court judgments on the legality of such loans. There is still considerable risk attached to foreign-currency loans, however, and there is a chance that their quality will deteriorate somewhat in the near future. For example, uncertainty about the legality of exchange rate-linked loans to companies and possible changes to the fisheries management system could weaken fisheries and thereby erode the value of the commercial banks' assets.<sup>8</sup>

## Composition of credit risk base

In calculating their capital adequacy ratio, commercial banks assess their credit risk according to the standardised method set forth in Financial Supervisory Authority (FME) rules.<sup>9</sup> Credit risk corresponded to a 1,800 b.kr. risk base at year-end 2010, with the largest commercial banks accounting for 99%. Just under 40% of the risk base is due to corporate loans, or about 645 b.kr., and 15%, or 268 b.kr., is due to loans to individuals and small companies. It is noteworthy that the second-largest credit risk item, 390 b.kr., was attributable to default. There is also considerable risk related to assets for resale, including the banks' subsidiaries that administer appropriated assets and assets the banks have acquired through financial restructuring, which are entered under the item "Other provisions."

8. *Financial Stability 2011/2* will discuss changes to the fisheries management system and the possible effect of such changes on financial stability.

9. FME Rules on the Capital Requirement and Risk-Weighted Assets of Financial Undertakings, no. 215/2007

Table II-2 Credit risk, capital adequacy requirement, and risk-weighted asset base<sup>1</sup>

B.kr.	Total capital adequacy requirement	Total risk-weighted asset base
Public sector, Gov't-owned companies, and financial undertakings	5	66
Corporations	52	645
Individuals and small companies	22	268
Loans secured by real estate	8	105
Default	31	390
Other provisions	27	337
Total	145	1,811

1. Commercial banking groups, year-end 2010.

Source: Financial Supervisory Authority

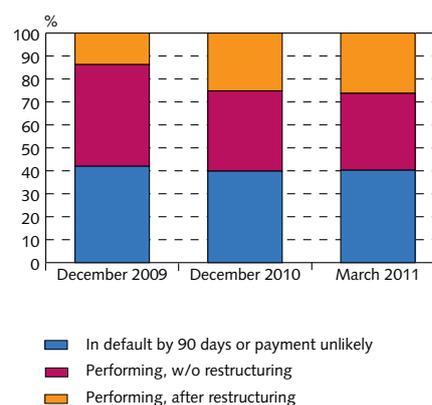
### Debt restructuring

An important element in the reconstruction of the commercial banks is the restructuring of their loan portfolios, but restructuring has progressed more slowly than originally assumed. There are a number of reasons for this, including delays in the preparation of the new banks' initial balance sheets, various uncertainties about Government policy action and the legality of loan agreements, economic instability, and insufficient knowledge within financial institutions about debt restructuring after a long upswing. The risk for the future is that loan quality will deteriorate, but the most important factors are customers' actual ability to pay and the value of collateral. In addition, loan values and write-off needs will be determined by general economic developments and by firms' operating conditions. By now, a large share of household debt has been restructured, but corporate debt restructuring has proceeded more slowly. Households and firms are heavily in debt and could have a negative effect on output growth, which in turn is a premise for their being able to handle their debt. The banks are faced with a choice between adjusting debt balances to the borrowers' capacity to pay or appropriating collateral. If the banks have difficulty making such decisions, this is cause for concern. Clearly, a fair share of firms are not viable. Highly leveraged firms that have not undergone restructuring are rather unlikely to engage in substantial investment or streamlining. As a result, it is desirable to expedite corporate debt restructuring to the maximum extent possible.<sup>10</sup> Although restructuring is proceeding more slowly than expected, performing loans following restructuring had increased from 14% of 2009 book value to 26% by end-March 2011. At the same time, default has remained virtually unchanged.<sup>11</sup> The success of the restructuring process differs somewhat, however, between banks and between customer groups. The percentage of performing restructured loans has risen most among firms with loan balances over 100 m.kr. and individuals with loan balances under 100 m.kr. Debt restructuring has proceeded slowly among firms with loan balances under 100

10. The status of households and businesses is discussed in greater depth in Section 2.2.

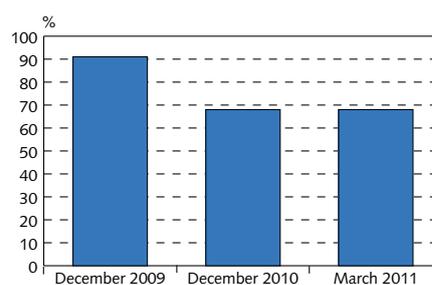
11. For this report, the term default refers to all loans 90 days or more in arrears or those for which payment is considered unlikely. If one loan taken by a given customer is 90 days in arrears, all of that customer's loans are classified as being in default. Thus default is higher than it would be if only those loans that are actually in default are included.

Chart II-5  
Percentage of total performing and non-performing loans<sup>1</sup>



1. The three largest commercial banking groups. Book value.  
Sources: Financial Supervisory Authority.

Chart II-6  
Restructured loans - extension of term ratio<sup>1</sup>



1. The three largest commercial banking groups. Book value.  
Sources: Financial Supervisory Authority.

m.kr. This is associated with slower-than-expected progress on the so-called "Straight Path".<sup>12</sup> Firms' lack of confidence in credit institutions and the uncertainty about the legality of exchange rate-linked loan agreements have deterred borrowers from participating in the programme, although this uncertainty should not impede the progress of the Straight Path, as participating firms do not relinquish any rights by availing themselves of the solutions offered. It is noteworthy that debt restructuring most often entails extending loan duration. This could be cause for concern, as such restructuring is only sustainable if future revenues are sufficient to cover debt service. For example, 68% of loans considered restructured have been lengthened. The percentage has fallen since 2009, however, when it was 91%. The large commercial banks' loans were transferred to them from the old banks at significant discounts, as credit risk was considered substantial. As a result, the banks have considerable leeway to restructure debt.

### Credit provisioning

The commercial banks' credit provisioning accounts equalled just under 9% of their lending at year-end 2010.<sup>13</sup> Write-offs have increased steadily, but the large credit provisioning balance is due primarily to default. In 1995-2004, before the old banks began expanding, their credit provisioning accounts averaged 3% of total loans. The balance of the credit provisioning account for loans to individuals rose by about 11% between 2009 and 2010, and that for loans to companies rose by about 8%. It is likely that measures to assist individuals have already been implemented for the most part; thus it is not expected that write-offs for individuals will increase to any marked degree. Write-offs of loans to companies will probably rise sharply in the near future, in accordance with progress made in corporate debt restructuring. The balance of the commercial banks' credit provisioning accounts varies; some of the banks have written off more than others, which indicates that the banks have made varying progress in debt restructuring.

Table II-3 Credit provisioning account balances<sup>1</sup>

% of loans	2009	2010
Loans to individuals	3.9	4.7
Loans to companies	8.6	11.6
Other loans	1.0	4.3
Percentage of total lending	6.5	8.8

1. Commercial banking groups, year-end 2009 and 2010 (excluding Byr hf.).

Sources: Commercial banks' annual accounts.

12. The so-called "Straight Path" is an agreement signed in mid-December, providing for co-ordinated action to resolve the debt problems of small and medium-sized companies. Information to the effect that the programme is proceeding more slowly than intended emerged at a conference on the progress of the "Straight Path," held on 22 March 2011 by the Iceland Chamber of Commerce, the Confederation of Icelandic Employers, the Icelandic Financial Services Association, the Ministry of Economic Affairs, and the Ministry of Finance.

13. The credit provisioning accounts of the largest commercial banks reflect only loan impairment after the new banks were established. If the valuation of the loans proves higher than was assumed on the initial balance sheets of the new commercial banks, this will raise the book value of the loans and the corresponding income entry in the profit and loss account. The credit provisioning account and impairment do not change.

### Mortgage loan-to-value ratios

At year-end 2010, 27% of mortgage loans had a loan-to-value (LTV) ratio over 90%. Governmental authorities in many other countries have set maximum limits for LTV ratios for new mortgage loans, including Norway (90%) and Sweden (85%). No such rules have been adopted in Iceland; however, they would provide lenders and borrowers a suitable amount of restraint and would prevent unnecessary risk-taking. Real estate market turnover has tended to rise in recent months, and one of the commercial banks recently began its advance into the market by offering mortgage loans at more favourable rates than the HFF currently offers.

Table II-4 Mortgage loan-to-value ratios<sup>1</sup>

%	30.06. 2010	31.12. 2010
Loan-to-value ratio 0-50	32	31
Loan-to-value ratio 50-70	19	19
Loan-to-value ratio 70-90	22	20
Loan-to-value ratio 90-100	8	8
Loan-to-value ratio over 100	16	19
Loan-to-value ratio unknown	3	3
Total	100	100

1. Commercial banking groups. Mortgage loans as a percentage of property values.

Source: Financial Supervisory Authority

### Large exposures decline

The FME monitors large exposures. According to FME data, total large exposures of the largest commercial banks amounted to 181 b.kr. at year-end 2010, the equivalent of 40% of their capital base.<sup>14</sup> A total of 17 exposures equalled or exceeded 10% of the capital base, and three exceeded the 25% regulatory maximum. The fact that large exposures have declined in amount and number is a positive sign. It is important to prevent facilities granted to individual customers and parties connected to them from creating large exposures in the accounts of more than one bank, as this could jeopardise financial stability.

Table II-5 Large exposures<sup>1</sup>

B.kr.	31.12. 2009	30.06. 2010	31.12. 2010
Large exposures, net	318	275	181
Statutory capital base	368	404	456
% of statutory capital base	87	68	40
Number in excess of 10%	25	19	17
Number in excess of 25%	4	3	3

1. Commercial banking groups.

Source: Financial Supervisory Authority.

14. Large exposures are exposures (lending, securities holdings, shares, guarantees granted, etc.) incurred by a financial undertaking with respect to a client or a group of financially connected clients, the value of which amounts to 10% or more of the own funds of the undertaking. According to the Act on Financial Undertakings, no. 161/2002, exposure resulting from one or more customers that are internally linked to one another may not exceed 25% of a financial undertaking's own funds, and the sum of large exposures may not exceed 800% of the undertaking's own funds.

## Imbalances between assets and liabilities

Transferring assets from the old banks to the new ones without a corresponding transfer of liabilities caused sizeable foreign exchange imbalances, as well as interest and indexation imbalances. Court judgments and legislation on the illegality of exchange rate-linked loans have reduced the imbalances, and the financial institutions have worked on restructuring their loan portfolios and reduced imbalances themselves. In addition, the Central Bank has concluded a currency swap agreement with one commercial bank and has purchased foreign currency as well. Indexation imbalances have increased considerably in line with the reduction of foreign exchange imbalances. If inflation rises, the effect on the banks' operations will be positive.

### Central Bank measures to reduce foreign exchange imbalances

New Rules on Foreign Exchange Balance took effect in January 2011. As before, the purpose of the Rules is to limit foreign exchange risk by preventing foreign exchange balances from exceeding defined limits. One of the most important changes from previous versions of the Rules is that the permissible open foreign exchange position in individual currencies has been reduced from 20% to 15% of equity, and the permissible total foreign exchange balance has been lowered from 30% to 15%. Due to the circumstances that developed after Iceland's banks failed, however, temporary provisions were added so as to allow the Central Bank to authorise financial institutions to maintain a separate positive or negative foreign exchange balance temporarily. Ever since the banking system collapsed, financial institutions have

#### Box II-1

### Central Bank of Iceland Rules on Foreign Exchange Balance and Liquidity Ratio

#### Rules on Foreign Exchange Balance

The current Rules on Foreign Exchange Balance, no. 950/2010, took effect on 1 January 2011. The first reporting under the new Rules took place in February 2011, when reports were submitted for January. As before, the purpose of the Rules is to limit foreign exchange risk by preventing foreign exchange balances from exceeding defined limits. One of the most important changes from previous versions of the Rules is that the permissible open foreign exchange position in individual currencies has been reduced from 20% to 15% of equity, and the permissible total foreign exchange balance has been lowered from 30% to 15%. Foreign exchange balance reporting is also more detailed than before, as foreign-denominated assets and liabilities are classified by type: loans, bonds, equity securities, shares in mutual funds, deposits, interest-bearing agreements, debts to the Central Bank, and so on. Due to the circumstances that developed after Iceland's banks failed, however, temporary provisions were added so as to allow the Bank to authorise financial institutions to maintain a separate positive or negative foreign exchange balance temporarily. When applying for such authorisation, financial institutions must present a dated timetable showing how they intend to bring their foreign exchange balance back within the limits provided for in the Rules. These exemptions will not be granted beyond 1 January 2013. As of May 2011, a total of 23 entities were required to submit foreign exchange balance reports, and 18 of them had received temporary exemptions, including all of the largest commercial banks.

### Rules on Liquidity Ratio

The current Rules on Liquidity Ratio, no. 317/2006, date from 2006. The aim of the Rules is to ensure that credit institutions always have sufficient liquidity to meet foreseeable and potential payment obligations during a specified period of time. Credit institutions are obliged to send the Central Bank monthly reports providing information underlying the calculation of their liquidity ratios. Claims and obligations that are included in the calculations are classified by type, maturity, and risk. The reports also specify what proportion in each category is included in the calculation. The liquidity ratio is calculated for four periods: < 1 month; 1–3 months; 3–6 months; and 6–12 months. The ratio of claims and liabilities that mature or can be converted to cash within one month and within three months shall not be lower than 1, or 100%. If the credit institution cannot fulfil this requirement, the Rules provide for sanctions in the form of per diem fines on the shortfall. Credit institutions shall disclose their liquidity ratios for other periods as well, even though there are no requirements concerning specific ratios for those periods. As of May 2011, a total of 24 entities were subject to the reporting requirement.

The Central Bank Rules on Liquidity Ratio are scheduled for review in the near future. It is considered obvious that new liquidity rules should incorporate the Basel III criteria, including the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR). The former of these measures short-term (30 days) liquid assets, whereas the latter measures security of funding. The criteria are international, but the rules provide for flexibility at the national level.

worked towards reducing their foreign currency imbalances. Such imbalances increase risk in the operations of the financial institutions concerned and necessitate higher reserve requirements. The market for hedging instruments is virtually non-existent in Iceland, and the capital controls limit domestic financial undertakings' access to foreign hedging options. Consequently, the banks have few options for correcting the situation while confidence in the Icelandic financial markets is limited and risk aversion is significant. The Central Bank has sought ways to ameliorate this problem in order to restore the financial system to better equilibrium and thereby contribute to financial stability. The Bank initiated discussions on this matter with financial institutions, with the aim of ensuring that the banks' foreign exchange imbalances due to net foreign-denominated assets generating income in foreign currency do not exceed 15% of their own funds. Towards the end of 2010, the Bank concluded a currency swap agreement with one of the commercial banks, as well as purchasing foreign currency to reduce the foreign exchange imbalance. These transactions promote increased financial system stability and bolster the Central Bank's non-borrowed foreign exchange reserves.

### Foreign exchange imbalances have diminished

At the end of 2010, the largest commercial banks' foreign exchange imbalances were about 66% of their capital base but had declined significantly year-on-year. In the largest commercial banks' annual financial statements, the foreign currency mismatches in their books are corrected with reference to the sensitivity of changes in the book

value of assets to exchange rate movements.<sup>15</sup> Their corrected foreign exchange mismatches totalled 13% of their capital base as of year-end 2010. Clearly, the imbalances will diminish if a portion of the banks' foreign-denominated loans to companies are deemed illegal. Such loans would then be converted to Icelandic krónur, changing the foreign exchange balance substantially.

Table II-6 Mismatches in assets and liabilities in foreign currency<sup>1</sup>

%	31.12.2009	30.06.2010	31.12.2010
Recorded foreign currency imbalance	143	115	66
Adjusted foreign currency imbalance	25	12	13

1. Imbalances as a percentage of the capital base. Totals from the three largest commercial banks.

Source: Commercial banks' annual accounts.

### Considerable indexation imbalances

According to information from the Financial Supervisory Authority, the commercial banks' indexation imbalances amounted to 166 b.kr. at year-end 2010. The imbalances have increased following the conversion of exchange rate-linked loans to indexed loans. In order to reduce the imbalances, the banks must increase their indexed deposits and issue indexed bonds when the opportunity presents itself. There is considerable fixed interest rate risk in the banks' loan books. Fixed interest rate risk stems from mismatches in asset and liability categories and exists primarily due to differences in indexed items; however, there is also considerable fixed interest rate risk related to foreign-denominated assets and liabilities. Based on the commercial banks' loan books at year-end 2010, the potential loss on a 1% rise in interest rates could have totalled 17 b.kr. Fixed interest rate risk amounted to 3.8% of the banks' capital base. As a result, the banks' fixed interest rate risk was sizeable at year-end 2010.

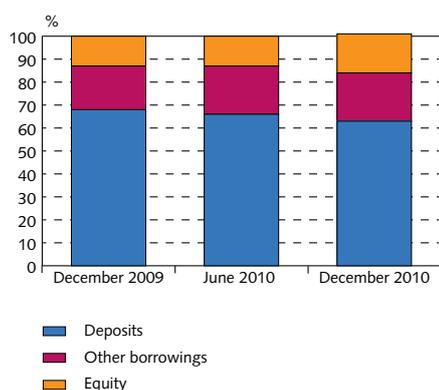
Table II-7 Fixed interest rate risk<sup>1</sup>

B.kr.	Nominal (non-indexed) items	Indexed items	Foreign-denominated items	Total
1% interest rate increase	-0,6	-15,4	-1,3	-17,3

1. Commercial banking groups. Year-end 2010.

Source: Financial Supervisory Authority.

Chart II-7  
Commercial banks' funding 2009-2010<sup>1</sup>



1. Commercial banks, parent companies.  
Sources: Central Bank of Iceland.

## Funding

### Sight deposits predominate

The vast majority of the commercial banks' funding comes from deposits. Deposits have declined as a share of total funding, however, and now account for about 2/3 of the total. The reduction in deposits indicates that customers have paid up debts; it suggests as well that deposits have begun to shift to other asset classes, such as marketable securities and real estate. The banks' liquidity risk is related primarily

15. In their financial statements, the banks correct for a portion of exchange rate gain/loss due to exchange rate-linked loans to customers with income in Icelandic krónur (FX delta coefficients) because they consider that the real value of such loans will not change in accordance with exchange rate movements. As uncertainty about customers' ability to pay and the legality of loan agreements in foreign currency diminishes, the need for such corrections is reduced. The Financial Supervisory Authority has authorised the use of FX delta coefficients in calculating the risk base due to exchange rate risk.

to potential withdrawal of deposits. Over 80% of the banks' deposits are sight deposits; therefore, the banks must be prepared for large-scale withdrawals at any given time. This is why it is important that the banks increase the weight of term deposits. If interest rates remain low, investment options increase in number, and risk aversion diminishes, the banks can expect a share of their deposits to shift over to other investment forms. It is also likely that a possible change in the blanket Government guarantee of deposits – cf. official declarations that deposits in Icelandic banks are guaranteed in full – will affect investors' choices. Non-residents hold about 12% of commercial bank deposits, and the old banks hold about 7%. Consequently, the banks must be prepared for the expatriation of a portion of these deposits, with the accompanying impact on their liquidity and on foreign exchange market flows.

The Central Bank's revised capital account liberalisation strategy discusses the largest commercial banks' liquidity position.<sup>16</sup> Among other things, the report assesses the strain on the banks' liquidity in the event of sudden, complete removal of the controls. It is clear that the banks can tolerate significant withdrawals because of substantial secure liquid assets, although it is not possible to lift all of the controls.<sup>17</sup> As of the end of March 2011, secure liquid assets held by the largest commercial banks amounted to 580 b.kr., or 39% of their total deposits. About 40% of secure liquid assets are in Icelandic Treasury bonds, and about one-third in foreign currencies.

