FINANCIAL STABILITY

2014 • 1

Contents

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:
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Vol. 14 9 April 2014

Printing: Oddi ehf.

This is a translation of a document originally written in Icelandic. In case of discrepancy or difference in interpretation, the Icelandic original prevails. Both versions are available at www.cb.is.

ISSN 1670-584X, print
ISSN 1670-8156, online

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.

The situation has improved, but considerable risk lies ahead

The Icelandic economy has taken a number of steps forward in the recent term. GDP growth was strong in 2013 – among the strongest in developed countries – and was based largely on goods and services exports, as domestic demand was broadly unchanged from the previous year. National saving grew, as did the current account surplus. Inflation subsided rapidly at the turn of the year and has aligned with the Bank's inflation target and is expected to remain there in the course of the current year. Wages have risen somewhat in excess of prices, however, and purchasing power has increased as a result. Unemployment has continued to fall. Households' ability to service their debt has therefore increased.

Households' and firms' debt burden has continued to fall in the past year, owing to restructuring, write-downs, and increased income. The economic upswing and improved private sector financial conditions are reflected in the banks' position, which strengthened further in 2013, with good returns on equity and total assets, declining levels of non-performing loans, and rising capital ratios. Banking system liquidity has remained strong. Economic prosperity resting on a sound footing therefore strengthened the foundations of financial system stability, as it always does.

Closer scrutiny of the banks' position reveals that they are not as strong as would appear at first perusal, although there is no cause for major concern. One reason for this is that their foreign-denominated liquidity will deteriorate markedly in coming years, other things being equal, unless the terms of Landsbankinn's debt to the old bank are renegotiated or the new bank gains access to foreign credit beforehand. Another reason is that a portion of the banks' operating performance is based on valuation increases in loans and other irregular items. If adjustments are made for this, their returns on core operations are weaker, although they remain slightly ahead of other Nordic banks. Loan values are still unusually uncertain. The increase in the bank tax will also erode the banks' performance. These factors and the risks that lie ahead should temper tendencies to see the banks' high capital ratios as excessive. It should also be borne in mind that additional capital requirements based on international standards have yet to be implemented in Iceland, which is even more reason for the banks to moderate their dividend payments.

If current forecasts materialise, near-term economic developments should not undermine financial stability. The Central Bank's February forecast provides for average GDP growth of just over 3% in 2014 and the upcoming two years. If it is borne out, spare capacity will disappear from the economy, and a positive output gap will begin to develop around the end of this year. This will call for economic policy responses to safeguard economic stability. The stability of the financial system need not be in any danger as long as economic policy is disciplined and private sector expectations are reasonably realistic. Experience shows that developments could tend in either direction, and if they are unfavourable, it could trigger a sequence of events that would have detrimental implications for financial stability. In this context, it is cause for concern that, according to the Bank's forecast, domestic demand will grow well in excess of GDP growth in coming years. National saving will therefore diminish and the current account surplus will turn into a deficit. Economic policy and public incentives must work against this, as the risks attached to the balance of payments problem and the liberalisation of the capital controls escalate as the current account surplus grows smaller. The greater the confidence in Iceland and the improvements in the external position and current account surplus, the less likely it is that residents' capital outflows will vastly exceed non-residents' inflows when capital account restrictions on the former are lifted.

Economic forecasts illustrate the likeliest scenario, but safeguarding financial stability requires consideration of all risk factors, even those that may lurk in the tails of the probability distribution. It is also necessary to assess the uncertainty caused by the fact that the probability distribution is often unknown and, for some events, hardly definable. The key risks currently known centre on several factors: Iceland's balance of payments problem and possible mistakes in resolving it, which would jeopardise economic and financial stability; uncertainty about the quality of the banks' loan portfolios; the outlook for the banks' underlying operating performance; mistakes made in economic policy when the slack in the economy turns into a positive output gap; and the potential long-term effects of the capital controls on asset prices and the financial markets.

It is possible to draw up scenarios where these risks amplify one another, which could ultimately have severe repercussions for financial system stability. It is the task of those who monitor financial stability, conduct economic policy, and take other major decisions on economic development and the financial system to stop such a vicious cycle in its tracks. In all instances, it is vital to protect the sovereign's debt position, credit rating, and access to foreign credit markets. In the recent term, there have been signs that the situation regarding these factors is improving. In addition, the spreads on the Treasury's foreign bonds maturing in 2016 and 2022 have fallen markedly in recent weeks.

As usual, this issue of *Financial Stability* contains detailed analyses and statistical information on Iceland's balance of payments problem. As has been stated quite often, the problem falls broadly into three categories. First of all, the debt service burden on foreign debt is heavy, both this year and in the four years following, and exceeds the foreseeable current account surplus. Second, domestic entities other than the sovereign and the Central Bank still have only limited access to foreign credit markets on affordable terms. Third, the settlement of the failed banks' estates could add substantially to the stock of volatile króna assets held by non-residents locked in by the capital controls. These króna assets could rise as high as nearly half of GDP if the failed banks' ISK assets are collected in full and paid to creditors. Iceland has no excess foreign exchange revenues with which to unwind such positions, however.

According to the analysis that follows, although the balance of payments problem is still detrimental, the situation has improved in the recent term, owing to last year's strong current account surplus, which reduced the debt position more than previously anticipated. In addition, the heaviest years concerning amortisation of foreign debt – 2012 and 2013 – are already behind us, and borrowers had saved up for a portion of the payments beforehand. Also, it appears as though a share of upcoming payments, particularly those in 2015, will be covered with refinancing or foreign asset sales. And finally, there are signs that the new banks' access to foreign credit markets is easing.

This does not change the fact that, without targeted measures to solve the balance of payments problem, the capital controls cannot be lifted without taking unjustifiable risk with economic and financial stability. Broadly speaking, these targeted measures entail i) spreading out foreign loan payments, particularly on Landsbankinn's foreign-denominated debt to the old bank; ii) facilitating solutions concerning the failed banks' ISK assets that do not deplete Iceland's foreign reserves or foreign exchange revenues, even though access to foreign credit is limited; and iii) improving resident entities' access to foreign credit markets. The Government and the Central Bank are working together on a number of possible options based on detailed long-term balance of payments scenarios.

Iceland has been improving the regulatory framework for its financial system in the recent past, as have many other developed countries hit hard by the financial crisis. Some of the improvements entail the implementation of international regulatory standards, while others focus on Iceland-specific risks. Last December, the Bank adopted new liquidity rules that are based on the Basel III principles but include special foreign-denominated liquidity ratios. Ahead is the implementation of the Basel III capital adequacy rules, which are part of the EEA regulatory framework (the Capital Requirements Directive, CRD IV) and require legislative amendments. It is also planned to adopt special prudential rules before the capital controls are lifted. The main aim of the rules is to reduce foreign exchange risk, but they may also include tools that can be used in response to excessive volatility in capital movements. Moreover, a legislative bill on a financial stability council has been presented before Parliament. The bill aims both to provide a stronger foundation for systemic risk analysis and response and to guarantee the necessary access to information for this purpose. All of these developments indicate that we are gradually putting the lessons learnt from the financial crisis into action.

The financial system: outlook and key risks

Positive developments

There are numerous signs that risk in the financial system has diminished since last spring. In 2013, the economy and the private sector evolved in a more positive direction than in 2012. GDP growth measured 3.3% in 2013, a post-crisis high, investment excluding irregular items[1] grew by 6% during the year, and real disposable income grew by 4.1%. Exports grew 5.3%, in spite of worsening terms of trade. Iceland's underlying[2] current account balance was positive in the amount of 82 b.kr., or 4.6% of GDP, the strongest surplus since 2010.

The large commercial banks turned in strong operating results in 2013. Returns declined slightly between years, however, calculated interest rate spreads narrowed, and expense ratios declined slightly. Scenarios for their core operations indicate that the banks' combined operations improved in 2013. Their calculated returns on core activities grew by 0.1 percentage point, to 0.7% of total assets. In comparison, several Nordic banks' returns on core operations averaged 0.5% in 2013. Nonetheless, returns on core operations account for only a third of banks' total returns, and income from irregular items still weighs heavily. Loan revaluation explains nearly half of the three large commercial banks' total profit in 2013.

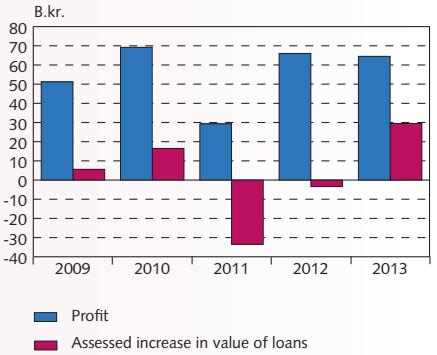
Households' and businesses total debt continued to decline in 2013, and with rising asset prices, net wealth and financial conditions in the private sector have grown stronger. Household debt declined by over 5% of GDP in 2013, as compared with 3.5% of GDP in 2012. By 2013, it had declined by nearly 30% of GDP from its 2009 peak. Ireland is the only European country with heavily leveraged households to achieve a comparable reduction in debt. The proportion of non-performing loans has continued to decline, and the number of individuals on the default register fell significantly for the first time since the beginning of 2009, a trend that is expected to continue. Corporate debt amounted to 141% of GDP at the end of 2013, after declining nearly 24 percentage points year-on-year. At present, the corporate debt ratio is similar to that at the beginning of 2005. Lending to companies grew in the second half of 2013, with net new lending[3] amounting to four times net H1 lending. Default on corporate debt continues to fall, and bankruptcies have diminished markedly in number. The number of firms on the default register is broadly unchanged since mid-2011, however.

Key risks

The key risks facing the financial system at present are related to Iceland's balance of payments problem. It is foreseeable that the current account surplus in coming years will not cover contractual foreign debt payments, let alone release non-residents' ISK assets. Foreign funding must be lengthened and short-term króna assets

Chart 1

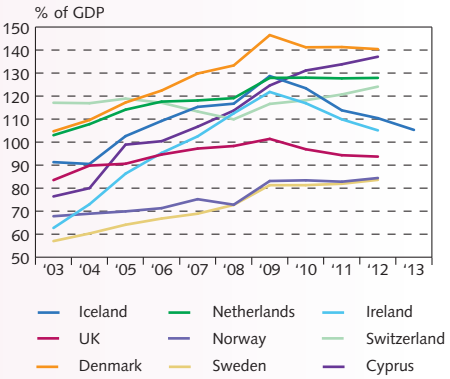
The three largest banks' profit and revaluation of loans and receivables[1]



1. Consolidated accounts.
Sources: Commercial banks' annual financial statements, Financial Supervisory Authority, Central Bank of Iceland.

Chart 2

Household debt in European comparison
2003-2013

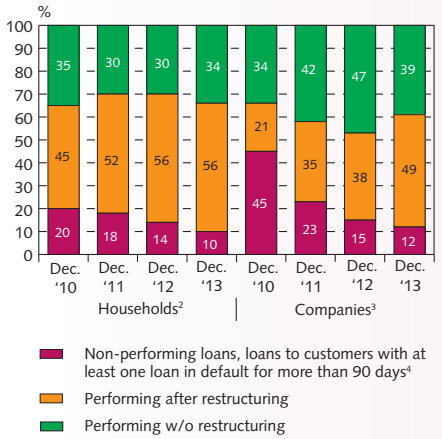


Sources: Eurostat, Statistics Iceland, Central Bank of Iceland.

1. Investment excluding ships and aircraft.
2. Excluding the effects of the DMBs in winding-up proceedings and Actavis on the balance on income.
3. New lending net of prepayments.

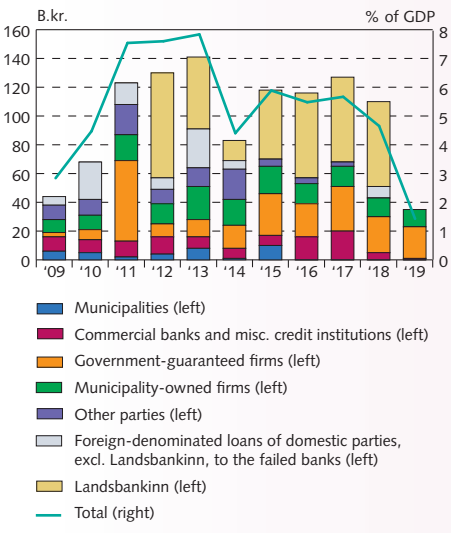
held by offshore ISK owners and deposit money banks (DMB) in winding-up proceedings must be reduced before the controls can be lifted.

Chart 3
Status of loans[1]



1. Parent companies, book value. 2. Loans to households include loans from the three largest commercial banks and the Housing Financing Fund. 3. Loans to companies include loans from the three largest commercial banks. 4. Non-performing loans are defined as loans in default for more than 90 days or deemed unlikely to be paid. The cross-default method is used; that is, if one loan taken by a customer is non-performing, all of that customer's loans are considered non-performing.
Source: Financial Supervisory Authority.

Chart 4
Estimated payments by parties other than the Treasury and CBI on foreign loans and foreign-denominated loans to the failed banks



Sources: Statistics Iceland, Central Bank of Iceland.

Impact of debt relief and amendments to indexed loans

Other things being equal, the proposed prohibition on indexed annuity loans with maturities of more than 25 years will lower house prices and add to borrowers' debt service burden. Such changes should be timed carefully in view of the fact that households remain heavily leveraged and a considerable proportion of them are underwater. There is also some uncertainty related to the Government's mortgage debt relief package and the financing of the measures, as the Glitnir winding-up committee has declared its intention to file suit because of the bank tax that is intended to finance the measure. Increased levies on the banks could result in wider interest rate spreads, particularly at depositors' expense, through reduced deposit rates. In addition, prepayments of Housing Financing Fund loans are likely to rise because of borrowers' increased collateral capacity.

Foreign debt service and the balance of payments problem

Iceland's foreign debt service burden is heavy, and deleveraging will be rapid in coming years. Concurrent with this, the Treasury and the Central Bank must refinance a portion of their outstanding debt so as to maintain sufficient foreign exchange reserves, which is one of the prerequisite for credible capital account liberaliation. Apart from Treasury and Central Bank debt, the bonds between Landsbankinn and LBI represent the heaviest burden. Repayment of these bonds begins with full force in 2015. According to a statement from Landsbankinn, the bank will need to refinance the bonds before the 2016 maturities. The same year, a 115 b.kr. Treasury debt used to finance the foreign exchange reserves matures.

Some domestic entities, including Landsbankinn, have been saving up for upcoming repayments or will sell foreign assets to cover them. Adjusted for this, and based on a cautious assessment of expected refinancing, unfunded instalments through 2018 amount to about 460 b.kr., or up to 5.0% of GDP per year. In comparison, the underlying current account balance for 2013 was positive by 82 b.kr., or 4.6% of GDP. The Central Bank's forecast indicates, however, that the current account balance will be less favourable in coming years and will turn into a deficit before long, in part due to the Government's mortgage debt relief measures. According to the Bank's forecast, imports will grow in the wake of the debt reduction, and the current account balance will deteriorate by about 1% of GDP per year, or the equivalent of 100 b.kr. over the next five years.[4] However, if it is assumed that the current account balance over the next few years will remain close to the average of the last three years, or 3.5% of GDP, foreign loan repayments will exceed the current account balance by about 100 b.kr. during the period

4. Central Bank forecast, published in Monetary Bulletin 2014/1.

from 2014 to 2018. It is necessary to maintain a strong external trade surplus in coming years in order to cover heavy debt service. In order to achieve this, national saving must be broadly similar to the 2013 level and then rise in line with increased investment. It is also important to extend foreign loan maturities, the Landsbankinn-LBI debt in particular. The interaction between these two factors would greatly diminish the risk attached to Iceland's balance of payments and facilitate liberalisation of the capital controls.

Other things being equal, the current foreign debt service profile provides no latitude for other outflows such as those connected with the failed banks' composition agreements, non-residents' short-term ISK assets, or capital account liberalisation, unless other inflows are forthcoming. Improved domestic access to foreign credit markets on sustainable terms is a prerequisite for stability in the years to come. A heavy foreign debt service burden is one of the principal risks the financial system faces in connection with lifting the capital controls.

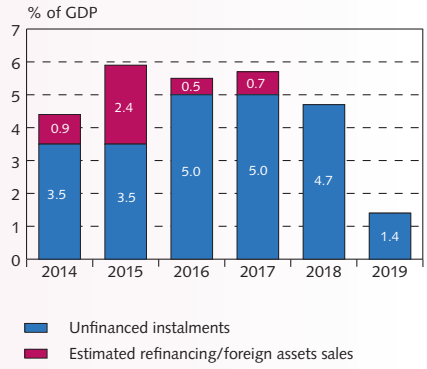
Settlement of DMBs in winding-up proceedings

The assets of Glitnir, Kaupthing, and LBI are currently estimated at one-and-a-half times GDP. About 38% of the assets are domestic, as opposed to under 6% of claims. Other things being equal, domestic assets worth nearly half of GDP will revert to foreign creditors when the estates are settled. Iceland's current account balance does not provide scope for outflows of the estates' ISK assets, and it is important to diminish the adverse effect of the disbursements on the balance of payments by reducing the weight of domestic assets in their portfolios.

No decisions have been made about the next stage in the failed DMBs' winding-up proceedings. The winding-up proceedings must not have a negative impact on the balance of payments, and the settlement of the estates must not pose a threat to short- or long-term stability. It must leave resident entities in a position to access foreign credit markets on sustainable terms, as this is the foundation for a long-term solution to Iceland's balance of payments problem.

Chart 5

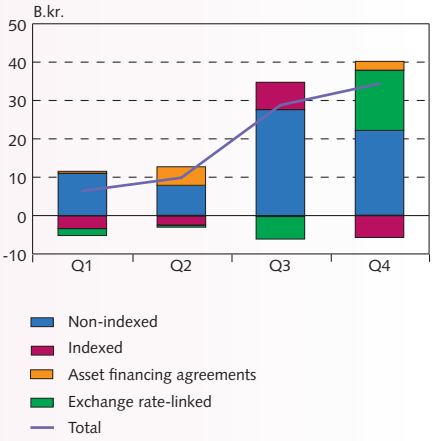
Estimated payments by parties other than the Treasury and CBI on foreign loans and foreign-denominated loans to the failed banks[1]



1. Based on end-2013 balance and 26 February 2014 exchange rate.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 6

Net new lending[1] from the three large commercial banks to firms by loan form
Q1/2013 - Q4/2013



1. New loans net of prepayments.
Source: Central Bank of Iceland.

I The economic environment

Export-driven GDP growth

According to the most recent forecast from the International Monetary Fund (IMF), global GDP growth will be relatively strong in 2014 and 2015, with increased momentum in developed countries. The US Federal Reserve Bank has already begun to taper off its monetary stimulus, and the outlook is for policy interest rates to remain low in the US and Europe at least well into next year. Risk has increased in many emerging economies, with a resurgence of capital outflows, currency depreciation and, in some countries, policy rate increases, while in developed countries the economic outlook is improving and asset prices are rising. GDP growth measured 3.3% in Iceland in 2013, outpacing other developed countries, and was driven by exports in spite of adverse developments in terms of trade, whereas domestic demand was broadly unchanged year-on-year. Unemployment is still falling, and inflation has realigned with the target. Iceland's sovereign CDS spread has been declining. The króna appreciated last year and has continued to strengthen in 2014, even though the Central Bank has stepped up its foreign exchange purchases. Asset prices have risen over the same period.

Foreign economic affairs and financial markets

World economic outlook

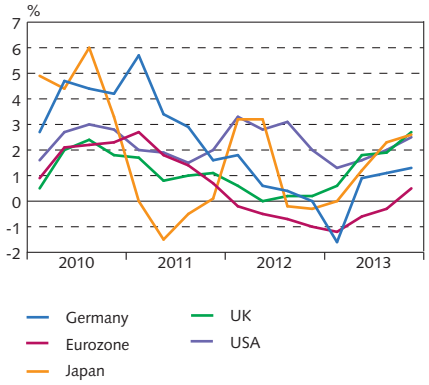
GDP growth resumed in developed countries last year, gaining momentum in most economies (Chart I-1). Annualised GDP growth was positive in the eurozone in Q4/2013, after a contraction lasting nearly two years. As in the recent past, Germany was the driver in the euro area, with GDP growth measuring 1.3% in Q4, as opposed to 0.5% in the eurozone as a whole. In the US, Japan, and the UK, growth ranged between 2.5% and 2.7% year-on-year.

The global recovery is expected to continue this year and next year (IMF, *World Economic Outlook*, April 2014). The IMF's global GDP growth forecast is broadly unchanged since last autumn, at 3.6% for this year and 3.9% for 2015. For developed countries, the IMF now estimates GDP growth at about 2.3% for 2014 and 2015, about a percentage point above last year's forecast. The average Consensus Forecasts projections for most developed countries have been on the rise in recent months. Early forecasts for GDP growth in 2015 suggest that growth will continue: 1.4% in the euro area (2.0% in Germany), 2.5% in the UK, 3.1% in the US, and 1.3% in Japan.[1]

The US Federal Reserve Bank bought long Treasury bonds and mortgage-backed bonds in the amount of 85 billion US dollars per month in 2013. At the end of May 2013, however, it was thought that the bank was considering scaling down its bond purchase programme. In December the bank announced plans to cut its purchases by 10 billion dollars per month. Further reductions of 10 billion dollars per month were announced in January and March, and beginning in April, the Federal Reserve will buy bonds for 55 billion dollars per month.[2]

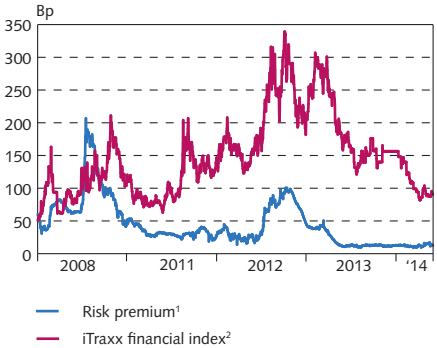
Central banks in the US and Europe have maintained low policy rates for some time and appear likely to continue on that path –

Chart I-1
GDP growth in selected countries[1]



1.Year-on-year change in GDP.
Source: Macrobond.

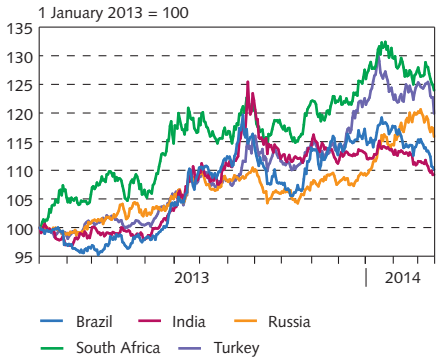
Chart I-2
Risk premium and iTraxx financial index in Europe
Daily data, 3 January 2008 - 21 March 2014



The risk premium is measured as the spread between three-month EURIBOR rates and expected overnight rates (OIS). 2. The iTraxx financial index comprises CDS spreads for 125 financial companies in Europe.
Source: Bloomberg.

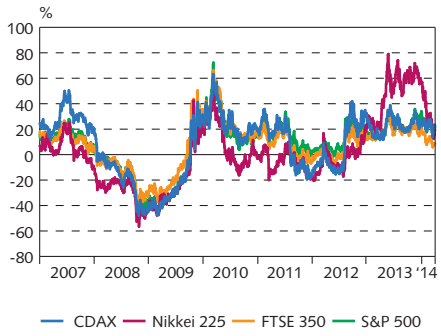
1. *Consensus Forecasts,* March 2014.
2. Statements by the US Federal Reserve Board.

Chart I-3
Exchange rate indices of selected currencies against the US dollar
Daily data, 1 January 2013 - 31 March 2014



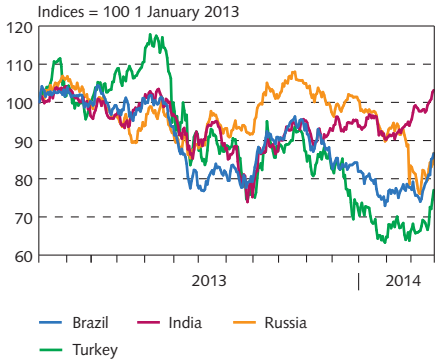
Source: Macrobond.

Chart I-4
Share price indices[1]



1. 112-month change.
Source: Macrobond.

Chart I-5
Share price indices in selected emerging markets



Source: Macrobond.

Europe in particular. The US Federal Reserve announced in March that, in the absence of other changes, it would not raise interest rates until next year. This protracted period of low interest rates has exacerbate risk. The search for yields leads to increased debt and risk-taking, which could jeopardise financial stability.[3] Many countries are now responding to this by considering alternative policy tools intended to mitigate the build-up of systemic risk (i.e., macroprudential policies).

Increased risk in emerging economies

Investors' interest in emerging economies has cooled in the recent term, for a number of reasons. The output growth outlook has generally deteriorated in emerging countries, while it has improved in developed countries, where risk premia have remained low (Chart I-2). The US Federal Reserve's decision to scale down its injection of liquidity into the economy has also had an impact. Capital outflows from emerging economies in 2013 and early this year have caused currencies to depreciate and interest rates to rise (Chart I-3).