Table II-8 Commercial bank deposits<sup>1</sup>

Deposits (b.kr.)	31.12.2009	30.06.2010	31.12.2010	Percentage of deposits
Residents	1,485	1,534	1,450	88%
– in Icelandic krónur	1,228	1,330	1,257	87%
– in foreign currency	257	205	193	13%
Non-residents	261	299	205	12%
– in Icelandic krónur	200	240	193	94%
– in foreign currency	61	59	13	6%
Total deposits	1,746	1,833	1,655	100%

1. Commercial banks, parent companies. Byr hf. deposits included as of June 2010.  
Source: Central Bank of Iceland.

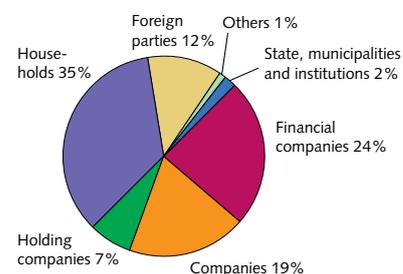
### Market funding needs to be increased

The banks' other borrowings remain limited, with the exception of a foreign-denominated bond issued by NBI (now Landsbankinn hf.) to Landsbanki Íslands hf. in connection with remuneration for the difference between transferred assets and liabilities. Clearly, the banks need to increase the weight of market funding when conditions and terms are acceptable. While it is difficult to time such actions, it would be possible to begin by issuing bills or bonds in the domestic market – covered bonds in particular – and then move on to foreign funding. In order to facilitate domestic market funding, it is necessary to finish

16. Capital account liberalisation strategy, Appendix II. Report from the Central Bank of Iceland to the Minister of Economic Affairs, 25 March 2011.

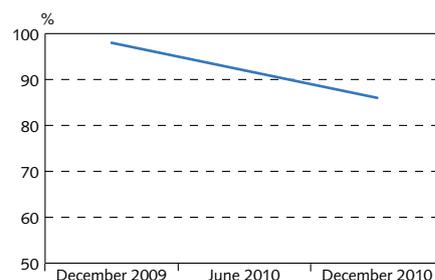
17. Here secure liquid assets are cash, financial institutions' deposits with others, securities eligible as collateral for Central Bank facilities, etc.; cf. the definition of secure liquid assets according to the FME's liquidity requirements.

Chart II-8  
Deposit owners 2010<sup>1</sup>



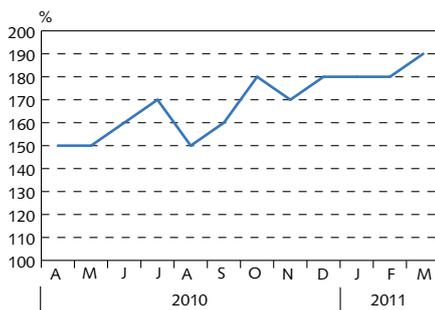
1. Commercial banks, parent companies.  
Sources: Central Bank of Iceland.

Chart II-9  
Commercial banks' deposits as % of loans 2009-2010<sup>1</sup>



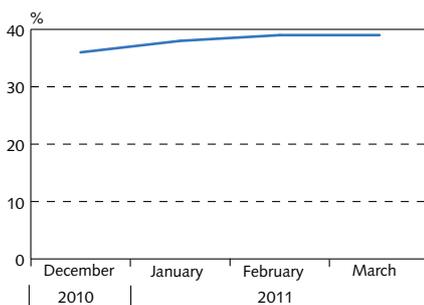
1. Commercial banks, parent companies.  
Sources: Central Bank of Iceland.

Chart II-10  
Commercial banks liquidity, 0-3 months<sup>1</sup>  
According to Central Bank of Iceland liquidity rules



1. Assets as % of liabilities. Largest commercial banks, parent companies.  
Source: Central Bank of Iceland.

Chart II-11  
Secure liquid assets as % of deposits<sup>1</sup>  
According to FME liquidity requirements



1. Largest commercial banks, parent companies.  
Source: Financial Supervisory Authority.

restructuring the banks' loans, and when the conditions is right, limit or revoke the Government declaration of blanket deposit guarantee. It is likely that foreign funding will be accessible first from multinational banks or institutions, and then later in the market, after a credit rating has been issued. In this context, it is assumed that the Treasury will have to pave the way by securing foreign funding and providing a benchmark for loan terms.

### Liquidity position according to Central Bank rules and FME requirements

The Central Bank sets rules governing credit institutions' liquidity. According to those rules, liquid assets and liabilities are classified by time periods and weighted in terms of risk. Assets and liabilities are classified in terms of four periods of time: those that are liquid within one month, from one to three months, from three to six months, and from six to twelve months. According to the rules, credit institutions shall have liquid assets in excess of liabilities in the first two periods. The rules entail a certain stress test where a discount is applied to various equity items, but where it is assumed that all obligations must be paid upon maturity, as well as a portion of other obligations, such as deposits, at short notice or none at all. In addition to the Central Bank rules, the Financial Supervisory Authority has demanded that the largest commercial banks hold liquid assets equal to at least 20% of all deposit balances and cash and cash equivalents, equivalent to at least 5% of sight deposits. The commercial banks meet the Central Bank's liquidity requirements and the Financial Supervisory Authority's requirements for deposit payout ratios.

### Preparation for implementation of Basel III liquidity rules

The Basel Committee on Banking Supervision has recently worked on preparing proposals for international liquidity rules. The Committee provides for two minimum ratios: the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR). The Central Bank and the FME have begun preparing for the implementation of the Basel III liquidity rules. New liquidity rules would supplant the current Central Bank liquidity rules.

### Equity and capital adequacy ratios

The current economic environment and uncertainty about the value of the banks' loans call for a strong capital position. The capital base of the largest commercial banking groups totalled 452 b.kr. as of year-end 2010, including subordinated loans amounting to just under 47 b.kr. The capital base therefore consists of share capital and accumulated operating revenues. The banks' capital ratio, according to the pertinent provisions of the Act on Financial Undertakings, was 21% at the end of the period, after rising by just over 5 percentage points year-on-year. All of the largest commercial banks now fulfil the FME's minimum 16% capital ratio requirement with room to spare. In 2010, MP Bank assessed its internal economic capital in collaboration with the FME.<sup>18</sup> In April 2011, MP Bank strengthened its capital position with

18. ICAAP and SREP, according to Basel II: Pillar 2.

the addition of new shareholders. The bank's capital ratio with the new share capital was about 24%. Byr hf. has had to write off significant amounts recently and is now seeking to strengthen its capital position.<sup>19</sup> The strong capital of each individual bank is important, but it does not take into account the contagion effect between institutions, which can cause systemic risk. In addition, there is still some uncertainty about the actual value of the banks' loans, and therefore about their equity.

### Operational risk

With the implementation of the Basel II regulatory framework, a capital requirement was made due to operational risk. The FME's capital adequacy rules define operational risk as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events including legal risk ..."<sup>20</sup> It is difficult to measure operational risk, at least in comparison with credit and market risk. All of the commercial banks use the so-called basic indicator approach in calculating operational risk, which estimates risk based on operating revenues. Calculated in this way, the operational risk of the largest commercial banks was just over 200 b.kr. at year-end 2010 and capital requirement 16 b.kr. The basic indicator approach is simple and perhaps does not give a clear view of actual risk. A salient example of substantial operational risk loss in Iceland is the loss accruing to the banks in the wake of the Supreme Court judgments on the illegality of exchange rate-linked loan agreements. Another example of possible operational risk can be found in the wide-ranging complaint filed with the EFTA Surveillance Authority (ESA) on the implementation and enforcement of the EU Consumer Affairs Directive, no. 93/13/EEC.

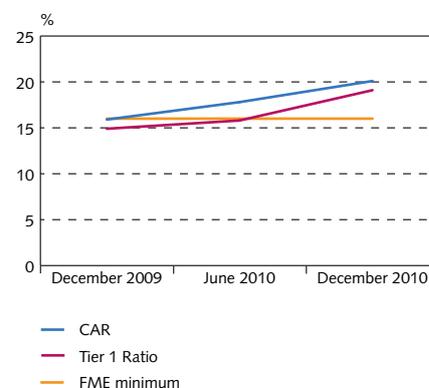
### Savings banks<sup>21</sup>

In recent months, savings banks have declined in number and their balance sheets have contracted sharply. The savings banks' total assets amounted to about 61 b.kr. as of year-end 2010, after having declined by over 90% since year-end 2008. The greatest impact comes from the collapse of SPRON, the conversion of Byr Savings Bank to a commercial bank, and the merger of Mýrasýsla County Savings Bank and SpKef Savings Bank with Arion Bank and Landsbankinn.

### Restructuring of the savings banks

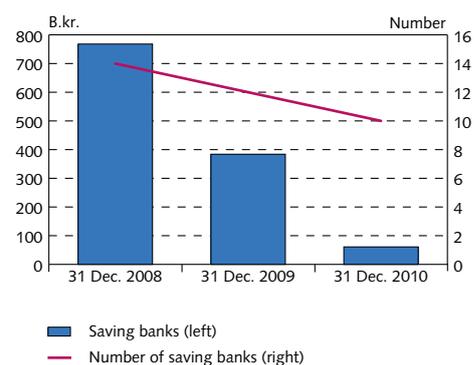
In 2010, work was concluded on the restructuring of the five savings banks that did not meet minimum capital adequacy requirements in the wake of the banking crisis.<sup>22</sup> The Icelandic State Financial Investments (ISFI) agency administers the State's holdings in the

Chart II-12  
Capital adequacy ratio 2009-2010<sup>1</sup>



1. Largest commercial banks' consolidated accounts.  
Sources: Commercial banks' annual reports.

Chart II-13  
Saving banks: assets and number of banks<sup>1</sup>



1. Savings banks, book value at year-end. Excluding Spkef Savings Bank in 2010.  
Source: Central Bank of Iceland.

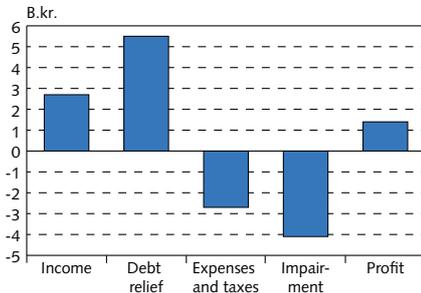
19. In mid-May 2011, when this section was in preparation, Byr hf. had not published its annual financial statements for 2010.

20. Rules on the Capital Requirement and Risk-Weighted Assets of Financial Undertakings, no. 215/2007.

21. In this section, savings banks refers to savings banks in operation as of year-end 2010, with the exception of SpKef Savings Bank, which merged with Landsbankinn in March 2011. Figures are consolidated unless otherwise stated. Discussion of the aggregate position may therefore diverge from that of individual financial companies.

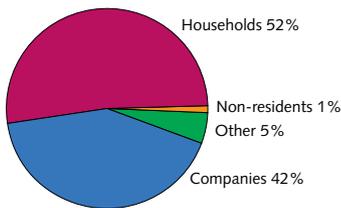
22. These are Sparisjóður Norðfjarðar (27 July 2010), Sparisjóður Bolungarvíkur (22 September 2010), Sparisjóður Vestmannaeyja (10 December 2010), Sparisjóður Þórshafnar og nágrennis (22 December 2010), and Sparisjóður Svarfdæla (22 December 2010). The date of each savings bank's financial restructuring agreement is in parentheses.

Chart II-14  
Savings banks' income and expenses 2010



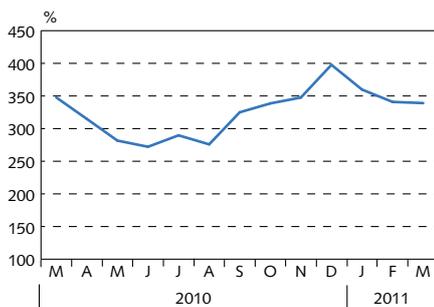
Source: Savings banks' annual reports.

Chart II-15  
Breakdown of savings bank loans 2010<sup>1</sup>



1. Savings banks, book value at year-end. Excluding Spkef Savings Bank.  
Sources: Central Bank of Iceland.

Chart II-16  
Savings bank liquidity, 0-3 months<sup>1</sup>  
According to Central Bank of Iceland liquidity rules



1. Assets as % of liabilities. Savings banks in operation in March 2011.  
Source: Central Bank of Iceland.

savings banks. ISFI is preparing a strategy for a sound long-term operational foundation for the savings banks and is exploring various streamlining options for the system as a whole, together with stakeholders.

### Irregular items prominent in financial statements

The savings banks' combined profit for 2010 amounted to 1.4 b.kr. Income due to debt relief and hefty impairment stemming from debt restructuring characterised the savings banks' financial statements. Combined income entries owing to debt forgiveness amounted to 5.5 b.kr. during the year, and loan impairment was 4.1 b.kr. The savings banks' largest regular income item is net interest income. Net interest income totalled just under 2 b.kr. in 2010, and the interest rate differential was about 3%. Furthermore, net fees and commissions were just over 400 m.kr., and operating expenses were about 2 b.kr. during the year. Earnings from regular operations before interest and impairment were just over 600 m.kr. in 2010.<sup>23</sup> The savings banks' profit from regular operations is therefore quite small, and the expense ratio of the sector is high.

### Half of loans to households

In 2010, the savings banks' loans to customers and credit institutions totalled about 53 b.kr., or 87% of their total assets. Just over half of their loans to customers are to households, where as 42% are to businesses. A scant one-third of corporate loans were to service firms, and another third were to fisheries. About half of loans are indexed, and roughly one-third are exchange rate-linked. As has previously emerged, many savings banks underwent financial restructuring last year and wrote off large amounts. Measures to assist households with overleveraged residential property by reducing their LTV ratios to 110% have also affected the savings banks' loan quality.

### Status according to precautionary rules

As of end-March 2011, the savings banks' foreign exchange balance, according to the Central Bank Rules on Foreign Exchange Balance, totalled about 35% of their capital base. The foreign exchange balance is still in excess of the maximum specified in the Central Bank Rules, but a large number of savings banks have been granted exemptions. The exemptions are subject to the requirement that the savings banks work systematically towards reducing their foreign exchange risk.

The savings banks' liquidity is generally good, and well above the limits set by the Central Bank in its liquidity rules. Like the commercial banks, the savings banks are funded primarily with deposits; therefore, their liquidity risk is related to withdrawals. The savings banks that have undergone financial restructuring must fulfil the liquidity requirements set by the FME, as well as complying with the Central Bank's liquidity rules. The Financial Supervisory Authority requires that they hold liquid assets equal to at least 10% of all deposit balances and cash and cash equivalents, equivalent to at least 5% of

23. Regular operations refers to net interest income, regular service income, and miscellaneous operating income, less operating expenses.

sight deposits. All of the above-mentioned savings banks meet the FME requirements.

The capital ratios of the restructured savings banks, defined in accordance with the FME rules on financial institutions' capital ratios, were over 16% of their risk-weighted asset base following restructuring. The capital position of the savings banks that have not undergone financial restructuring varies, and they are unequally well prepared for strain on their capital.

#### **SpKef Savings Bank merges with Landsbankinn<sup>24</sup>**

In April 2010, the FME decided to transfer the assets and liabilities of Keflavík Savings Bank to SpKef Savings Bank. The FME's objective was to ensure access to deposits, provide for uncurtailed and undisturbed access to banking services, and prevent further damage to the financial market. At year-end 2010, SpKef Savings Bank's capital was negative by just over 11 b.kr., and the bank needed some 19 b.kr. in order to meet the minimum capital adequacy requirement. The savings bank's liquidity problem had therefore become severe. It was clear that its operations and future were entirely dependent on direct Government support and guarantee. In early March 2011, ISFI announced that it would be most efficient and economical to merge SpKef Savings Bank with Landsbankinn instead of funding it separately. Later that month, Landsbankinn and the Minister of Finance signed an agreement concerning the acquisition and merger of Landsbankinn and SpKef, which the FME approved, citing the failure of planned funding activities and the magnitude of the savings bank's capital and liquidity problems, which rendered it unable to fulfil its obligations to customers or creditors.

24. The Financial Supervisory Authority decision on the status of SpKef Savings Bank, dated 5 March 2011.

At the commercial and savings banks' service locations and automatic teller machines (ATMs), customers can avail themselves of a variety of services, including withdrawals, transfers of funds, payment of invoices, and account balance information. The same information and payment services can be obtained from service desks, online banking, and a variety of other web-based services, although it is not possible to obtain cash in this way.

There were just under 2500 customers per DMB service location in Iceland, as opposed to 3800 in the Nordic countries. Use of online banking is widespread. The map on the following page illustrates, by region, the geographical distribution of service locations – branches, service outlets, and ATMs – operated by Icelandic commercial and savings banks as of year-end 2010. The service network was densest in the greater Reykjavík area, with 41 service locations and 95 ATMs. The number of inhabitants per service location was also greatest in greater Reykjavík, at just under 5,000 inhabitants per service outlet, whereas in the West Fjords there was one service

1. Information on the number and location of ATMs was acquired from DMBs on 16 May 2011. Information on bank service locations and users of online banking services as of 31 December 2010 was obtained from the Financial Supervisory Authority. Population figures by region as of 1 December 2010 were obtained from Statistics Iceland. The Central Bank is not responsible for the reliability of such external data.

#### Box II-2

### Banks' service locations and ATMs<sup>1</sup>

location for every 475 inhabitants. A total of 202 ATMs were in use in Iceland at that time, most of them (95) in greater Reykjavík and the fewest (7) in the West Fjords.

Service locations declined by 15% from the beginning of 2009, and the number of ATMs fell by 20%. There were 152 service locations at the beginning of 2009 and 129 at the beginning of 2011. Over the same two-year period, the number of ATMs fell from 254 to 202.

At year-end 2010, 245,396 customers used individual online banking services, and 58,457 used corporate online banking. As expected, online banking and use of other web-based banking services has skyrocketed since the turn of the century, easing the strain on branches and other service locations.

### Commercial and savings banks' service locations

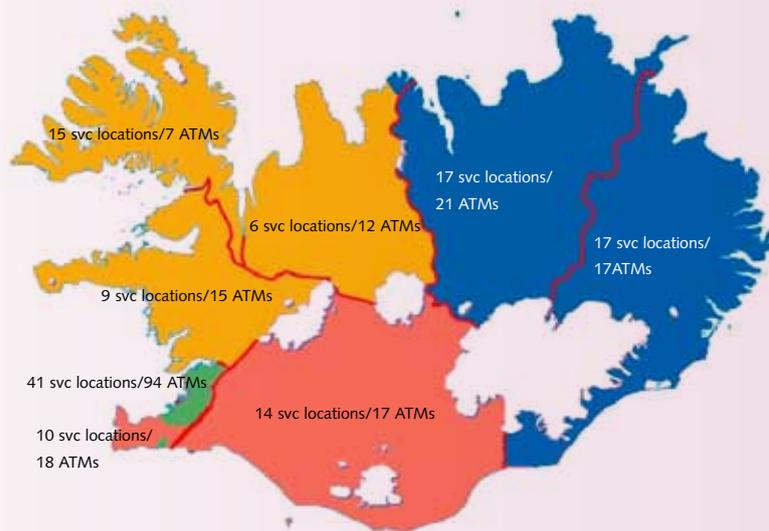
Service outlets (branches and other service locations) and ATMs

Distribution of ATMs	ATMs	Inhab./ATM
Greater Reykjavik	95	2,151
West Iceland	15	1,025
West Fjords	7	1,018
Northwest Iceland	12	615
Northeast Iceland	21	1,381
East Iceland	17	724
South Iceland	17	1,400
Reykjanes	18	1,170
Total	202	1,583

\* Information from DMBs, May 2011.

Distribution of service locations (branches and other service locations)*	Service locations	Inhabitants /service location
Greater Reykjavik	41	4,931
West Iceland	9	1,708
West Fjords	15	475
Northwest Iceland	6	1,230
Northeast Iceland	17	1,706
East Iceland	17	724
South Iceland	14	1,700
Reykjanes	10	2,105
Total	129	2,467

\* Information from FME and Statistics Iceland, December 2010.



## Housing Financing Fund

In the recent term, the operation and capital position of the Housing Financing Fund (HFF) has been strongly affected by the economic situation and the Government's actions to assist overleveraged households.