Outflows from emerging economies spiked in mid-2013 and again this January. Last summer it was the currencies of countries with large external imbalances, high inflation, and rising indebtedness that yielded to the pressure. Chart I-3 shows the currency deprecation in South Africa, Brazil, and India last spring and autumn, with the South African rand falling 8.3% against the US dollar in May 2013, and the Brazilian real by 6.2%. At the beginning of this year, outflows were concentrated in countries featuring political uncertainty and a poor output growth outlook relative to developed economies. Currency depreciation in Russia and Turkey early this year can also be seen in Chart I-3, the rouble falling by 6.9% in January and the lira by 5%, on the heels of a 6.1% drop in the preceding month. The weakening at the beginning of the year appears to have reversed relatively quickly, however, as central banks took action to support their currencies.[4]

Foreign markets

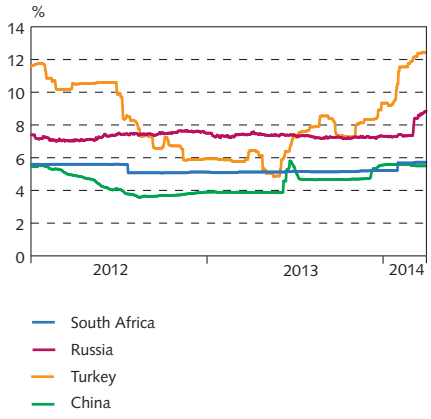
Mutual fund growth in developed economies has pushed share prices upwards (Chart I-4). In late January, however, prices dipped temporarily for less secure asset classes, owing to disappointment with US labour market figures and increased difficulties in emerging economies. By the end of March, the twelve-month rise in share price indices amounted to nearly 20% in Germany, the US, and Japan, and 8.5% in the UK (Chart I-4).

Asset prices have generally been on the decline in emerging countries in the past year. Developments in the MSCI share price indices in US dollars are illustrated in Chart I-5, which shows a dip in share prices in May, in response to signs that the Federal Reserve was considering scaling down its liquidity injections. Prices gave way again when the tapering was implemented in December and when the Argentinian peso plummeted in late January.

3. Altunbas, Gambacorta, and Marques-Ibanez "Does monetary policy affect bank risk?" *International Journal of Central Banking*, March 2014, and Maddaloni and Peydró "Bank Risk-taking, Securitization, Supervision and Low interest Rates: Evidence from the Euro-area and the U.S. Lending Standards" *The Review of Financial Studies*, June 2011.
4. BIS, *Quarterly Review*, March 2014.

Short-term interest rates have been rising in emerging countries over the past year. Developments in three-month interbank rates in South Africa, Russia, Turkey, and China can be seen in Chart I-6. Interest rates rose in Turkey in late May 2013 and in China in early June. Rates rose in Turkey and South Africa when the Argentinian peso fell in late January, and interbank rates in Russia rose in early March. Three-month interbank rates are now up 0.6 percentage points year-on-year in South Africa. They have risen 1.4 percentage points year-on-year in Russia, 1.6 percentage points in China, and 6.0 percentage points in Turkey.

Chart I-6
Three-month interbank rates



Source: Macrobond.

The domestic economy

Domestic demand

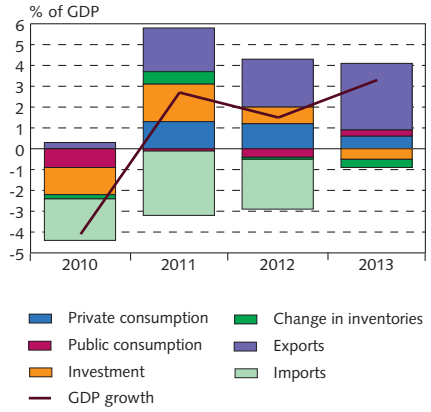
According to preliminary figures from Statistics Iceland, output growth measured 3.3% in 2013, about 0.3 percentage points more than in the Bank's February forecast. Growth was driven primarily by exports (Chart I-7). Investment and private consumption had grown somewhat during the previous two years, with imports growing commensurably. There was little discernible year-on-year change in private consumption and investment last year, in spite of a contraction in imports of ships and aircraft, which affected investment figures from previous years.

Iceland's investment level is still below 15% of GDP, well below the thirty-year average of about 20% (Chart I-8). Business investment has not recovered, and public investment is more or less on hold. There was a slight uptick in residential investment towards the end of the year, and the outlook is for further growth as long as real house prices continue to rise.

Unemployment measured 4.5% in Q4 2013, after declining slightly year-on-year. According to the Directorate of Labour (DoL), registered unemployment was 4.5% in January and February, compared to 5.5% over the same period of last year.

Inflation has fallen rapidly in recent months and was slightly below target in February, for the first time in three years.

Chart I-7
Contribution of expenditure components to GDP growth 2010-2013



Source: Statistics Iceland.

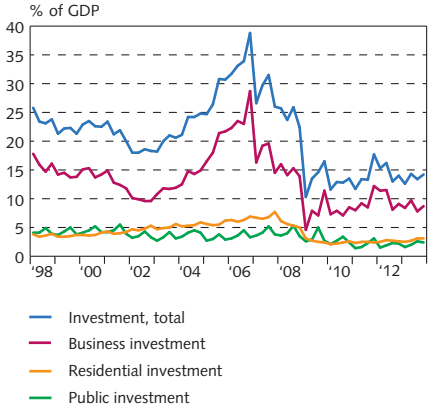
Real exchange rate, terms of trade, and exports

The real exchange rate rose markedly in 2013, due primarily to nominal appreciation of the króna. In the past three quarters it has hovered around 85% of its average since 1980, and it is currently at its strongest since the banks failed in October 2008 (Chart I-9).

Terms of trade continued to deteriorate in 2013, owing largely to falling cod prices. The cod catch grew by over 15% year-on-year, but the catch value contracted by 4.4% and, for the year as a whole, was about 4.1% less than in 2012. Aluminium prices were also lower in 2013 than in 2012, and aluminium export values fell by some 4½% year-on-year. Revenues from foreign tourists were up nearly 15%, however, exceeding marine export revenues for the first time (Chart I-10).

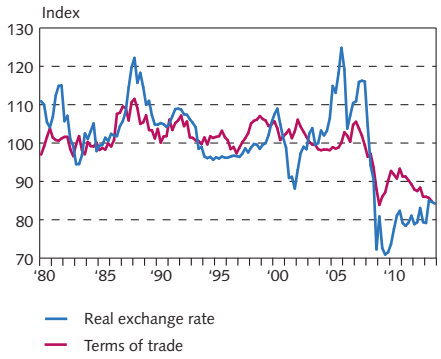
The current account balance has turned around abruptly in the past five years (see Box I-1). Investment contracted by 11% of GDP over these five years and has been at a historical low for this period.

Chart I-8
Investment



Source: Statistics Iceland.

Chart I-9
Real exchange rate and terms of trade
Q1/1980 - Q4/2013



Sources: Statistics Iceland, Central Bank of Iceland.

National saving also grew markedly when private consumption contracted relative to GDP. As is discussed further in Chapter II, it is desirable to maintain a sizeable trade surplus in coming years in order to cover external payment flows. It is critical to step up national saving in order to boost investment while the current account is in surplus (see Box I-1).

Access to foreign capital markets

The spread between the Icelandic Government's 10-year US dollar bond, issued in 2012, and a comparable US Treasury bond maturing in 2022 has narrowed in recent months. It is now about 2.0 percentage points, roughly 20 basis points below the low of last spring (Chart I-11). Since the beginning of the year, the spread between Icelandic and US Treasury bonds has narrowed by about 60 basis points. In the past twelve months it has narrowed by 16 basis points, whereas premia on comparable Lithuanian and Latvian bonds versus US Treasury bonds have narrowed by 47 and 56 basis points, respectively, over the same period. In January 2014, rating agency Standard & Poor's changed the outlook on Iceland's sovereign credit rating from negative to stable. Moody's affirmed Iceland's rating at Baa3 with a stable outlook in December 2013, and in February 2014 Fitch affirmed its rating for Iceland at BBB, also with a stable outlook.

Box I-1

Current account balance, investment, and saving

Iceland's current account balance has changed radically in recent decades. For a long period, there was a trade deficit that was financed with foreign borrowing and foreign direct investment. The current account balance is not only a measurement of the surplus or deficit on trade with other counties; it also provides an estimate of the capital inflows and outflows needed to sustain the deficit or surplus. In a closed economy, saving is always equivalent to investment, but in an open economy, it is possible to invest in excess of saving if there is a trade deficit, or to invest abroad if there is a trade surplus. As a result, a change in the current account balance is always associated with a corresponding change in investment and saving.

The current account balance turned from a surplus in the amount of 1.9% of GDP in 1994 to a 10.2% deficit in 2000 (Table

Table 1. Changes in investment ratio, saving ratio, and current account balance

	ΔI	*ΔS*	*ΔCA*	*Current account balance*
1994				1.9
Change 1994-2000	7.2	-4.9	-12.1	
2000				-10.2
Change 2000-2002	-5.0	6.7	11.7	
2002				1.5
Change 2002-2008	6.4	-13.5	-19.4	
2008				-17.9
Change 2008-2013	-11.0	13.5	24.1	
2013				6.2

The table shows changes in ratios of investment (ΔI), saving (ΔS), and current account (ΔCA). ΔCA is always equal to ΔS less ΔI. All figures are shown relative to GDP. The calculation of the current account balance and national saving is based on Central Bank estimates of the underlying variables.

Sources: Statistics Iceland, Central Bank of Iceland.

1). Over that period, investment as a share of GDP rose by 7.2 percentage points and saving contracted by 4.9%. The current account deficit then disappeared rapidly, and by 2002 there was a 1.5% surplus on external trade as saving rose again and investment contracted. Between 2002 and 2008, investment increased by more than 6% of GDP. Private consumption also grew during this period, and saving contracted by 13.5% of GDP, resulting in an underlying current account deficit of 18% in 2008. Such a deficit is not sustainable, as it is financed largely through foreign borrowing, as is well known. The turnaround in the last five years has been very rapid. Investment contracted by 11% of GDP and has been at a historical low over this period. National saving also grew significantly when private consumption contracted relative to GDP by 13.5 percentage points, according to underlying figures. It is desirable to increase investment after such a long hiatus; however, a strong surplus on external trade is needed, in view of the heavy foreign debt service burden ahead. In order for both of these to materialise, national saving must increase significantly.

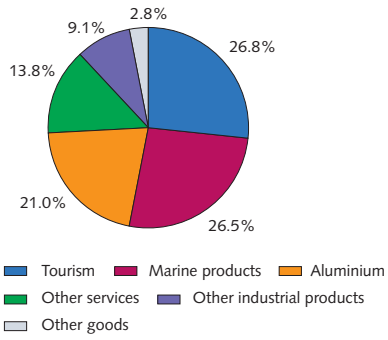
Domestic markets

The real estate market

Real estate market turnover grew in 2013 and has continued to rise so far in 2014 (Chart I-12). At constant prices, quarterly turnover in 2013 was similar to that in 2003. In Q4/2013, real estate market turnover was equivalent to about 13.3% of GDP, some 0.7 percentage points below the average since the turn of the century. This indicates that the slump beginning in early 2008 ended in 2012.

Real house prices have continued to rise. In February, Registers Iceland's house price index for the capital area had risen by 6.4% year-on-year in excess of the price level, the largest twelve-month increase since January 2008. Real house prices have now risen by 10.6% from the December 2010 trough and are back to the level last seen in November 2004 (Chart I-13).

Chart I-10
Export revenues 2013



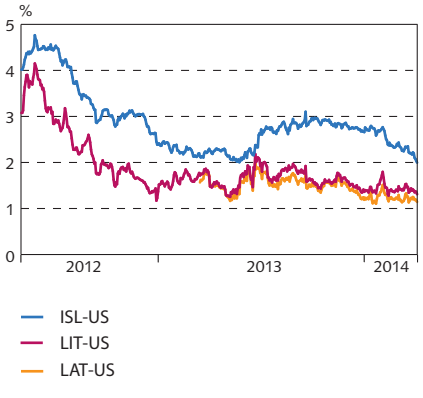
Source: Statistics Iceland.

Bond market

Bond market turnover has tapered off in recent years, while equity market activity has grown, fuelled by new stock exchange listings. NASDAQ OMX Iceland (OMXI) bond market turnover totalled 1,822 b.kr. in 2013, down from 2,324 b.kr. in 2012 (Chart I-14). Although only 3% of bonds traded in the market are issued by entities other than the Treasury or the Housing Financing Fund (HFF), issuance of non-Government bonds has increased substantially in the past few years. Many of these issues are related either to Central Bank foreign currency auctions (see Box II-2) or institutional investment funds' financing (see Box I-2).

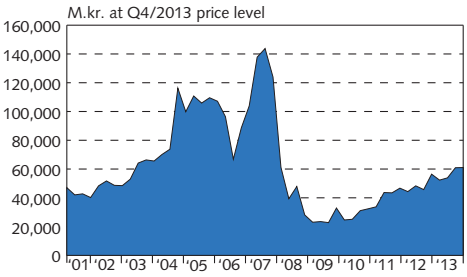
Yields at the short end of the nominal yield curve are below the Central Bank's collateralised lending rate, as they have been since the capital controls were introduced. The same is true of indexed bond yields. Five- and 10-year indexed bond index yields have fallen from 6.57% and 5.29%, respectively, at the end of 2007 to 2.49% and 2.93%, respectively, as of end-2013. They have been below 3.5% since mid-2010. The rise in OMXI bond indices since the beginning of

Chart I-11
Interest rate spread between 10-year Icelandic, Lithuanian, and Latvian USD bonds and 10-year US Treasury bonds
Daily data, 9 May 2012 - 2 April 2014



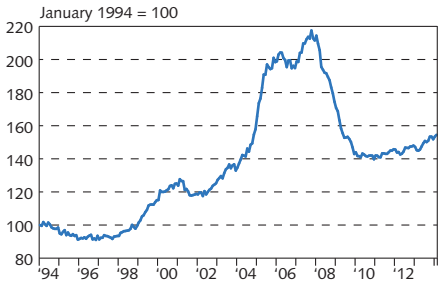
Sources: Bloomberg, Central Bank of Iceland.

Chart I-12
Housing market turnover
Q2/2001 - Q4/2013



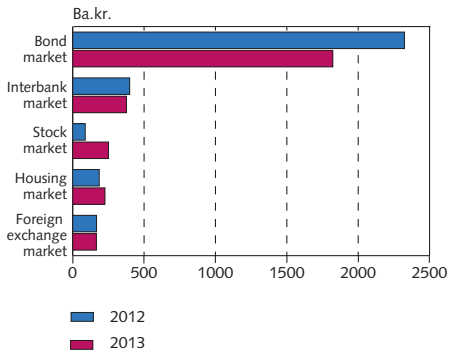
Sources: Registers Iceland, Statistics Iceland, Central Bank of Iceland.

Chart I-13
Real house prices
Monthly data, January 1994 to February 2014



Sources: Registers Iceland, Statistics Iceland, Central Bank of Iceland.

Chart I-14
Market turnover 2012 and 2013



Sources: Nasdaq OMX Iceland, Registers Iceland, Central Bank of Iceland.

2009 can be seen in Chart I-15. The price increase during this period, which is reflected in low yields, is caused to an extent by increased demand from domestic and foreign investors locked in by the capital controls. Non-resident investors' bond holdings declined by 54 b.kr. in 2013, to a year-end total of 191 b.kr. (for further discussion, see Chapter II).

Lower bond market rates reduce the Treasury's financing costs, which have fallen sharply in the domestic market since the capital controls were imposed and can be expected to rise when the controls are lifted. Other things being equal, this will increase the Treasury's financing costs.

Equity market

Equity market turnover has risen sharply in the recent past, and the number of companies on the Main List has grown. Turnover was 251 b.kr. in 2013, as opposed to 88 b.kr. in 2012. Three new companies were listed on the Main List during 2013: N1 and two insurance companies, Vátryggingarfélag Íslands (VÍS) and Tryggingamiðstöðin (TM). The OMXI6 index rose by 18.9% in 2013, after rising 16.5% in 2012 (Chart I-16). It fell by 7.7% in the first quarter of 2014, however. Price developments varied from company to company, with Vodafone rising most, at 13%, and Marel falling most (21%).

The total market capitalisation of Main List companies rose by some 133 b.kr. in 2013, as opposed to an increase of 60 b.kr. in 2012. The outlook is for continued Main List expansion this year. Trading with insurance company Sjóvá's shares is scheduled to begin on 11 April, following an initial public offering from 27-31 March. HB Grandi's offering is currently underway, and the company's shares are to be admitted for trading on the exchange thereafter. HB Grandi has been listed on the OMXI's First North market in recent years.

Foreign exchange market

The króna appreciated by some 2% in Q1/2014, as opposed to 6.4% over the same period in 2013. It appreciated by nearly 11% in trade-weighted terms in 2013.

Since mid-May 2013, the Central Bank has intervened more actively in the foreign exchange market (Chart I-17). Exchange rate volatility (measured as the standard deviation of daily changes) in Q1 was about half that in the same quarter of 2013. Volatility diminished after the Bank increased its foreign exchange market activity. The Bank sold foreign currency twice last May, but market conditions changed in July, and the exchange rate rose sharply when market makers channelled more foreign currency into the market. The Bank responded to this development by intervening and buying currency, which it had not done since it suspended its regular foreign currency purchase programme at the end of 2012. From July through the end of the year, the Bank bought currency for the equivalent of 10 b.kr. It then sold the equivalent of 2 b.kr. when the króna weakened suddenly in August and September. In Q1/2014, the Bank bought foreign currency from market makers for the equivalent of 24.2 b.kr. and sold for just under 0.5 b.kr. in a single transaction. The Bank's transactions

accounted for 39% of total foreign exchange market turnover during the quarter, as compared with 14% in 2013. The foreign exchange market activity undertaken by the Central Bank since it announced its new intervention policy last May has prevented the króna from strengthening even further. The supply of foreign exchange has increased in recent months because foreign debt maturities have been less onerous over the past 10 months than they were previously, and because financial institutions' foreign currency mismatches have been reduced, in part through measures taken by the Central Bank

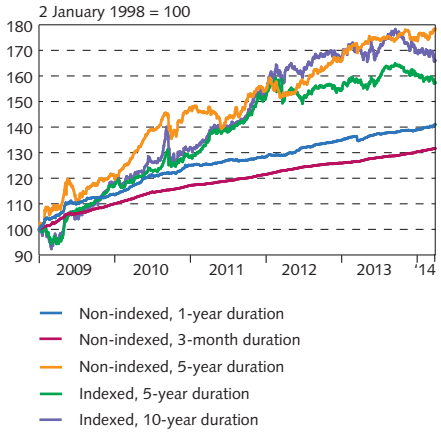
The interbank market for krónur

Turnover in the interbank market for krónur totalled 377 b.kr. in 2013, as opposed to 399 b.kr. in 2012 (Chart I-14). In the first two months of 2014, it has contracted sharply compared with the same period in previous years. In the latter half of 2013, interbank market interest has been below the centre of the interest rate corridor, averaging 0.25 percentage points above the floor of the corridor. Twice in 2013, interest rates rose to the ceiling of the interest rate corridor and just above it. Overnight rates usually rise when financial institutions' outflows are largest, at mid-month or month-end.[5]

Chart I-15

The indices are calculated by Nasdaq OMX Iceland for fixed-duration bonds[1]

Daily data, 2 January 2009 - 31 March 2014



1. The indices are calculated by Nasdaq OMX Iceland for fixed-duration bonds.

Source: Nasdaq OMX Ísland.

Chart I-16

OMXI6 share price index

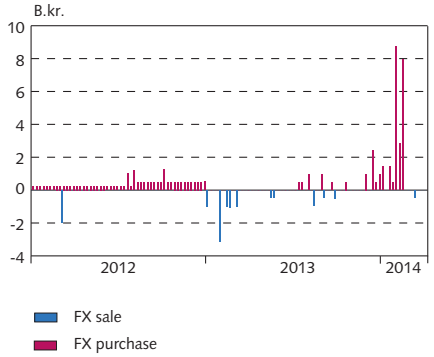
Daily data, 2 January 2009 - 31 March 2014

Source: Nasdaq OMX Iceland.

Chart I-17

Central Bank of Iceland FX intervention 2012-2014

Weekly data



Source: Central Bank of Iceland.

5. Other important factors are the point in time within the reserve requirement period and how successful market agents are in meeting reserve requirements. In such instances, interest rates are quick to return to their previous equilibrium.

Box I-2

Shadow banking and corporate bond issuance

Shadow banking is the term applied to conventional banking activities taking place outside the regulated banking system. It extends to intermediation of credit where long-term assets are funded with short-term liabilities and the assets are often more illiquid than the funding. Money market funds, repurchase agreements between financial institutions, and issuance of asset-backed securities are all examples of shadow banking activities. Shadow banking activities are generally funded with unsecured short-term capital that could dry up without prior notice. Another risk associated with shadow banking is that it can contribute to increased indebtedness and asset bubble formation. Because of its connections with the banking system, shadow banking can pose a threat to financial stability.

In recent years, shadow banking has increased around the world, giving rise to concerns about the lack of systematic supervision of the activities. In this context, emphasis is usually placed on the risk related to connections between shadow banking and systemically important financial market entities such as commercial banks or pension funds.

The Financial Stability Board (FSB) monitors shadow banking worldwide. According to the FSB's most recent report, assets held by "other financial intermediaries" (OFI) accounted for ¼ of all financial assets in the Board's global sample. This corresponds to about half of banking system assets and about 117% of the combined GDP of the sample.[1] With the imposition of tightened liquidity and capital requirements on conventional banking operations, this ratio is expected to rise in the future. Regulation and increased supervision are needed in response to such a development if it should jeopardise financial stability. Shadow banking appears to be generally more widespread in developed countries, although growth in shadow banking activities was greatest among emerging countries in 2012. Intermediation of capital through the shadow banking system in the global sample rose by nearly 7.6% in 2012, from 66 trillion US dollars to 71 trillion US dollars.[2]

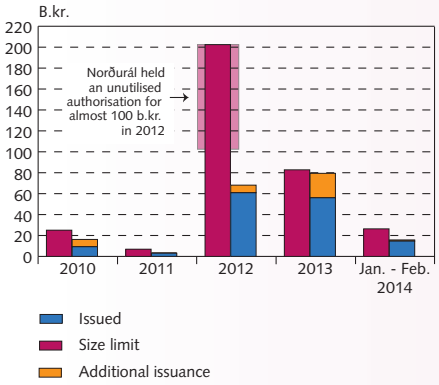
As is the case with conventional banking, shadow banking activities were much more extensive in Iceland before the financial crisis struck in autumn 2008. Attention has turned towards domestic shadow banking in the recent term, in particular because of the pension funds' enormous investment need and the limited investment options available under the capital controls regime. One possible manifestation of shadow banking is corporate bond issuance, particularly the intermediation of capital through funds or investment companies. Institutional investment funds have been rather prominent in bond issuance in the past two years, often in connection with financing for real estate projects. In 2012 and 2013, for instance, about 80% of bonds issued by institutional investment funds were for real estate projects.

Usually the buyers of these institutional investment fund bonds are institutional investors such as pension funds; however, after issuance, the bonds are often listed on the market. It should be noted that the institutional investment fund bonds are seldom backed directly by collateral; therefore, the risk attached to such investments is linked to the fund itself and not the underlying assets. It is important that the pricing and yield on these bonds take account of this. It should be noted, though, that the institutional

Chart 1

Corporate bond issuance, expansion of bond series, and authorisation for issuance[1]

January 2010 - February 2014



1. Based on date of issue.
Source: Icelandic Securities Depository.

1. The following countries were included in the FSB's global sample: Argentina, Australia, the United States, Brazil, the United Kingdom, France, the Netherlands, Hong Kong, India, Indonesia, Italy, Japan, Canada, China, Korea, Mexico, Russia, Saudi Arabia, Singapore, Chile, Spain, South Africa, Switzerland, Turkey, and Germany.
2. See the FSB's report: *Global Shadow Banking Monitoring Report 2013*.

investment funds' investment authorisations are often limited to very specific projects and assets; therefore, the risk is indirectly linked to the underlying assets.

The other side of the market for corporate bonds – financing without the intermediation of institutional investment funds – has been linked to a large degree to the Investment Programme in connection with Central Bank foreign currency auctions. It was reported in *Financial Stability* 2013/1 that issuance of unlisted corporate bonds totalled 57 b.kr. in 2012, and that an estimated 57% of that issuance had been in connection with the Investment Programme. Many of these unlisted bonds were listed on the market in 2013, however. Bond listings totalled 62 b.kr. that year, as opposed to only 5.3 b.kr. in 2012.[3] The fact remains that almost all of the corporate bonds issued in 2012 that are still unlisted are connected with the Bank's Investment Programme. The Bank held seven foreign currency auctions in 2013, generating an estimated 34.7 b.kr. worth of issued corporate bonds, which is similar to the 2012 figure.

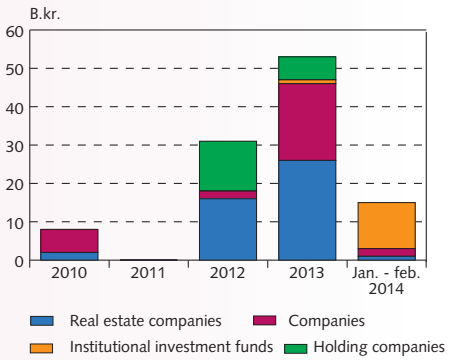
The corporate bond market as a whole has grown rapidly in the past two years, which is an important step towards an effective financial market. Developments in the first two months of this year suggest that 2014 will be similar in this regard. In 2013, total corporate bond issuance amounted to just over 79 b.kr., some 11 b.kr. more than in 2012. Issuance was very limited in 2010 and 2011. Corporate bonds were issued for 16 b.kr. in the first two months of 2014, and the unutilised issuance authorisation amounted to just under 11 b.kr. Of that total, institutional investment funds issued bonds for about 11.5 b.kr., or about 70% of the total for the two-month period.

As is mentioned above, shadow banking activities receded after the collapse of the banking system. They have been on the rise again in recent years, however, and it is therefore appropriate to monitor the development of the shadow banking system. For example, the three large commercial banks' net new lending to real estate companies contracted by 1 b.kr. in 2013, while institutional investment funds issued real estate-related bonds for nearly 6 b.kr. in 2013 and over 17 b.kr. in 2012.[4] Net new lending to holding companies grew by some 7 b.kr. in 2013, however, part of it for real estate projects. In addition, the three large commercial banks' net new lending to companies totalled nearly 80 b.kr. in 2013, which is virtually equal to the year's corporate bond issuance.