### Heavy impairment due to overleveraged residential property

The HFF's operating loss totalled 35 b.kr. in 2010. Net interest income declined by 10% year-on-year, particularly due to lower interest rates on liquid assets and increased appropriated assets. During the year, the Fund raised its interest premium from 0.45% to 0.9% in three increments, in response to declining interest income and increased impairment. As a result, the Fund's lending rates have not fallen commensurate with the yields on HFF bonds. The HFF had to write off a full 36 b.kr. during the year. Impairment due to measures to assist overleveraged households by reducing their LTV ratios to 110%

totalled about 23 b.kr. as of year-end 2010. The Fund has stated that the write-down to 110% will probably affect about 9,000 households. Furthermore, information from the Fund indicates that about 70% of loans to be written down are performing. The Central Bank is of the opinion that this is a serious drawback of the 110% approach; that is, that solvent borrowers are having a portion of their debt cancelled. In the final analysis, the write-downs will be funded with taxpayer money. If economic developments are negative, the quality of HFF loans will remain uncertain.

### Properties owned by the HFF increased in number year-on-year

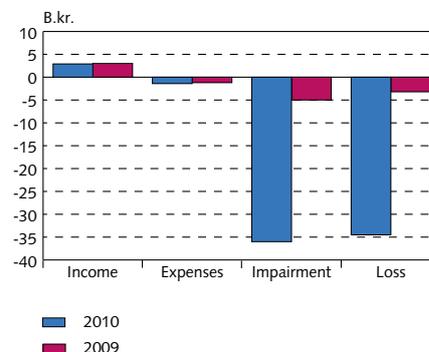
The HFF's total assets amounted to 836 b.kr. at year-end 2010. About 90% of HFF's assets are loans backed by real estate. Loans contracted slightly year-on-year. The HFF is the largest provider of mortgage loans in Iceland, with an estimated market share of over 50%. Default among the Fund's borrowers has been on the rise, and loans in serious default (more than 90 days in arrears) totalled 73 b.kr., or 9.7% of total loans, as of year-end 2010. The number of properties owned by the HFF has risen steeply. At end-2010, the Fund owned 1,069 residential properties appropriated in satisfaction of claims, as opposed to 347 properties at year-end 2009. The book value of properties for sale totalled some 15 b.kr. at year-end; just under one-third of them are being rented out. The HFF finances mortgage lending by issuing indexed HFF bonds. The bonds are in four series maturing at intervals of 10 years, beginning in 2014. Also outstanding are older Housing Bonds and Housing Authority Bonds. At year-end 2010, their securities issuance totalled 820 b.kr., after increasing 6% year-on-year. All of the Fund's issued securities are backed by a simple Government guarantee. It is important for the HFF that the mismatches between its assets and liabilities be kept to a minimum. The difference between the average maturities is small, but the balance between average maturities could be upset if a substantial amount of debt is repaid. The HFF's indexation imbalance is negative, in part because of cash for liquidity management. If inflation increases, the effect on the Fund's operations will be negative.

### HFF in capital adequacy difficulties

The HFF's equity amounted to 8.6 b.kr. as of year-end 2010, after having declined by 1.5 b.kr. year-on-year in spite of a 33 b.kr. capital injection from the Treasury. After the capital injection, the Fund's capital ratio was 2.2%, having dropped from 3% at year-end 2009 in spite of the contribution.<sup>25</sup> The Fund's long-term goal is to maintain an equity ratio over 5.0%. Clearly, the Treasury will have to contribute substantial new capital to the Fund or grant it a subordinated loan if long-term capital adequacy objectives are to be achieved by the end of 2011. Under current fiscal conditions, it can be assumed that the capital injection must be financed with borrowed funds.

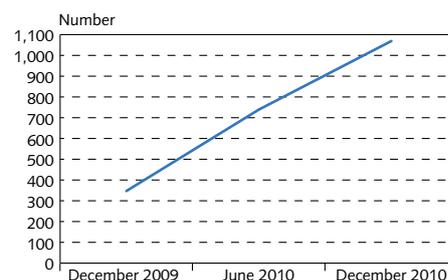
25. The Housing Financing Fund's equity ratio is calculated in accordance with the provisions of the Regulation on the Financial Position and Risk Management of the Housing Financing Fund, no. 544/2004. The percentage is calculated in the same manner as the capital adequacy ratio of financial undertakings.

Chart II-17  
HFF income and expenses 2009-2010



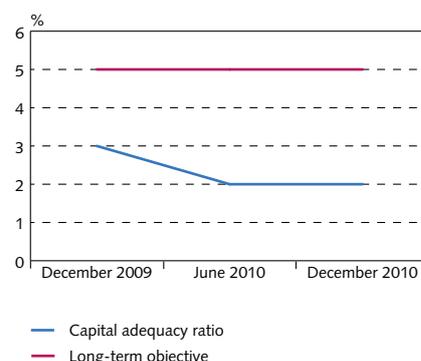
Source: HFF's annual reports.

Chart II-18  
Residential properties owned by HFF



Source: HFF's annual reports.

Chart II-19  
HFF's capital adequacy ratio<sup>1</sup>



1. Capital adequacy ratio according to Regulation no. 544/2004.  
Source: HFF's annual reports.

**Review of HFF operations on the horizon**

The EFTA Surveillance Authority (ESA) approved the capital injection from the Treasury in March 2011, subject to the requirement that a detailed plan for the restructuring of the Fund's social and competitive role be completed by end-September 2011. In addition, Parliament has approved a parliamentary resolution on an investigation of the Housing Financing Fund's operations during the period 2004-2010. Following that investigation, the policy and operations of the Fund and the funding of Iceland's mortgage lending system will undergo a comprehensive review. The Central Bank is of the opinion that, given the broad scope of the Housing Financing Fund's activities and the various types of risk attached to them, the Fund's operations should fall within the scope of the Act on Financial Undertakings, even through the specified minimum capital adequacy requirement may be different than for other financial institutions. This would place the Fund on the same footing as commercial and savings banks with respect to financial supervision. Such a move would increase the monitoring of the Fund's activities.

## Appendix II-1

### DMBs' balance sheets 31 March 2011

Deposit money banks' balance sheet summaries are prepared based on monthly reports from the DMBs themselves to the Central Bank. At end-March 2011, five commercial banks, 10 savings banks, and one credit co-operative submitted balance sheet reports.

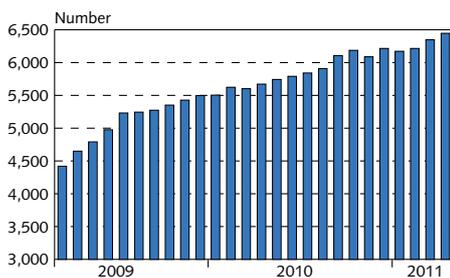
Table 1 Balance sheet summary, deposit money banks, 31 March 2011

Assets	Balance in m.kr.	Liabilities	Balance in m.kr.
<i>Cash and deposit balances with the Central Bank of Iceland</i>	100,633	<i>Debt with the Central Bank</i>	1,897
Banknotes and coin	4,063	Debt with the Central Bank	0
Foreign banknotes and coin	2,565	Overnight loans	1,897
Current account with Central Bank	32,525		
FX account with Central Bank	4,274		
Certificates of deposit	57,207	<i>Trading liabilities</i>	28,576
		Market derivatives	1,703
<i>Financial assets held for trading</i>	126,405	Short positions	26,867
Market derivatives	1,367	Instruments of debt	0
Equity securities < 10% shareholdings	11,000	Other financial current liabilities	7
Bonds and bills	114,038		
		<i>Financial liabilities at fair value through P&amp;L</i>	537
<i>Financial assets at fair value through P&amp;L</i>	167,339	Securities issuance	230
Equity securities < 10% shareholdings	10,600	Subordinated loans	308
Bonds and bills	156,739	Direct borrowings	0
<i>Financial assets available for sale</i>	116,865	<i>Financial obligations at original price</i>	2,208,698
Equity securities < 10% shareholdings	422	Deposits from credit institutions	279,553
Bonds and bills	116,443	Deposits from others than credit institutions	1,459,780
		Securities issuance	7,516
<i>Loans and accounts receivable</i>	2,010,476	Subordinated loans	50,146
Claims other than direct lending	262,250	Other direct borrowings	411,703
Lending – write-offs	1,748,226		
		<i>Financial liabilities related to transfers of financial assets</i>	0
<i>Investments held to maturity</i>	94		
Bonds and bills	94	<i>Derivatives due to hedging of risk</i>	0
<i>Derivatives due to hedging of risk</i>	0	<i>Other liabilities</i>	68,132
<i>Shares in associates, subsidiaries, and joint ventures ≥ 10% shareholdings</i>	110,124	<i>Liabilities, total</i>	2,307,841
Associated companies	15,624		
Shares in related companies	94,500		
<i>Other assets</i>	123,177	<i>Equity and minority interest</i>	447,273
<i>Assets, total</i>	2,755,114	<i>Total liabilities and equity</i>	2,755,114

## 2.2 Borrowers: Businesses and households

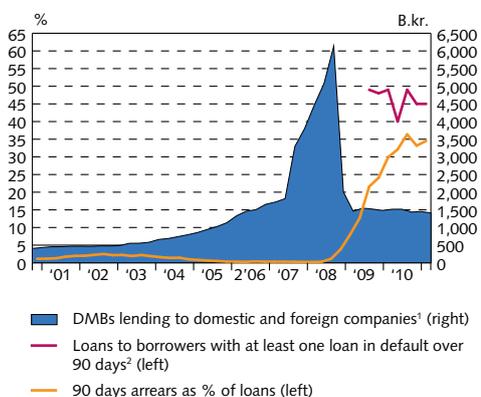
Iceland's private sector is heavily leveraged in comparison with other countries. One-third of companies have had negative equity for a protracted period of time. Some of these firms are not viable but managed to survive during the upswing because of easy access to credit. In many instances, the profits from the boom years were not operating profits from regular business activities but exchange rate or trading gains. In general, firms appear to have reacted to external circumstances and taken action in response. The operating profit of firms with positive equity is higher than at any time since 1997. There are signs that households' financial position is improving, although some are still in difficulty. Purchasing power is similar to 2003 levels. The banks appear to be well on their way towards restructuring household loans, but much work has yet to be done for corporate loans. It is critical to expedite corporate restructuring, wind up non-viable companies, and restructure viable companies' debts.

Chart II-20  
Companies in serious default  
March 2009 - April 2011



Source: CreditInfo.

Chart II-21  
Companies arrears in the three largest banks and DMBs lending to domestic and foreign companies



1. Book value, parent companies. 2. Non-performing loans are defined as loans that have been in default for more than 90 days or payment is deemed unlikely. If a borrower's loan is non-performing, then all loans this borrower is considered non-performing (cross default method).  
Sources: Financial Supervisory Authority, Central Bank of Iceland.

### Corporations

#### High default ratio ...

Ever since the economy collapsed, corporate default has been substantial. The default register currently includes almost 6,500 companies, the highest number since March 2009.<sup>26</sup> At the end of Q1/2011, the three largest commercial banks' corporate arrears totalled about 34% of their total lending to firms, after having declined marginally since Q3/2010. Chart II-22 shows the book value of the three commercial banks' corporate loans by payment status. In terms of total value, almost 45% of loans were non-performing; that is, in default for more than 90 days or deemed unlikely to be paid. If one loan taken by a customer is non-performing, all of that party's loans are considered non-performing; i.e., the cross-default method is used. If the legality of the loan agreement is in dispute, this could cause an underestimation of the capacity to pay because it could be that the borrower is withholding payment until a conclusion is reached. According to the same definition, 32% of loans are performing without restructuring, and 23% are performing after restructuring. These percentages have changed little in the past 12 months.<sup>27</sup> The percentage of loans that are performing following restructuring has tended to rise, and the share that are performing without restructuring has declined. About half of outstanding non-performing loans are in the restructuring process. Once the process is complete, they could be reclassified as performing loans after restructuring, they could be sent for collections, or the borrower could undergo bankruptcy proceedings. There is considerable uncertainty about at least one-fourth of corporate loans. The insignificant changes in the default ratios over the past month are due in part to the fact that lending has contracted at the same time that the amount in default has declined.

#### ... and restructuring is proceeding slowly

Businesses are still heavily leveraged. Firms were assessed to own about 243% of GDP at the end of March 2011, as opposed to 330% of

26. Based on the CreditInfo default register. Businesses on the default register are those seriously in arrears; in general those whose debts are in arrears by at least 90 days.

27. The available data extend to March 2011. The last 12 months are therefore from March 2010 to March 2011.

GDP in the fall of 2008. In comparison, the year-end 2010 debt ratio was 105% GDP in the UK, 98% in the euro area, and about 75% in the US. These figures show that, in comparison with other countries, Icelandic businesses are heavily in debt relative to GDP. Chart II-23 shows that Icelandic firms' ratio of debt to GDP began to rise as early as 2003 and has been much higher than that of comparison countries ever since. It should be borne in mind, though, that a considerable share of this debt is that of multinational corporations; therefore, their revenues might be a more suitable measure in many respects. Chart II-21 shows that the book value of loans from DMBs' parent companies to domestic and foreign firms rose sharply in 2006-2008. The depreciation of the króna was a significant factor in the rise in book value, as at least half of the loans were exchange rate-linked. After the banks collapsed, book value declined sharply. A portion of the loan portfolios was left in the bankrupt estates, some DMBs were not reconstructed and therefore are not included in the figures, and a portion of the loan portfolios had been used as collateral and remained with the holder of collateral when the banks failed.

The percentage of non-performing corporate loans is also very high in comparison with other financial crises. As can be seen in Table II-9, the percentage is now similar to that in Indonesia at the turn of the century. It is of paramount importance that corporate debt restructuring efforts be successful and that they be expedited to the maximum extent possible.

Table II-9 Corporates non-performing loans

%	Indonesia	Korea	Malaysia	Thailand	Czech Republic	Turky	Mexico	Brazil
1998	49	-	15	-	21	7	11	5
1999	33	20	15	41	22	10	9	9
2000	56	14	11	27	20	11	6	8
2001	50	10	11	22	14	29	5	6
2002	42	-	10	-	10	14	5	6
2003	-	-	-	16	8	15	-	-

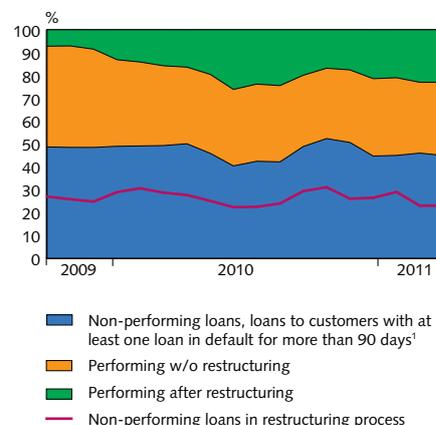
Source: Corporate Restructuring Lessons from Experience (2005). Eds. Michael Pomerleano and William Shaw.

Disputes about the legality of loan agreements are one of the factors that have delayed debt restructuring. In order to expedite restructuring, the authorities, the Confederation of Icelandic Employers, and financial institutions have signed an agreement concerning the debt of small and medium-sized companies, called the "Straight Path." Some creditors have negotiated amongst themselves concerning the acquisition of larger firms. A great deal of work remains to be done. Firms in default do not operate in a normal operating environment and are unlikely to invest, streamline, grow, or develop. Systematic restructuring of viable companies' debt is needed in order to ensure them a normal environment in which to operate. A high default ratio also increases uncertainty in the financial system, and this uncertainty must be eliminated as soon as possible.

**Bankruptcy and unsuccessful distraint on the rise**

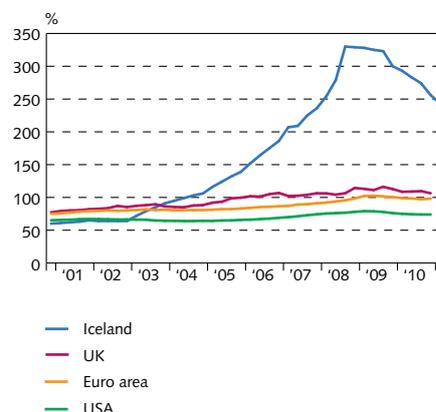
Temporary measures to lighten firms' debt service burden, such as freezing of loans, are mostly finished. There are strong indicators of

Chart II-22 Status of loans from the three largest banks to companies, book value



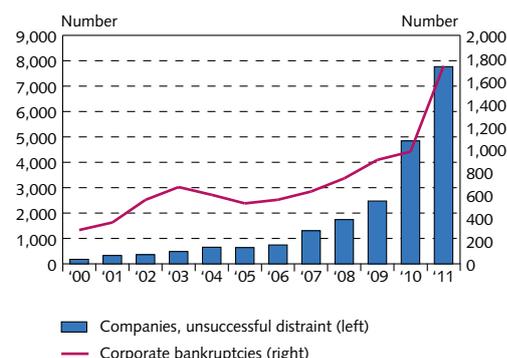
1. Non-performing loans are defined as loans that have been in default for more than 90 days or deemed unlikely to be paid. If one loan taken by a customer is non-performing, all of that party's loans are considered non-performing, i.e. cross default method is used. Source: Financial Supervisory Authority.

Chart II-23 Companies debt as a % of GDP



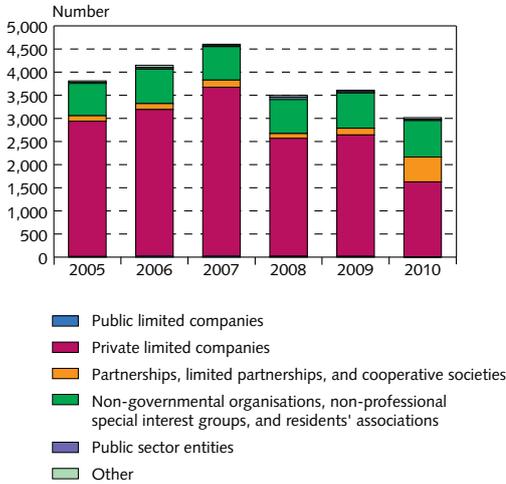
Sources: IMF, Central Bank of Iceland.

Chart II-24 Corporate bankruptcies and unsuccessful distraint Total for entire year<sup>1</sup>



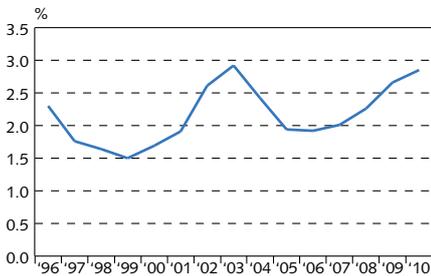
1. Total number for 2011 is extrapolated from first quarter. Sources: Registers Iceland, Statistics Iceland.

Chart II-25  
Number of new registered companies and organisations



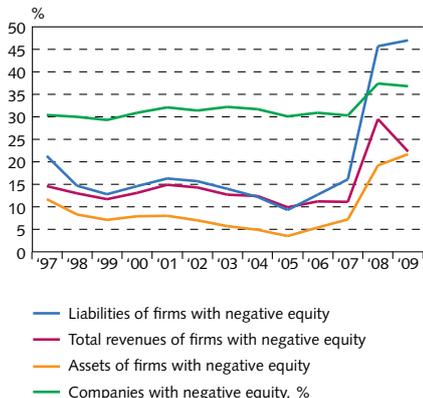
Source: Statistics Iceland.

Chart II-26  
Corporate bankruptcies, frequency



Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-27  
Companies with negative equity their assets, liabilities and revenues as % of total



Source: Statistics Iceland.

increased collections, which may be necessary in order to expedite the winding up of companies that are not viable. In the latter half of 2010, 3,489 unsuccessful distraint actions<sup>28</sup> were taken against companies, as opposed to 1,058 during the same period in 2009. The number of bankruptcies also rose last year, from 910 in 2009 to 982 in 2010. During the first three months of 2011, a total of 1,942 unsuccessful distraint actions have been taken against companies, a year-on-year increase of 160%. Over the same period, 433 firms have declared bankruptcy, a 67% increase. Data indicate that, in many instances, collection concludes with unsuccessful distraint without any bankruptcy proceedings. Conceivably, this is done in order to avoid the cost associated with the bankruptcy process, for it is often the case that there is little to gain from further collections procedures.

The status of companies varies greatly from sector to sector. For example, export firms' operating environment improved with the depreciation of the Icelandic króna. The real exchange rate has been historically low, which supports the export sector. On the other hand, firms that depend on imported resources and sell products domestically are in difficulties. The frequency of bankruptcy and unsuccessful distraint is highest in the building and construction sector, which has contracted steeply following the enormous growth of the pre-crisis years.

**Frequency of bankruptcy often underestimated**

New company registrations have declined somewhat since 2007, when they peaked at around 4,500. The private limited liability company (ehf.) is by far the most popular operational form. Interest in limited partnerships surged in 2010, however, after amendments were made to tax legislation.

Risk appetite varies in accordance with operational form. During the period 2005-2010, some 98% of companies and organisations subjected to bankruptcy proceedings were private limited companies, which accounted for about half of all firms (see Table II-10). About 1.7% were public limited companies, and about 0.3% were partnerships, limited partnerships, or cooperative societies. Bankruptcy is virtually unheard of among other types of companies, as these include the public sector or entities not engaged in actual commercial activities.<sup>29</sup>

Figures on the number of firms are usually taken from Statistics Iceland data on the number of registered companies and organisations, which in turn are based on the Directorate of Internal Revenue's Enterprise Register. Table II-10 breaks these figures down into six categories, by operational form. Actual commercial activities are usually carried out only in the first three categories: public limited companies; private limited companies; and partnerships, limited partnerships, and cooperative societies. The number of firms in Iceland that are engaged

28. The total number of unsuccessful distraint actions. The same company can be subject to unsuccessful distraint more than once.

29. Of over 4,300 listed corporate bankruptcies in 2005-2010, only seven fall outside these three categories. Of these, four are individuals with operations under their own national ID number. Registration of such operations is not mandatory. The operations are classified as companies in the Directorate of Internal Revenue's Enterprise Register if the national ID number was registered before 1 July 2003.

in commercial activities is therefore the sum of these three categories, or about 55% of firms appearing on the Statistics Iceland register.

**Table II-10 Number of companies and organisations, by operational form**

	2005	2006	2007	2008	2009	2010
Public limited companies	880	891	852	797	753	712
Private limited companies	23,481	25,386	27,557	28,662	30,167	30,188
Partnerships, limited partnerships, and cooperative societies	2,687	2,694	2,759	2,761	2,773	3,204
Non-governmental organisations, non-professional special interest groups, and residents' associations	18,790	19,510	20,105	20,799	21,476	22,224
Public sector entities	2,342	2,340	2,253	2,281	2,283	2,291
Other companies or organisations	2,136	2,174	2,195	2,225	2,301	2,326
<b>Total</b>	<b>50,316</b>	<b>52,995</b>	<b>55,721</b>	<b>57,525</b>	<b>59,753</b>	<b>60,945</b>

Source: Statistics Iceland.

The frequency of bankruptcy by Icelandic companies has perhaps been underestimated heretofore, as a large share of companies and organisations are public sector entities or companies not engaged in actual commercial activities. If bankruptcy frequency is calculated based on the number of companies with actual operations, according to the classification in the table above, it is revealed that, over the past 15 years, the frequency has ranged from 1.5% during upswings to 3.0% in downswings. The bankruptcy frequency has been on the rise ever since 2007 (see Chart II-26).

### Expected probability of default

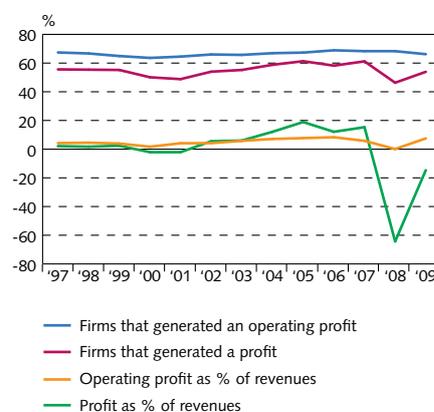
An assessment of financial stability must take account of the status of Icelandic companies, as credit risk in the Icelandic banking system is related to corporate lending to a large degree. Loan losses can be classified as expected losses, which the banks should cover by contributing to their provisioning accounts, and unexpected losses, which the banks must address by using capital. Expected loan losses are calculated as the product of the probability of default and the loss given default. Therefore, the collateral used to secure the loans must be known, and it must be possible to assess its value. In mid-2009, some 40% of the three largest banks' loan portfolios had no registered collateral. Either the registration process was flawed or large amounts were being loaned without collateral.

### Balance sheet solvency and cash flow solvency

In *Financial Stability 2010/1*, it was explained that two measures are generally used to assess companies' status: balance sheet solvency (whether equity is positive) and cash flow solvency (whether the firm can service its debt when due). In Iceland, a company is considered insolvent if it fails to meet either criterion.<sup>30</sup>

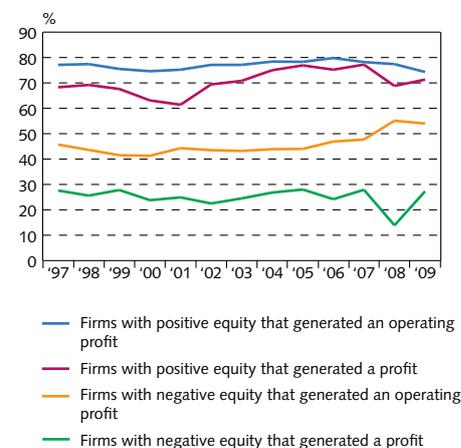
The most recent information from firms' annual accounts is from 2009, as companies are not required to submit their annual accounts until well into the following calendar year.<sup>31</sup> Because this was the first

**Chart II-28**  
Companies profit and operating profit<sup>1</sup>



1. Operating profit is defined as operating revenues less operating expenses. Profit is defined as operating profit adjusted for cost of capital, depreciation, taxes, and other irregular items.  
Source: Statistics Iceland.

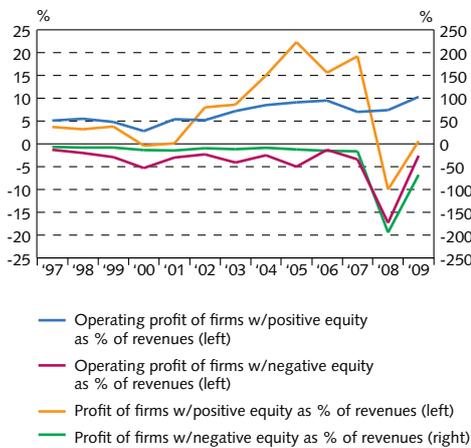
**Chart II-29**  
Percentage of companies that generated profit and operating profit by capital position<sup>1</sup>



1. Operating profit is defined as operating revenues less operating expenses. Profit is defined as operating profit adjusted for cost of capital, depreciation, taxes, and other irregular items.  
Source: Statistics Iceland.

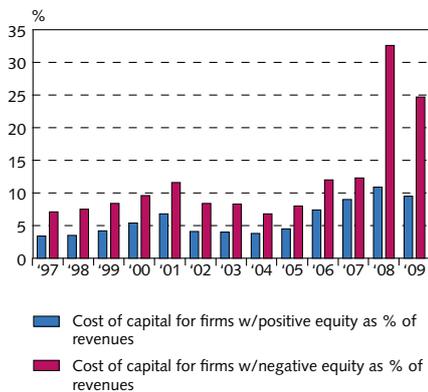
30. See the Act on Bankruptcy, Etc., no. 21/1991, and the Legal Procedure Committee report on amendments to the Bankruptcy Act (2009), p. 10. On the Ministry of Justice website: <http://www.domsmalaraduneyti.is/media/Skyrslur/Rettarfarsnefnd-AGS.pdf>.

Chart II-30  
Profit and operating profit of companies as % of revenue, by capital position<sup>1</sup>



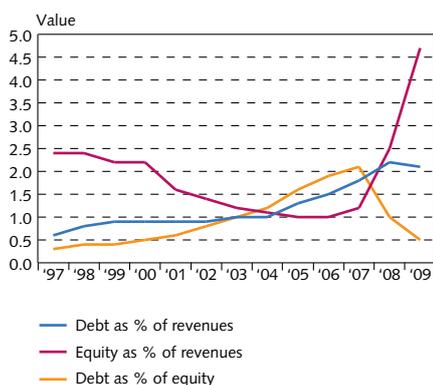
1. Operating profit is defined as operating revenues less operating expenses. Profit is defined as operating profit adjusted for cost of capital, depreciation, taxes, and other irregular items.  
Source: Statistics Iceland.

Chart II-31  
Companies' cost of capital by capital position



Source: Statistics Iceland.

Chart II-32  
Company leverage



Source: Statistics Iceland.

full operational year after the economic collapse, the annual accounts give a certain indication of firms currently in operation. The analysis of the annual accounts used data from firms engaged in commercial activities only, as described above in the discussion of operational forms.

In 1997-2007, an average of 31% of firms that submitted annual accounts had negative equity. This percentage rose to 37% in 2008 and remained virtually unchanged in 2009. In general, these firms were relatively asset-poor. Their assets before the collapse were about 7% of total assets of Icelandic companies, on average. They owed an average of 15% of total debt, and their total revenues<sup>32</sup> averaged 13% of the total. Since the collapse, clear signs can be seen of large companies becoming insolvent. The percentage of firms with negative equity rose only from 30% to 37%, whereas their debt as a share of total debt rose from 16% to 46%, and their revenues increased from 11% to nearly 30% (Chart II-27).

There are several interrelated factors explaining why a third of firms have negative equity. The tax system may have some effect. For example, it appears that some of these firms invest heavily, and the depreciation percentage in their accounts may be higher than the actual lifetime of the assets concerned. These firms' depreciation percentage averaged 15% of total depreciation, while their assets were only 7%. In addition, some of the firms have substantial assets that are not entered at market value; for example, fishing and agricultural quotas. Finally, it is not possible to ignore the fact that some of these companies are in serious operational difficulties. Their accounts payable averaged 23% of the total accounts payable of all Icelandic companies, whereas their total revenues were only 13%.

### Operating profit high

Profit and loss accounts are available for those firms that are engaged in actual business activities and have some operating revenues. During the period 1997-2009, an average of 67% of firms with operations generated an operating profit.<sup>33</sup> The percentage changes very little from year to year, ranging from 64% in 2000 to 69% in 2006. Operating profit as a percentage of total revenues changes somewhat from year to year, fluctuating with the business cycle. In 2009, operating profit as a share of total revenues measured 7.5%, which is nearly the highest for the period. The average is about 5.0% (Chart II-28). The smallest was in 2008, when operating profit was negligible. Naturally, 2008 was an unusual year with regard to most figures from companies' profit and loss accounts and balance sheets.

The operating performance of companies with positive equity is naturally much better than that of companies with negative equity. On average, about 77% of firms with positive equity generated an operating profit, as opposed to only 46% of firms with negative equity (Chart II-29). Firms' operating profit as a share of total revenues, by equity position, can be seen in Table II-11 and Chart II-30. Among firms with positive equity, the operating profit averaged 6.8% of total

31. See the Annual Accounts Act, no. 3/2006.

32. Total revenues refers to: operating revenues, interest income, and other irregular revenue.

33. Operating profit is defined as operating revenues less operating expenses.

revenues. In 2009, these firms' operating profit was a record 10.3%. Operating losses of companies with negative equity were about 4.1% on average and peaked in 2008 at 17.3% of total revenues.

### Boom year profits were not operating profits

The share of firms that generate a profit<sup>34</sup> fluctuates with the economic cycle. In 1997-2009, this percentage averaged 55%, peaking at 61% during the 2005-2007 period, and bottoming out at 49% in 2001 and 46% in 2008. Profit as a share of total revenues fluctuated as well, peaking at 19% in 2005. There were losses amounting to 2.1% of total revenues in 2000 and 2001. The loss was greatest in 2008, at 64.3%, and 2009, at 14.7% (Chart II-28). The depreciation of the Icelandic króna had a profound effect in these two years, as many companies recognise exchange rate gains or losses through their profit and loss accounts.

It is noteworthy that profit as a share of total revenues in 2002-2007 is much greater than operating profit as a share of total revenues. This shows that firms' profits during the upswing were not operating profits but were driven by items not directly related to regular operations: interest income, dividends, and irregular revenues.

Firms' profit as a share of total revenues, by equity position, can be seen in Table II-11 and Chart II-30. It is normal that fewer firms generate profit than operating profit. Among firms with positive equity, profit as a share of total revenues peaked at an average of 22.3% in 2005. Average profit per year among firms with negative equity was negative for the entire period. Losses as a share of total revenues averaged 11.3% but were much higher in 2008 and 2009, when they amounted to 194% and 68% of revenues, respectively, due primarily to exchange rate losses on financial items.

**Table II-11 Companies' profit and operating profit, by equity position, 1997-2009**

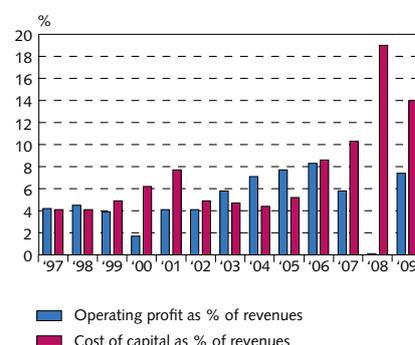
Share of firms with positive/negative equity that:	Positive	Negative
Generated an operating profit (average of annual percentage)	77%	46%
Generated a profit (average of annual percentage)	70%	25%
<i>Firms with positive/negative equity:</i>		
Average operating profit as share of total revenues <sup>1</sup> (average of annual averages)	6.8%	-4.1%
Average profit as share of total revenues <sup>2</sup> (average of annual averages)	6.9%	-30%
Highest operating profit as share of total revenues (annual average)	10% (2009)	-1.3% (1997 and 2006)
Lowest operating profit as share of total revenues (annual average)	2.8% (2000)	-17% (2008)
Highest profit as share of total revenues (annual average)	22% (2005)	-6.6% (1997)
Lowest profit as share of total revenues (annual average)	-10% (2008)	-194% (2008)

1. Operating profit is defined as operating revenues less operating expenses. 2. Profit is defined as operating profit adjusted for cost of capital, depreciation, taxes, and other irregular items.

Source: Statistics Iceland.

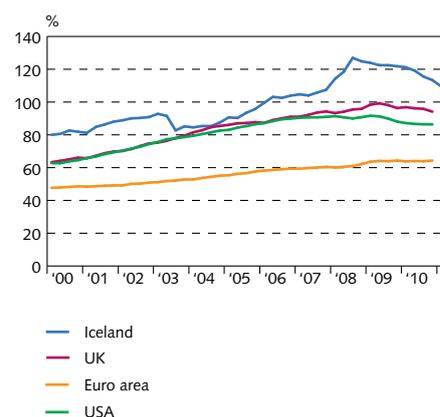
34. Profit refers to operating profit adjusted for cost of capital, depreciation, taxes, and other irregular items.

Chart II-33  
Companies' cost of capital and operating profit



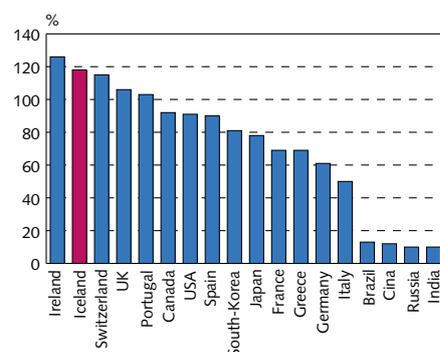
Source: Statistics Iceland.

Chart II-34  
Household debt as % of GDP



Sources: IMF, Central Bank of Iceland.

Chart II-35  
Household debt as % of GDP in the year 2010<sup>1</sup>



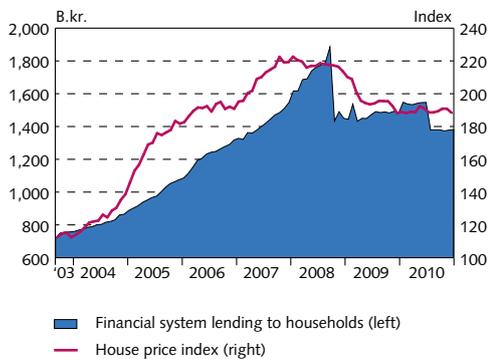
1. Different dates but in most cases in the year 2010.

Sources: IMF, Central Bank of Iceland.

Chart II-36

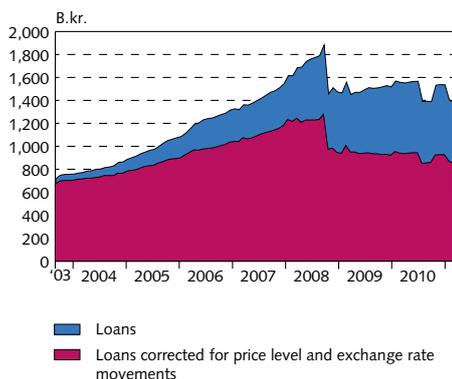
House price index and financial system lending to households<sup>1</sup>

January 2002 = 100



1. Book value, parent companies.  
Sources: Statistics Iceland, Central Bank of Iceland.

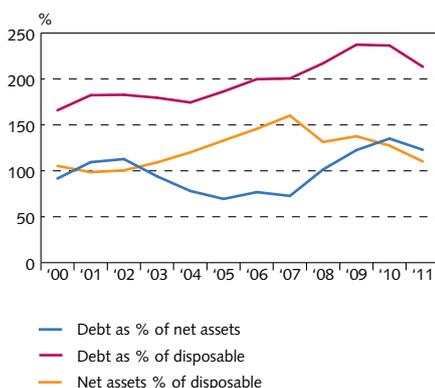
Chart II-37

Financial system lending to households<sup>1</sup>

1. Book value, parent companies. Corrected for estimated effects of price level and exchange rate movements deflated by the CPI and the exchange rate of the króna.  
Source: Central Bank of Iceland.

Chart II-38

Financial position of households



Source: Central Bank of Iceland.

### Balance sheet solvency a clear indicator of firms' viability

Among firms with negative equity, cost of capital as a share of total revenues was four times higher on average than among other companies (Chart II-31). These firms were proportionally more heavily leveraged and less likely than others to generate an operating profit or a profit (Chart II-30), and their average annual operating profit and profit were negative for the entire period. Negative equity – insolvency – is therefore a clear sign that a firm is not operationally sound, at least given its current debt level. As is stated above, there could be many reasons for negative equity. Some of them are normal occurrences in business operations, whereas others should be interpreted as warning signals. If a firm's equity is negative, this should prompt its owners, managers, and creditors to question its operational viability.

### Leverage high in historical context

Companies accumulated a significant amount of debt in the pre-crisis years, as foreign interest rates were historically low and access to credit virtually unimpeded. *Financial Stability 2010/1*<sup>35</sup> discussed in some detail the unhedged foreign exchange risk on many Icelandic companies' balance sheets before the collapse. Corporate balance sheets ballooned in size, and their debt-to-equity ratios plummeted between 1998 and 2005, whereupon the situation began to deteriorate. Debt skyrocketed in 2008, concurrent with the depreciation in the króna, and equity evaporated, (Chart II-32).

Debt as a percentage of total revenues has grown steadily since 1997, with the exception of 2009. By 2008, the percentage had surged from 60% to about 220% (Chart II-32). The depreciation of the króna increased debt sharply during that year. It should be borne in mind, however, that profit on underlying operations rose much less over the same period. Companies' growth was financed almost entirely with credit during those years.

Companies' cost of capital consists of interest, indexation, and exchange rate gains or losses. In order for a company's debt to be considered sustainable, its operating profit must cover cost of capital and dividends. As a share of total revenues, cost of capital rose between 1997 and 2001 and then declined sharply until 2004, concurrent with increased leverage. The decrease is due in part to lower interest expense on foreign-denominated debt, and to higher interest revenues. With the exception of 2008, cost of capital has risen steeply as a share of total revenues since 2005 (Chart II-33).