Chart 2

Issuance of unlisted corporate bonds and expanision of bond series[1]

January 2010 - February 2014



1. Based on date of issue. Bonds that have been listed on the Nasdaq OMX Iceland are excluded; therefore, the amounts for unregistered bonds could decline over time.
Source: Icelandic Securities Depository.

3. This refers to the dates the bonds are listed on the exchange. There is usually a delay between the bond's original issuance and its listing on the exchange.

4. Net new lending refers to new loans net of prepayments.

II External position

Risk attached to non-residents' short-term króna assets must be unwound before capital controls are lifted

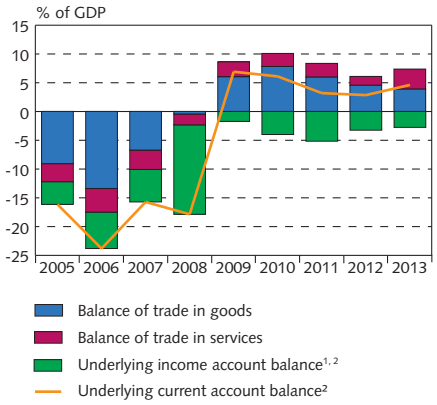
Iceland faces a balance of payments problem. It is foreseeable that the current account surplus in coming years will not cover contractual foreign debt repayments, let alone release non-residents' ISK assets. This is the main reason the capital controls are in place. Foreign funding must be lengthened and short-term króna assets held by non-residents and deposit money banks (DMBs) in winding-up proceedings must be reduced before the controls can be lifted. At the same time, the Treasury and the Central Bank must refinance a portion of their outstanding debt. The measures undertaken upon liberalisation of the controls must resolve Iceland's balance of payments problems in the short and long term in a manner that preserves financial stability and ensures access to foreign credit markets.

The balance of payments problem

Domestic entities other than the sovereign and the Central Bank still have only limited access to foreign credit markets. At the same time, it is clear that the current account surplus in coming years will not suffice to service foreign debt repayments, let alone cover the other outflows against which the controls provide temporary shelter. Short-term ISK assets – offshore krónur – owned by non-residents amount to nearly a fifth of GDP, and the book value of ISK assets held by DMBs in winding-up proceedings is over a fourth of GDP. Foreign financing must be lengthened, and the stock of offshore krónur and short-term ISK assets held by the failed DMBs must be reduced before the controls are lifted. This can be done through lengthening of maturities, refinancing, asset swaps, write-offs, or by negotiating these parties' exit through direct contracts or by auction. The measures must be well prepared and must be conducive to easing Icelandic borrowers' access to foreign credit markets afterwards; otherwise, the balance of payments problem will have been solved only temporarily.

Chart II-1

Balance of trade in goods and services; underlying factor income and current account balances



1. Transfers included with income account. 2. Excluding DMBs in winding-up proceedings and the pharmaceuticals company Actavis in income account balance.

Sources: Statistics Iceland, Central Bank of Iceland.

Current account balance

In 2013, Iceland's underlying current account balance was positive in the amount of 82 b.kr., or 4.6% of GDP, the strongest surplus since 2010.[1] The trade surplus for the year was 132 b.kr., or 7.4% of GDP. In comparison with 2012, this represents an increase of 1.3 percentage points of GDP, even though the real exchange rate was somewhat higher in 2013. The composition of the trade surplus has changed in recent years. The goods account surplus has contracted by nearly half, from 7.8% of GDP in 2010 to 3.9% of GDP in 2013. The declining goods trade surplus is due in large part to increased imports, a higher real exchange rate, and worsening terms of trade, which deteriorated by about 7% during the period in question. On the other hand, the services account surplus has never been as large as in 2013, when it

1. Excluding the effects of the DMBs in winding-up proceedings and the pharmaceutical company Actavis on the balance on income.

measured 3.5% of GDP, due mainly to increased tourism revenues (for further discussion, see Chapter V).

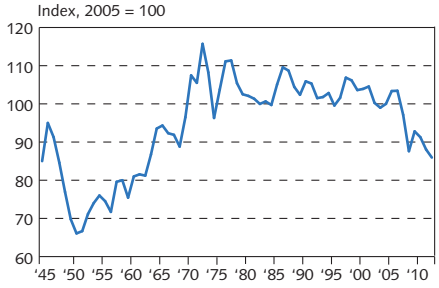
The deficit on the underlying balance on income contracted in 2013, to 2.8% of GDP, owing partly to foreign interest rates, which are still very low.

Capital controls contain the income account deficit

The actual income account deficit, including calculated interest on the domestic assets of DMBs in winding-up proceedings, far exceeds the measured deficit. Because the DMBs in winding-up proceedings are defined as residents, their interest income and dividends on domestic assets are not included in the balance on income. This is true of interest and dividends on their króna-denominated assets, as well as interest income on domestic assets listed in foreign currencies, such as the bonds between Landsbankinn and LBI and the estates' deposits with commercial banks. Because of this mismatch, the estates' króna-denominated assets grow over time, as the estates are not allowed to transfer interest and dividends on ISK assets abroad. This also leads to underestimation of the underlying income account deficit by an amount corresponding to the interest expense on the failed DMBs' domestic assets listed in foreign currencies. The underlying balance on income excludes the DMBs in winding-up proceedings and the pharmaceuticals company Actavis. In some instances, however, these entities could have a significant effect on the goods, services, or income account that is not corrected for. In addition to the above-described mismatch in the underlying balance on income, when the failed DMBs purchase expert services abroad and pay for them with foreign assets, this creates another mismatch. These mismatches are similar in magnitude, however, and therefore offset each other to a large degree.

Considering this interest expense and the terms available in foreign credit markets, it is likely that the income account deficit will grow in coming years, when foreign debt is refinanced and the capital controls are lifted. Although interest on residents' foreign assets is considered part of factor income, it is not all repatriated to Iceland. A portion of it is recognised in the financing balance as reinvested factor income. Similarly, it is not a given that all interest on non-residents' domestic assets flows out of the country. The financing balance reflects capital flows, as is discussed in Appendix II. For the above-described reasons, the underlying current account balance does not give a fully accurate indication of the economy's ability to cover projected foreign debt repayments and other foreign exchange outflows.

Chart II-2
Terms of trade for goods and services



Sources: Statistics Iceland, Central Bank of Iceland.

Terms of trade, real exchange rate, and trade balance

Production of Iceland's main exports, marine products and aluminium, is subject to a large degree to capacity constraints, at least for the short and medium term. This means that the balance on goods is extremely dependent on the price at which export products are sold. This applies more to marine products than to aluminium, which is subject to the same type of effect on both import and export sides. Since the onset of the global financial crisis in 2007, Iceland's terms of trade have deteriorated by nearly 17%. As of 2013, they were some 9% below

the post-World War II average. Poorer terms of trade erode the trade surplus and put pressure on the exchange rate, complicating the resolution of Iceland's balance of payments problem. Other things being equal, a 1% change in terms of trade will cause the trade surplus to change by roughly 0.5% of GDP. Developments in terms of trade will probably affect exchange rate developments somewhat as well, given the current foreign debt service profile. Further discussion of Iceland's terms of trade can be found in Box II-1 in *Monetary Bulletin* 2013/4.

As is the case with terms of trade, Iceland's real exchange rate is historically low at this juncture. In 2013, it was about 17% below the average for 1980-2012, a period characterised by a persistent trade deficit. The low real exchange rate supports the trade surplus (Chart II-3). The domestic economy has adjusted relatively quickly to a changed real exchange rate following the collapse of the banking system, partly through increased emphasis on exports, tourism in particular. If the real exchange rate remains close to its post-crisis level – and there are few indications to the contrary – there will continue to be a sizeable surplus on goods and services trade. This is borne out by the experience of other countries that have suffered a comparable twin banking and currency crisis. It is unrealistic to assume that consumption, investment, and the trade surplus will return to their previous long-term averages as long as the real exchange rate is so far below its long-term average. The historical averages of domestic demand and the current account balance are based on a much higher real exchange rate, easier access to foreign credit markets, and massive indebtedness at a time when spending outpaced revenue generation.

Chart II-3
Balance of trade in goods and services and real exchange rate

Sources: Statistics Iceland, Central Bank of Iceland.

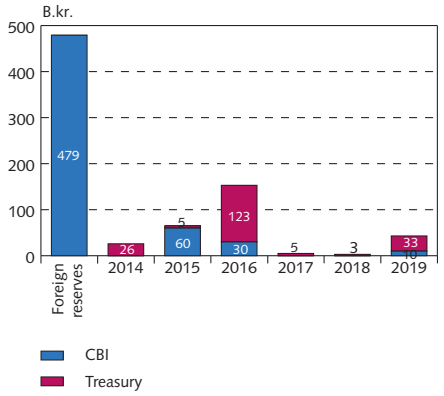
Payment flows independent of capital controls

Icelandic borrowers' access to foreign credit markets has eased in recent months, as the spread has narrowed between the Icelandic Treasury's 10-year US dollar bond and comparable bonds issued by the US Treasury (for further discussion, see Chapter I). Both Arion Bank and Landsbankinn have been assigned credit ratings of BB+ with a stable outlook by rating agency Standard & Poor's. No doubt this will support their efforts to obtain market funding abroad. In February 2013, Arion Bank issued an unsecured three-year bond in Norway. The bond was sold for 11.2 b.kr., with a 500-basis point premium. Íslandsbanki followed suit in December 2013, issuing a four-year unsecured bond in Sweden for 8.9 b.kr. In March 2014, it expanded the bond by 5.3 b.kr. at a premium of 330 basis points. These issues are discussed further in Chapter IV. Reykjavík Energy (OR) strengthened its liquidity position as well, with a loan taken from Goldman Sachs in the latter half of 2013. All of these developments indicate that domestic borrowers are regaining access to foreign credit markets which, after the banking system collapsed in autumn 2008, were all but closed to entities other than the sovereign and exporters with solid foreign currency revenues. The financing terms offered to domestic borrowers are still rather high.

As can be seen in Chart II-4, the Central Bank's foreign exchange reserves amounted to 480 b.kr. at year-end 2013. At the same time, Iceland's foreign short-term debt totalled about the same amount.

Chart II-4

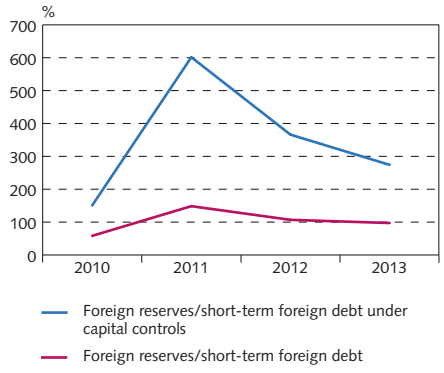
Estimated payments by Treasury and CBI on foreign loans and foreign-denominated loans owed to the failed banks plus the CBI's FX reserves[1]



1. Based on position on 31 December 2013 and exchange rate of 26 February 2014.
Source: Central Bank of Iceland.

Chart II-5

Foreign reserves/short-term foreign debt[1]



1. Guidotti-Greenspan rule. Short-term foreign debt including DMBs in winding-up proceedings, debt in foreign currency and kronur (excluding deposits in foreign currency, fully covered by foreign assets according to CBI liquidity rules).
Source: Central Bank of Iceland.

About half of the reserves, or 245 b.kr., mature in the next three years. It is therefore necessary to refinance at least some of the upcoming maturities so that the reserves will be strong enough that the capital controls can be lifted without compromising confidence in Iceland. Furthermore, foreign short-term liabilities must be scaled down. Measures related to capital account liberalisation may not impede the Treasury's market access, either short-term or long-term. Chart II-5 illustrates developments in the so-called Guidotti-Greenspan ratio – foreign exchange reserves versus short-term external debt – with and without capital controls in recent years. In general, it is assumed that the ratio should be at least 100% in order to enhance confidence and ensure access to credit markets. The repayment profile on resident entities' foreign debt is heavy in the next several years, at between 110 b.kr. and 126 b.kr. during the 2015-2018 period. In order to facilitate market refinancing of this debt, the foreign exchange reserves must be large enough to create the confidence that the economy can service its external debt.

The repayment profile of foreign loans and foreign-denominated loans to DMBs in winding-up proceedings is shown in Chart II-6. A comparable profile has been published in previous issues of this report, including *Financial Stability* 2013/1 and 2013/2. The profile is now shown as a share of estimated GDP, in order to facilitate comparison with the current account balance. Tables 6 and 7 in Appendix II show the profile in krónur terms as well. The main changes from previous profiles, apart from exchange rate movements, are as follows: Landsbankinn's 50 b.kr. prepayment on the LBI bond, made last December; 2014 instalments paid to DMBs in winding-up proceedings by entities other than Landsbankinn which are lower than previously estimated; Lýsing's refinancing; and Íslandsbanki and OR's new loans, which are mentioned above. Estimated instalments to be paid in 2014-2018 by entities other than the sovereign and the Central Bank total about 550 b.kr., or just under 6% of GDP during the heaviest years (see Chart II-6).

The repayment profile in Chart II-6 shows all external debt payments made by resident entities other than the sovereign and the Central Bank. Some borrowers have saved up for a portion of the payments or own foreign assets that they intend to sell, at least in part, and others will probably refinance some of the maturities. As a result, Chart II-6 does not show the actual refinancing need, only the debt service burden. Chart II-7 adjusts for this. It shows estimated refinancing or foreign asset sales, on the one hand, and unfinanced instalments, on the other. It is assumed, other things being equal, that the commercial banks will continue to roll over their current market funding, that credit lines will be rolled over, and that Landsbankinn will sell foreign assets to cover 2014 and 2015 payments on the LBI bonds. This is in line with the press release published by Landsbankinn on 23 December, when it made an optional prepayment on the bond, stating that "the Bank continues to face a refinancing requirement ahead of 2016 bond maturites". The assumptions above are extremely cautious. For instance, it is not assumed that the commercial banks will seek out further market funding in spite of their need

to refinance subordinated FX loans from the Treasury, FX loan from the Central Bank and fulfil swap agreements with the Central Bank in coming years. As Chart II-7 shows, unfinanced instalments in 2014 and 2015 equal about 3.5% of GDP, whereas the underlying current account surplus in 2013 totalled about 4.6% of GDP. The unfinanced instalments in 2016 and 2018 are much heavier, ranging up to 5% of GDP per year. Unfinanced instalments in excess of 3.5% of GDP total about 100 b.kr. during the 2016-2018 period, whereas unfinanced instalments in excess of 3% of GDP total about 150 b.kr. during the 2014-2018 period. Bridging the gap requires some combination of an increased current account surplus, inflows of capital, further refinancing, or lengthening of loan maturities.

Landsbankinn's debt service burden will be heavy in the next few years, and as is stated earlier, the bank itself assumes that it will need to refinance in advance of the 2016 maturities. The bank has very limited scope to buy foreign currency in the market in order to pay down the bonds, as its foreign exchange balance is positive by 6% of its capital base, according to its year-2013 annual accounts. According to the Central Bank Rules on Foreign Exchange Balance, a financial institution's open foreign exchange position may not be positive or negative by more than 15% of its capital base.[2] Therefore, Landsbankinn must refinance the bonds in order for its balance sheet to remain in compliance with the Central Bank rules. If Landsbankinn cannot refinance, it must divest itself of some of its foreign-denominated assets.

Other things being equal, the current foreign debt service profile provides no latitude for other outflows such as those connected with the failed banks' composition agreements, non-residents' short-term ISK assets, or capital account liberalisation, unless other inflows are forthcoming. It is therefore vital that resident entities gain access to foreign credit markets on acceptable terms in the near future. A heavy foreign debt service burden is one of the principal risks the financial system faces in connection with lifting the capital controls. Further information, including a more detailed breakdown of the foreign debt service profile, can be found in Appendix II.

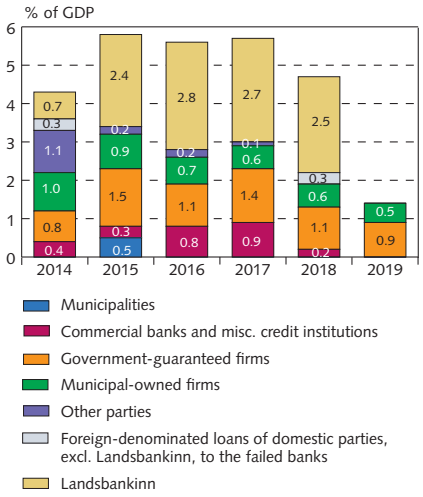
The underlying net external position

The Central Bank has discussed Iceland's underlying international investment position in several of its recent publications. An in-depth discussion of this topic can be found in *Special Publication* no. 9, entitled "Iceland's underlying external position and balance of payments", published last year. Iceland's external position has improved steadily in recent years, in part because of the current account surplus that provides the scope to pay down foreign debt. Iceland's position is still as is described in previous Central Bank publications: the country has a balance of payments problem that necessitates the capital controls. Its external debt position is sustainable and has been declining in recent years, both in nominal terms and as a share of GDP. The underlying international investment position (IIP) as of year-end 2013

2. Rules no. 950/2010.

Chart II-6

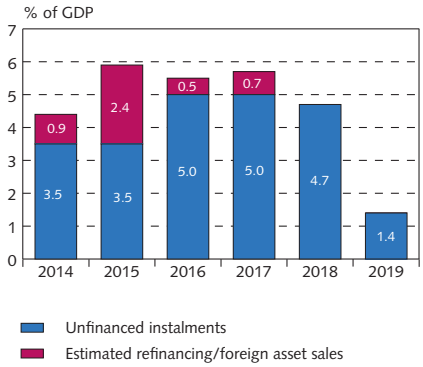
Estimated payments by parties other than the Treasury and CBI on foreign loans and foreign-denominated loans to the failed banks[1]



1. Based on end-2013 balance and 26 February 2014 exchange rate.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-7

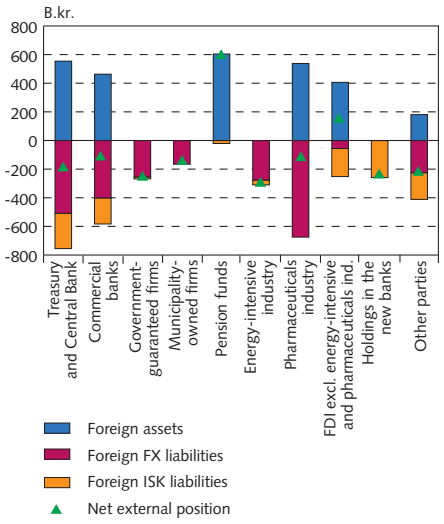
Estimated payments by parties other than the Treasury and CBI on foreign loans and foreign-denominated loans to the failed banks[1]



1. Based on end-2013 balance and 26 February 2014 exchange rate.
Sources: Statistics Iceland, Central Bank of Iceland.

is now estimated to have been negative by 53% of GDP, or 944 b.kr., an improvement of 180 b.kr., or 10% of GDP, over the end-2012 position.

Chart II-8
Estimated foreign assets and liabilities in underlying net external position
Year-end 2013



Sources: Financial informations from Glitnir, Kaupthing and LBI; Central Bank of Iceland.

Table II-1 Estimated underlying external assets and liabilities at year-end 2013

B.kr.	*Foreign assets*	*Foreign FX liabilities*	*Net FX position*	*Foreign ISK liabilities*	*Net position*	*% of GDP*
Treasury and Central Bank	554	-507	47	-247	-200	-11
Commercial banks	463	-400	63	-182	-120	-7
Government-guaranteed firms	0	-253	-253	-14	-267	-15
Municipality-owned firms	0	-165	-165	0	-165	-9
Pension funds	604	0	604	-20	584	33
Energy-intensive industry	0	-275	-275	-34	-309	-17
Pharmaceuticals industry	538	-674	-136	0	-135	-8
FDI excl. energyintensive industry and pharmaceuticals industry	406	-55	351	-196	155	9
Holdings in the new banks	0	0	0	-258	-258	-15
Other parties	181	-224	-43	-186	-229	-13
Total	2,746	-2,553	193	-1,137	-944	-53

Sources: Financial information from Glitnir, Kaupthing and LBI; Statistics Iceland, Central Bank of Iceland.

Table II-1 and Chart II-8 give a breakdown of foreign assets and liabilities by type of entity. This is a more detailed itemisation than has been published heretofore. Among other things, the failed DMBs' foreign assets that are considered to belong to domestic creditors are specified by owner. The largest domestic creditor is the Central Bank of Iceland Holding Company (ESÍ). According to an analysis of ESÍ's assets based on calculated settlement, the Treasury and the Central Bank's external position in foreign currencies is now estimated to be positive by just under 50 b.kr. The majority of foreign debt is in the hands of the Treasury, the Central Bank, the commercial banks, Government-guaranteed firms, and municipal-owned firms. These parties' net external position improved considerably between years, or by 17% of GDP, owing to a reduction in debt and an increase in foreign assets, which in turn is due to improved classification and growing GDP. Further discussion of Iceland's external assets and liabilities can be found in Appendix II.

Non-residents' hold on short-term króna assets

Non-residents' short-term króna assets – offshore krónur – totalled 322 b.kr., or roughly 18% of GDP, at the end of February 2014, after having declined by 56 b.kr., or just over 3% of GDP, over the previous twelve months. For the most part, the reduction is attributable to the foreign currency auctions held by the Central Bank, which acted as an intermediary in the transfer of 52 b.kr. in short-term króna assets over this period. In addition, Glitnir paid about 5 b.kr. to foreign priority creditors' deposit accounts in late 2013, after a dispute on claim priority was resolved.

Non-residents' short-term ISK assets can be divided into two categories: deposits and bonds. Deposits currently amount to 138 b.kr., or just under 8% of GDP, and have remained virtually unchanged for

the past 20 months (Chart II-10). There has been some movement in individual deposit categories during this period, however. Deposits with DMBs now total about 110 b.kr. These fall into two categories: so-called Vostro accounts, which are foreign financial institutions' deposits in Iceland, and deposits owned by other foreign parties.

Vostro account balances currently amount to just under 60 b.kr. and have remained unchanged since December 2012, after having declined steadily from August 2010. Vostro deposits are generally considered the most volatile of non-residents' short-term ISK assets. There are many indications that the Central Bank's foreign currency auctions have been helpful in releasing the most impatient Vostro account owners' assets and placing them in the hands of long-term investors. Most of the Vostro balances that have sat unchanged for the past five-and-a-half years are probably held in custody by foreign financial institutions. Those institutions probably charge custodial fees and have little or no incentive to channel the investors towards foreign currency auctions or provide them with information on exit options.

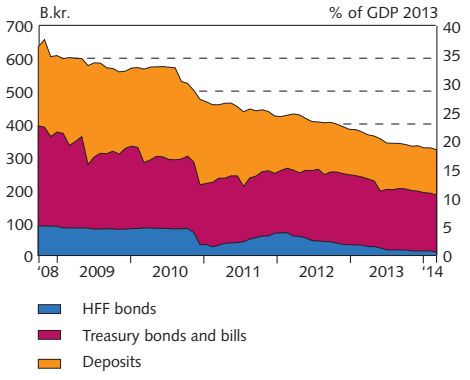
Other króna-denominated DMB deposits held by non-residents total about 55 b.kr. and have increased by 13 b.kr. in the past twelve months, including Glitnir's 5 b.kr. payment to priority creditors in late 2013. These deposits doubled in the two years following October 2008, albeit from a small amount. They stood virtually still thereafter, until the Glitnir payment to priority creditors, and have grown slightly in the recent months. Glitnir's priority creditors do not have disposal rights over their deposits and are therefore not eligible to participate in Central Bank foreign currency auctions. Other depositors in this group appear to have very limited interest in the auctions.

In addition to their ISK deposits with DMBs, non-residents hold about 28 b.kr. in króna-denominated deposits with the Central Bank. These balances are related to foreign settlement systems' settlement of Icelandic securities. They fluctuate over time, but not dramatically, and the volatility that does exist is associated with maturities of domestic securities.

In addition to the deposits, non-residents own some domestic assets in Government-guaranteed bonds and bills, which totalled about 184 b.kr., or just over 10% of GDP, at the end of February. They have declined by about 55 b.kr. in the past twelve months. As Chart II-11 shows, this position changed very little from year-end 2010, when the Avens agreement was concluded, until year-end 2012.[3] Bondholders participated more actively in Central Bank foreign currency auctions in 2013 and have scaled down their positions by 61 b.kr. since end-2012, while another 58 b.kr. have exited through foreign currency auctions. As before, non-residents concentrate their investments in very short bonds, and they hold a large share of the Treasury's shortest securities. It is clear that, if the most impatient owners of short-term ISK assets seek to exit through the Bank's auctions, the auctions have facilitated their exit already. Bondholders appear to be more interested in exiting the domestic market than

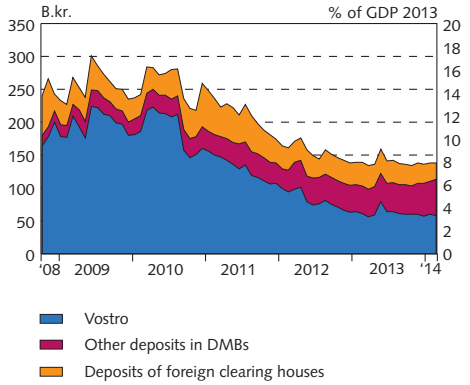
3. The Avens agreement provided for the purchase by pension funds, through the Central Bank's intermediation, of króna assets owned by the Banque cantrale du Luxembourg amounting to 120 b.kr. in exchange for foreign currency.

Chart II-9
Short term króna assets held by non-residents
October 2008 - February 2014



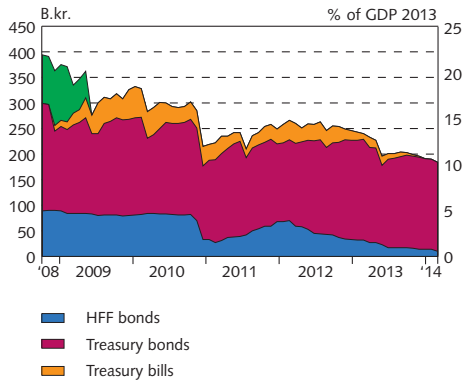
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-10
Non-residents' króna deposits
October 2008 - February 2014



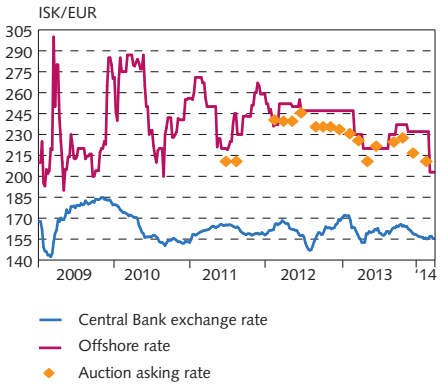
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-11
Non-residents' bond stock in krónur
October 2008 - February 2014



Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-12
Central Bank exchange rate, offshore rate, and auction asking rate



Sources: Reuters, Central Bank of Iceland.

are the remaining depositors, many of whom appear to be inactive investors. It should be borne in mind, though, that offshore ISK owners are not entirely locked in, as they are authorised to expatriate the interest payments on their assets, and interest in the foreign currency auctions is sensitive to both the auction exchange rate and nominal bond interest rates.

Ownership of offshore krónur became more concentrated during the years immediately after the banks collapsed, as non-residents holding such assets are permitted to sell them to other non-residents, irrespective of the controls. As time passed, however, such transactions became increasingly infrequent. Transactions are sparse and the market appears to be shallow. In March, the offshore exchange rate rose suddenly by 13%, from 232 krónur per euro to 203 krónur per euro (Chart II-12). The incentive for offshore trading lies in nominal Treasury bond interest, which can be expatriated. For example, if a foreign investors buys RIKB19 in the offshore market at an exchange rate of 203 kr. per euro when the official Central Bank exchange rate is 156 kr. per euro and then exports the coupon interest, the return on the original purchase price is about 11% per year, or more. The principal remains locked in by the controls, however.

When the DMBs in winding-up proceedings begin disbursements, based on calculated settlement and the book value of assets, domestic króna-denominated assets in the amount of 463 b.kr. will revert to foreign creditors. About 110 b.kr. of that amount is already in liquid form, while another 95 b.kr. is in the form of claims against domestic entities, and 258 b.kr. represents the value of foreign creditors' stakes in the new banks. Further discussion of the DMBs in winding-up proceedings can be found in Chapter VII. The ultimate sale value of these assets is uncertain, but if the proceeds are paid to foreign creditors in krónur, they will gradually be added to the stock of short-term ISK assets held by non-residents.

Efforts to resolve the balance of payments problem must continue

In recent years, systematic attempts have been made to resolve the balance of payments problem still facing the domestic economy. The capital controls have provided the temporary shelter needed to restructure domestic balance sheets. A lasting current account surplus has enabled domestic borrowers, most of whom have no foreign revenues or assets, to deleverage their foreign debt to a significant degree. By now, most of them have paid off their foreign debt or are about to do so. Several large domestic firms still carry foreign exchange risk on their balance sheets, however. But they have restructured their repayment profiles, and the outlook has improved as regards access to foreign credit on affordable terms. In spite of this, it is likely that the current account surplus will not cover foreign debt service in coming years, and domestic borrowers must lengthen their debt by extending maturities or refinancing. The Landsbankinn-LBI debt is the most onerous case in point.

The stock of offshore krónur has diminished by nearly half, or over 300 b.kr., in recent years. This has been achieved through con-

tractual agreements with individual owners of offshore krónur – such as the Avens agreement with the Banque centrale du Luxembourg – through other direct transactions, and through the foreign currency auctions. It is important to continue on this path and reduce the stock of non-residents' volatile short-term holdings still further, through the above-mentioned measures, long-term commitment periods or, at some point, bond swaps, as is described in the current capital account liberalisation strategy.

As is stated in Chapter VII, no decisions have been taken regarding the next steps in the failed DMBs' winding-up proceedings. The problem surrounding the estates is twofold. On the one hand are foreign-denominated claims against residents without the foreign credit market access they need to refinance their debt. As is mentioned above, these parties must lengthen their financing. On the other hand, the estates hold ISK assets with a book value of more than a fourth of GDP. These assets have risen somewhat in value in recent years, in part because interest and dividend income is locked in by the capital controls. The estates' problems must be solved in a comprehensive way that safeguards financial stability and ensures access to foreign credit markets.

Box II-1

Foreign loan repayments

As is stated in Chapter II, the current account surplus since 2009 has provided resident borrowers scope to pay down foreign debt. Nevertheless, the foreign debt service burden over the next few years exceeds the foreseeable current account surplus. It is therefore appropriate to examine the repayment profile from recent years. Chart 1 and Table 1 show estimated payments made by resident entities (other than the Treasury and the Central Bank) on foreign loans and foreign-denominated loans to the failed banks between 2009 and 2013. It is estimated that resident entities paid down foreign debt in the amount of over 505 b.kr., an average of over 100 b.kr. per year. At that time, the underlying current account surplus was about 380 b.kr. The 125 b.kr. difference is due primarily to two factors: on the one hand, residents have paid down some of their debt by selling foreign assets or collecting on foreign loans owed to them, and on the other hand, investment has brought foreign currency into Iceland.

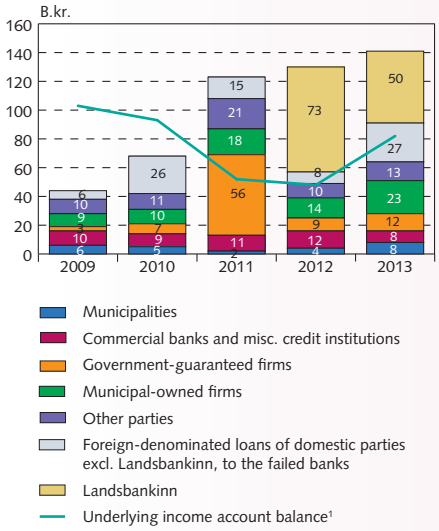
Instalment payments were much heavier in 2011-2013 than in 2009 and 2010. The difference lies mainly in payments made by Government-guaranteed companies in 2011 and in Landsbankinn's prepayments in 2012 and 2013. Because the current account surplus exceeded debt service early in the period, there was scope to purchase foreign currency to cover future payments, some of which were paid in the latter half of the period.

As is mentioned above, investment-related foreign currency inflows affect Iceland's ability to pay down foreign debt. For example, the Central Bank's foreign currency auctions have generated inflows, both through the auctions themselves and through the foreign exchange market, in the amount of 210 b.kr., while releasing offshore krónur in the amount of 128 b.kr. Resident entities have been able to use the difference, 80 b.kr., to pay down foreign debt. Furthermore, based on a conservative estimate, it can be assumed that they sold foreign assets or collected loans owed by non-residents for some 20-80 b.kr. during the period. This excludes any possible asset sales to cover interest expense on the foreign exchange reserves. The remainder is other net inflows, excluding the foreign currency auctions. The amount involved totals a few dozen billion krónur. In addition, the foreign exchange market transactions by the Central Bank and the commercial banks have some impact.

Chart 1

Estimated payments by parties other than the Treasury and CBI on foreign loans and foreign-denominated debts to the failed banks

2009-2013



1. Excluding DMBs in winding-up proceedings and the pharmaceuticals company Actavis in income account balance.
Source: Central Bank of Iceland.

Table 1 Estimated payments by entities other than the Treasury and Central Bank on foreign loans and foreign-denominated loans to the failed banks, 2009-2013

B.kr.	*2009*	*2010*	*2011*	*2012*	*2013*	*Total*
Municipalities	6	5	2	4	8	25
Commercial banks and misc. credit institutions	10	9	11	12	8	50
Government-guaranteed firms	3	7	56	9	12	87
Municipality-owned firms	9	10	18	14	23	74
Other parties	10	11	21	10	13	65
Residents' foreign-denominated loans to the failed banks, excluding Landsbankinn[1]	6	26	15	8	27	82
Landsbankinn	0	0	0	73	50	123
Total	44	68	123	130	141	506
Underlying current account surplus	103	93	52	48	82	379

1. Loans owed by domestic entities with assets and operations only in Iceland, or in Iceland and abroad. Loans owed by domestic entities with only foreign assets and operations are excluded.
Sources: Statistics Iceland, Central Bank of Iceland.

Box II-2

Central Bank of Iceland foreign currency auctions

Since 2011, the Central Bank has held foreign currency auctions in connection with its capital account liberalisation strategy.[1] The auctions enable resident and non-resident owners of foreign currency not subject to repatriation requirements to invest in Iceland according to two options: the purchase of long indexed Treasury bonds at the auction price, under the so-called Treasury Bond Programme, and participation in the Investment Programme. In the Investment Programme, investors can purchase krónur at the auction exchange rate for 50% of the intended investment amount, provided that the other 50% is exchanged in the onshore foreign exchange market. Under both programmes, investors pledge to hold the investment for at least five years. Concurrent with these auctions, non-residents wishing to scale down or close out their króna positions are given the chance to participate in auctions in which they offer to sell krónur in exchange for foreign currency not subject to repatriation requirements. In essence, the Central Bank acts as an intermediary between investors wishing to undertake long-term investment in Iceland and non-residents wishing to close out their króna positions.

The Bank began holding auctions under the Treasury Bond Programme in the summer of 2011, and the first auction according to the Investment Programme was held in February 2012. A total of 19 Treasury Bond Programme auctions and 17 Investment Programme auctions have been held to date. At least some bids have been accepted in all of the auctions except the most recent one, which took place on 18 March 2014. According to the exchange rate set for each auction and the Central Bank's central exchange rate on those same days, investors have brought 56 b.kr. into the country through the Treasury Bond Programme and 153 b.kr. through the Investment Programme. Just under a third of the total amount has been imported through the domestic foreign exchange market in connection with the Investment Programme. Closer examination of the auctions featuring both options reveals that the Investment Programme is much more popular among investors than the Treasury Bond Programme (Chart 1). The chart shows all expected inflows generated by the auctions, both through the auctions themselves and through the foreign exchange market.

In October 2009, restrictions on foreign currency inflows were lifted, thereby authorising the exportation of registered new investments out of the country at any time. After auctions began under the Investment Programme, it was permissible to use new investments dating back to October 2009 as the amount that must be converted in the foreign exchange market, matching the amount imported through the auctions. It is likely that some investors took advantage of this option, particularly in the first two years in which the Investment Programme was offered. Presumably, proportionally more came in through the foreign exchange market as a result of the auctions in 2013 and the first months of 2014, as the build-up phase of previous new investment projects was probably well advanced.

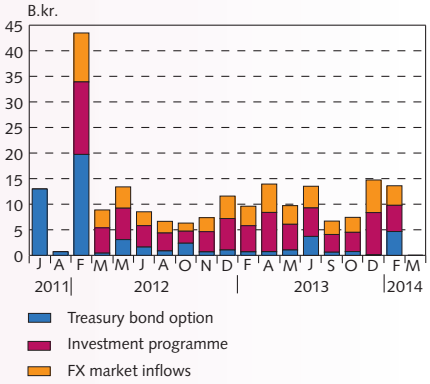
In all, the foreign currency auctions have brought in foreign investment amounting to nearly 12% of year-2013 GDP. About 45% of the capital entering the country through the Investment Programme has been invested in bonds, 42% in equities, 12% in real estate, and about 1% in mutual funds (Chart 2). An analysis of the investments by amount shows that domestic investors accounted for 38% of participation in the Investment Programme, while foreign investors accounted for the other 62%. Foreign companies

1. See http://www.sedlabanki.is/lisalib/getfile.aspx?itemid=8672

Chart 1

Central Bank of Iceland foreign currency auctions

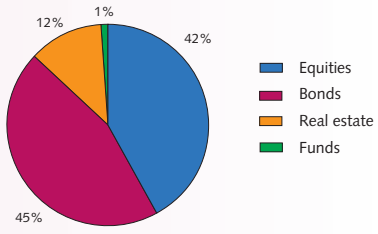
Purchases of euros for krónur



Source: Central Bank of Iceland.

Chart 2

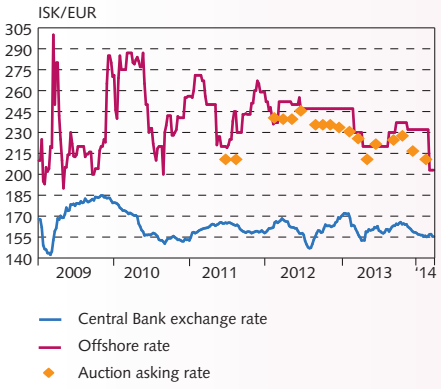
Breakdown of the Investment Programme by investment type



Source: Central Bank of Iceland.

Chart 3

Central Bank exchange rate, offshore rate, and auction asking rate

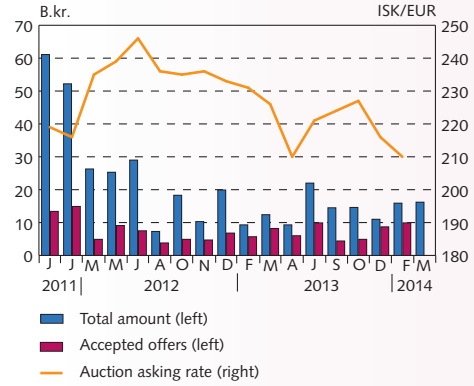


Sources: Reuters, Central Bank of Iceland.

Chart 4

Central Bank of Iceland foreign currency auctions

Purchases of krónur for euros



Source: Central Bank of Iceland.

under domestic ownership were considered domestic investors for the purposes of this analysis.

In addition, 18 auctions have been held in which bids are solicited from parties wishing to sell their króna assets in exchange for foreign currency exempt from repatriation requirements. In 2011, two auctions were held, and the exchange rate was set at 210 kr. per euro. A relatively consistent price profile developed in 2012, with the exchange rate stabilised at 240 kr. per euro, but it fell thereafter and has been fluctuating between 230 and 210 kr. per euro since then. The last auction exchange rate was 210 kr. per euro in the 4 February auction. No exchange rate was set for the 18 March auction because all bids were rejected. As Chart 3 shows, the auction exchange rate is usually about 5% stronger than the last offshore market price.

In the 18 auctions to date, 375 b.kr. have been offered for sale, and the Bank has bought about 128 b.kr. (Chart 4). The expectations of the parties offering ISK assets for sale do not always match the expectations of the investors using the auctions for long-term investment in Iceland. Naturally, this affects the amount accepted in the auctions, and it was the reason why all bids were rejected on 18 March.

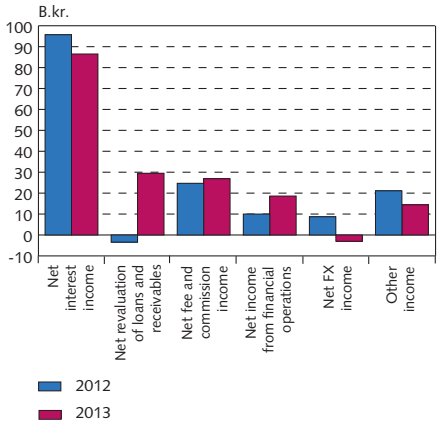
III Operations and equity[1]

Operating environment calls for continued strength

Iceland's large commercial banks generated solid profits in 2013. Returns contracted slightly year-on-year and the calculated interest rate spread narrowed, but the net increase in loan values was significant. Scenarios for core operations indicate that the banks' overall operations improved during the year. Taxation rose considerably and will probably affect the terms ultimately offered to customers. The commercial banks continue to strengthen their capital position and are on a sound footing with respect to leverage. Since the new commercial banks were established, their main emphasis has been on debt restructuring, which is now well advanced. The banks' operating environment, specifically to include the upcoming liberalisation of the capital controls, calls for continued strength.

Last year's operations were successful for Iceland's large commercial banks, with combined profits totalling more than 64 b.kr. Their balance sheets expanded by nearly 150 b.kr., or just over 5%, due in large part to liquid assets and loans to customers. The appreciation of the króna and loan prepayments reduced the book value of the loan stock, while valuation increases and new lending increased it, as did inflation. As before, the main estimated items pertain to the real value of transferred loan portfolios. There is still some uncertainty about the value of loans, and therefore about operating results, key financial ratios, and equity.

Chart III-1
The three largest commercial banks' income[1]



1. Consolidated accounts.
Sources: Commercial banks' annual financial statements.

Calculated interest rate spreads narrowed year-on-year

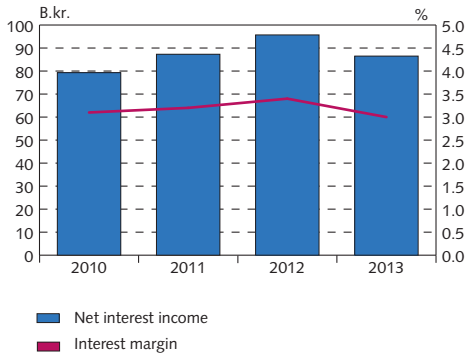
The combined calculated return on equity of Iceland's three large commercial banks totalled 12% in 2013. The return on total assets declined slightly from the previous year, to 2.2%. The Icelandic banks' return on total assets is high relative to Nordic banks, whose ratios commonly lie in the 0.5-0.6% range.[2] In 2013, net interest income totalled 87 b.kr., a decline of 9 b.kr. year-on-year. The combined calculated interest rate spread was 3% and declined between years. Interest rate spreads vary among Icelandic banks, in part due to differences both in financial reporting methods and in the composition of assets and liabilities, and are considerably wider than among Nordic banks. Discounts on purchased loan portfolios are on the decline, and debt restructuring is nearly complete, which, among other things, reduces calculated interest income. Lower inflation, a larger share of mortgage loans in the loan portfolios, and increased liquid assets also reduced interest rate spreads. Furthermore, increased competition has probably pushed lending rates downwards, while lengthened funding (such as longer term deposits and bond issues) has raised interest expense. As has been reported widely, the bank tax was raised in

1. The discussion in this chapter is based on the consolidated accounts of Iceland's three largest commercial banks for 2013 and comparison figures for 2012. Figures represent the aggregate position of the commercial banks unless otherwise stated. The aggregate position may diverge from that of individual financial companies.
2. The Nordic comparison is based on data from Bankscope. See Appendix IV.

Chart III-2

The three largest commercial banks' net interest income and interest rate differential[1]

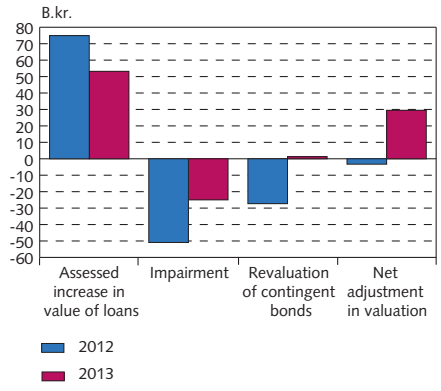
Ratio of net interest income to average total assets for the year



1. Consolidated accounts.
Sources: Commercial banks' annual financial statements.

Chart III-3

The three largest banks' income and expenses due to revaluation of loans and receivables[1]



1. Consolidated accounts.
Sources: Commercial banks' annual financial statements.

2013.[3] Clearly, expenses will rise as a result. Over time, the increase will trigger changes in lending and deposit rates. Because there is more competition in the lending market than in the deposit market, the tax increase is more likely to affect deposit rates.

The banks' fee and commission income totalled 27 b.kr. in 2013, a large share of it deriving from payment cards, payment intermediation, asset management, and investment banking activities. Commission income rose by 2.3 b.kr. year-on-year, due mostly to market transactions, corporate transactions, and asset management. The banks' income from financial activities increased markedly from the previous year, to 18.6 b.kr., owing to advantageous conditions in the securities markets. Gains on equity securities holdings and bond holdings totalled 14.4 b.kr. and 4.5 b.kr., respectively, while derivatives generated marginal losses. The banking groups had a combined positive foreign currency imbalance of 70 b.kr. at the end of the year. Owing to the appreciation of the Icelandic króna, they sustained a combined exchange rate loss of 3 b.kr. Other income totalled just over 14 b.kr., including income from real estate and profits on affiliates and discontinued operations.

Substantial loan valuation increases

At 29.5 b.kr., the net increase in loan values was one of the banks' largest income items in 2013,[4] as compared with a net decrease of 3.4 b.kr. in 2012. In 2013, the increase in loan values amounted to 53 b.kr., owing mainly to revaluation and prepayments in excess of book value, while decreases amounted to 25 b.kr.[5] The amounts of the valuation changes have declined substantially from the previous year, when, as before, a portion of the increase in loan values was recognised as interest income.

Net changes in loan values since 2009 total about 143 b.kr., excluding charges for contingent bonds and capitalisation through interest income. In general, corporate loans have risen in value, while household loans have fallen. Due to differences in balance sheet structure from bank to bank, changes in loan portfolio values have remained within the banks to varying degrees. For instance, the combined net increase in loans granted by Landsbankinn and Arion Bank has reverted in full to the old banks (and more besides), while at Íslandsbanki it has increased the bank's profit and equity (see Table III-1). Volatility in the item "loan valuation" is likely to continue to diminish.

Developments in expense ratios

The banks' combined operating expenses remained virtually unchanged between years, totalling just under 75 b.kr. in 2013.[6]

3. The so-called bank tax was raised from 0.1285% to 0.376% in 2013. It is calculated on total liabilities in excess of 50 b.kr. and will be used to finance the Government's debt relief package.
4. Net changes in loan values, as well as charges and capitalisation of contingent bonds.
5. The increase in loan values in 2013 includes, among other things, an increase of 4.7 b.kr. due to the receipt of shares by Landsbankinn hf., and the corresponding entry is recognised among wage-related expenses.
6. Year-2013 operating expense is adjusted for the largest irregular items (Landsbankinn's charge of 4.7 b.kr. for its obligation to allocate to employees the shares received in connec-

Table III-1 The three large commercial banks' income and expenses due to loan revaluation

	2009	2010	2011	2012	2013	Total
Landsbankinn hf.						
Increase in value of loans	23,772	49,702	58,489	37,320	19,440	188,723
Loan impairment	-6,577	-32,794	-47,760	-14,380	-7,706	-109,217
Revaluation of contingent bonds	-10,241	-16,269	-34,316	-27,331	1,319	-86,838
Total impact on income	6,954	639	-23,587	-4,391	13,053	-7,332
Profit for the year	14,332	27,231	16,973	25,494	28,759	112,789
Íslandsbanki hf.						
Increase in value of loans	18,419	42,305	15,249	24,739	24,677	125,389
Loan impairment	-19,501	-28,312	-16,469	-19,029	-8,378	-91,689
Revaluation of contingent bonds	0	0	0	0	0	0
Total impact on income	-1,082	13,993	-1,220	5,710	16,299	33,700
Profit for the year	23,982	29,369	1,866	23,418	23,069	101,704
Arion Bank hf.						
Increase in value of loans	20,199	40,269	38,368	12,824	9,099	120,759
Loan impairment	-9,939	-26,787	-27,424	-17,514	-8,940	-90,604
Revaluation of contingent bonds	-10,556	-11,604	-19,593	0	0	-41,753
Total impact on income	-296	1,878	-8,649	-4,690	159	-11,598
Profit for the year	12,871	12,557	11,094	17,056	12,657	66,235
Large commercial banks						
Increase in value of loans	62,390	132,276	112,106	74,883	53,216	434,871
Loan impairment	-36,017	-87,893	-91,653	-50,923	-25,024	-291,510
Revaluation of contingent bonds	-20,797	-27,873	-53,909	-27,331	1,319	-128,591
Total impact on income	5,576	16,510	-33,456	-3,371	29,511	14,770
Profit for the year	51,185	69,157	29,933	65,968	64,485	280,728

Sources: Commercial banks' annual financial statements, Central Bank of Iceland, Financial Supervisory Authority.

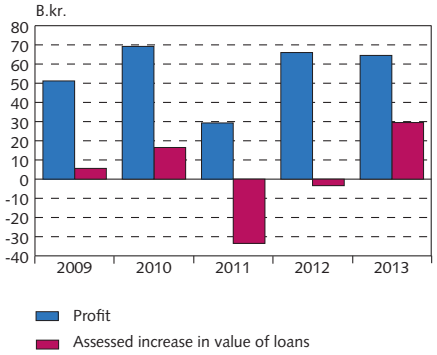
Their expenses developed differently during the year, however, as did their expense ratios. After accounting for the largest irregular items, expenses amounted to 53% of operating income, an increase from the prior year.[7] Expense ratios were strongly affected by the decline in interest income. After adjusting for the largest irregular items, expenses amounted to 2.6% of total assets, a slight decline year-on-year. The banks' combined expenses increased by 10 b.kr. per year during the period 2010-2012 but stopped rising in 2013. In spite of this, their operating expenses as a share of total assets are rather high in comparison with Nordic banks. Wage costs account for just over half of the banks' operating expenses. After adjusting for the charge due to Landsbankinn's disposal of equity securities, the banks' combined wage costs rose by nearly 800 m.kr., or 2%. Consideration must be given to a number of factors here, including the 3.25% contractual wage increase in February 2013 and the financial administration tax on wages, which is recognised among wage costs and rose by more than 740 m.kr. year-on-year, from 5.45% in 2012 to 6.75% in 2013. This is offset somewhat by a 5% year-on-year decline in the number of bank employees. The banks placed strong emphasis on reducing operating expenses last year and will probably continue on this path in the near future.

tion with the settlement with LBI, and Arion Bank's charge of the 500 m.kr. fine imposed by the Competition Authority on its subsidiary, Valitor).