### Adjustment to external conditions

Companies' annual financial statements for 2009 show that, in general, they responded to external circumstances and adapted their operations to a changed situation. The operating profit of firms with positive equity is higher than at any time since 1997. There are no signs of any changes in 2010.

About 45% of the three large commercial banks' loans to companies are non-performing. One-third of companies have had nega-

35. See *Financial Stability 2010/1*, pp. 42-43.

tive equity for a protracted period of time and were thus insolvent. Some of the firms are not viable but managed to survive during the upswing because of unusually easy access to credit. It is critical that both firms and commercial banks expedite the winding up of non-viable firms and restructure the debt of firms that can be rescued. If the restructuring is delayed unduly, it will prevent the companies from engaging in normal operations, which will have an adverse effect on the banking system and the economy in the long run.

## Households

### Household debt still high but declining

Icelandic households are heavily indebted in international comparison, and their debt soared in the run-up to the financial crisis, due in part to increased real estate purchases and leveraged private consumption prompted by extremely easy access to credit. Debt peaked at 127% of GDP in 2008 but has declined by about 3% per quarter in the recent term (Charts II-34 and II-35). At end-March 2011, it was back to year-2007 levels, at 110% of GDP. In comparison, the debt ratio was approximately 80% of GDP at the turn of the century. It is now similar to that in Ireland and somewhat above that in the UK, Portugal, and the US. In part, Iceland's high debt ratio is due to the fact that the percentage of home-owning households is among the highest in the world.

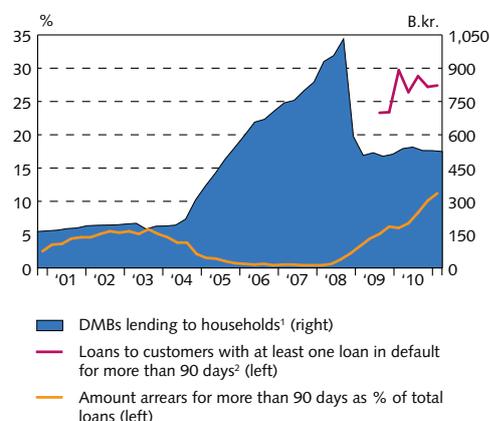
In the period 2000-2010, household debt as a share of disposable income<sup>36</sup> peaked in 2010, although it is likely to decline marginally in 2011 (Chart II-38). Total assets as a share of disposable income – including real estate, motor vehicles, bank balances, and various securities (but excluding pension assets) – peaked in 2007, in part due to the rise in equity securities prices in 2004-2007. That percentage declined sharply between 2007 and 2008, as a large proportion of domestic equities became worthless when the three commercial banks failed. Debt as a share of net assets peaked in 2010 at 130%, about 20% higher than in 2002. This percentage can be expected to fall slightly in 2011, due to limited residential investment.

### Default has increased

Default has increased dramatically since the banks failed, and household arrears account for about 11% of the three large commercial banks' total household lending. Chart II-40 shows the book value of loans granted by the three commercial banks and the Housing Financing Fund (HFF) to households, by payment status. Non-performing loans are defined as loans that have not been paid in more than 90 days or those for which payment is deemed unlikely. If one loan taken by a customer is in arrears by 90 days or more, all of

Chart II-39

Household arrears in the three largest banks and DMBs lending to households

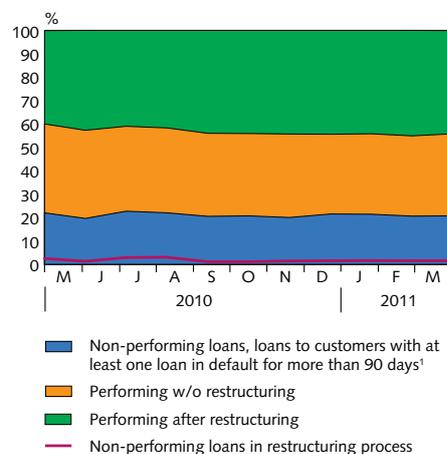


1. Book value, parent companies. 2. Non-performing loans are defined as loans that have been in default for more than 90 days or deemed unlikely to be paid. If one loan taken by a customer is non-performing, all of that customer's loans are considered non-performing, i.e. cross default method is used.

Sources: Financial Supervisory Authority, Central Bank of Iceland.

Chart II-40

Status of loans from three largest banks and Housing Financing Fund to households, book value



1. Non-performing loans are defined as loans that have been in default for more than 90 days or deemed unlikely to be paid. If one loan taken by a customer is non-performing, all of that customer's loans are considered non-performing, i.e. cross default method is used.

Source: Financial Supervisory Authority.

36. For 2010, the Central Bank uses income based on the Bank's forecast of disposable income and not the Statistics Iceland estimate. Statistics Iceland calculates functional income distribution for the national accounts and reconciles revenues for the main economic sectors, and their assets and liabilities. At present, however, the household disposable income estimated by Statistics Iceland is not reconciled with household private consumption and changes in their assets and liabilities. Usually there is a discrepancy. In the database for the Central Bank's macroeconomic model, household disposable income as published by Statistics Iceland is increased by 11%.

Chart II-41  
Households in arrears, household bankruptcy, and unsuccessful distraint  
March 2011 - April 2011

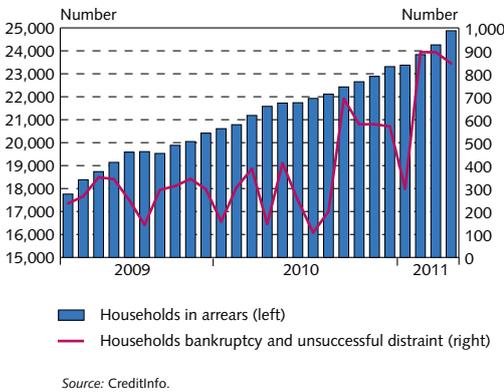


Chart II-42  
Individual bankruptcies  
Total for entire year<sup>1</sup>

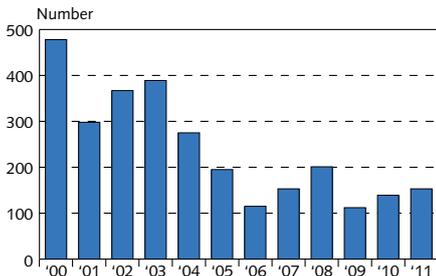
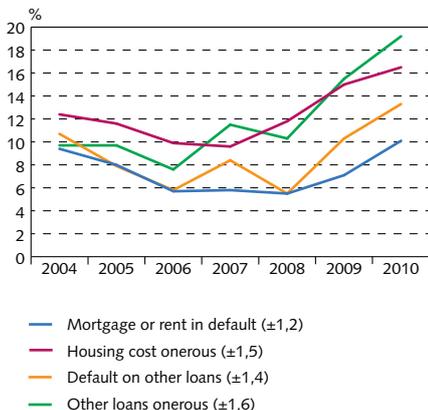


Chart II-43  
Statistics Iceland random sample survey  
Debt service and default



that customer's loans are considered non-performing, according to the cross-default method. The chart shows that non-performing loans constitute about 21% of total loans to households. This percentage has changed little in recent months.

At the end of April 2011, just under 25,000 individuals were on the default register.<sup>37</sup> That number has grown rapidly in recent months, and by one-third since March 2009. Bankruptcy and unsuccessful distraint actions against individuals have also risen substantially, totalling just over 3,400 in 2009 and about 4,400 in 2010. Figures from the first months of 2011 indicate that they could approach 9,000 this year. At the same time, the number of bankruptcy declarations among individuals has changed little, and the number per year is only one-third that at the beginning of the century. Individual bankruptcies numbered 112 in 2009, whereas they totalled 139 in 2010 and, based on the first four months of the year, appear likely to reach 150 in 2011. One manifestation of increased default is the surge in unsuccessful distraint actions, which in some instances may be due to an increase in collections procedures. There are indications that, in many cases, collections procedures end with unsuccessful distraint.

**Restructuring well underway**

Default is unlikely to rise significantly beyond the 21% of loans to households are non-performing (cross-default method). Almost half of non-performing loans are already in collections or bankruptcy proceedings, about 8% are in restructuring process, whereas there is more uncertainty about the rest.

In the wake of the financial crisis, several options have been offered to distressed households. One of these is the adjustment of mortgage debt to the value of the underlying property – sometimes called the 110% option. Other measures are debt smoothing, problem debt restructuring, and various options concerning personal liability and borrowed liens. Write-downs of household debt have probably taken place mostly through the recalculation of loans containing illegal exchange rate linkage clauses.

The most comprehensive measure for households in severe financial distress is problem debt restructuring. During the period 1 April 2009 to 1 August 2010, a court order was required for problem debt restructuring. Just over 1,100 applications for problem debt restructuring were filed, and slightly more than half were approved. On 1 August 2010, special legislation on problem debt restructuring was passed, obviating the need for court intervention and assigning oversight of the process to the Debtors' Ombudsman. Almost 1,900 applications have been received, and just over one-fifth have been processed. In recent months, about 75 applications have been received each week. Applicants often have difficulty paying their debts because their disposable income has declined relative to their cost of living.

37. Households on the default register are those seriously in arrears; in general, those whose debts are in arrears by 90 or more.

### Statistics Iceland survey: debt service on non-mortgage loans is heavy

Statistics Iceland has carried out a standard of living survey in recent years, as part of a harmonised survey carried out by the European Union (the European Union Statistics on Income and Living Conditions, or EU-SILC).<sup>38</sup> Nearly 4,000 respondents have answered questions on arrears<sup>39</sup> of mortgages or rent, arrears on loans other than mortgages, the financial burden of total housing costs, the financial burden of non-mortgage debt service, whether the household has the wherewithal to cover unexpected expenses amounting to 140,000 kr.,<sup>40</sup> and how well the household makes ends meet. The sample gives certain indications of households' position. The situation has deteriorated since the boom year 2007, but less than expected. The responses to the survey suggest that the situation today is in many ways similar to that in 2004. The share of households in default on mortgage loans is broadly unchanged since then, at 10%, and the percentage of households that would have difficulty covering unexpected expense is unchanged as well, at 36%. Debt service on loans other than mortgages has grown significantly, though, and was a heavy burden for 19% of households in 2010, as opposed to 10% in 2004. Default on these loans has increased as well, but only by about 2 percentage points. About half of households have difficulty making ends meet, as was the case in 2004.

### Positive developments in external conditions important

Real estate market activity is still limited, although turnover has risen slightly. At year-end 2010, nominal house prices rose year-on-year for the first time since March 2008. Increased turnover could ease the situation for households needing to move into a smaller home but still holding property that has proven difficult to sell.

Households have taken advantage of the authorisation to withdraw third-pillar pension savings, but that authorisation will soon expire. The first payment of a special interest rebate, in the amount of 0.6% of mortgage loans, was disbursed on 1 May 2011. This interest rebate is a temporary measure that will remain in effect only in 2011 and 2012. Real wages rose year-on-year in 2010 and are now back to 2003 levels. Public sector employees' salaries have remained unchanged or have fallen, but private sector wages rose more in 2010 than in 2009.

Unemployment is still high, particularly among the youngest workers. The job situation has changed little in the past 12 months. Private consumption grew in 2010 after a contractionary period and is expected to grow slowly this year. Continuing positive developments in external circumstances are a prerequisite for improved household conditions.

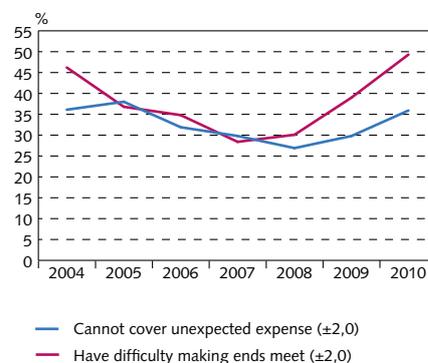
38. The full text of the report can be found on the Statistics Iceland website: <https://hagstofa.is/lisalib/getfile.aspx?ItemID=11925>.

39. In this context, default refers to at least one instance of default in the past 12 months.

40. The amount varies from year to year but was 140,000 kr. in the 2010 survey.

Chart II-44

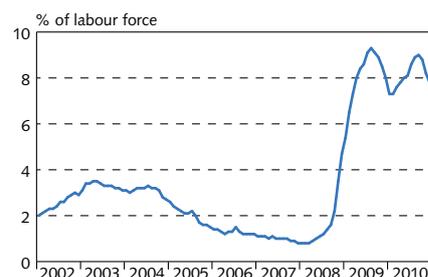
Statistics Iceland random sample survey  
Financial distress



Source: Statistics Iceland.

Chart II-45

Seasonally adjusted unemployment<sup>1</sup>



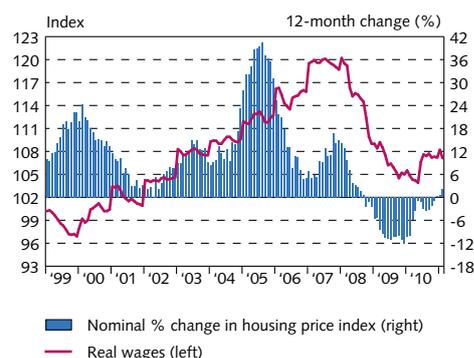
1. Registered unemployment is the average number of individuals registered with employment agencies nationwide as a percentage of the estimated number of persons in the labour market in each month. Monthly data.

Sources: Directorate of Labour, Central Bank of Iceland.

Chart II-46

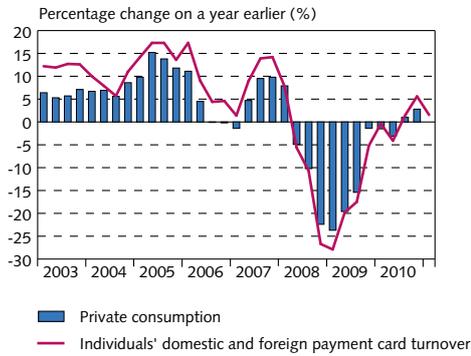
Real wages and change in housing market prices in greater Reykjavík

March 1999 = 100



Sources: Registers Iceland, Statistics Iceland.

Chart II-47  
Private consumption and payment card turnover<sup>1</sup>



1. Quarterly data.

Sources: Statistics Iceland, Central Bank of Iceland.

### Households' financial situation is gradually improving

The financial position of many households remains difficult, although better times are on the horizon. During the period 2000-2010, household debt as a share of disposable income was highest in 2010, although it is likely to decline marginally in 2011. Furthermore, debt is declining as a share of GDP. Household debt restructuring is proceeding apace. Households with negative housing equity and heavy debt service were in the greatest danger of financial distress in the event of a change in conditions. As a result, it is likely that the households in the weakest position suffered a severe reduction in disposable income and/or had heavy debt service before the collapse. Although risks are numerous, there appears to be cause for cautious optimism about the future for household financial conditions, and their impact on the stability of the financial system is limited.

## III Payment systems

### New structure implemented

*The Central Bank of Iceland sold its holding in the Icelandic Banks' Data Centre at the beginning of 2011 and acquired Greiðsluveitan ehf. in full. The Central Bank's main objective and policy with the operation of Greiðsluveitan is to ensure secure, efficient, and economical payment intermediation services. Payment and settlement system operations have been relatively conventional in the recent term. On the horizon are various projects relating to the adaptation of systems to the international financial system and to Iceland's participation in it. Major changes have taken place in financial system information technology arrangements, and adaptation to these changes is underway. The Central Bank has invited participants in the payment card market to collaborate on an assessment of the benefits of building up a centralised domestic settlement system for payment card transactions. A steering group has begun work and will submit its findings in May 2011. The European Central Bank is developing a new, centralised, multi-currency securities settlement system (T2S) that is to be brought into use in 2014-2015. The Central Bank of Iceland is collaborating with the Icelandic Securities Depository (ISD) and market agents on an appraisal of the premises for and possible timing of Iceland's participation. The Bank is ready to act as an intermediary for a centralised multi-currency settlement system (CLS) between Icelandic financial institutions and foreign banks if there is sufficient interest among Icelandic institutions. If this should materialise, such a system would pave the way for more reliable and economical foreign exchange transactions than are possible today.*

### Greiðsluveitan ehf.

For decades, financial institutions have co-operated on payment intermediation and information technology, particularly to include the operation of the Icelandic Banks' Data Centre (RB) and Fjölgreiðslumiðlun. In many ways, this structure has been sound and economical, and it proved its value during the financial crisis.

The Central Bank of Iceland sold its holding in the Icelandic Banks' Data Centre at the beginning of 2011 and acquired Greiðsluveitan ehf. (previously Fjölgreiðslumiðlun hf.) in full. The change is an element in separating ownership and control of important infrastructure from users in a competitive market, as well as seeking ways to streamline information technology functions. As before, every effort will be made to safeguard the systemic structure that proved so useful during the financial crisis.

Greiðsluveitan operates the Icelandic financial system's main payment and settlement systems and related functions. Greiðsluveitan will be operated as a subsidiary of the Central Bank of Iceland. The company's activities are separated from other core Central Bank operations, as Greiðsluveitan plays a unique service role for the Icelandic financial system and is financed by system users (banks and savings banks). The Central Bank's principal objectives and policy regarding Greiðsluveitan operations are as follows:

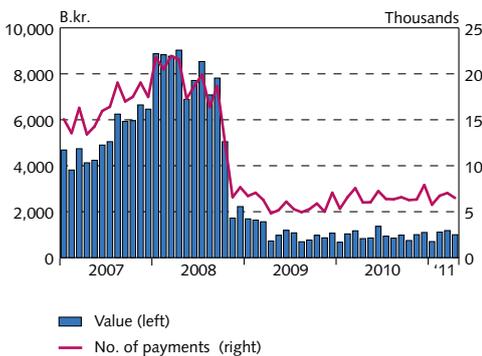
- To ensure secure, efficient, and economical payment intermediation services.
- To ensure that payment system structure and payment intermediation execution are in compliance with international regulatory provisions.

- To ensure that the company's services are available to all financial institutions that have the required permits to operate in the domestic financial market, meet participation requirements, and pay an appropriate fee for the services.
- To ensure non-discrimination and transparency in operations.

According to law, international guidelines from the Bank for International Settlements (BIS), and its own position as a central bank, the Central Bank of Iceland is responsible for promoting reliable and efficient operation of important domestic payment and settlement systems. The Central Bank plays a dual role in the area of payment and settlement systems:

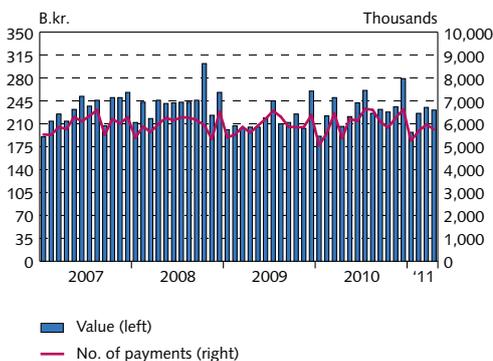
- Oversight of systemically important payment and settlement systems, formulation of policy on system development, adoption of rules on operations and settlement arrangements, and support for market solutions.
- Operation of the RTGS system and other important payment infrastructure, including final monetary settlement of other payment systems.

Chart III-1  
RTGS system turnover<sup>1</sup>



1. Turnover and number of payments from 2007.  
Source: Central Bank of Iceland.

Chart III-2  
Netting system turnover<sup>1</sup>



1. Turnover and number of payments from 2007.  
Source: Greiðsluveitan ehf.

### Payment and settlement system activity – RTGS system

Payment and settlement system turnover appears to have normalised again after the financial crisis in the fall of 2008 and the upswing in the years preceding.