7. Operating income excluding income due to changes in loan values and discontinued operations.

Chart III-4

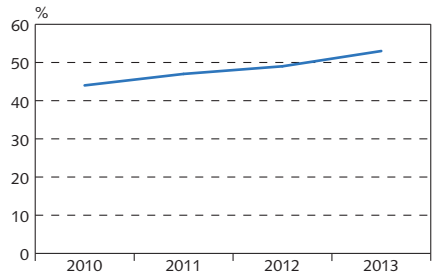
The three largest banks' profit and revaluation of loans and receivables[1]



1. Consolidated accounts.
Sources: Commercial banks' annual financial statements, Financial Supervisory Authority, Central Bank of Iceland.

Chart III-5

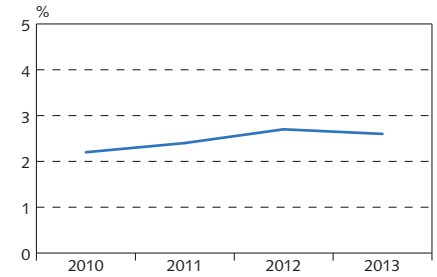
The three largest commercial banks' cost-to-income ratios[1]



1. Consolidated accounts. Operating expenses, adjusted for major irregular items, as a shre of operating income, excluding loan revaluation changes and discontinued operations
Sources: Commercial banks' annual financial statements.

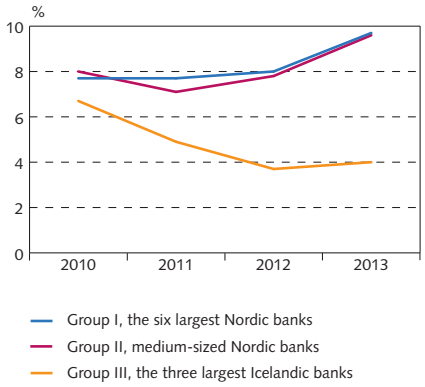
Chart III-6

The three largest commercial banks' cost-to-assets ratios[1]



1. Consolidated accounts. Operating expenses, adjusted for major irregular items, as a share of total assets
Sources: Commercial banks' annual financial statements.

Chart III-7
Return on equity, core operations[1]
Nordic comparison



1. 23 Nordic banks. Group I includes the six largest Nordic banks. Group II includes other medium-sized banks. Group III contains the three largest Icelandic banks according to Scenario II.
Sources: Bankscope, banks' annual financial statements, Central bank calculations.

Tax increases

The banks paid 28.5 b.kr. in taxes in 2013, an increase of 12.6 b.kr. from the prior year. As is well known, the bank tax was raised from 0.1285% to 0.376% in 2013. It is calculated on total liabilities in excess of 50 b.kr. and will be used, among other things, to finance the Government's debt relief package. The bank tax amounted to 8.5 b.kr. and income tax was 20 b.kr., including a special 6% tax on the income tax base in excess of 1 b.kr. In addition, the banks paid a 6.75% financial administration tax on wages, which is recognised among wage costs. The corresponding tax rate in 2012 was 5.45%. Increased taxation could affect the terms offered to customers.

Core operations at the large commercial banks

Broadly speaking, the commercial banks' operating income can be divided into three categories: core income, income from financial activities, and other income. Core income includes net interest and commission income. Income from financial activities generally consists of the combined gains or losses on financial assets held for trading and financial assets at fair value, plus exchange rate gains or losses. Other income comprises the remaining income items. Expenses can be divided into regular expenses and irregular expense items, but this classification is always a matter of opinion. In recent years, the largest commercial banks' operating results have been coloured by an unusually large number of estimated items and calculated variables. For example, net interest income has included transferred discounts due to transferred loans, and valuation changes in loans have fluctuated widely. The above has been reflected in the banks' returns and other key ratios. Under such circumstances, it can be difficult to assess the banks' core operations solely from the figures published in their annual accounts.

Various scenarios for core operations

Table III-2 shows the largest commercial banks' operating results in 2013 and 2012 and their estimated core operations, presented in two scenarios based on different assumptions.

Scenario I:

Core operations are based on net interest and commission income according to the annual accounts, 1% net loan impairment, financial income for the year (excluding exchange rate gains or losses due to changes in the ISK exchange rate) and operating expenses for the year, adjusted for the largest irregular items.[8]

Scenario II:

Core operations are based on a 3% calculated interest rate differential, 1% net loan impairment, and commission income according to the annual accounts. As before, operating expenses for the year are adjusted for the largest irregular items. Scenario II is therefore tighter.

8. Year-2013 operating expense is adjusted for Landsbankinn's charge of 4.7 b.kr. for its obligation to allocate to employees the shares received in connection with the settlement with LBI, and Arion Bank's charge of the 500 m.kr. fine imposed by the Competition Authority on its subsidiary, Valitor.

Table III-2 Core operations scenarios for the largest commercial banks

Profit and loss account and financial ratio:	*2013*			*2012*		
M.kr.	*Settlement*	*Scenario I*	*Scenario II*	*Settlement*	*Scenario I*	*Scenario II*
Net interest income	86,544	86,544	86,544	95,666	95,666	84,485
Net loan value changes	29,511	-18,308	-18,308	-3,371	-17,778	-17,778
Net commission income	26,947	26,947	26,947	24,655	24,655	24,655
Net income from financial operations	15,563	18,605	0	18,709	9,972	0
Other income	13,131	0	0	14,102	0	0
Operating expenses[1]	-80,052	-74,861	-74,861	-74,842	-74,842	-74,842
Tax	-28,485	0	0	-15,931	0	0
Profit from discontinued operations	1,326	0	0	6,980	0	0
Profit	64,485	38,927	20,322	0	0	0
Return on equity, %	12.2	7.5	4.0	14.0	7.8	3.7
Return on total assets, %	2.2	1.4	0.7	2.3	1.3	0.6
Expenses as % of net interest and commission income[1]	71	66	66	62	62	69
Expenses as % of total assets[1]	2.8	2.6	2.6	2.7	2.7	2.7

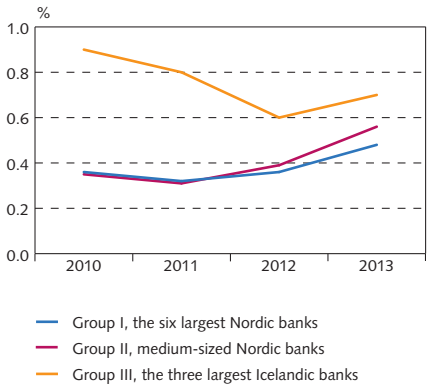
1. Year-2013 operating expenses in Scenarios I and II are adjusted for the 4.7 b.kr. charge due to Landsbankinn's allocation to employees of shares received by the bank in connection with the settlement with LBI, and Arion Bank's charge of the 500 m.kr. fine imposed by the Competition Authority on its subsidiary, Valitor.
Sources: Commercial banks' annual accounts, Central Bank of Iceland.

The above-described scenarios do not take account of tax payments. Increased tax levies must be considered when projecting returns in coming years. It is appropriate to note that scenarios for core operations will always be subject to debate, and it is impossible to assert that one scenario is more correct than another. Furthermore, narrower definitions apply rather to conventional banking activities because of the limited impact of income from financial activities, etc.

Calculated returns on the commercial banks' core operations according to Scenario I would total 38.9 b.kr. in 2013, and the calculated return on equity and return on total assets would be 7.5% and 1.4%, respectively. Calculated returns on core operations according to Scenario II would total 20.3 b.kr., and the calculated return on equity and return on total assets would be 4% and 0.7%, respectively. Because the interest rate differential in 2013 was actually 3%, as the assumptions in Scenario II provide for, the difference between the scenarios lies in the 18.6 b.kr. in income from financial activities, net of exchange rate losses, in Scenario I. The difference in the scenarios for 2012 (see Table III-2) stems from 11.2 b.kr. in higher interest income and 10 b.kr. in income from financial activities according to Scenario I. A comparison between 2013 and 2012 shows that the banks have increased their commission income, while expenses (adjusted for key irregular items) were virtually unchanged; furthermore, increased lending to customers led to higher calculated interest income in Scenario II. It can therefore be concluded that the banks' core operations improved last year.

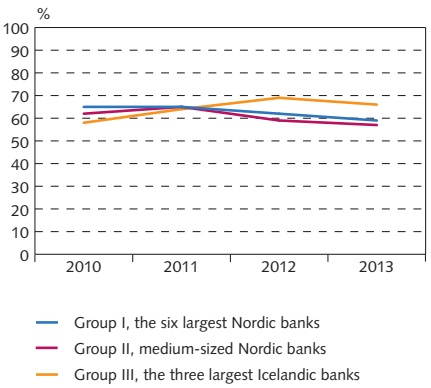
Interest rate differentials have been wide in recent years, and a portion of interest income derives from the redemption of discounts on the purchase of transferred loan portfolios. Furthermore, the banks' capital ratios have risen, which tends to widen the interest rate differential, other things being equal. While it is difficult to project future interest rate spreads, we have assumed 3% here. It is conceiv-

Chart III-8
Return on total assets, core operations[1]
Nordic comparison



1. 23 Nordic banks. Group I includes the six largest Nordic banks. Group II includes other medium-sized banks. Group III contains the three largest Icelandic banks according to Scenario II.
Sources: Bankscope, banks' annual financial statements, Central bank calculations.

Chart III-9
Operating expenses as a share of core income[1]
Nordic compatison

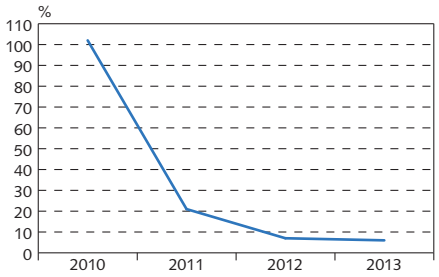


1. 23 Nordic banks. Group I includes the six largest Nordic banks. Group II includes other medium-sized banks. Group III contains the three largest Icelandic banks according to Scenario II.
Sources: Bankscope, banks' annual financial statements, Central bank calculations..

Chart III-10

The three large commercial banks' foreign exchange imbalances[1]

Mismatches in exchange rate-linked assets and liabilities as a share of the capital base



1. Parent companies.
Sources: Central bank of Iceland.

able that the increase in the bank tax will prompt the banks to widen their interest rate spreads to maintain their profitability. Both scenarios assume loan impairment of 1%. In the long run, the percentage could be lower – for instance, if mortgage loans rise as a share of total loans – as experience shows that impairment is generally lower for mortgage loans than it is for general debt. According to Scenario I, income from financial activities is set at 14% of income in 2013 and 8% in 2012. It can be considered likely that this item is usually positive; however, it is clear that exchange rate gains on financial activities are unknown. As a result, there could be a loss on equity securities and bonds due to extraordinary external circumstances, as has happened from time to time.

Scenario II and international comparison

As is stated above, it can be difficult to estimate the Icelandic banks' core operations solely on the basis of figures published in their annual accounts, not to mention comparing them with foreign banks operating in an entirely different environment. The comparison of the Icelandic banks' core operations with those of Nordic banks is based on the above-described Scenario II for the Icelandic banks and comparable annual accounts items for other Nordic banks.[9] The narrower definition of core operations is used, where exchange rate gains from financial activities are uncertain. The large Nordic banks' (Group I) return on equity from core operations was 7.7-9.7% during the period 2010-2013, as opposed to returns in the 7.1-9.6% range for medium-sized Nordic banks (Group II). The Icelandic banks' calculated core returns according to Scenario II (Group III) ranged between 3.7% and 6.7% during the period. They declined through 2012 and then rose again in 2013. It should be noted that the Icelandic banks' return on equity is lower partly because they have higher capital ratios than their Nordic counterparts. The reverse is true if the banks' returns on total assets from core operations are examined: the Icelandic banks' calculated returns according to Scenario II are higher than those of other Nordic banks. The large Nordic banks' (Group I) returns on core operations were 0.3-0.5% during the period, similar to those of medium-sized Nordic banks (Group II). The Icelandic banks' calculated core returns according to Scenario II (Group III) ranged between 0.6% and 0.9% during the period. They declined through 2012 and then rose again in 2013. One explanation for the Icelandic banks' higher returns on total assets may be that mortgage loans constitute a smaller share of total assets. The same pattern emerged, however, for return on equity or return on total assets: the Icelandic banks' calculated core returns according to Scenario II declined in 2010-2012 and then rose in 2013.

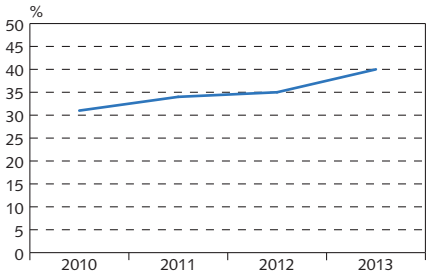
Among large Nordic banks (Group I), expenses as a share of income from core operations ranged between 59% and 65% during the period, as opposed to 57-65% for medium-sized Nordic banks (Group II). For the Icelandic banks, costs relative to calculated income from core operations according to Scenario II (Group III) ranged

9. Twenty-three Nordic banks were divided into two groups: Group I consisted of the six largest banks in the region, and Group II consisted of medium-sized banks. Source: Bankscope. Group III consisted of Iceland's three largest banks according to Scenario II.

between 58% and 69% during the period, rising through 2012 and then falling in 2013. During the 2010-2012 period, the Icelandic banks' expenses rose by 10 b.kr. per year. The proportional increase was well in excess of the rise in calculated core income. In 2013, calculated core income rose by 4% year-on-year, while expenses (adjusted for key irregular items) remained virtually unchanged.

As is stated above, the aforementioned comparison is based on a narrow definition of core income (net interest and commission income), changes in loan values, and total operating expenses. In the case of the Icelandic banks, Scenario II is used. The analysis ignores the fact that various operating expenses are not directly related to the acquisition of core income but are related to the acquisition of income from financial activities, etc. In the case of the Icelandic banks, substantial expenses have stemmed from debt restructuring and related activities. Because restructuring is well advanced, the banks will probably be able to reduce their operating expenses and thereby increase their returns on core operations, as they have done in the recent past. Furthermore, core returns would increase if loan impairment were lower than is assumed here. For example, impairment of mortgage loans is generally low; therefore, increasing the weight of such loans would reduce impairment. Furthermore, larger balance sheets would bring opportunities for increased core income and proportional reduction of operating expenses.

Chart III-11
The three large commercial banks' indexation imbalances[1]
Mismatches in indexed assets and liabilities as a share of the capital base



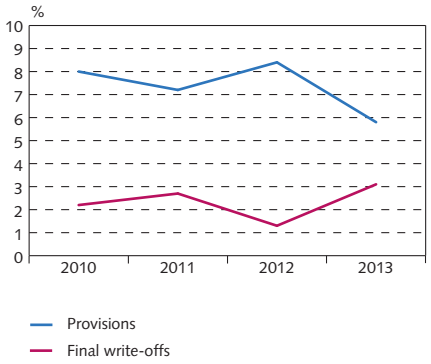
1. Consolidated accounts.
Sources: Commercial banks' annual financial statements.

Foreign exchange and indexation imbalances

The large commercial banks' foreign exchange imbalances have declined sharply in recent years. The decline stems mainly from two sources: the recalculation and redenomination of exchange rate-linked loans converted to indexed or nominal ISK loans following Supreme Court judgments, and the recognition of Landsbankinn's contingent bond in foreign currency at year-end 2012, whereas it had previously been recognised in krónur. In 2013, the foreign exchange imbalances of the banks' parent companies remained unchanged between years, while imbalances at the group level increased due to the effects of subsidiaries. On 18 December 2013, the temporary provision authorising the Central Bank to grant financial institutions temporary exemptions (for three months at a time) from foreign exchange balance rules was extended until 1 January 2015.

The commercial banks' combined indexation imbalances continued to rise in 2013. At year-end 2013, the mismatch between the large commercial banks' indexed assets and liabilities was positive by 239 b.kr., as opposed to 192 b.kr. at year-end 2012. As before, the banks' indexation imbalances vary: Landsbankinn stands out with a mismatch of 70% of its capital base at the end of the year; Arion's was 40% of its capital base, and Íslandsbanki's was 3% of its capital base. The main reason for the continued year-on-year rise in indexation imbalances is the increase in indexed mortgage loans, in part due to Arion Bank's settlement of the Drómi bond when it took over Drómi and ESÍ's household loan portfolio instead of the bond.[10]

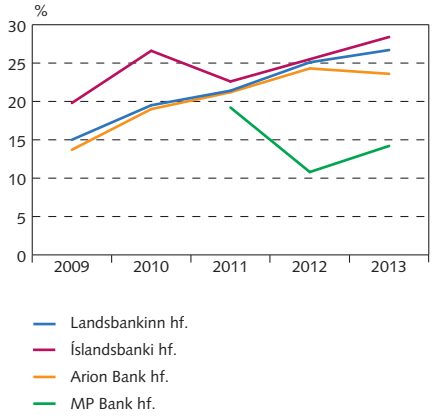
Chart III-12
The three largest commercial banks' provisions for impairment and final write-offs[1]
% of loans to customers



1. Consolidated accounts.
Sources: Commercial banks' annual financial statements.

10. At year-end 2013, Arion Bank's so-called Drómi bond was settled. In short, Arion received 50 b.kr. in household loans instead of the bond, and 15 b.kr. in deposits were settled.

Chart III-13
Commercial banks' capital adequacy ratios[1]



1. Consolidated figures. Capital base as % of risk base.
Sources: Commercial banks' annual financial statements.

Credit provisioning accounts and assessment of loan quality

The impairment reflected in the banks' credit provisioning accounts shows the estimated impairment of loan portfolios from book value after the new banks were established (impairment in excess of discounts on claim value). When the claim value of a substantial portion of the loan portfolios exceeds the book value, developments in credit provisioning accounts based on the book value of loan portfolios do not tell the whole story about loan quality and valuation. In addition, the credit provisioning account balance declines when the loans associated with the provisions are finally written off. At year-end 2013, the balance of the banks' credit provisioning accounts for loans to customers stood at 108 b.kr., or 5.8% of the book value of customer loans. This is a slight decline from the previous year. Final write-offs during the year totalled 58 b.kr., as opposed to 23 b.kr. in 2012. Significant progress was made in restructuring and final write-offs were carried out, thus reducing the balance of the provisioning accounts. The methodology for assessing the book value and impairment of loans and the balance on the provisioning account can vary from bank to bank. The difference between claim value and book value is still significant, particularly for non-performing loans, and probably provides enough scope to conclude loan portfolio restructuring.

Strong capital position

The large commercial banks continued to strengthen their capital position in 2013. Their combined capital ratios rose by over a percentage point between years, to 26.2% as of end-2013, including a Tier I capital ratio of 24%.[11] The banks' capital ratios are well above the Financial Supervisory Authority's (FME) required minimum.[12] Their capital base totalled 595 b.kr. at the end of 2013, after increasing by 45 b.kr., or 8%, from the previous year. The capital base consists primarily of share capital and accumulated operating income, while subordinated loans amounted to only 9%. The banks' risk base was 2,269 b.kr. at year-end 2013, an increase of 68 b.kr., or 3%, year-on-year. In broad terms, the risk base consists of credit risk, market risk, and operational risk. Credit risk, the most important risk facing the banks, comprises over 80% of the risk base. The credit risk base rose by 58 b.kr. between years, most of it due to Arion Bank, owing to the addition of household loans instead of the Drómi bond, which bore a risk weight of 0% due to the Government's statement of indemnity and was settled at the end of the year. The market risk base and operational risk base rose by 5 b.kr. each, as all of the large commercial banks calculate their operational risk based on their average net operating

11. Capital ratio defined according to the Act on Financial Undertakings and the FME Rules on Capital Requirement and Risk-Weighted Assets of Financial Undertakings. Tier 1 capital consists of share capital, retained earnings, etc., and deductions; cf. Article 84 of the Act on Financial Undertakings.

12. The Act on Financial Undertakings, no. 161/2002, stipulates that a financial undertaking's capital base shall be at least 8% of its risk base; however, based on the authority contained in the Act, the Financial Supervisory Authority has set a higher minimum. The commercial banks have conducted their own internal capital adequacy assessment process (ICAAP) and the Financial Supervisory Authority has then conducted its supervisory review and evaluation process (SREP), after which it has determined the banks' minimum capital ratios.

income for the preceding three years.[13] A strong capital position and operating profit in 2012 prompted two of the large commercial banks to pay out dividends totalling 13 b.kr. Three of them now intend to pay dividends in the amount of 37 b.kr. on their year-2013 profit. MP Bank stands out among the commercial banks, with a capital ratio of only 14.2% at the end of 2013. The largest commercial banks' debt relative to the book value of their equity continued to decline in 2013. At the year-end, their debt multiplier was 4.3 (debt relative to book value of equity), as opposed to 4.6 at year-end 2012.

Credit institutions' risk base takes account of risk weights. For instance, if the composition of risk-weighted assets changes, the capital ratio can rise or fall, even if both the capital base and the value of total assets remain unchanged. The lower the ratio of risk-weighted assets to total assets, the less capital the bank must hold against assets, and the more debt it can take on. In the recent past, questions have arisen concerning the consistency and reliability of risk weights in calculating the risk base for capital adequacy rules. The new Basel III rules contain provision on the minimum unweighted leverage ratio. The ratio is conceived as a supplement to the regulatory risk-weighted capital ratio and is intended as support in the event that risk weights prove incorrect when put to the test. The Basel III leverage ratio is discussed in greater detail in Box III-1.

Numerous uncertainties remain

Since their establishment, the new commercial banks have concentrated mainly on debt restructuring. Restructuring was well advanced at the end of 2013, and the banks' operations are now characterised more by actual banking activities. In spite of this, some uncertainty still remains in relation to capital account liberalisation, stability of funding, and the value of loans. Many borrowers are still highly leveraged. Lifting the capital controls could cause exchange rate volatility and sudden inflation spikes, which could affect borrowers' ability to service their debt. Increased impairment could have a marked impact on the banks' capital ratios. As a result, continued strength is needed until these uncertainties are eliminated.

13. According to the Basic Indicator Approach set forth in the Financial Supervisory Authority risk base rules.

Box III-1

International leverage ratio

Basel III leverage ratio

Over the years prior to the global financial crisis in 2008, many financial institutions' leverage increased – on and off the balance sheet – although they maintained high risk-weighted capital ratios at the same time. In the wake of the crisis, both the market and financial supervisors began to require that banks increase their capital adequacy and thereby reduce their leverage. In the recent past, questions have arisen concerning the consistency and reliability of risk weights in calculating the risk base for capital adequacy rules. The new Basel III rules contain provisions on the minimum unweighted leverage ratio.[1] The ratio is conceived as a supplement to the regulatory risk-weighted capital ratio and is intended as support in the event that risk weights prove incorrect when put to the test. Furthermore, the leverage ratio is intended as a restriction on financial system indebtedness so as to prevent the rapid deleveraging that can amplify downturns.

The Basel III leverage ratio can be described with some simplification as the ratio of Tier 1 capital to defined asset items, where corrections are made for derivatives and items due to repurchase agreements,[2] plus other defined off-balance sheet items.[3] Information on and assessments of these risk items in annual accounts can differ from the risk assessment methods used to calculate the leverage ratio. In this context, the Basel Committee for Banking Supervision has prepared instructions for harmonised completion of the summaries used to derive the leverage ratio. Currently, the minimum leverage ratio is 3%. A higher leverage ratio indicates less indebtedness. In the near future, the Basel Committee will review information from banks so as to examine further the ratio composition and the minimum with respect to the business cycle and banks' various business models. According to the Basel III rules, banks must publish their consolidated leverage ratios beginning in 2015. The minimum leverage ratio rules take effect in 2018.

$$LR^{1} = \frac{\textit{Tier 1 capital}}{\textit{Assets + derivatives + SFT + off-balance sheet items}}$$

1. For further clarification of the leverage ratio, see "Basel III leverage ratio framework and disclosure requirements", January 2014.

Assessment of leverage ratios

In Europe, implementation of the leverage ratio takes place through the EU Capital Requirements Regulation (CRR) and the EU Capital Requirements Directive (CRD IV). The European Banking Authority (EBA) is currently working on technical standards for the implementation of the ratio, which are scheduled for completion around mid-2014. In the recent term, the EBA has monitored European banks' leverage ratios in terms of the Basel III rules as current at any time. In March 2014, the EBA published an assessment of the ratio,[4] based on data from 166 banks as of end-June 2013. The banks were divided into two groups: Group 1 (41 large international banks) and Group 2 (125 other banks).[5] The average leverage ratio for Group 1 was 3.0%, and the median was slightly higher. The

1. This discussion of the leverage ratio is based on the recommendations set forth in the Basel Committee's January 2014 report entitled "Basel III leverage ratio framework and disclosure requirements" unless otherwise specified. It should be noted that the Basel Committee reserves the right to amend the recommendations until 2017. The rules are therefore still in preparation. They are scheduled to take effect as minimum requirements in 2018.
2. Repurchase agreements, securities lending, and other loans dependent on the market value of assets and often include provisions permitting margin calls.
3. For treatment of other items on and off the balance sheet in calculating the numerator of the leverage ratio, reference is made to "Basel III leverage ratio framework and disclosure requirements, January 2014", pp. 3-9 and Annex.
4. See "EBA Basel III monitoring exercise, Results based on data as of 30 June 2013".
5. Group 1 consisted of international banks with more than EUR 3bn in Tier 1 capital. Group 2 consisted of other banks with less capital. Full implementation of the Basel III rules was assumed.

combined capital shortfall for Group 1 banks falling below the 3% threshold was just over 100 billion euros. The average leverage ratio for Group 2 was 3.6%. The median was somewhat higher, and the distribution of the ratio was greater in Group 2 than in Group 1. The combined capital shortfall for Group 2 banks below the 3% threshold was just over 27 billion euros. In January 2014, the Basel Committee announced several changes in the calculation of defined items on and off the balance sheet (the numerator of the ratio). The latitude for netting was increased, risk due to certain derivatives was reduced, weighting for calculation of risk due to off-balance sheet items was reduced, etc. In general, the changes will raise leverage ratios and reduce the capital requirement of the banks that did not previously satisfy the 3% minimum.

In recent years, financial supervisors have paid increased attention to banks' general leverage ratios or debt multipliers and their development, such as the ratio of debt to equity, as has been discussed in previous issues of *Financial Stability*. The largest commercial banks' debt continued to decline relative to their net worth in 2013. At the year-end, their debt multiplier was 4.3 (debt relative to book value of equity), as opposed to 4.6 at year-end 2012. A higher debt multiplier implies greater indebtedness. The Basel III leverage ratio resembles the reciprocal of the debt multiplier, as the Icelandic banks' book value of equity relative to total assets ranges between 15% and 20%. The large Icelandic commercial banks have not published Basel III leverage ratios. Based on available financial information, their ratios could lie in the 14-19% range, which is high in international comparison. This is somewhat lower than a simple debt multiplier suggests, but due to a haircut, book value of equity exceeds Tier 1 capital. Total assets are usually lower than assessed risk in the calculation of the leverage ratio, due mainly to derivatives and off-balance sheet items. In general, the Basel III leverage ratio is a more stringent measure of banks' indebtedness than a simple debt multiplier is.

Box III-2

Stress testing banks - a top-down stress testing model

Top-down stress testing is one way to assess risks that the banking sector might face. It can provide an indication of vulnerabilities in the banks tested or in the sector as a whole. In short, stress testing means assessing in a forward-looking manner how macroeconomic and financial conditions affect banks' profitability, capital, and liquidity. The impact of macro-financial scenarios is projected onto bank balance sheets and profit and loss accounts using various equations and models. The macro-financial scenarios usually include a baseline and one or more plausible stress scenarios, and the time horizon may range from a few months to several years.

When a central authority conducts stress testing based on macroeconomic assumptions, without the involvement of the banks, this is referred to as top-down stress testing. Bottom-up stress testing, on the other hand, is carried out by banks themselves, using their own models and methodology.

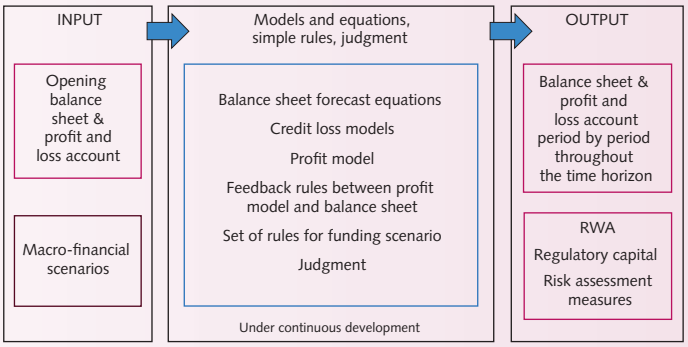
There is no standardised or universal method for stress testing. The 2008 financial crisis gave central banks the impetus to develop their stress testing frameworks, but approaches and solutions vary and the work is continually evolving.

Overview of the Central Bank's top-down stress testing model

The Central Bank of Iceland is developing a top-down stress testing model whose first version is now ready. The model provides a practical approach to the assessment of Icelandic banks' solvency and liquidity risks. It links given macro-financial scenarios to a bank's balance sheet and profit and loss account, as well as to regulatory capital and other risk assessment measures, period by period, using separately estimated models and equations, simple rules, and the analyst's judgment.

Chart 1

Overview of the Central Bank's top-down stress testing model



Source: Central Bank of Iceland.

The model is a dynamic balance sheet model that uses various forecast equations and sub-models to forecast each balance sheet item,[1] conditional upon the macro-financial scenarios. For comparison, the stress testing framework of the European Central Bank (ECB)[2] embeds a dynamic balance sheet module, and also the

1. Stress testing can be based on either static or dynamic balance sheet assumptions; i.e., the assumption that the balance sheet items will either remain on initial levels or that they will evolve in accordance with time and macroeconomic conditions.
2. See the ECB Occasional Paper Series http://www.ecb.europa.eu/pub/pdf/scpops/ecbocp152.pdf, "A Macro Stress Testing Framework for Assessing Systemic Risks in the Banking Sector".

US Federal Reserve Bank[3] models bank balance sheet evolution. Furthermore, the Central Bank model forecasts a bank's profit and loss account conditional upon the balance sheet forecast and the given scenarios. Simple rules are applied regarding feedback from the profit and loss account back to the balance sheet. In addition, a separate funding scenario (e.g., deposit flight) is projected onto the balance sheet using a set of rules.

The data needed for the top-down stress testing model are the scenarios being tested and the initial balance sheet and profit and loss account. The balance sheet items are divided into classes. Assets are divided into classes such as cash and deposits, financial assets, and loans. Liabilities are divided into classes such as deposits, borrowings from the central bank[4] and other financial institutions, and debt securities issued. These classes are further divided according to type, sector, or collateral quality, and according to whether they are indexed, non-indexed, or foreign-denominated.

Sub-models and equations

The main sub-models of the Central Bank's stress testing model include corporate and household credit loss models and a profit model. For most balance sheet items, however, the forecast equations are simpler. Nevertheless, these equations are assumed to represent the evolution of the balance sheet items in the Icelandic environment of indexation, exchange rate volatility, and inflation.

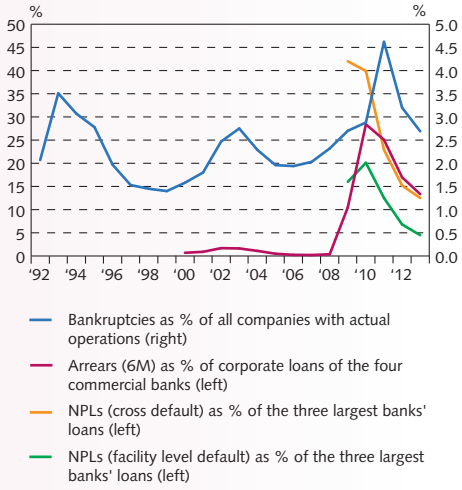
Credit risk is a major risk component for the Icelandic banks; therefore, projecting credit losses is a key element of stress testing. In general, there are different indicators and measures of credit risk. The most prominent of them are probability of default (PD), loss given default (LGD), and their product, loss rate (LR). Balance sheet-type indicators such as the stock of impairment allowance, or non-performing loans (NPL) expressed as ratios to total loans can be used to assess the evolution of credit risk.[5] The Central Bank's credit loss models consist of various equations used to forecast credit losses based on given macro-financial scenarios. The macro-financial variables used in the equations include, for instance, GDP, real exchange rate, inflation, real interest rate, unemployment, and asset prices.

The profit model includes modules for net interest income (NII), loan loss impairment, net financial income, net fee income, and operating expense projections. The NII module projects interest income and expenses separately, using the evolution of the relevant balance sheet items and projections of retail interest rates conditional upon a macro-financial scenario. The loan loss impairment calculations use the aforementioned credit loss models and relevant balance sheet items.

The Central Bank's top-down stress testing model applies the sub-models and equations in a coherent way across the banks tested. The model can be used either to benchmark bottom-up stress tests done by banks themselves applying their own methods, or to run standalone tests. The model is under continuous development.

Chart 2

Comparison of bankruptcy, corporate loan arrear and NPL data



Sources: Financial Supervisory Authority, Statistics Iceland, Central Bank of Iceland.

3. See http://www.federalreserve.gov/bankinforeg/independent-projections-letter-20131216.pdf.
4. This is also a balancing item in the model and is needed in order to match assets with liabilities and equity.
5. In the case of Iceland, data on NPLs are only available from October 2009. Data on arrears are available from Q4/2000, but they consist of the amount in arrears (i.e., unpaid bills) and not the amounts of loans in arrears. Impairment allowance data as reported in balance sheets are available from 2008. In addition, annual data on corporate bankruptcies are available from 1992.

IV Funding and liquidity

Liquidity strong but increased market funding needed

Iceland's commercial banks and savings banks are funded largely with deposits. Other sources of funding have increased gradually in recent years. All of the three largest commercial banks have now issued covered bonds that are listed on the NASDAQ OMX Iceland exchange (OMXI). Íslandsbanki issued an unsecured bond in Swedish kronor last year and expanded the issue this March. Both Arion Bank and Íslandsbanki have issued bonds abroad. With its foreign bond issue last year, Arion Bank was the first of Iceland's banks to issue a bond abroad since 2008. Most of the remainder of the banks' borrowings consists of the Landsbankinn-LBI bonds. Arion Bank and Landsbankinn have now been assigned credit ratings for the first time. Both have ratings of BB+ from Standard & Poor's. The banks' liquidity risk centres on large-scale withdrawal of deposits, but liquidity rules require that the banks hold substantial liquid assets to cover their deposits. Funding risk centres on the Landsbankinn-LBI bond. Planned rules on funding ratios will limit risk due to maturity mismatches, particularly in foreign currencies.

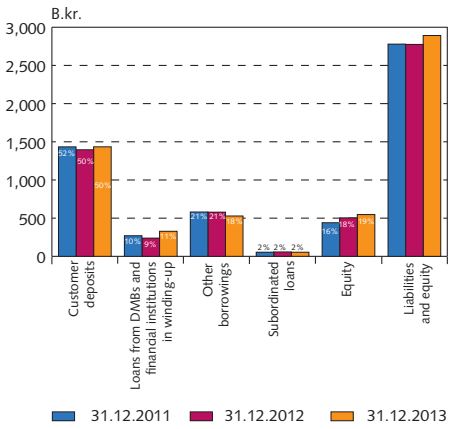
Banks funded chiefly through deposits

Deposits and international comparison

Iceland's commercial banks and savings banks are funded largely with deposits. Customer deposits comprised about 50% of the banks' total funding at year-end 2013. Another 11% of their funding came from the deposits of currently operating deposit money banks (DMB) and DMBs in winding-up proceedings. Last year, customers' and financial institutions' deposits with commercial banks increased by nearly 145 b.kr., after having declined by nearly 70 b.kr. in 2012. At the end of 2013, Landsbankinn made a prepayment of 50 b.kr. on its bond with the old bank, thereby reducing the share of other borrowings, while deposits increased. Non-residents' deposits remained virtually unchanged in 2013, after having contracted by more than 30 b.kr. in 2012. Non-residents' foreign-denominated deposits now constitute about 1% of bank deposits.

As a share of total funding (excluding derivatives), the three large commercial banks' customer deposits are similar to the deposits of Nordic commercial banks of similar size (Chart V-2). Landsbankinn's share is lower than that of Arion Bank and Íslandsbanki, due to the bonds representing its debt to the old bank. Even though Landsbankinn has the lowest ratio, it is still higher than is customary among the largest Nordic banks, which have much easier access to other forms of funding. The difference in the two ratios shown in Chart V-2 – that is, deposits-to-assets and deposits-to-borrowings – is greater for the Icelandic banks than for the comparison group, due to the Icelandic banks' strong capital position.

Chart IV-1
Commercial banks' funding[1]



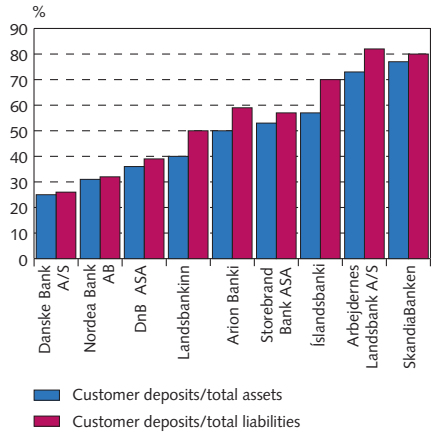
1. Parent companies.
Source: Central Bank of Iceland.

Increased capital

Both Íslandsbanki and Landsbankinn paid dividends last year, for the first time since they were established in 2009. Equity had accumulated due to their strong operating performance in recent years. Landsbankinn paid 10 b.kr. in dividends last autumn, and Íslandsbanki

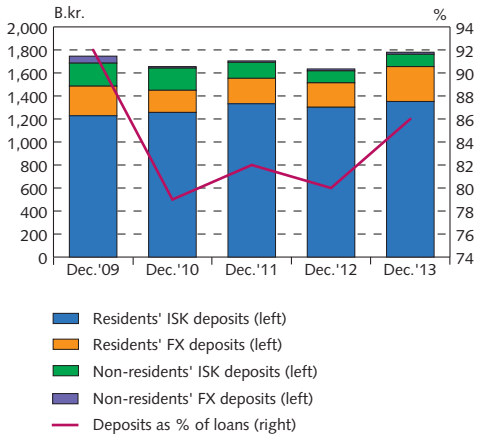
paid 3 b.kr. At year-end 2013, the commercial banks' equity amounted to 554 b.kr., an increase of 50 b.kr. from the previous year-end. At the end of 2013, equity accounted for just under 19% of their funding and subordinated loans about 2%. All three of the large banks have announced plans to pay dividends this year.

Chart IV-2
Nordic banks' deposits as a % of total funding
December 2013



Source: Bankscope.

Chart IV-3
Deposits with commercial banks in FX and ISK[1]



1. Parent companies, commercial banks. Deposits of customers and financial undertakings. Customer deposits as a % of loans to customers.
Source: Central Bank of Iceland.

Other borrowings and market funding

Borrowings other than deposits constitute a relatively small share of the banks' funding. The three large commercial banks have all been authorised by the Financial Supervisory Authority (FME) to issue covered bonds to fund mortgage lending. The FME authorisation, granted in stages, now covers total issuance of 65 b.kr. for the three banks combined. At the end of March, the amount issued totalled 40.7 b.kr., which is a large year-on-year increase proportionally but only a small part of their total funding, at just over 1% of their balance sheets. Arion Bank has issued three series, two indexed and one nominal, in the total amount of 11.3 b.kr., and Íslandsbanki has issued five series for a total of 25.9 b.kr. Landsbankinn has issued one nominal bond in the amount of 3.4 b.kr. The majority of the bonds issued are indexed, with original maturities ranging between seven and 22 years. The bonds are listed on the OMXI exchange but have seen little secondary market trading. Covered bonds are not eligible as collateral for Central Bank lending facilities, and owners of offshore krónur are therefore not permitted to invest in them.

Íslandsbanki began issuing three- and six-month bills last year, with issuance totalling 8.5 b.kr. At the end of March 2014, there were 8.05 b.kr. outstanding. Íslandsbanki is the only commercial bank in Iceland to issue listed bills since 2008.

Arion Bank and Íslandsbanki have both issued bonds abroad. Their issues in 2013 were the first foreign bonds issued by Icelandic banks since 2008. Arion issued an unsecured three-year bond in the amount of 500 million Norwegian kroner, at NIBOR rates plus a 5% premium. The bond was listed on the securities exchange in Norway. In December 2013, Íslandsbanki issued a bond in the amount of 500 million Swedish kronor. The bond bears a four-year maturity, at STIBOR rates plus a 4% premium. In March 2014, the issue was expanded by 300 million Swedish kronor, at STIBOR plus 3.3%, or 70 basis points lower than the original issue. The Íslandsbanki bonds are listed on the securities exchange in Ireland.

Both Arion Bank and Landsbankinn received credit ratings from Standard & Poor's at the beginning of 2014. These are the first ratings the banks have received from international rating agencies. Both banks were assigned ratings of BB+, which is one notch below Iceland's sovereign rating. Having a credit rating is an important step towards further borrowing in foreign markets.

Borrowings other than deposits still comprise a relatively small share of the banks' total funding, and even though there are signs of increased funding diversity ahead, the process is a slow one. Other borrowings still consist primarily of the Landsbankinn-LBI bonds and Arion Bank's takeover of a covered bond portfolio.

Arion Bank's covered bond takeover

A large share of Arion's non-deposit funding derives from a mortgage loan portfolio it bought from Kaupthing hf. at the end of 2011. Arion purchased the portfolio by taking over covered bonds originally issued by Kaupthing in 2006-2008. The bonds, which had an outstanding value of 122 b.kr. at the end of 2013, are backed by mortgages and bank deposits held in a special fund, the Arion Bank Mortgages Institutional Investor Fund.

Landsbankinn's foreign-denominated bonds

Landsbankinn has the largest proportion of non-deposit funding, owing mainly to the secured bonds it issued to the estate of the old bank as compensation for the difference between assets and domestic deposits transferred to Landsbankinn. The bonds are issued in foreign currency, with quarterly instalments from 2014 through 2018. In the first half of 2012, Landsbankinn and the old bank entered into an agreement concerning a prepayment in an amount equivalent to 73 b.kr. in euros, US dollars, and pounds sterling. Another prepayment, this one in the amount of 50 b.kr., took place in December 2013. An exemption from capital controls was granted to LBI in 2012 to pay 73 b.kr. out to creditors, but this exemption has not been granted in relation to the 50 b.kr. prepayment that took place in December. The new bank's debt to the old one totalled just under 240 b.kr. at the end of 2013.

Landsbankinn's debt to the old bank constitutes the bulk of the three commercial banks' bond issuance and explains most of their repayment profile for the next several years. About 72% of the next five years' instalment and interest payments, or 280 b.kr., are denominated in foreign currency. The foreign repayment profile is therefore heavy in the next several years, both for Landsbankinn and relative to Iceland's current account surplus (see Chapter II). The banks need to lengthen their funding by lengthening deposit commitment periods and refinancing upcoming loan maturities.

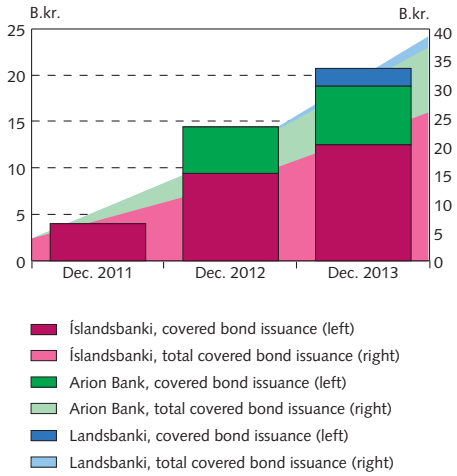
Encumbrance ratios

The banks' position varies as regards the share of their assets used as collateral for funding, etc.[1] Landsbankinn's encumbrance ratio declined by 12 percentage points in the second half of 2013, following its prepayment on its debt to the old bank, to 29% at the year-end. Íslandsbanki's encumbrance ratio was just over 12%, and Arion had hypothecated about 29% of its balance sheet, or 277 b.kr. Arion's ratio is due primarily to a mortgage loan portfolio pledged against long-term covered bonds.

A sample of 60 European banks showed a median encumbrance ratio of 28.5% at year-end 2011.[2]

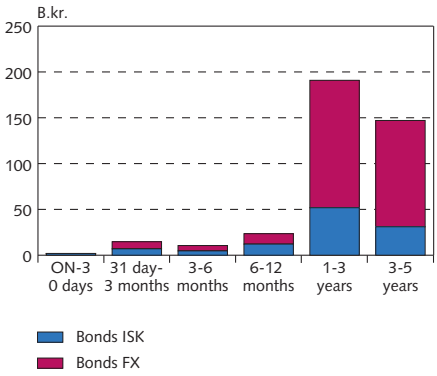
1. Assets pledged as collateral for loans, swap agreements, and so forth.
2. Bank for International Settlements. "Asset encumbrance, financial reform and the demand for collateral assets: Report submitted by a Working Group established by the Committee on the Global Financial System". CGFS Papers, No. 49, May 2013.

Chart IV-4
Commercial banks' covered bond issuance[1]



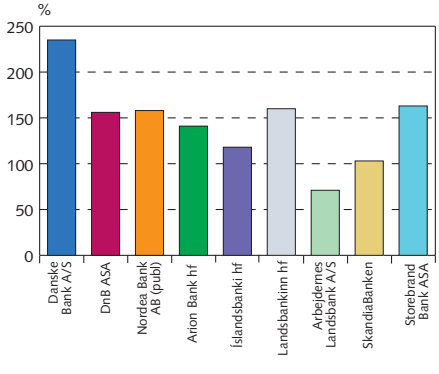
1. New issues (columns) and total outstanding (shaded areas).
Source: Nasdaq OMX Iceland.

Chart IV-5
Bond maturities[1]
The three large commercial banks as of 28 February 2014



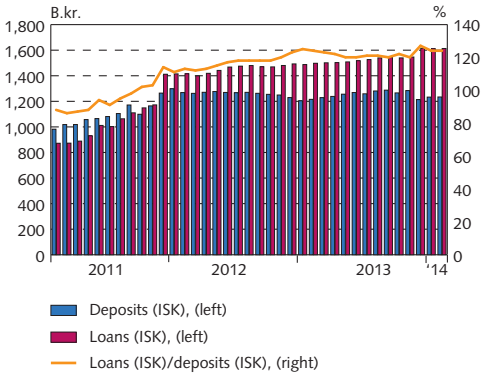
1. Instalments and interest.
Source: Central Bank of Iceland.

Chart IV-6
Loans to deposits
Nordic banks, December 2013



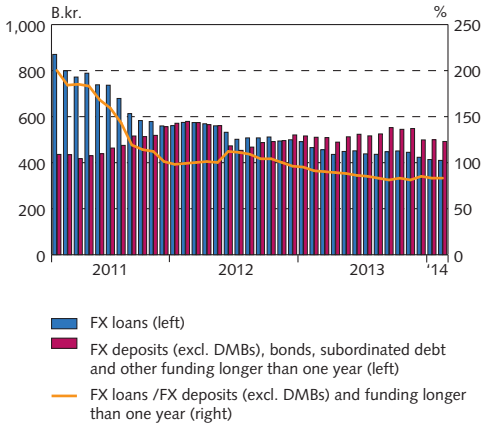
Source: Bankscope.

Chart IV-7
Loans to deposits[1]



1. Parent companies, commercial banks. Customer loans as a % of customer deposits.
Source: Central Bank of Iceland.

Chart IV-8
FX loans to FX funding[1]



1. Parent companies, commercial banks.
Source: Central Bank of Iceland.

Funding and maturity mismatches

On the whole, deposits are considered a stable source of funding, and the ratio of loans to stable deposits is used as an indicator of funding stability. In general, short-term funding is considered relatively risky, and a bank can reduce its risk by funding more of its loans with stable deposits and long-term bond issues. Some countries have recently begun to adopt rules stipulating loan-to-deposit ratios and ratios of stable funding to total liabilities or to loans and claims. Among the countries that have set such rules are South Korea, Portugal, and New Zealand. Experience of applying rules based on such core funding ratios is still limited, however. Further discussion of policy instruments like these can be found in Appendix I.[3]

Harmonised rules designed to reduce the risk attached to funding and maturity mismatches are considered important, however, and the Basel Committee on Banking Supervision is currently preparing rules on the so-called net stable funding ratio (NSFR). Iceland's banks have submitted information accordance with draft NSFR rules since the beginning of 2013. Plans are in place to adopt rules applying specifically to foreign funding ratios as well as overall ratios, and to consider periods longer than a year.

In Iceland, an examination of the large commercial banks' funding ratios (such as loans vs. deposits) reveals that the ratios for Arion and Landsbankinn are somewhat above the 120% maximum that has been cited as a reference (Chart 6).[4] On the other hand, they are no higher than has been seen among other banks in the Nordic region. One of the reasons for this is that the Icelandic banks' capital provides a large share of their funding; therefore, it might be more illustrative to consider their loans as a share of stable funding.

At the end of 2013, the banks' foreign funding totalled just under 700 b.kr., including 330 b.kr. in customer and corporate deposits, and borrowings amounting to 320 b.kr., including 290 b.kr. with maturities longer than a year. Most of their other foreign-denominated obligations are subordinated loans. The three large banks' foreign-denominated assets consist of customer loans, which totalled just under 400 b.kr. at the end of 2013, and about 331 b.kr. in foreign-denominated assets that are classified as liquid assets and deposits in other banks.[5] Apart from deposits, the banks' liquid foreign assets are Treasury bonds with credit ratings of AA- and higher. The banks' foreign liquidity is therefore strong, but there are medium-term refinancing risks, mostly due to the Landsbankinn-LBI bonds.

Liquidity and stress tests

Liquidity

New liquidity rules took effect on 1 December 2013. The rules are based on the liquidity coverage ratio (LCR), which is issued by the

3. The ESRB Handbook on Operationalising Macro-prudential Policy in the Banking Sector http://www.esrb.europa.eu/pub/pdf/other/140303_esrb_handbook.pdf?24d8545e98add76e204675daa62a6a51.

4. Srobona, M., J. Beneš, S. Iorgova, K. Lund-Jensen, C. Schmieder, and T. Severo (2011), "Toward operationalizing Macroprudential Policies: When to Act?" Chapter 3 in Global Financial Stability Report, September.

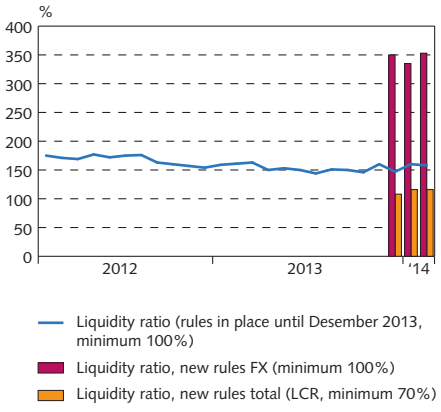
5. Assets and inflows according to the Central Bank Rules on Liquidity Ratio, no. 1055/2013.

Basel Committee and used as an international liquidity reference. This is the first time international criteria for liquidity rules have been set forth, and most countries are currently implementing rules based on them. European banks will be required to fulfil liquidity requirements based on the Basel criteria at the beginning of 2015.

The rules assume that banks must always have sufficient high-quality liquid assets to cover net outflows for the next 30 days under stressed conditions. Under Iceland's new liquidity rules, the banks must fulfil requirements for both foreign-denominated and overall liquidity. In 2014, the minimum liquidity ratio is 100% for foreign currencies and 70% overall. All of Iceland's commercial banks meet the liquidity requirements.