RTGS system turnover in the first four months of 2011 totalled 3,991 b.kr. in 26,031 outgoing payment orders, as opposed to 3,706 b.kr. in 25,480 outgoing payment orders in 2010. Turnover plummeted in the wake of the banks' collapse in 2008 but quickly stabilised again based on the changed operating environment of Iceland's financial institutions. Participants in the system as of 1 April 2011 were the Central Bank of Iceland, Arion Bank, Clearstream, the Housing Financing Fund, Íslandsbanki, MP Bank, NBI, Saga Investment Bank, and Byr, which handles payment intermediation for currently operating savings banks. Over 80% of RTGS system turnover in 2010 was attributable to the three largest participants in the system. Participants' authorised limits in the RTGS system totalled 18.25 b.kr. on 1 April 2011. As is set forth in the pertinent rules, authorised limits were fully collateralised with Treasury bonds and Housing Financing Fund bonds. The arrangements for operation of the RTGS system were changed when Greiðsluveitan took over operation of the system at the beginning of 2011.

Netting system turnover totalled just under 890 b.kr. in nearly 23 million payment orders during the first four months of 2011, and system participants were the same as in 2010. Netting system participants' authorised limits totalled 5.5 b.kr. and were fully secured by the Central Bank of Iceland.

At the end of March 2011, notes and coin in circulation outside the Central Bank amounted to nearly 36 b.kr. Of that amount, 5,000-krona banknotes accounted for the greatest value, or 29 b.kr., some 87% of the total value of banknotes in circulation. Payment card

turnover totalled just over 55 b.kr. in 9 million transactions in March 2011. Over the past 12 months, card turnover rose by 2% over and above the preceding period.

Securities settlement system turnover in the first four months of the year amounted to just under 780 b.kr. in 7,770 transactions. Just over 17,000 transactions took place outside the exchange. About 99% of year-2010 turnover was due to bonds and bills traded on the NASDAQ OMX exchange. Transactions took place in 10 equity securities and 57 series of bonds and bills. During the first three months of 2011, 96% of turnover was attributable to trading in debt securities, and 4% was due to trading in equities. Transactions took place in 31 debt security series and 7 equity securities. In 2010, trading in equities was limited almost entirely to shares in Össur and Marel, but in 2011 there was also trading in Icelandair and BankNordik stock. In 2010, active regular trading took place in about 30 series of bonds and bills. Most of this trading was concentrated in benchmark series of Treasury bonds, Treasury bills, and Housing Financing Fund bonds, as well as selected series of Municipality Credit Iceland plc and City of Reykjavík bonds.

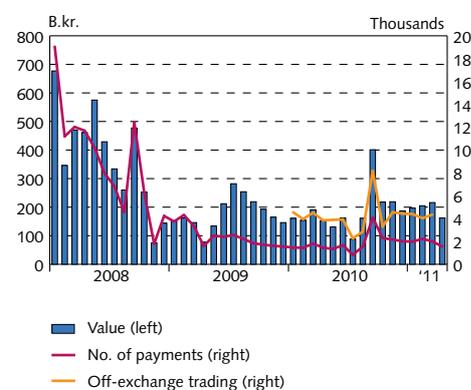
### Real-Time Gross Settlement System

Greiðsluveitan, dótturfélag Seðlabanka Íslands, tók um áramót við Greiðsluveitan, a subsidiary of the Central Bank of Iceland, took over the operation of the RTGS system at the beginning of 2011. Processes are being reviewed and adaptation to the changes is underway. Simultaneously, the RTGS system is being connected more closely with the international financial system so as to strengthen still further the domestic and cross-border payment intermediation and settlement infrastructure.

At the request of the Central Bank, the simulation team from the Bank of Finland conducted a simulation of the RTGS system with the BOF-PSS2 simulator. The data on which the simulation was based extend back to 2007, but most of the tests were based on data from 2010. The report on the simulation was not complete as this report went to press, but our brief summary of the highlights follows.

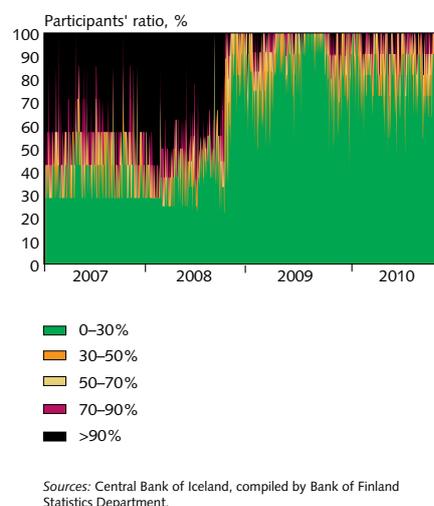
The main findings from an analysis of historical RTGS system data indicated abundant liquidity in the RTGS system and revealed that intraday strain on the system was distributed relatively evenly. Chart 4 shows how liquidity has been utilised in the system in the past four years and how increased slack has developed since the fall of 2008. The stress tests revealed no particular weaknesses with respect to participants. Three participants were most systemically important due to their high activity levels and because they generally sent the largest payment orders. The stress tests included an examination of how the system would respond if one of these participants were suddenly locked out of the system. The simulation showed that the system was well able to handle this with respect to liquidity flows. System liquidity was reduced by as much as 13% when one participant was locked out, but no problems arose due to a shortage of liquidity within the system.

Chart III-3  
Securities settlement system turnover<sup>1</sup>



1. Turnover and number of payments from 2007.  
Source: Icelandic Securities Depository.

Chart III-4  
RTGS system participants' liquidity  
January 2007 - November 2010



Sources: Central Bank of Iceland, compiled by Bank of Finland Statistics Department.

The section above on system operation includes a discussion of turnover and number of transactions in the RTGS system. It should be noted that the method of counting has been changed, so that system turnover is reported in terms of the number of outgoing payments/payment orders. The previous practise of counting both incoming and outgoing payments has been discontinued. Obviously, this reduces the number of transactions by about 50%. The new counting method is consistent with that used in other payment systems.

### Review of rules on settlement of payment card transactions

The framework agreement on the new structure of Icelandic payment intermediation, dated 15 November 2010, states that the Central Bank will review the current rules on settlement of payment card transactions taking place in Iceland and in Icelandic currency. The aim is to achieve increased streamlining in settlement of domestic payment card transactions, for the benefit of Icelanders, while practicing non-discrimination and fulfilling security and efficiency requirements. Furthermore, the framework agreement states that the Bank will invite entities in the payment card market to collaborate on an appraisal of the benefits of building a centralised settlement system for payment card transactions. If the assessment reveals that a centralised domestic settlement system is more economical for Iceland than continued participation in international systems, participants in the Icelandic payment card market will collaborate with the Central Bank to investigate whether there are grounds for the development of such a centralised settlement system for card transactions. According to the agreement, further arrangements and execution of this work is subject to the prior approval of the Competition Authority.

In March 2011, the Central Bank notified the Competition Authority that it intended to establish a project group and that all issuers and acquirers would have the opportunity to participate in its work. Furthermore, the Bank stated that the project group's findings would be published in a report that would be provided to all market participants and supervisory bodies. The Competition Authority agreed to the Central Bank's initiating such a project. Thereafter, a steering group was formed to carry out the project. The steering group is finalising its work and will publicise its findings in the near future.

With the adoption of the Central Bank's Rules on Settlement of Payment Card Transactions, no. 31/2011, it was required that settlement of domestic card transactions in Icelandic krónur take place in the same currency, if the cards are issued in Iceland.

The Rules do not state that settlement shall take place with transfers between the settlement agents' accounts with the Central Bank. This is actually what happens, though. According to the Rules, the Bank is authorised to grant foreign acquirers an exemption from the requirement that settlement take place in Icelandic krónur, upon fulfilment of specific conditions. Such an exemption has been granted to one party, the Danish/Norwegian acquirer Teller.

Considering the project group's previous findings, it is likely that settlement of payment card transactions will take place in Icelandic

krónur when the card is issued in Iceland, the merchant is domestic, and the transaction is in krónur. Furthermore, it will probably be proposed that the authorisation for exemptions for foreign acquirers be deleted from the Central Bank Rules. An adaptation period will be granted so that foreign entities can react to these changes. The final recommendation is that it be required to carry out monetary settlement with transfers of funds between current accounts in the Central Bank. Market participants decide, following the report by the steering committee, whether a formal feasibility study should be carried out on technical options; that is, whether to use the computer systems of foreign payment card companies for Icelandic payment card settlement and clearing, or whether it is economical to design/purchase a third-party solution.

Clearly, the current solution to netting in connection with bilateral monetary settlement of Borgun and Valitor's card transactions is a temporary one. The arrangements for netting of card transactions are more the task of the market participants than of the Central Bank, although the Bank has opinions about the matter. The Bank's involvement is in accordance with Article 4 of the Act on the Central Bank of Iceland, no. 36/2001, which states that the Bank shall contribute to a safe, effective financial system, including domestic and cross-border payment systems.

It is important that the long-term solution chosen ensure that all market participants, whether domestic or foreign, receive equal treatment, and that no exemptions are made from Central Bank rules. Requirements concerning safety and efficiency will be enforced by the Central Bank of Iceland.

### TARGET2-Securities and CLS connection for Icelandic banks

The European Central Bank (ECB) has decided to develop a new, centralised, multi-currency securities settlement system called TARGET2-Securities, or T2S.

The T2S system will be owned by the ECB but operated by the central banks of Germany, France, Italy, and Spain. It is assumed that many securities depositories will participate in the system, which will be connected to RTGS systems in various currency areas. Settlement is based on delivery versus payment (DvP), and monetary settlement can only take place with central bank funds; that is, via central bank accounts. Electronic securities that must be settled will either be stored in specially identified accounts of individual owners, or as nominee accounts in the ECB's T2S system, alongside monetary securities settlement accounts; that is, monetary settlement accounts and electronic securities accounts will be in the same system. It is stressed that the system must meet the most stringent requirements for security, efficiency, and economic soundness.

It will be based on international standards and best practise. The objectives pertaining to co-ordination of securities settlement across borders and between markets will be achieved simultaneously. The main hindrances to further development and co-ordination of securities settlement are the differences in methods and procedures from market to market and the differences in regulatory framework. This

has resulted in hefty fees for securities transactions taking place across markets or borders. The vast difference in costs between markets has been addressed by the EU – for example, in the Markets in Financial Instruments Directive (commonly called MiFID), which encourages the strengthening of the competitive environment between participants. With reference to this, the ECB has promoted the development of a multi-currency securities settlement system in which market participants from various countries may participate on the same basis, irrespective of size and currency, and compete amongst themselves on the basis of price and service.

The launching of the T2S system will foster competition between securities depositories, which currently is all but non-existent in many instances. With the advent of T2S, local securities depositories will no longer have a special advantage over other depositories based on their access to the local currency. All securities depositories connected to T2S will have the same possibility of operating in the markets to which the system extends.

Representatives of the Central Bank of Iceland and the Icelandic Securities Depository (ISD) have participated in meetings held by the ECB, together with representatives from several central banks outside the euro area and from securities depositories both within and outside the euro area. The purpose of these meetings has been to discuss the development, possible operational structure, and administration of the new centralised, multi-currency securities settlement system.

It is planned that the system be brought into use in September 2014, with membership to be granted in stages between September 2014 and September 2015. Central banks and securities depositories that plan to participate in T2S beginning in 2014-2015 must sign an agreement to this effect with the ECB in November 2011. If a potential participant has not made a final decision by that time, it will be possible to participate in the system later.

Icelandic market participants – banks, issuers, and investors – must assess the strengths, weaknesses, opportunities, and threats connected with membership. Icelandic market participants' views must be known before the Central Bank of Iceland and the ISD can formulate a final position on the matter. The Central Bank and the ISD must also analyse more fully the obligations implied by participation – for example, the suitability of current systems (the RTGS system and securities settlement systems) for connection to T2S and the cost of participating – before making a decision. It is clear that the expense incurred by the ISD for adaptation of systems and infrastructure would be considerable. Central banks that link their currencies to the system must also incur adaptation and connection costs. On the other hand, securities transactions and settlement across borders will probably be easier and more economical. Furthermore, settlement procedures will become better co-ordinated between markets, and competition between securities depositories will increase.

#### **CLS connection for Icelandic commercial banks and Central Bank involvement**

Continuous Linked Settlement (CLS) is a centralised multi-currency settlement system that links the RTGS systems of 17 currencies. CLS

was set up in 2002 by 68 of the world's largest banks, which were also shareholders. The design and objectives of CLS aim at reducing settlement risk in foreign exchange transactions. CLS Bank International, which was established for CLS, provides a five-hour window for settlement in all of the RTGS systems connected to the 17 currencies. At present, some 68% of spot currency trades go through CLS and are netted out, so that only 1% of the total amount traded needs to be settled between the parties. CLS settles the following types of transaction: FX spot trades, FX forward trades, FX options, FX swaps, non-deliverable forwards, and credit derivatives.

Participation in CLS can take three forms. First are settlement members – CLS shareholders, which include the large banks previously mentioned. These members provide services to the majority of other members, called third-party members, which conclude special contractual agreements with settlement members. In addition, there are fourth-party members; that is, a third-party member guarantees settlement vis-à-vis settlement members.

Those that are not members of CLS enjoy less confidence in business and may receive less favourable terms in the foreign exchange market. Only one Icelandic bank, Glitnir, participated in CLS before the banks collapsed in 2008. JP Morgan acted as settlement member for Glitnir. No Icelandic bank is a CLS member at present. It is difficult to quantify exactly the benefits that would accrue to Icelandic banks from CLS membership. Some of them can be measured, such as lower transaction fees and a larger number of lower-cost transactions, while others are intangible or derived, such as confidence and trust.

Since the fall of 2008, foreign banks have had no interest in concluding third-party contracts with Icelandic banks, and there are few signs that this situation will change in the near future. The capital controls and Iceland's low credit ratings are influencing factors.

Several months ago, a foreign bank proposed a CLS solution for the Icelandic banks. According to the solution, the Central Bank of Iceland would establish a third-party relationship with a settlement member – i.e., the foreign bank – and the Icelandic banks would be fourth parties under the aegis of the Central Bank. This arrangement is used in several other countries. The solution can be briefly described as follows: the Icelandic banks would transact directly with the foreign bank as though they were third parties. The foreign bank pays positive net balances directly to the Icelandic banks' *nostro* accounts and receives payment for negative net balances from other members. The foreign bank would actually be carrying out these transactions on behalf of the Central Bank of Iceland, however, and the Central Bank would bear the risk involved. The foreign bank would not wait to receive payment for negative balances before paying out the positive balance, and it is assumed that the agreement with the Central Bank will involve intraday credit lines. Each agreement between the Central Bank and the fourth-party banks would contain provisions on authorised limits and collateral, so as to protect the Central Bank.

Meetings were held in Iceland with all of the pertinent parties in March. The domestic banks have examined the project to a limited degree, but the Central Bank has not taken a position on it yet, as

the banks have not formally requested that the Bank do so. On the other hand, it is clear that if this solution were implemented, it would represent a sort of quality seal for the Icelandic financial system and could pave the way for cheaper and more reliable foreign exchange transactions than are currently available.

## IV. Macroprudential policy

### Comprehensive analysis needed

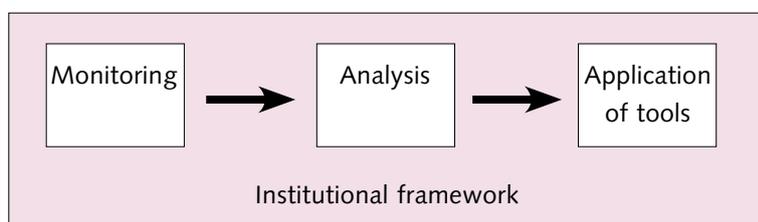
*This section gives a brief description of the macroprudential approach, which takes into consideration the financial system as whole and the interconnection between households, businesses, and financial institutions. Macroprudential supervision requires the execution of a comprehensive analysis that includes monitoring imbalances in the economy and the accumulation of risk over time. Furthermore, it requires consideration of cross-sectional risk, including concentration risk, risk stemming from interconnectedness, and contagion risk at any given time.*

*Concentration has diminished greatly from previous times, and there are signs that the connections between financial institutions are much weaker as well. The risk prevailing today is of a different kind than that in the prelude to the crisis. Households and businesses are heavily leveraged, and banks are faced with the choice of adapting borrowers' debt to their ability to pay or appropriating collateral. Further analysis is needed in order to formulate macroprudential rules that promote stability. The institutional framework must be structured so that areas of responsibility are clearly defined and must promote independence in the application of supervisory tools.*

### What is macroprudential policy?

*Financial Stability 2010/1 presented a definition of the macroprudential approach and discussed macroprudential supervision. It stated that macroprudential supervision centres on monitoring of factors that could jeopardise the stability of the financial system and the application of prudential tools so as to prevent and respond to systemic risk. Since the global financial crisis struck, discussion of macroprudential supervision has become much more widespread, and understanding of systemic risk and the interplay between the financial system and the real economy has grown. There is still significant ground to cover in implementing macroprudential rules and supervision, particularly in terms of analysis and tools.*

Financial supervisors must be structured so that they support the execution of macroprudential policy in three ways: monitoring, analysis, and application of tools.



#### Monitoring

Monitoring entails closely following developments in indicators that can shed light on risk existing in the financial system. Among them are the following:

- Indications of market conditions, such as CDS spreads and share prices.
- The status of financial institutions, such as capital ratio and liquidity.

- Macroeconomic variables such as output gap, current account balance, unemployment, and asset prices.
- The position of households and businesses.

### Analysis

An assessment is made of financial system stability, based on the evolution of the indicators being monitored:

- Early warning signals are sought. For example, certain financial ratios are used to forecast instability in the system using simple models. There is no single recognised model, but various tools of this type are under development around the world.<sup>1</sup>
- The status of financial companies as a whole is assessed, including liquidity risk, credit risk, market risk, and operational risk.
- Links between financial institutions and possible contagion.
- Conventional stress tests are used to measure the banks' resilience. The execution of the stress tests can be divided into two phases:
  1. An adverse macroeconomic downturn scenario is defined, based on a well-grounded hypothesis or estimated from tail density forecast of a stochastic macroeconomic model.
  2. The macroeconomic scenario is related to the banks' loan books in order to estimate the probability of default and the loss given default, which depends on the collateral backing the loans. On that basis, it is possible to estimate expected losses and determine whether the banks can resist the strain.

It is important not to overinterpret the stress tests. The models used for stress testing do not fully take into account the bilateral relationship between the financial system and the real economy. When the effects of the macroeconomic scenario on the banking system have been estimated, the process is considered complete; the impact of a banking system shock on the economy is not assessed.<sup>2</sup>

The list above is not exhaustive but, together with many other factors, it is part of what must be considered in an assessment of overall financial system stability. In other countries, systemic models are being developed.

### Application of tools

The tools discussed internationally include these:

- variable capital adequacy ratios.
- ceilings on leverage ratios.
- liquidity ratios.
- ceilings on loan-to-value ratios.

Before tools are determined, an extensive analysis of what tools are suitable for the current situation must be carried out, and the will to act must be in place.

1. See, for example, Comparing Macro-prudential Policy Stances Across Countries, Financial Stability Review December 2010, ECB.

2. See Analytical Models and Tools for the Identification and Assessment of Systemic Risks, Financial Stability Review June 2010, ECB.

### Institutional framework

Many countries are implementing broad-based changes in their institutional framework for financial supervision in the wake of the financial crisis. Emphasis is placed on:

- the objectives of macroprudential supervision
- increased co-ordination efforts by central banks in the field of prudential supervision.
- clear division of tasks and responsibilities at the governmental level.
- professional solutions and independence in the application of tools.

### Macroprudential analysis

It is important to conduct an extensive assessment of the benefits of macroprudential analysis in the light of new knowledge. On the basis of macroprudential analysis, the strengths and weaknesses of the macroprudential tools available must be assessed, taking into account incentives and arbitrage opportunities for market agents, politicians, and supervisors. It is also necessary to analyse and respond to a possible conflict between financial stability and monetary policy.