The banks' foreign-denominated liquidity is very strong, and their liquid assets exceed their total foreign currency deposits. But the liquidity position only gives an indication of their short-term position, but the banks' long-term situation differs as foreign loans come due.

Chart IV-9
Deposits with commercial banks in FX and ISK[1]



1. Parent companies, commercial banks.
Source: Central Bank of Iceland.

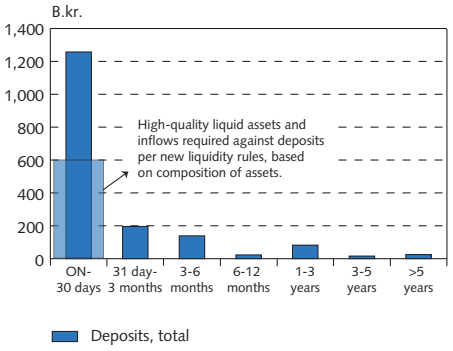
Tightened requirements in new Central Bank liquidity rules

As is stated above, Iceland's commercial banks are funded primarily with demand deposits. About 72% of deposits can be withdrawn within a month, 84% within three months, and 92% within six months. The new liquidity rules set tighter requirements for liquid assets to cover liquid deposits, providing an increased incentive for term deposits. The new rules require high-quality liquid assets to cover all one-month deposits from domestic and foreign financial institutions, pension funds, financial firms in moratorium or winding-up proceedings, and non-resident entities whose balances are not insured by a deposit guarantee fund. This includes about a third of all of the three largest banks' deposits that can be withdrawn within a month.[6]

The banks must also be able to pay out a portion of other liquid deposits. Overall, they must be able to cover nearly half of all one-month deposits according to the liquidity rules, based on the current deposit composition. This applies to about 20% of the banks' balance sheets.

The common feature of the deposit classes requiring 100% reserves is that they are risky deposits comprising a large share of total deposits, and concentration is high. The 10 largest depositors within each category own up to 100% of the deposits in that category; in other words, a small number of depositors own a large share of the deposits, as can be expected in the case of entities like financial institutions and pension funds. Concentration is much less in other deposit classes – households and small and medium-sized companies – and the 10 largest depositors in these categories own about 2-3% of total deposits in the category concerned. These two deposit categories account for about 40% of all of the three large banks' deposits.

Chart IV-10
Deposits with commercial banks in FX and ISK
The three large commercial banks as of 28 February 2014



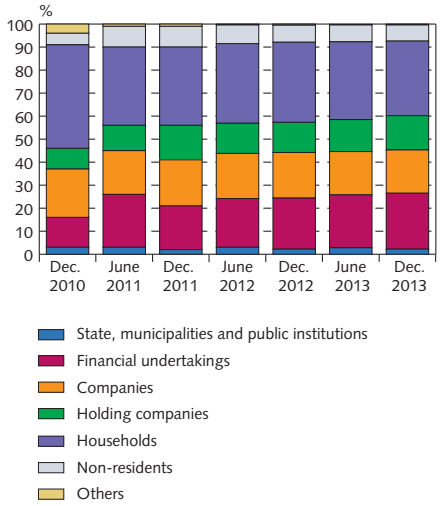
Source: Central Bank of Iceland.

Liquidity stress testing

The liquidity rules entail a certain stress test. The banks must be able to withstand periods of tight market liquidity, and the new rules are

6. The liquidity rules assume that liquid assets exceed net outflows. Consideration is therefore given to inflows and liquid assets.

Chart IV-11
Deposit holders[1]



1. Parent companies, commercial banks.
Source: Central Bank of Iceland.

more stringent in many respects than the previous Central Bank rules. It is assumed that the banks can depend only on high-quality liquid assets, precautionary entries are made for derivatives contracts, and no inflows are assumed except for loans that are performing in full. As is stated above, it is assumed that the banks can pay out all one-month deposits held by certain parties. The liquidity rules also take account of a three-month period in assessing liquidity risk.

In addition, the Central Bank performs stress tests in order to assess the impact of various shocks on the largest commercial banks. These include system-wide shock tests – such as the impact of potential deposit flight upon removal of the capital controls – and more specific stress tests featuring targeted assumptions for each individual bank. Also considered is the possibility that the stress period could last longer than the 30 days the rules provide for, as well as the foreseeable refinancing requirement over longer periods.

V DMB assets and borrowers' position

Private sector financial conditions continue to improve

Households' and businesses' total debt continued to decline in 2013, and with rising asset prices, the private sector's net wealth and financial conditions have grown stronger. Private investment is still relatively limited, while deposit money banks' (DMB) total assets are unchanged year-on-year in real terms but have contracted by 2% relative to GDP. Concentration of the banks' large exposures declined in 2013, as in 2012. Households' financial position improved slowly in 2012. The recovery accelerated in 2013 and outpaced the projections from the beginning of the year. The amount of non-performing loans has continued to decline, and the number of individuals on the default register fell significantly for the first time since the beginning of 2009. This trend is expected to continue. Default on corporate debt is falling gradually, and bankruptcies have diminished markedly in number. The number of firms on the default register is broadly unchanged since mid-2011, however.

Deposit institutions

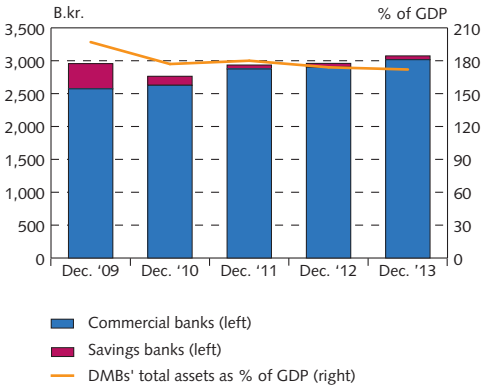
Total DMB assets unchanged year-on-year in real terms

At present there are four commercial banks and eight savings banks in operation in Iceland. The assets held by these DMBs amounted to 3,074 b.kr. at the end of December 2013, after increasing by 114 b.kr. between years. In real terms, they declined by 0.3%. They have fallen steadily since end-2009, with the real decline measuring 11.2% over the four-year period. DMB assets have declined as a share of GDP as well, from 200% in 2009 to 172% at the end of 2013. Assets owned by credit undertakings other than DMBs totalled 1,062 b.kr.[1] The vast majority of these are owned by the Housing Financing Fund (HFF), with assets of 863 b.kr. as of end-2013, including some 768 b.kr. in mortgage loans.

Since the banks failed in 2008, Landsbankinn has been Iceland's largest commercial bank in terms of balance sheet size. At year-end 2013, its total assets accounted for 38.7% of total commercial bank assets, an increase of 0.4% since year-end 2012. Íslandsbanki's share was 28.0% and increased 0.1% between years. Arion Bank and MP Bank's assets declined as a share of the total, however; Arion accounted for 31.3% of the total and declined 0.2% year-on-year, and MP accounted for 2.0%, after declining 0.3%.

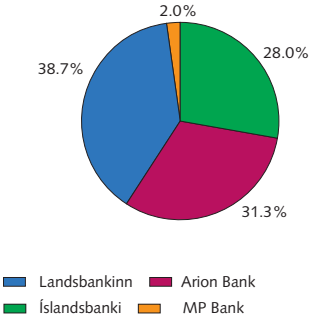
Loans constitute the lion's share of the DMBs' asset portfolios, at 65% of the total, or 1,966 b.kr., as of end-2013. Loans as a share of total assets rose by 2% in the latter half of 2013 but remained unchanged in comparison with year-end 2012. The increase in the second half of 2013 was due mainly to Arion Bank's takeover of household loans previously owned by Drómi hf., Frjálsi hf. (a Drómi subsidiary), and the Central Bank of Iceland Holding Company ehf. (ESÍ), which increased the book value of Arion's loans by roughly 50 b.kr. Excluding that takeover, the book value of loans rose by 49 b.kr. in the latter half

Chart V-1
DMBs' total assets, % of GDP[1]



1. Parent companies.
Sources: Statistics Iceland, Central Bank of Iceland.

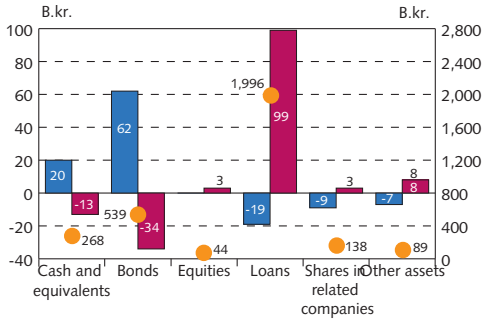
Chart V-2
Commercial banks' share of total assets[1]
Year-end 2013



1. Parent companies.
Sources: Financial institutions' annual accounts.

1. Miscellaneous credit undertakings apart from the Housing Financing Fund are: Valitor hf., Borgun hf., Lýsing hf., Straumur IB hf., the Icelandic Regional Development Institute, and Municipality Credit Iceland Plc.

Chart V-3
DMBs' total assets[1]



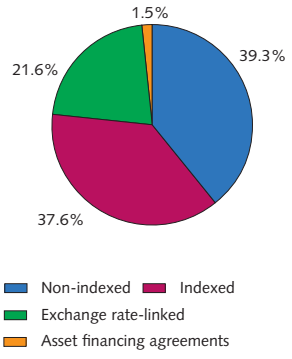
1. Parent companies.
Source: Central Bank of Iceland.

of the year, as opposed to a contraction of 19 b.kr. in the first half. Excluding changes in loan values as well, the increase totalled 36 b.kr. in the second half of the year, as compared with a 35 b.kr. contraction in the first half. This is a radical change in a six-month period, indicating that demand for new credit grew in the second half of 2013. In real terms, the book value of loans rose by 3.7% in the second half of 2013, as opposed to a decline of 3.6% in the first half. Loan write-downs declined by 25% year-on-year, due in part to the recalculation of illegal exchange rate-linked loans – most of which was completed in 2013 – and reduced uncertainty about recoveries (see also Chapter III).

Bonds are the second-largest class of DMB assets, at 17.5% of the total, and cash is the third-largest, at 8.7%. An examination of developments in individual asset classes reveals that, in addition to loans, the book value of bonds fluctuated widely in 2013. Bond assets grew by 62 b.kr. in the first half of 2013 and then declined by 34 b.kr. in the latter half, due in large part to Arion Bank's takeover of the Drómi-ESÍ loan portfolio, which included the settlement of a bond issued by Drómi in 2009 in connection with the transfer of SPRON deposits to Arion Bank. The book value of the bond was 69 b.kr. Other asset classes include equity securities, which accounted for only 1.4% of DMB assets. In terms of market value, the banks' equity holdings rose by nearly 10% in 2013, while the OMXI6 index rose nearly 19%. The market risk attached to equity securities holdings in their balance sheets is therefore negligible. Claims against non-residents amounted to 457 b.kr., or 15%, at the end of the year, as opposed to 383 b.kr. at year-end 2012. The increase is due in large part to an increase in foreign currency deposits, as DMBs usually invest such deposits abroad, either in deposit accounts in foreign banks or in foreign government bonds bearing strong credit ratings, while recognising them as assets in their balance sheets.

Exchange rate-linked loans continue to shrink in importance, accounting for 21.6% of the DMBs' total loan portfolios at the end of 2013, as opposed to 26% a year earlier. The share of non-indexed loans rose by 3.4%, however, to an all-time high of 39.3% of total loans. Indexed loans accounted for 37.6% of total loans as of end-2013, after increasing 1.0% during the year. In terms of book value, non-indexed loans have increased much more than indexed loans in the DMBs' balance sheets.

Chart V-4
DMBs' loans[1]
Year-end 2013



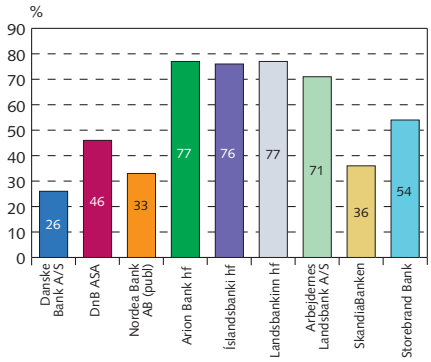
1. Parent companies.
Source: Central Bank of Iceland.

Risk base in comparison with total assets

Financial institutions' risk base and capital base are calculated in accordance with the Act on Financial Undertakings and the pertinent rules set by the Financial Supervisory Authority, which stipulate how assets are to be recognised in the risk base. The riskier the asset is considered to be, the higher the risk weight – and therefore the capital requirement. All of the Icelandic banks use the Standardised Approach to calculate their risk base. None of them uses the Internal Ratings Based Approach (IRBA), which is based on an undertaking's own model to assess risk and is used by most large foreign banks. Banks using the IRBA generally have lower capital requirements than those that follow the Standardised Approach. At year-end 2013, the three

large commercial banks' risk base – that is, their risk-weighted assets – amounted to 76-77% of their total assets. This is well above the risk base for most banks in comparison countries. For instance, Nordea Bank and Danske Bank, both of which use the IRBA, had ratios of 33% and 26%, respectively (see Chart V-5). Arbejdernes Landsbank's ratio was 71%, however, and it uses the Standardised Approach. The lower the risk base and the greater the difference between the risk base and total assets, the less capital is required to offset it. The large Icelandic banks' capital position is strong, given that their risk base is about 77% of total assets and their capital ratio was 26% at the end of 2013.

Chart V-5
Risk weighted assets as % of total assets[1]
Year-end 2013

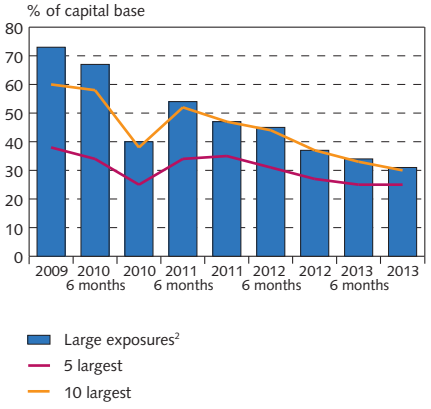


1. Consolidated figures.
Sources: Banks annual accounts, Bankscope.

Large exposures decline

The amount of the commercial banks' five largest exposures fell by just under 2% of the commercial banks' combined capital base in 2013, and by 10% from end-2011 to end-2013. The amount of their 10 largest exposures fell even further, or by about 7% of the commercial banks' combined capital base, in 2013, and by 18% from end-2011 to end-2013. The commercial banks' capital base was 598.7 b.kr. at year-end 2013. It rose by 8% in 2013 and by 25% in 2012 and 2013 combined. As Chart V-6 indicates, large exposures have declined sharply since 2009. By end-2013 they amounted to 30% of the capital base, having declined by 7% during the year. The reduction in the commercial banks' large exposures in recent years is due primarily to a substantial increase in their capital base. Another contributing factor is the 30% decline in net large exposures since 2009.

Chart V-6
Large exposures[1]



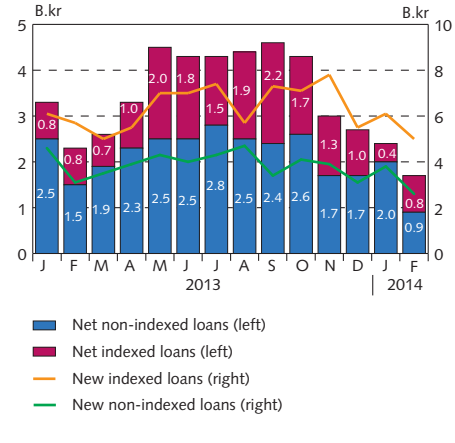
1. Consolidated figures. Large exposures to a client or group of clients may not exceed 25% of a financial undertaking's capital base. The total amount of large exposures may not exceed 400% of a financial undertaking's capital base. 2. An exposure incurred by a financial undertaking to a client or a group of connected clients the value of which amounts to 10% or more of the undertaking's capital base.
Source: Financial Supervisory Authority.

Continued growth in DMB mortgage lending

In mid-2013, the Central Bank began collecting more detailed information on new DMB lending and loan prepayments. Previous figures did not take adequate account of prepayments, which made it difficult to assess net changes in lending. The new data only extend back to January 2013, however, and it is not possible to carry out comparisons with earlier periods. Based on these new data, new mortgage lending totalled 124 b.kr. in 2013, and new mortgage lending net of prepayments amounted to 43.6 b.kr. About 62% of new mortgages are indexed and the other 38% non-indexed. Prepayments of indexed mortgages exceed those for non-indexed loans, as there are more indexed mortgages outstanding. Net of prepayments, however, the reverse is true: non-indexed loans account for just under 62% of net mortgage lending, while indexed loans account for just over 38%. Non-indexed mortgages increased relative to the total amount of mortgage lending to households last year, from 8.7% at year-end 2012 to 11.2% at the end of 2013.

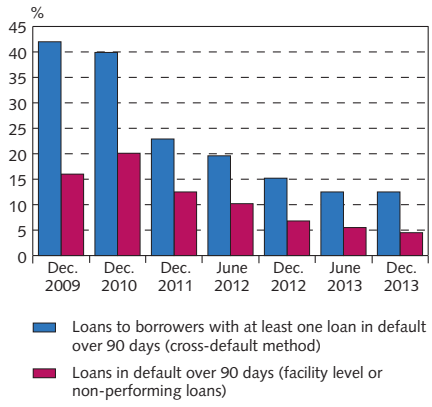
Chart V-7 shows that net new mortgage lending declined by about 1 b.kr. in February 2013 and then rose to 4.5 b.kr. in May. It remained broadly unchanged for the next five months, and indexed mortgages gained ground. From May to October, the share of indexed loans averaged 42%. From November 2013 until end-February 2014 (the most recent data), net mortgage lending declined by 60%. It is not known what caused the contraction – whether external conditions had this effect, or whether it was simply a temporary anomaly. New

Chart V-7
New DMB mortage lending[1]
January 2013 - February 2014



1. Commercial banks and savings banks.
Source: Central Bankf of Iceland.

Chart V-8
Default ratios of the three largest commercial banks[1]



1. Parent companies, book value.
Sources: Financial Supervisory Authority, Central Bank of Iceland.

legislation on consumer loans entered into force in November, but the banks themselves think it had very little impact on new mortgage lending. The new law did incorporate higher cost-of-living references for single parents and families with children, however, which could have had some effect. An expert group tasked with examining reduction of principal on indexed mortgage debt presented its recommendations at the end of November, and it is possible that some consumers were reluctant to buy a home while the proposals were still in the introductory stages and not incorporated into the law. This is particularly the case for refinancing and assumption of mortgages upon the purchase of a new property, as the reduction of principal is supposed to take place over a period of four years. For example, there have been reports that, while implementation is uncertain and the statutory framework is not yet in place, banks have been unwilling to confirm that borrowers would be permitted to use third-pillar savings to reduce the principal of new loans taken to refinance previous debt after 1 December 2013. It is therefore important to eliminate this uncertainty. It is likely, though, that new legislation on write-downs will be passed before the spring legislative session ends in May.

General HFF lending declined by 3 b.kr. year-on-year, to a year-end 2013 total of 10 b.kr. Prepayments totalled nearly 18 b.kr. over the same period and were broadly unchanged from 2012. Net new indexed HFF lending was therefore negative by 8 b.kr. in 2013. This is a radical change from 2011, for instance, when new loans amounted to 21 b.kr. and prepayments were 10 b.kr. New mortgage loans from pension funds totalled just over 8 b.kr. in 2013, an increase of 1 b.kr. year-on-year. Further discussion of the Housing Financing Fund and the pension funds can be found in Chapter VI.

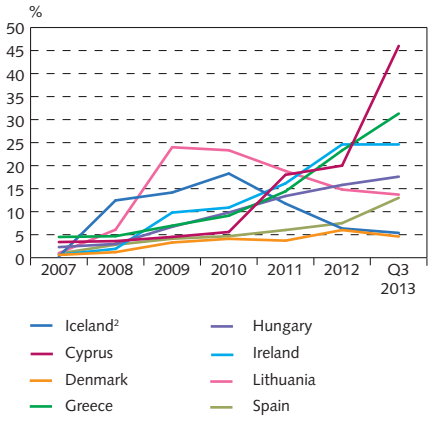
Default continues to decline

Private sector debt restructuring has slowed down, as can be seen in the three large commercial banks' declining default ratios, from 15.2% at year-end 2012 to 12.5% at the end of 2013. These figures are based on the very conservative cross-default method, which assumes that all of a customer's loans are in default if one is in arrears or payment is deemed unlikely (Chart V-8). Actually, the default ratio remained unchanged in the latter half of 2013, but if Arion Bank's takeover of the Drómi-ESÍ household loan portfolio were excluded, it probably would have been below 12%. Furthermore, it should be noted that the Financial Supervisory Authority required a change in methodology for defining default at mid-year. With that change, the three large commercial banks' corporate default ratios rose by 3.3% in August and September. If adjustments are made for these changes, default in the second half of 2013 declined broadly as it did in the first half of the year. Nonetheless, the decline in default has slowed down in comparison with earlier periods. In 2013, the share of loans being restructured declined by 1%, as opposed to 6% in 2012. The loans currently being restructured are probably more difficult cases that were allowed to wait and therefore remained unresolved. This assumption is supported by the fact that the amount of non-performing loans classified as frozen

increased, while other non-fulfilment, including legally disputed loans, remained virtually unchanged in 2013.

Another measure of default is the one generally used for international financial reporting. According to this method, even though a customer has one loan in arrears by 90 days or more, that customer's other loans are not considered to be non-performing. By that criterion, 4.5% of the banks' loans were in default at year-end 2013, a decline of a percentage point between years. Other things being equal, a bank with a sound loan portfolio generally has a default ratio of 1-2%. Internationally, default ratios have risen sharply in the recent past, particularly in countries facing economic difficulties (Chart V-9). In Cyprus, for instance, nearly half of commercial banks' loans are in default. Chart V-9 shows that efforts to reduce default ratios have been successful in countries where non-performing loans skyrocketed after the financial shocks of 2008, Iceland among them. Clearly, efforts to reduce default ratios have borne more fruit in Iceland than in many other countries hit hard by the financial crisis. Default ratios will probably continue to fall in Iceland this year, but as yet it is unclear whether the peak has been reached in countries whose default levels are still rising. GDP growth forecasts for the current year are positive, except in Cyprus, but it is uncertain whether increased economic activity in the other countries will be enough to turn the trend around. The situation in Cyprus is still very difficult, but the European Union (EU) projects that, after a 5% drop in GDP this year, the contraction should end next year with output growth turning slightly positive.

Chart V-9
Default ratios in European comparison[1]



1. Year-end figures 2007-2012. 2013: 3rd quarter unless otherwise stated. Banks' non-performing loans as a percentage of gross loan portfolio w/o write-downs. Non-performing loans are gross loans in default and not only the amount in default. 2. 2007: Figures estimated from the annual accounts of the failed banks. 2008: Central Bank estimates.

Sources: International Monetary Fund, World Bank, Financial Supervisory Authority, Central Bank of Iceland.

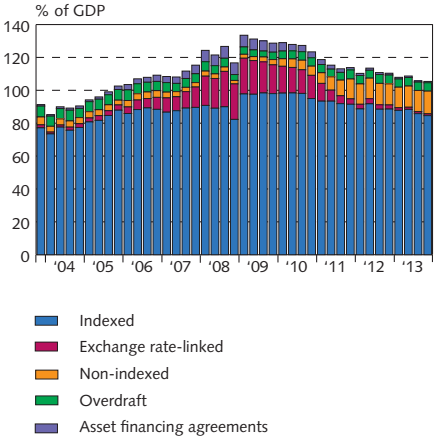
Households

Household balance sheets continue to improve

Household debt is estimated at just over 105% of GDP as of year-end 2013. In real terms, it declined by 3.2% in 2013, which represents a real decline of 0.5% more than in the previous year. As a share of GDP, household debt fell by just over 5% in 2013, as opposed to 3.5% in 2012. Developments in 2013 indicate that the household deleveraging that began early in 2009 is still underway. The reduction in 2013 is attributable in large part to recalculation of illegal exchange rate-linked loans, debt retirement, and instalment payments, which have exceeded new loans granted. Household debt will continue to decline in coming years, as the Government plans to write down indexed household debt by 72 b.kr. through the Treasury and to achieve an additional 70 b.kr. reduction by allowing households to use third-pillar pension savings to pay down debt. The debt relief measures are to be distributed over a four-year period, with write-downs amounting to just under 8% of estimated year-2014 GDP.

The debt write-down will increase households' net wealth, which will increase their willingness to spend, thereby stimulating private consumption. In some instances, the increase in collateral capacity will prompt households to take on more debt to offset the write-down; therefore, it is likely that the net reduction in household debt will be somewhat less than 8% of GDP.[2]

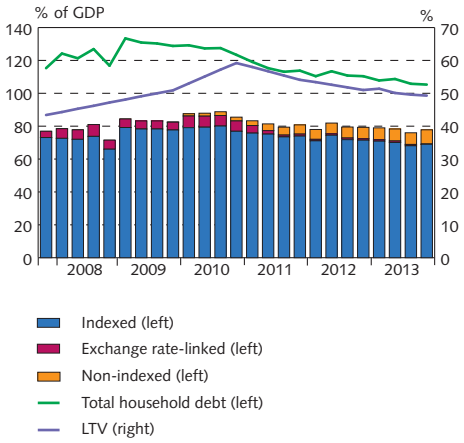
Chart V-10
Household debt as % of GDP
Q4/2003 - Q4/2013



Sources: Statistics Iceland, Central Bank of Iceland.

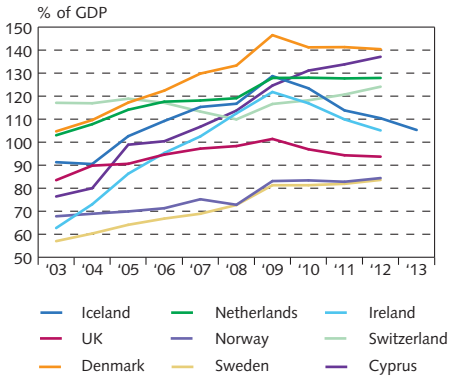
2. If households' pension fund assets are included, their net asset will increase by 5½% of GDP.