Macroprudential analysis has been evolving constantly in recent years. Macroprudential analysis concerns the stability of the financial system as a whole, with the aim of identifying systemic risk. Assessment of systemic risk involves two related factors:

1. Accumulation of risk over time, where procyclicality in the financial system is evaluated, together with procyclicality between the financial system and the real economy.
2. Cross-sectional risk, also referred to as financial network risk. At any point in time, it is necessary to look in all directions and assess the risk extending over the entire financial system. In order to assess the impact of individual financial institutions' actions on others in the financial system and on the system as a whole, it is necessary to maintain a systematic overview of and monitor collective risk, contagion, and links between financial institutions.

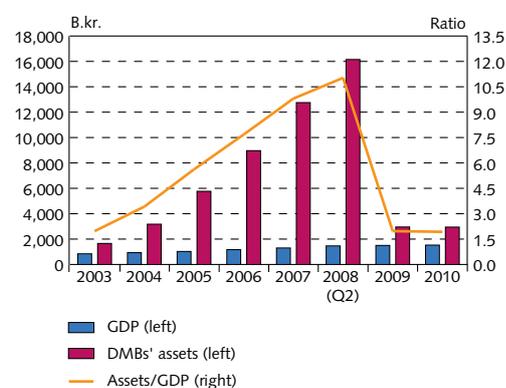
### Accumulation of risk over time

#### Substantial risk accumulated

Risks in the financial system (for example, asset bubbles) have a tendency to accumulate over a long period of time while awareness of the risks in question is limited and credit is readily available. Although the risk may be obvious to some, it is more difficult to determine whether there is imminent risk on the horizon.

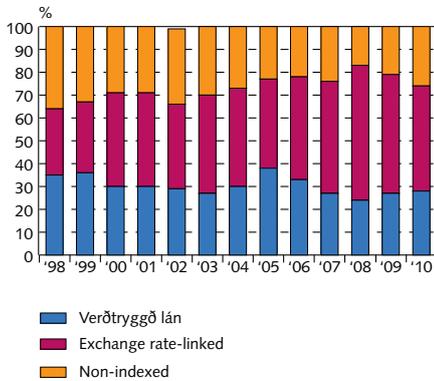
In assessing possible loan losses, it would be necessary to consider the accumulation of credit risk over time, such as that developing with the rapid surge in lending growth prior to the collapse of the banks. Their speedy penetration of new markets was risky, and they had in place incentive programmes that encouraged risk-taking in the quest for short-term gains. Rapid growth increases the likelihood of default in the future. At the time when lending growth was very rapid, the currency composition of loans changed as well. Exchange

Chart IV-1  
DMBs' assets<sup>1</sup>



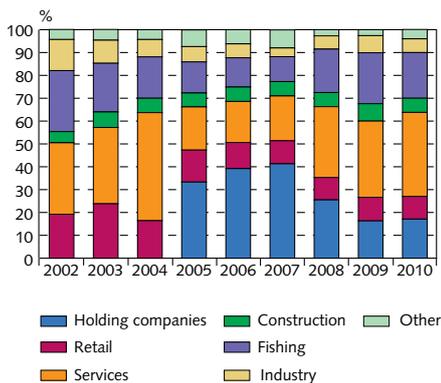
1. Consolidated figures from the three largest banks; parent company figures from other deposit institutions.  
Sources: Annual accounts of the three largest banks, Central Bank of Iceland.

Chart IV-2  
DMBs' lending to private sector,  
by type of loan<sup>1</sup>



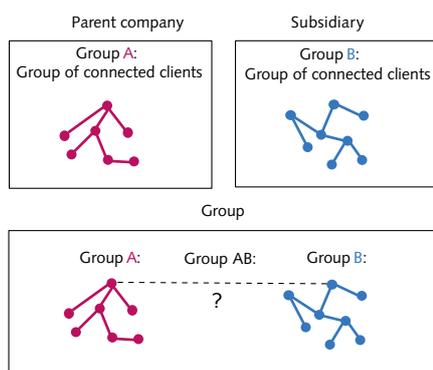
1. Book value, parent company figures.  
Source: Central Bank of Iceland.

Chart IV-3  
DMBs' loans to companies, by sector<sup>1</sup>



1. Book value, parent company figures. Fishing industry includes fishing and fish processing. Holding companies were not defined separately until 2005.  
Source: Central Bank of Iceland.

Chart IV-4  
Group of connected clients



Source: Central Bank of Iceland.

rate-linked loans were granted in ever-increasing numbers, and by 2008 they accounted for 59% of loans granted by the DMBs' parent companies. The share of exchange rate-linked loans has declined since the collapse, but it is still higher than the export revenues of the companies to which the loans are extended. In other words, natural hedging does not yet exist. Loans to holding companies are another example of pre-crisis risk accumulation; that is, a concentration of risk that escalated. In 2005, holding companies were separated from other service companies in lending reports. At that time, their loans were 31% of total parent company loans. By 2007, they were 44% of the total. There was insufficient information about the underlying risk related to these loans. Today the book value of loans to holding companies accounts for only 17% of total lending.

It is also important for financial supervisors to keep track of loan repayment arrangements. If a large share of a bank's loans are bullet loans, it is more difficult to assess which borrowers are in distress because bullet loan defaults do not surface until maturity.

### Debt restructuring: a prerequisite for reconstruction

Financial system risk factors depend in part on general macroeconomic conditions and are therefore different today than they were in 2004-2007. Households and businesses are heavily in debt and could make a negative impact on GDP growth by scaling down private consumption and investment. By the same token, economic recovery, increased investment, output growth, and employment are important if households and firms are to be able to handle their debt. Household debt restructuring appears to be well underway, but a massive task is ahead related to corporate debt restructuring, and the banks are faced with a choice between adjusting debt balances to the borrowers' capacity to pay and appropriating collateral. Customers' expected debt tolerance could be exaggerated in various cases involving extended loan duration as the main form of restructuring.

### Cross-sectional risk<sup>3</sup>

#### Comprehensive overview necessary

At any point in time, it is necessary to look in all directions and assess the transmission of risk across the entire financial system. In order to assess the impact of individual financial institutions' actions on others in the financial system and on the system as a whole, it is necessary to maintain a systematic overview of and monitor collective risk, contagion, and links between financial institutions. A comprehensive assessment requires in-depth knowledge of the financial system, but it can be extraordinarily difficult to gain such an overview when operations extend across national boundaries.

A handy example is supervision of large exposures. By definition, a large exposure is an obligation amounting to over 10% of the capital base.<sup>4</sup> Furthermore, large exposures to a group of connected

3. Also referred to as financial network risk.

4. The Act on Financial Undertakings, no. 161/2002. Provisions on large exposures are based on EU Directive 2006/48/EC, with subsequent amendments, and the FME Rules on Large Exposures Incurred by Financial Undertakings, no. 216/2007. Derivatives are calculated

clients (classified as one risk) may not exceed 25% of the capital base. The summary in Chart IV-4 illustrates the problem related to monitoring of large exposures and groups of connected clients. In the parent company is a group of connected clients (labelled A in the chart) whose exposures are nearly 25% of the group's capital base. In a subsidiary is another such group (labelled B in the chart). If these two groups are related, their combined exposure is nearly 50% of the group's capital base.

Methods for supervising large exposures in cross-border banks are not well enough defined. It is necessary to have thorough knowledge and oversight of companies, their owners, and their family and business ties in order to identify relationships correctly, and the matter becomes more complex with increased cross-border operations. In general, the home country's financial supervisory agency is not authorised to carry out on-site inspections of subsidiaries; thus there must be extremely close co-operation between financial supervisors in monitoring the large exposures of cross-border financial institutions.

During the period from 2004 to 2008, almost half of the Icelandic banking system's loans were from foreign subsidiaries, and little was known about, for example, the sectoral classification or the counterparties.

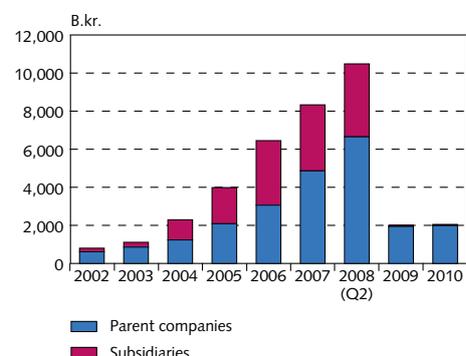
### Concentration has diminished ...

The Parliamentary Special Investigation Commission (SIC) examined the Icelandic banks' loans to the largest corporate groups during the pre-crisis years. The SIC's analysis is based on a different approach than the definition of large exposures according to Rules no. 216/2007. A summary was prepared of developments in total lending to corporate groups. It includes direct lending and funding using forward contracts; collateral is not deducted. The SIC analysis is based on data from parent companies because of a shortage of data from subsidiaries. The analysis below is based on the SIC's methods and examines the loans of the largest corporate groups, without deducting from collateral. Reports on large exposures have also been used in order to obtain the most comprehensive assessment of loans and credit risk related to the largest corporate groups' derivatives contracts. Reports on large exposures are prepared on a consolidated basis, but with the limitation that the Financial Supervisory Authority does not have a detailed list of the obligations of the largest firms' subsidiaries, nor is it authorised to carry out on-site inspections of subsidiaries.<sup>5</sup> The examination covered corporate groups whose direct loans and financing through derivatives contracts equalled at least 10% of individual banks' capital base. In 2004-2008, concentration in the financial system increased. The

as a credit equivalent, which is defined in the FME Rules on the Capital Requirement and Risk-Weighted Assets of Financial Undertakings, no. 215/2007. In calculating the exposure according to Rules no. 216/2007, collateral such as deposits, securities, etc., is deducted from the exposure with a specified haircut. The capital base is that of the group.

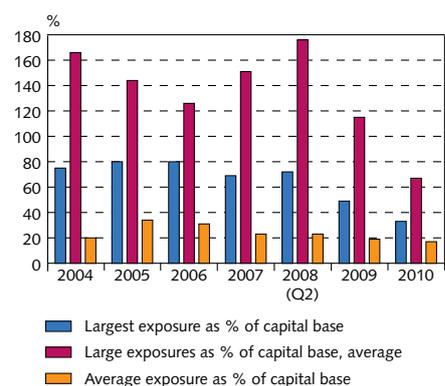
5. For example, there is considerable banking secrecy in Luxembourg, and it was not until early this year that the Supreme Court of Luxembourg ruled that the police should deliver to the Special Prosecutor in Iceland all of the documents from Banque Havilland in Luxembourg (previously Kaupthing in Luxembourg) that were seized in November 2009. The documents are considered highly significant for the Special Prosecutor's investigation of Kaupthing.

Chart IV-5  
The three largest banks' loans:  
parent companies and subsidiaries



Sources: Annual accounts of the largest banks, Central Bank of Iceland.

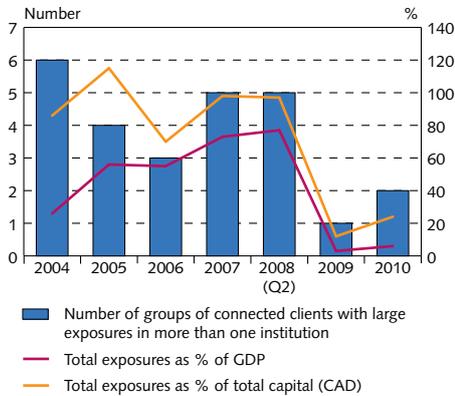
Chart IV-6  
Largest loans and derivative contracts  
as a % of capital base<sup>1</sup>  
The three largest banks



1. This group of borrowers consists of clients where the exposure of loans and amount of funding by using derivative contracts exceed 10% of capital base.

Sources: Parliamentary Special Investigation Commission (SIC), Central bank of Iceland.

Chart IV-7  
Risk concentration<sup>1</sup>  
Totals from the three largest banks



1. This group of borrowers consists of clients where the exposure of loans and amount of funding by using derivative contracts exceed 10% of capital base.

Sources: Parliamentary Special Investigation Commission (SIC), Central Bank of Iceland.

above-mentioned obligations totalled an average of 20-25% of the capital base, but due to the rapid growth of the banks, their capital base expanded by leaps and bounds, so that obligations grew quickly in terms of amounts while remaining relatively constant as a percentage of capital. During the pre-crisis years, an average of approximately five corporate groups had obligations over 10% of capital in more than one bank, which is an enormous amount of concentration in the system. In mid-2008, five parties had large obligations in more than one bank, and the total obligation of these parties amounted to almost 80% of GDP. Because of the limitations on detailed information about subsidiaries' customers, concentration risk could be even greater if subsidiaries' customers are connected with customers of the parent company. By now, concentration risk due to large corporate groups has diminished markedly.

### ... and indicators suggest that connections and correlation between financial institutions are reduced as well

One of the factors that exacerbated risk in the banking system before the crisis was interconnectedness between banks. The connections were of various types. As is stated above, large borrowers took loans from all of the banks. Shares in one bank were used as collateral in other banks. The banks granted share purchase loans to large shareholders in other banks. Iceland's financial market legislation has been tightened on these points. Today the connections between banks are much less, and there is little lending between them – perhaps less than would be appropriate. Such a development could obstruct normal interbank market activities. At present, the connections between the banks are probably of a more indirect nature. The banks are holding similar assets, which they need to dispose of in the same market. The price of the assets could plunge if the banks all divest them at once, but nonetheless, it is not normal for banks to own large numbers of large companies for a protracted period of time. The risk is that the banks will tend to delay selling, thus postponing the normalisation of business activity in Iceland. It will then take longer for the banks' operations to regain a sound footing.

### Institutional framework in neighbouring countries

In the wake of the financial crisis, a great deal of work has been done around the world in an attempt to identify what went wrong and how to improve matters. This section focuses on changes in the financial supervision architecture in selected neighbouring countries, including both financial supervisors and central banks, and on the main reasons for the changes.

#### Conventional financial supervision

Official supervisors play an important role in ensuring that financial system operations are secure and in compliance with the appropriate regulatory instruments. The structure of financial supervision varies, however. The institutional framework with the longest history is the conventional financial supervision model, which is based on separate supervisory bodies that specialise in supervision of specific sectors of

the financial system. According to this model, banking supervision is carried out by the central bank, whereas other institutions supervise insurance activities, securities activities, and consumer protection. In spite of attempts to achieve economies of scale by merging specialised supervisory bodies, this is still the most widespread model of financial supervision in the world, reflecting the arguments in favour of entrusting the central bank with banking supervision.<sup>6</sup>

### **Integrated financial supervision**

In the 1980s, a model known as integrated financial supervision emerged in Europe. This model is based on the existence of a single financial supervisory agency that operates outside the central bank and is responsible for all sectors of the financial system. According to this model, financial supervisors and the central bank work together to maintain financial stability. This structure was created in an attempt to eliminate overlapping and duplication of effort by separate supervisory bodies, increase accountability and transparency in the financial market regulatory framework, and adapt the regulatory framework to financial institutions' tendency to evolve into conglomerates. The financial supervisory agency is a regulatory and supervisory body that monitors banks, insurance companies, securities companies, and pension funds, but also handles consumer protection as it relates to financial services. The central bank is an independent institution that, under this structure, is separate from the financial supervisory agency. Its conventional role is in the field of monetary policy, financial system liquidity management, last-resort lending, and oversight of payment and settlement systems. Under this architecture, the central bank is often assigned a role relating to stability of the financial system as a whole, based on a collaboration agreement with the financial supervisor and frequently has a representative on the board of the financial supervisory body. The pertinent ministries also participate in ensuring financial stability. In Iceland, comprehensive financial supervision was adopted in 1999 with the establishment of the Financial Supervisory Authority. Thereafter, the Central Bank of Iceland placed increased emphasis on the analysis and assessment of financial stability, in part through the establishment of its *Financial Stability* Department and the publication of its Financial Stability reports.

### **Inadequate response to increased systemic risk**

One of the principal findings of an international appraisal of the factors contributing to the global financial crisis is that systemic risk increased sharply during the upswing without triggering an appropriate supervisory response. There was widespread lack of understanding of the nature and scope of systemic risk and how it accumulates over time and then surfaces suddenly in response to a shock within or outside the financial system. Systemic risk can be divided into two broad categories: risk that develops over time; and cross-sectional risk (or financial network risk), which is due to the impact of individual

6. See, for example, the Central Bank of Iceland report entitled "The Role of Central Banks in Financial Supervision." Occasional paper no. 5, January 2011.

entities' actions on others in the financial system and on the system as a whole. Systemic risk is related to weaknesses that develop and escalate in banks' balance sheets or funding. Errors in financial supervision can also be traced to the fact that the financial supervision architecture did not take sufficient account of systemic risk. During the upswing, the emphasis in financial supervision was mostly on ensuring the safety and strength of individual financial institutions. It was thought that this approach would suffice to maintain the stability of the financial system as a whole, but subsequent developments proved otherwise.

### **Weaknesses of integrated financial supervision**

The financial crisis has enhanced the understanding of the weaknesses of the integrated financial supervision model as it pertains to financial stability. This model of financial supervision was not originally designed with macroprudential objectives in mind. The task of preserving financial stability was assigned to two separate and independent institutions which led to overlapping of certain functions and a lack of transparency concerning the ultimate responsibility for the task. In addition, understanding of the need for appropriate policy tools to stem the accumulation of risks in the financial system was lacking. Moreover, serious problems emerged in communications between the institutions, and leadership in identifying the problem and preparing appropriate responses was often inadequate. As a consequence, decisions on timely intervention to correct the problems in financial companies' and markets' operations were not made.

### **A strong and independent supervisory body**

When it becomes necessary to contain a credit or asset price bubble, the interests of the financial institutions inevitably collide with public interests. During the boom years, politicians' tendency to support unrestricted growth in financial services during good times came to the fore, and financial supervisors were not powerful enough to resist. Thus there is a need for strong, apolitical supervisory institutions that can identify when financial companies' interests do not coincide with those of the larger economy and take appropriate action to ensure stability. During the upswing, supervision of business practices, including consumer protection, became more visible and more popular among politicians than prudential supervision. As a result, the integrated financial supervision architecture did not safeguard financial stability in the intended way. When the crisis had struck, it also emerged that collaboration between supervisory entities was inefficient when financial companies were wound up on the basis of a co-operation agreement between separate institutions, which exacerbated the problem.

### **Clear objectives and defined responsibility**

Two main flaws in the integrated financial supervision architecture are considered to have led to a weak response to systemic risk and inadequate action to prevent wholesale collapse of financial companies: on the one hand, the financial stability objective was not well enough defined, and on the other, responsibility was poorly demarcated. In

reviewing the financial supervision structure, strong emphasis is being placed on defining thoroughly the objectives of financial supervision. The objective of maintaining financial system stability by identifying and reducing systemic risk is referred to as macroprudential policy. The objective of maintaining the safety and strength of individual financial companies is referred to as microprudential policy. The third objective is to protect consumers who use financial services, including investors and depositors.

### Twin-peaks model of financial supervision

In many countries, it has been decided to assign responsibility for macroprudential policy to the central bank, and in several countries a new institutional framework for financial supervision, the twin-peaks model, is being developed. In this model of supervision, the objective of financial stability becomes the organising principle for other objectives. The main reason for entrusting central banks with an expanded role in the prevention of systemic risk lies in their centralised role in the banking system. Central banks' macroeconomic emphasis also aligns well with the execution of macroprudential tasks, as central banks have extensive knowledge of macroeconomic and financial analysis. A clear-cut role and responsibility for the central bank in the area of financial stability policy, on a par with its role and responsibility in monetary policy, is also likely to enhance the likelihood that both objectives will be achieved. In many countries, a review of the internal organisation of central banks has begun with this new role in mind and with the idea of providing the central bank with policy tools consistent with the responsibility for achieving such an objective. Examples of possible macroprudential policy tools are variable capital ratios, liquidity requirements, and variable maximum loan-to-value ratios. In some instances, these overlap with microprudential tools. The difference in the application of the tools lies in a different risk assessment related to separate supervisory objectives. Under these cir-

Table IV-1 Institutional framework for financial supervision in selected countries

	United Kingdom	Belgium	Denmark <sup>1</sup>	Finland	Netherlands	Ireland	Iceland <sup>1</sup>	Norway	Sweden <sup>1</sup>
<i>Conventional financial supervision</i>									
Banking supervision and financial stability in the central bank. Specialised supervisors for insurance and markets. Separate consumer protection agency.			(before 1988)	(before 2009)	(before 2004)		(before 1999)	(before 1985)	(before 1991)
<i>Integrated financial supervision</i>									
All microprudential supervision and consumer protection in a single financial supervisory institution. Co-operation between financial supervisor and central bank concerning financial stability.	(before 2011)	(before 2011)	(since 1988)	(since 2009)		(before 2010)	(since 1999)	(since 1985)	(since 1991)
<i>Twin-peaks model</i>									
Macroprudential supervision in the central bank. <sup>2</sup> Central bank has oversight of microprudential supervision. Separate consumer protection agency.	(since 2011)	(since 2011)			(since 2004)	(since 2010)			
<i>Single central banking and supervisory institution</i>									
All prudential supervision and consumer protection in the central bank.									

1. Under review. 2. Macroprudential policy is a new term covering central banks' objectives, tasks, responsibilities, and policy tools for the maintenance of financial stability. Before the collapse, there was a general focus on financial stability, but objectives, tasks, responsibilities, and policy tools of separate institutions were poorly defined.

Source: Central Bank of Iceland (2011). "The role of central banks in financial supervision". Occasional paper no. 5, January 2011.

cumstances, it is important to co-ordinate, as well as possible, the use of such tools on a professional basis. With the new areas of emphasis, there is a need for much closer collaboration between the central bank, which handles macroprudential supervision, and the entity that is responsible for microprudential supervision.

### **Institutional framework in neighbouring countries**

The table illustrates four financial supervisory models: the three described, plus one that entails a single central bank and supervisory body that also handles consumer protection. The table describes the structure and recent evolution in eight European countries and Iceland.

Widespread changes have taken place in financial supervision in the UK, which suffered greatly during the crisis. The Financial Services Authority, founded in 1997, has been abolished and its operations transferred to a new unit under the supervision of the Bank of England (BoE). In addition, the BoE has been assigned responsibility for overall prudential supervision, with direct responsibility for macroprudential supervision and oversight of the independent microprudential supervisory agency. This is the so-called “twin-peaks model”. The objective is to create a strong, powerful institution wherein serious flaws in the previous institutional structure are remedied and to strengthen financial supervision with respect to financial stability. Because the UK is an EU Member State, the BoE participates in the supervisory work of the European Systemic Risk Board. A new institution has been established whose goal is to protect consumers who use financial services.

In three EU Member States that are also members of the European Monetary Union (EMU) – Belgium, Holland, and Ireland – similar changes have been made and a twin-peaks model adopted. The central banks in these countries have two main roles as part of the European System of Central Banks (ESCB) and as independent public institutions. As part of the ESCB, the central banks shoulder collective responsibility for the determination and implementation of monetary policy for the euro area. In addition, they act as liaisons with the international payment intermediation system and make use of the Target2 real-time gross settlement system operated by the European Central Bank. As independent public institutions, the central banks also bear responsibility for prudential supervision of the activities of financial companies and markets. Concurrent with the structural changes, consumer protection has been placed under the aegis of a consumer protection supervisory entity. The experience of the Irish is notable, as Ireland was hit hard by the financial crisis in spite of close co-operation between its financial supervisor and central bank as regards overall financial system stability. In 2010, it was decided to change the structure and place all financial supervision within the Central Bank of Ireland, under unified management.

In the Nordic countries, the review process has not advanced as far. Sweden and Denmark, which are also in the EU but are not in the EMU, have an integrated financial supervision architecture. The crisis made quite an impact in these countries, and both of them have established an independent committee to review the present financial

supervisory architecture. The committees' task is to determine, among other things, whether the central bank needs new macroprudential policy tools, whether the central bank and financial supervisor should be more closely linked, whether it is necessary to design explicit procedures to dissolve failed banks, and whether central bank legislation should be amended. Finland and Norway escaped from the financial crisis relatively unscathed, and this seems to have shaped their attitude towards the need for changes in the institutional framework. Apart from increased central bank responsibility for macroprudential policy, they are not planning any radical changes in their current supervisory structure. In Finland, this is also because the authorities decided to adopt the integrated financial supervisory architecture in 2009. At the same time, increased emphasis has been placed on close co-operation between the financial supervisory authorities and the central bank in the area of financial stability.

### Summary

Many countries are implementing radical changes in their institutional framework for financial supervision in the wake of the financial crisis. As part of that process, the objectives of financial supervision have been defined and primary emphasis placed on macroprudential objectives. Because of their centralised position in the banking system, central banks in some countries have been assigned an expanded role in financial supervision, with emphasis on financial stability policy. At the same time, emphasis is placed on making them responsible for coordinating the execution of prudential supervision. In order to ensure that operation of financial supervision as a whole is as efficient as possible, strong emphasis is placed on a clear division of supervisory tasks and responsibility and on the professional execution of tasks. It is also considered important that supervisors be sufficiently strong and independent enough to apply macroprudential tools.

## Appendix IV-1

### Principal regulatory and statutory amendments related to the financial market 2010-2011

*Below is a summary of the most important amendments to financial market regulatory instruments from January 2010 through April 2011. The list is not exhaustive but is intended as an overview.*

#### 2010

##### January

- On 5 January, the president of Iceland refused to sign an act of law amending the Minister of Finance's authorisation to grant a Treasury guarantee of loans taken by the Depositors' and Investors' Guarantee Fund (DIGF) due to Icesave deposit accounts. In so doing, the president referred the matter to a national referendum. Three days later, Parliament passed an act of law stipulating that the referendum should take place as soon as possible, and no later than 6 March.

##### February

- On 25 February, Parliament passed Act no. 11/2010 amending the Act on Forced Sale, so that until 1 August 2010, a debtor can, upon filing an application, have the forced sale of his or her own residence deferred for up to three months. The amendment took effect the same day. Previously, the Act contained a provision deferring forced sale of residential housing through 28 February.

##### March

- On 4 March, Parliament passed Act no. 13/2010 amending the Act on Public Limited Companies. The amendment restricts the role of the Chairman of the Board, thereby eliminating the position of Acting Chairman of the Board. Explicit provisions on gender equality in the boards of companies were also passed into law.
- On 4 March, the Financial Supervisory Authority confirmed joint financial institution rules on corporate financial restructuring. The Financial Supervisory Authority was assigned the task of confirming supervised entities' rules on debt restructuring and amending the terms and conditions of bonds and loan agreements that could lead to debt cancellation or other concessions for companies. This was done with Act no. 107/2009 on measures to assist individuals, households, and businesses due to extraordinary circumstances in the financial market.
- On 6 March, a national referendum was held on the authorisation to issue a Treasury guarantee for loans related to the Icesave accounts. The authorisation to grant the guarantee was rejected with 98% of valid votes. The previous act of law authorising the guarantee with reservations, Act no. 96/2009, regained its validity.

## April

- On 23 April, Parliament passed Act no. 31/2010 amending the Act on Bankruptcy. According to the amended Act, the deadline for cancellation of measures entered into by a bankrupt shall be four years prior to the reference date, so as to ensure that it will be possible to conclude matters emerging in the wake of the banks' collapse without running the risk that interests will not be protected due to workload and time constraints.
- On 30 April, the Central Bank of Iceland amended its Rules on Foreign Exchange. The amendments clarified the Rules, reduced the maximum amount of foreign currency that can be purchased for travel, and changed specified exemptions so as to remove all doubt about the legality of offshore transactions.

## June

- On 1 June, Parliament passed Act no. 49/2010 amending the Act on Stamp Fees, and the Act on Treasury (Additional Revenue) Act. The amendments authorise a temporary exemption from payment of stamp fees upon refinancing of motor vehicle loans and expand the exemptions from payment of registration fees for refinancing of individuals' mortgages and motor vehicle loans.
- On 10 June, a new Act on Insurance Activities, no. 56/2010, entered into force. The Act applies to direct insurance in the areas of liability insurance and personal insurance, as well as any type of reinsurance. Supervision of such insurance remains in the hands of the Financial Supervisory Authority.
- On 10 June, Parliament passed Act no. 60/2010 amending the Act on Bankruptcy with the aim of improving the legal position of debtors. Among other provisions, the amended Act allows the debtor to continue living in his or her residential property for a period of time during bankruptcy proceedings or after forced sale. According to other new provisions, if a property is sold via forced sale at a normal market price, the difference is calculated to the benefit of the debtor.
- On 10 June, Parliament passed Act no. 70/2010 amending the Act on Unemployment Insurance and the Act on Rent Subsidy Allowances. The amendments extend the right to proportional benefits against part-time employment until year-end 2010; furthermore, income from third-pillar pension funds does not curtail unemployment benefits (retroactive to 1 March 2009), and the implementation of the Act shall take account of international obligations. According to the amendments to the Act on Rent Subsidy Allowances, income from third-pillar pension funds does not reduce benefits.
- On 11 June, Parliament passed the Mortgage Rights Act, no. 67/2010, authorising financial undertakings to grant mortgage rights in connection with the Financial Supervisory Authority's disposal of assets and liabilities due to extraordinary circumstances in the financial markets. The Act was passed in order to facilitate settlement between the old and new banks.

- On 12 June, Parliament passed Act no. 75/2010 amending the Act on Financial Undertakings. The amendments tighten rules and increase surveillance in a number of ways: the Financial Supervisory Authority is granted increased powers, financial institutions are required to hold a special register of large borrowers, the conditions upon which a financial institution may own its own shares are narrowed and clarified, financial institutions are prohibited from granting loans against collateral in their own shares or guarantee capital shares, conditions for loans to specific related parties are tightened, and rules on large exposures are tightened, as are rules on incentive programmes, bonus schemes, and termination agreements.
- On 14 June, Parliament passed Act no. 78/2010 amending the Foreign Exchange Act and the Customs Act. The amendments assign the Central Bank of Iceland sole jurisdiction over investigations and fines in connection with surveillance of the Foreign Exchange Act and the Rules on Foreign Exchange.
- On 15 June, Parliament passed Act no. 95/2010 amending the Act on Execution and the Act on Bankruptcy. The amendments entail, among other things, making composition of creditors a more effective measure for debtors, as well as expanding the conditions for enforcement of unsuccessful distraint and bankruptcy proceedings.
- On 15 June, Parliament passed the Act on Concessions for New Investment in Iceland, no. 99/2010. The aim of the Act is to stimulate and promote investment in business operations in Iceland by specifying, in a transparent manner in the law, what authorisation the State and municipal governments have to grant defined concessions to investment projects, so as to depart from the previous arrangement of concluding separate investment contracts for individual projects on the basis of special legislation approved by Parliament.
- On 24 June, Parliament passed the Act on the Debtors' Ombudsman, no. 100/2010, establishing the separate office of the Debtors' Ombudsman, whose task is to assist individuals, free of charge, in gaining an overview of their financial status and seeking solutions to financial problems. The Debtors' Ombudsman's role is to act as an intermediary in interactions and contractual agreements with creditors, and to implement debt mitigation. It also receives communications from debtors, protects their interests, and takes action if debtors' rights are encroached upon. Furthermore, it provides comprehensive advice and instruction on household finance.
- On 24 June, Parliament passed the Act on Debt Mitigation for Individuals, no. 101/2010. The objective of the Act is to enable individuals in severe financial difficulties to restructure their finances and establish a balance between their debt and their capacity to pay, so that the debtor can realistically fulfil his obligations for the foreseeable future.
- On 24 June, Parliament passed Act no. 102/2010 amending the Act on Temporary Mitigation of Residential Mortgage

Payments, establishing as permanent the measures set forth in the original Act.

- On 24 June, Parliament passed the Act on Temporary Measures for Individuals with Two Residential Properties, no. 103/2010. According to the Act, an individual who pays mortgages on two properties because of purchasing a property for residential use can request that one of the properties be transferred to the holder of collateral.
- On 24 June, Parliament passed Act no. 104/2010, temporarily amending the Income Tax Act, as regards taxation of cancelled debt for corporations, self-employed persons, and individuals, with consideration of the extraordinary circumstances currently reigning. According to the Act, it will temporarily be permissible, upon fulfilment of specific conditions, to report only a specified percentage of the cancelled debt as taxable income.
- On 30 June, the Central Bank of Iceland and the Financial Supervisory Authority issued guidelines to financial undertakings concerning non-binding exchange rate linkage clauses in the wake of the Supreme Court judgments in Cases no. 92/2010 and 153/2010. The guidelines are no. 20/2010.

#### October

- On 14 October, Parliament passed Act no. 128/2010 amending the Act on Debt Mitigation for Individuals due to the extremely heavy workload at the newly established Office of the Debtors' Ombudsman. The amendments were intended to ease debtors' position by granting applicants a deferral of payment upon submittal of the application for debt mitigation and not upon approval.
- On 20 October, Parliament passed Act no. 129/2010 amending the Act on Forced Sale. Because the Office of the Debtors' Ombudsman had only recently commenced operation and because of the time required to resolve pending cases, the Act on Forced Sale was amended, and the respondent's deadline for requesting that the Commissioner postpone the continuation of a forced sale be deferred for three months was extended until 31 March 2011.

#### November

- On 1 November, the Central Bank announced that the review of the Rules on Foreign Exchange, no. 370/2010, was complete. The Bank considered it unnecessary to amend the Rules; therefore, they remained in effect unchanged.
- On 16 November, Parliament passed Act no. 132/2010 amending the Act on Financial Undertakings as regards provisions concerning winding-up proceedings and bankruptcy proceedings for the failed commercial banks. The amendment was made following comments by the resolution committees and winding-up committees of the failed banks as a result of judgments handed down by an appeals court in France on 4 November 2010. It can be concluded from the judgment that there could be some legal

uncertainty pertaining to the origination of financial institutions' winding-up proceedings according to general rules. Because significant interests were at stake, it was considered necessary to eliminate all doubt about the involvement of the courts in winding-up proceedings and to ensure that there was no doubt about whether the formal requirements set forth in Directive 2001/24/EC on reorganisation and winding up of credit institutions were fulfilled.

- On 30 November, Parliament passed Act no. 135/2010 amending the Act on Debt Mitigation for Individuals and other Acts, with the aim of rectifying various flaws in the Act on Debt Mitigation, clarifying provisions and ensuring the effectiveness of debt mitigation, and co-ordinating the implementation of the debt mitigation measure.

#### December

- On 6 December, the Central Bank of Iceland approved new Rules on Foreign Exchange Balance, no. 950/2010. As before, the purpose of the Rules is to limit foreign exchange risk by preventing foreign exchange balances from exceeding defined limits. One of the most important changes from previous versions of the Rules is that the permissible open foreign exchange position in individual currencies has been reduced from 20% to 15% of equity, and the permissible total foreign exchange balance has been lowered from 30% to 15%.
- On 15 December, Parliament passed Act no. 141/2010 amending the Act on Securities Transactions, which expands the exemptions from the takeover requirement when a company is listed on the market or lists financial instruments on the market.
- On 16 December, the EFTA Surveillance Authority (ESA) confirmed its previously issued preliminary conclusion that the provisions of Act no. 125/2008, the so-called Emergency Act, were in compliance with the EEA Agreement and fulfilled other legal requirements. This included both the provisions assigning higher priority to deposits than to general claims and the actions taken by the Icelandic authorities on the basis of the Act. ESA was of the opinion that the actions to which the authorities resorted were the only options that could have averted the complete collapse of the Icelandic economy.
- On 17 December, Parliament passed Act no. 142/2010 amending the Act on Bankruptcy which aims at enabling individuals who have undergone bankruptcy proceedings but are still responsible for debt not paid during the proceedings to stabilise their finances. The amendment entailed shortening the expiry deadline for those claims, or for the portion not paid during bankruptcy proceedings, so that the expiry date of all claims in the estate will be the same – two years – irrespective of the type of claim.
- On 18 December, Parliament passed Act no. 150/2010, which provided for a 40% year-on-year increase in supervisory fees paid to the Financial Supervisory Authority by financial institutions.
- On 18 December, Parliament passed Act no. 151/2010 amend-

ing the Act on Interest and Price Indexation; the Act on Measures to Assist Individuals, Households, and Businesses due to Extraordinary Circumstances in the Financial Markets; and the Act on the Debtors' Ombudsman. The amendments were intended to reduce the uncertainty that developed in the wake of the Supreme Court judgments on exchange rate-linked loans, as regards the legality of contractual agreements covering a wide range of short- and long-term financing. The objectives were to ensure, to the extent possible, that comparable cases would receive comparable treatment, and to ensure legal security in the settlement of loan agreements with non-binding exchange rate linkage clauses.

- On 18 December, Parliament passed Act no. 153/2010, amending legislation on unemployment benefits. For those who lost their jobs after end-April 2008, the period of entitlement to benefits was lengthened from three years to four, and the authorisation to pay benefits commensurate with reduced employment was extended by six months, until 30 June 2011. The requirement concerning reduced employment was tightened from 20% to 30% of a full-time position.
- On 18 December, Parliament passed Act no. 155/2010, imposing a special tax on financial institutions in the amount of 0.041% of a base equal to total liabilities less deposits covered by the Depositors' and Investors' Guarantee Fund. Financial institutions that owe less than 5 b.kr. are exempt from the tax.
- On 22 December, Parliament passed Act no. 141/2010 amending the Act on Securities Transactions as regards mandatory takeover bids due to control of a company upon its listing on a stock exchange. The amendment was made because of comments indicating that the previous provisions could harm the securities market and could pose a serious risk that companies would remove their shares from trading in Iceland.

## 2011

### January

- On 28 January, the Financial Supervisory Authority issued Guidelines no. 1/2011 on insurance companies' risk management, based on the EU Solvency II Directive.

### February

- On 16 February, Parliament passed Act no. 13/2011, authorising the Minister of Finance to confirm the contractual agreements, signed in London on 8 December 2010, guaranteeing reimbursement by the Depositors' and Investors' Guarantee Fund of expenses incurred by the British and Dutch governments in connection with the payment of minimum deposit insurance to holders of deposits in the British and Dutch branches of Landsbanki Íslands hf., and payment of outstanding balances and interest on these obligations.
- On 20 February, the president of Iceland refused to approve the legislation authorising the Minister of Finance to conclude

the so-called Icesave agreements guaranteeing reimbursement by the Depositors' and Investors' Guarantee Fund of expenses incurred by the British and Dutch governments. The matter was then subjected to a referendum, held on 9 April, in which the electorate also refused to approve the legislation.

- On 21 February, the Financial Supervisory Authority approved Rules no. 162/2011 on financial undertakings' facilities for board members, directors, key employees, owners of qualifying holdings, or parties closely connected with them.
- On 24 February, Parliament passed Act no. 15/2011 amending the Act on Deposit Guarantees and an Investor- Compensation Scheme. According to the amendment, which was minor, it was stipulated that fees to the Fund should be paid no later than 1 June 2011 rather than 1 March.

### March

- On 28 March, Parliament passed Act no. 29/2011 (temporary provisions) on housing affairs, which authorised the Housing Financing Fund (HFF), upon fulfilment of specified requirements, to write down mortgage loans taken by individuals to 110% of the value of the underlying residential property. The aim of the write-down is to reduce overleveraging of assets and reduce household debt service, thereby contributing to a lower default rate. The cost of the HFF write-down is estimated at 21.8 b.kr.

### April

- On 7 April, Parliament passed Act no. 32/2011 on financial undertakings, with subsequent amendments (financial restructuring and winding up). The Act clarifies the implementation of EU Directive 2001/24/EC on the reorganisation and winding up of credit institutions. It ensures that foreign courts and the Icelandic authorities have the same understanding of how Article 32 of the Directive was implemented, as a British court has handed down a ruling that does not accord with the Icelandic authorities' understanding. The Act contains no substantive changes; instead, it removes all doubt that the exemptions in Article 32 of the Directive are intended only to exempt from the scope of Icelandic law those cases that were initiated prior to the commencement of winding-up proceedings or restructuring.
- On 11 April, the Financial Supervisory Authority approved amendments to the Rules on the Capital Requirement and Risk-Weighted Assets of Financial Undertakings, no. 215/2007. The amendments, which were technical in nature, were designed to align the Rules with bank directive.