Chart V-11
Household mortgage debt as % of GDP and real estate values
Q4/2007 - Q4/2013



1. Household mortgage debt as % of households' total real estate assets.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-12
Household debt in European comparison
2003-2013



Sources: Eurostat, Statistics Iceland, Central Bank of Iceland.

At year-end 2013, indexed household debt amounted to 84% of GDP, while non-indexed debt totalled 14%, overdraft loans 5%, exchange rate-linked loans 1%, and asset financing agreements 1% (see Chart V-10). The main changes in debt composition in 2013 are that indexed loans declined by 4.1% of GDP, exchange rate-linked loans by 1.4%, and overdraft loans and asset financing agreements by 0.3%. Non-indexed loans increased by about 1% of GDP, however. The size of last year's decline in indexed debt is noteworthy, as it constitutes about half of the reduction the Government's debt relief package is intended to achieve. Non-indexed debt continues to gain ground. Indeed, it was the only type of household debt to increase as a share of total debt, rising from 16.5% of total debt as of end-2012 to 18% at the end of 2013. In krónur terms, non-indexed household debt rose by 14% in 2013. Because the Government's debt relief package focuses solely on indexed loans, it will reduce indexed loans as a share of total debt, and non-indexed debt will increase accordingly.

The rise in non-indexed debt is due primarily to mortgage financing. Non-indexed mortgage debt rose from 0.1% of GDP at the beginning of 2010 to 8.7% as of end-2013 (see Chart V-11). The increase in 2013 amounts to just under 2% of GDP. At the same time, the share of indexed mortgages has fallen from almost 80% of GDP to 69%, with the reduction in 2013 measuring about 2.5%. Due to the decline in mortgage loans in 2013 and rising real estate prices, the loan-to-value (LTV) ratio for household mortgage debt measured 49.3% by the end of the year, falling below 50% for the first time since 2009. Households' housing equity therefore exceeds their mortgage debt. The LTV ratio peaked at just over 59% at the end of 2010.

In January 2014, an expert group appointed by the Prime Minister submitted its recommendations on discontinuing indexation of new consumer loans. The expert group proposes that indexation be banned on new annuity loans with a term longer than 25 years, and that incentives for non-indexed borrowing and lending be increased. If the group's proposals are heeded, this would be a major change in the financing options available to consumers, as some 90% of indexed loans consists of annuity loans of 25 years or more. Because non-indexed loans have been gaining in popularity and will probably continue to do so (in part because of the Government's plans to reduce indexed household debt principal), the question is whether there is a need for such broad-based measures to increase the weight of non-indexed debt.

A more detailed discussion of the expert group's recommendations on discontinuing indexation can be found in Box V-1.

Icelandic households' debt position continues to improve in international comparison

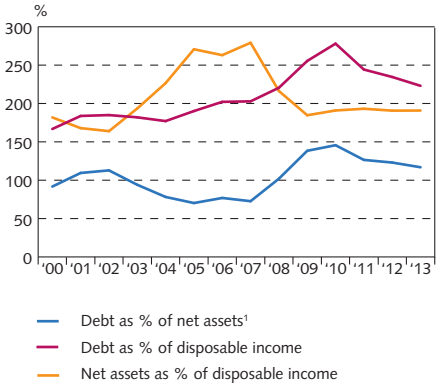
Shortly after the turn of the century, Iceland's level of household debt relative to GDP was similar to that in Denmark and Holland, whereas Switzerland's household debt-to-GDP ratio was highest. The ratio was much lower in most of the countries with which Iceland prefers to compare itself, however. Chart V-12 shows that, in the latter half

of the last decade, household debt rose sharply in Iceland and in countries such as Ireland, Cyprus, and Denmark. Icelandic household debt peaked at 133% of GDP in mid-2009, measuring 130% of GDP at the end of that year. Since then, the ratio has fallen rapidly, due both to reduced nominal debt and to GDP growth, which has been stronger in Iceland than in most industrialised countries in recent years. As of year-end 2013, Iceland's household debt had fallen by nearly 30% of GDP from the peak. This is a dramatic change in comparison with countries with high household debt levels. For instance, household debt has continued to rise in Switzerland and Cyprus and has remained broadly unchanged in Denmark and Holland. Cyprus is likely to have the highest household debt-to-GDP ratio in coming years, however, as the European Union (EU) projects that its GDP will contract by 6% and 5%, respectively, in 2013 and 2014.[3] Of the countries included in Chart V-12, the household debt-to-GDP ratio has only fallen in two of them: Ireland and the UK. As the Icelandic Government's debt relief package will reduce indexed household loan principal, the household debt ratio will fall as well, and in coming years it may approach the levels prevailing in Norway and Sweden, which have traditionally been much lower than in Iceland. In making this comparison, however, it is appropriate to bear in mind that home ownership is much more common in Iceland than in most other countries and that pension assets are among the highest known.

Households' financial position improves

The economic recovery taking place in 2011 and the first half of 2012 slowed down markedly in the second half of 2012, casting a shadow on households' financial position. GDP growth had weakened, and the near-term outlook was for more sluggish growth in domestic economic activity than had previously been forecast. Real disposable income declined by 0.5% between 2011 and 2012, for example. Since then, however, both the overall economy and households' position have developed much more positively than was expected at that time. GDP growth measured 3.3% in 2013, a post-crisis record, and real disposable income grew 4.1%. Debt as a share of disposable income has continued to decline. It fell by 11% in 2013, to 223% at the year-end, after peaking at 280% in 2010. According to *Monetary Bulletin* 2014/1, real disposable income is forecast to rise by 3.7% in 2014. If the forecast materialises and if the Government's plans to reduce indexed household debt principal are implemented, it will not be long before the ratio falls below 200% – for the first time since 2005. The Central Bank expects a surge in private consumption in 2014, with growth projected at 4.6% this year, as opposed to 1.6% in 2013, due in large part to the Government debt relief package. Other Government measures such as the 0.8% reduction in the middle income tax bracket (increasing disposable income by about 5 b.kr.) and the extension and expansion of the authorisation to withdraw third-pillar pension savings (increasing the maximum monthly withdrawal from 416,667 kr. to 600,000 kr.) will make an impact as well.

Chart V-13
Households' financial position
2000-2013

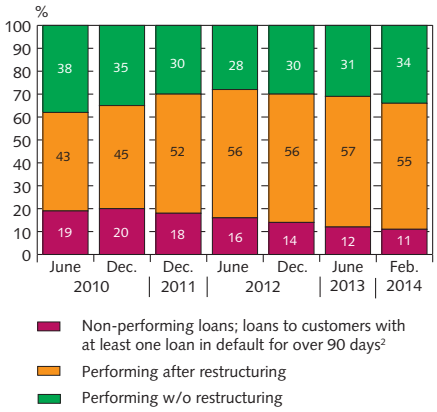


1. Including real estate, motor vehicles, bank balances, and various securities, but excluding pension assets.
Source: Central Bank of Iceland.

3. See: http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee2_en.pdf

Chart V-14

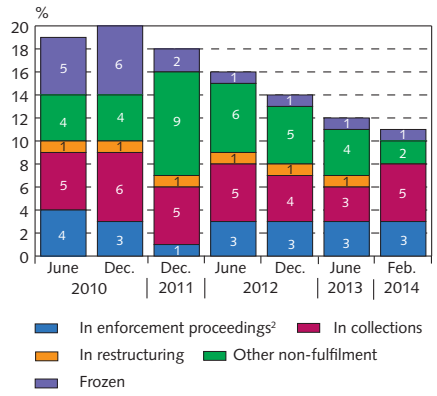
Status of loans to households from the three largest banks and the Housing Financing Fund[1]



1. Parent companies, book value. 2. Non-performing loans are defined as loans in default for over 90 days or deemed unlikely to be paid. The cross-default method is used, i.e. if one loan taken by a customer is non-performing, all of that customer's loans are considered non-performing.
Source: Financial Supervisory Authority.

Chart V-15

Status of household loans in default from the large commercial banks and the Housing Financing Fund[1]



1. Parent companies, book value. Non-performing loans are defined as loans in default for over 90 days or deemed unlikely to be paid. The cross-default method is used, i.e. if one loan taken by a customer is non-performing, all of that customer's loans are considered non-performing. 2. The share of loans in enforcement proceedings and collections declined in December 2011 because the HFF did not send out dunning letters or forced sale requests in the latter half of the month.
Source: Financial Supervisory Authority.

In the first three months of the year, withdrawals totalled 4.8 b.kr., as compared with 2.9 b.kr. in the first quarter of 2013. Early withdrawals of third-pillar savings totalled 93.1 b.kr. between March 2009 and March 2014. The unemployment rate for 2014 is projected at 3.7%, a decline of 0.7% from 2013. These developments make it clear that households' position has improved and will continue to do so.

Default ratios continue to decline

The percentage of loans in default continues to fall. Using book value and the cross-default method, about 11% of total loans granted to households by the three largest banks and the Housing Financing Fund (HFF) were in default at the end of February 2014,[4] down from 14% at the end of 2012. The ratio probably would have fallen below 10% by the end of last February had it not been for Arion Bank's takeover of Drómi and ESÍ's household loan portfolio. The default ratio was 20% in June 2011 and has therefore fallen by nearly a percentage point per quarter since that time.

The decline in default over the past 14 months is due to a 3% decline in other non-fulfilment (5% at year-end 2013) and a 1% drop in loans undergoing restructuring. On the other hand, loans in collections have risen by 1% and frozen loans and loans in enforcement proceedings are unchanged. These data suggest that household debt restructuring is moving in the right direction, as loans in enforcement or collections are on the rise and loans in restructuring and other non-fulfilment are on the decline. The decline in loans classified under "other non-fulfilment" is due mainly to a sharp decline in loans where the borrower is servicing only a portion of a loan facility. These loans have either been sent to collections, are performing after restructuring, or are now being serviced normally by the borrower.

Long-awaited decline in default register numbers

Household loans in default to the three largest commercial banks and the HFF began to decline in the second half of 2010, but the default register has developed quite differently since then. While household default declined from 20% at year-end 2010 to 12% in June 2013, the number of individuals on the default register rose by 5,000. This is an unfavourable development, but as has been discussed in previous issues of *Financial Stability*, there can be a considerable time lag between reductions in credit institutions' default figures and the number of individuals on the default register. Since mid-2013, however, the situation has changed for the better. At the end of February, there were 27,417 individuals on the default register (see Chart V-16), a decline of 890 from the end-July 2013 peak. This is also the lowest number in 13 months, or since January 2013, when there were 27,202 individuals on the default register.

At the end of February, 6,351 individuals on the default register were listed as bankrupt or having been subjected to unsuccessful distraint. The number of such individuals also peaked in July 2013, at 6,580, and has declined by 229 since then. Since end-2012, the number of individuals with this classification has risen by 293.

4. According to the cross-default method, if one loan taken by a customer is non-performing, all of that customer's loans are considered non-performing.

Chart V-17 shows the number and percentage of individuals added to and taken off the default register, based on a six-month average. The chart shows that the number of individuals added to and removed from the register was more or less in balance in August 2012. That equilibrium only lasted a month, however, before new additions to the default register surged again, peaking in mid-2013. Although the number of individuals on the default register rose during this period, there was a positive development at the same time, as the number of persons dropping off the register each month continued to rise, reaching a high of just over 800 at the beginning of 2014 – again, based on a six-month average. Chart V-17 shows that, in December 2013, the number of persons dropping off the default register exceeded new additions. If the number of persons who exit the register continues to rise, the total number on the default register should keep falling (Chart V-17). Credit institutions' declining default ratios support this development as well.

Chart V-18 shows that, between August 2013 and February 2014, there was very little change in the length of time that individuals currently on the default register had been there, although the number who had been on it for 49 months or more had declined by about 1,000. This positive development is supported by figures on delistings from the default register. A total of 9,141 individuals exited the default register in 2013, an increase of 28.2% from the 2012 total of 7,130. Chart V-19 shows that, of those who exited the default register in 2013, most had been there for 49 months or more. Of the delistings in 2012, the increase was greatest among this group of borrowers. Of the 11 categories shown in Chart V-19, the number of delistings in 2013 was significantly smaller for only one category: those on the register for 13-18 months. This is quite a positive development.

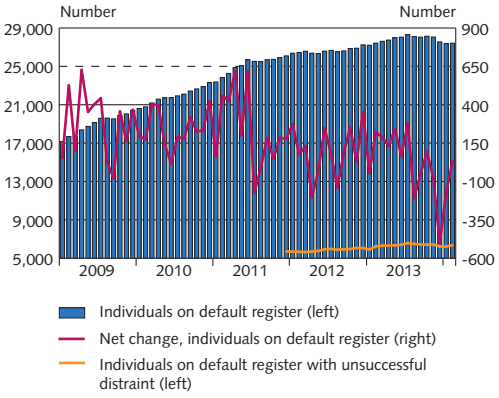
Registered individual bankruptcies totalled 396 in 2013, an increase of 44% year-on-year. The increase is probably due to the amendments made to the Bankruptcy Act at year-end 2010, when the time limit for declaring bankruptcy was shortened from four years to two. The amendment makes it easier and quicker for individuals who become insolvent to put their finances back on a sound footing.

Number of applications for debt mitigation unchanged in the recent term

A total of 5,044 borrowers had applied to the Debtors' Ombudsman for debt mitigation by the end of February. Of that total, 135 applications were in processing at the Ombudsman's Office, 643 were in the hands of supervisors, and 4,266 cases had been concluded. Some 2,200 of the concluded cases had been resolved through voluntary agreements. The debt mitigation period for these voluntary agreements is either 24 or 36 months, and in about 800 cases the mitigation period is now complete. On average, some 95% of unsecured contractual claims were forgiven.[5] Less than 3% of applications are

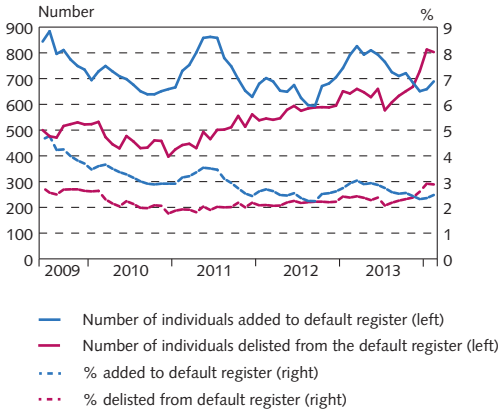
5. Contractual claims are unsecured claims negotiated between creditor and debtor. Claims are prioritised as follows: public claims such as the Student Loan Fund, tax liabilities, accumulated alimony and child support, etc., have priority; these are followed by statutory liens such as property tax and fire insurance. Next in priority are real estate-backed claims, followed by unsecured contractual claims.

Chart V-16
Individuals on default register, bankruptcy, and unsuccessful distraint
Monthly data, January 2009 - February 2014



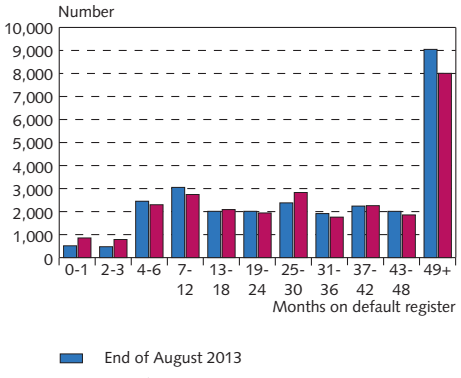
Source: CreditInfo.

Chart V-17
Number and % of individuals added to or removed from the default register
6 month average, June 2009 - February 2014



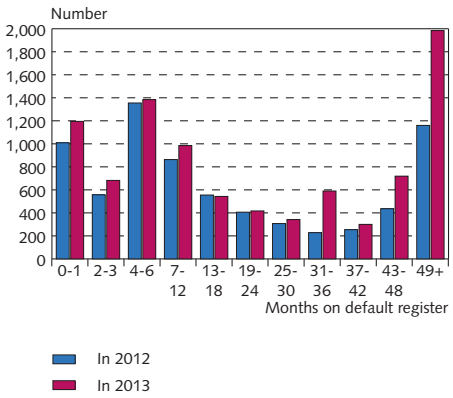
Source: Creditinfo.

Chart V-18
Individuals on default register[1]



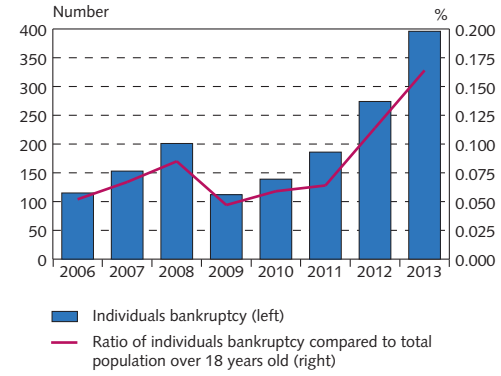
1. By number of months on default register.
Source: Creditinfo.

Chart V-19
Number of individuals of default register[1]



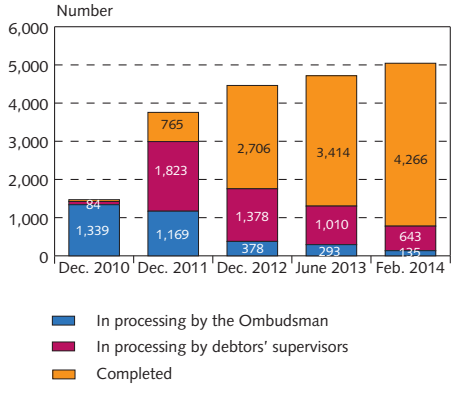
1. By number of months on default register.
Source: Creditinfo.

Chart V-20
Individuals bankruptcy[1]



1. Total for entire year.
Sources: Council of District Court Administration, Statistics Iceland.

Chart V-21
Status of applications filed with the Debtors' Ombudsman



Source: Debtors' Ombudsman.

therefore still being processed by the Ombudsman's office, 13% are in the hands of supervisors, and about 85% have been concluded. The status of debt mitigation applications has therefore changed radically since year-end 2012, when nearly 400 (or 9%) were being processed by the Ombudsman's office and another 31% were being handled by supervisors.

The number of applications for debt mitigation has changed little in the recent term. Between September 2013 and February 2014 there were 254 applications, as opposed to 219 for the same length of time before September 2013, an increase of 16%. The composition of the applicant group has changed, however: applicants are younger, the share of individuals has risen, and far fewer live in owner-occupied housing. In 2013, about 42% of applicants lived in their own homes, as opposed to 63% in 2010. Applicants' asset and liability position has changed radically as well. In 2010, their average assets and liabilities were valued at 15.8 m.kr. and 33.6 m.kr., respectively, as opposed to 9.4 m.kr. and 18.5 m.kr., respectively, in 2013. Their average ability to pay (before loan principal and interest expense) has changed even more – from 81,300 kr. per month in 2010 to 17,500 kr. per month in 2013. For those who have applied for debt mitigation so far in 2014, this figure has been negative.

Outlook brighter for households

Households' financial position began recovering slowly in 2012. The recovery accelerated in mid-2013 and outpaced the projections from the beginning of the year. For instance, real disposable income rose by 4.1% during the year, after having fallen by 0.5% in 2012. The labour market has firmed up and unemployment has continued to decline, as have inflation and inflation expectations. The reduction in total debt shows in reduced debt service, and rising real estate prices have strengthened households' equity position.[6] The reduction in household debt is a strong indication that restructuring efforts have been successful.

The outlook for 2014 and beyond is positive for Icelandic households. The Government's debt relief measures will strengthen households' financial position still further, as household equity will rise and debt service will fall. Private consumption is expected to increase markedly this year and next year as a result of the debt relief package. Moreover, 2014 is the first year since the beginning of 2009 to see a marked decline in the number of individuals on the default register – a trend that is likely to continue. The outlook for Icelandic households is therefore brighter than it has been in a long time.

Companies

Firms' economic environment

The economic situation has improved in the recent term for Iceland's principal trading partners, and the output growth outlook is margin-

6. At the end of February 2014, the nominal twelve-month increase in capital area house prices was 8.7%, and the real increase was therefore 6.4%.

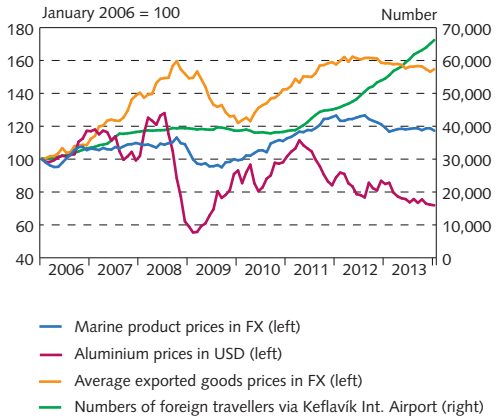
ally better now. Considerable uncertainty remains, however. Terms of trade have seldom been as weak as they are currently, and Iceland's goods exports are expected to contract by nearly 1% this year. Commodity prices are expected to fall in coming years as well – food prices in particular – but demand for fish products is projected to increase.[7] Marine product export prices have remained unchanged in recent months, it is hoped that they will rise in coming months as demand firms up. Aluminium prices continued to slide in the second half of 2013, albeit at a slower pace than in the first half. Further declines are expected in the near future, in spite of increased demand, as producers concentrate on destocking the surpluses that have accumulated in recent years. Falling aluminium prices have a particularly adverse effect on Icelandic energy companies, whose wholesale prices are linked to aluminium prices in many cases. To a degree, though, energy companies have hedged against unfavourable price developments in the short term.[8] Although terms of trade are poor, a number of positive developments have improved companies' situation. Output growth has been stronger in Iceland than in most developed countries, inflation expectations have subsided, and the króna has been more stable than often before.

Tourism-generated FX inflows hit record highs

The surge in tourism-generated foreign exchange inflows has counteracted the decline in export revenues from marine products and aluminium. The number of tourists visiting the country grew by 21% between 2012 and 2013, with the increase concentrated outside the peak summer season. In February, March, and December, for example, the number of visitors nearly doubled year-on-year. Total foreign payment card withdrawals in Iceland have risen in tandem with the number of foreign visitors, growing by more than 18% year-on-year in real terms. Foreign exchange inflows from tourism have never been as high as in 2013, with the payment card turnover balance positive by 12.7 b.kr., as opposed to just under 1 b.kr. in 2012. Before 2012 it was usually negative. Average spending per foreign tourist was lower than in recent years, however. This average, obtained by dividing total foreign payment card withdrawals by the number of foreign tourists travelling through Keflavík International Airport, was about 80,000 kr. during the 2003-2007 period.[9] It peaked in 2011, at 127,000 kr., and had fallen to approximately 119,000 kr. by 2013, a decline of 8,000 kr. in two years.[10] It could be that average spending has declined because average stays are shorter. The increase in visitor numbers is naturally a boon for tourism operators, and it is hoped that the benefits will spill over into sectors such as retail trade and services.

Chart V-22

Developments in exported goods prices and number of foreign visitors[1]

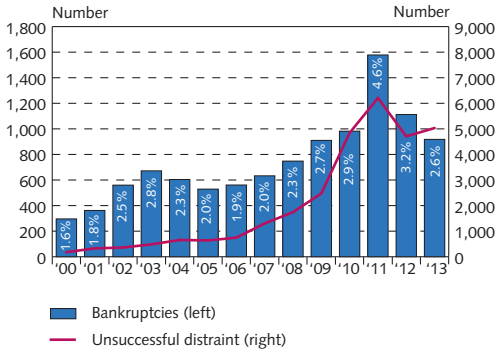


1. The average price for export products and the price for marine products in foreign currency are calculated by dividing there prices in icelandic krónur by the export-weighted trade basket. Monthly data is used for marine products and 12 month average for export products and number of foreign visitors. LME aluminium prices are in US dollars and show monthly averages and the most recent aluminium price.
Sources: Icelandic Tourist Board, London Metal Exchange, Statistics Iceland, Central Bank of Iceland.

Chart V-23

Corporate bankruptcies and unsuccessful distraint

Total for entire year; 2000-2013[1]

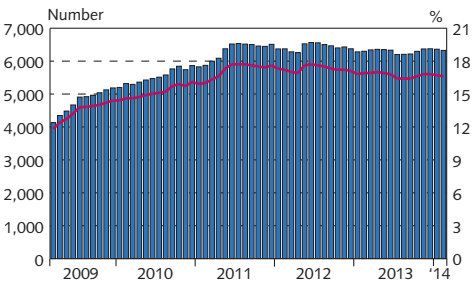


1. The percentages show bankruptcies as a share of the number of corporations.
Sources: Registers Iceland, Statistics Iceland.

Chart V-24

Companies in serious default

Monthly data, March 2009 - February 2014



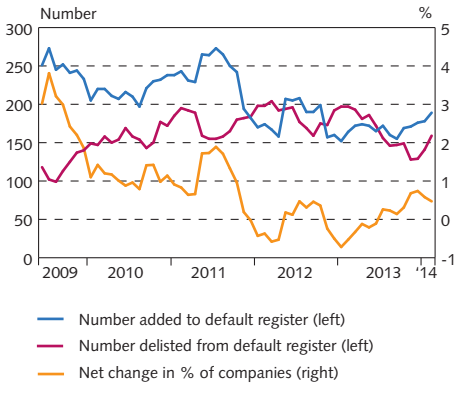
Source: CreditInfo.

7. For further discussion, see *Monetary Bulletin* 2014/1
8. According to the companies' annual accounts, about 20% of OR's revenues from energy sales and nearly half of Landsvirkjun's are contractually linked to global aluminium prices.
9. At constant 2013 prices.
10. It should be noted that these figures include only foreign tourists' payment card turnover. They do not include cash brought to the country and converted to krónur for spending in Iceland.

Chart V-25

Number and net change in % of companies added to or delisted from the default register

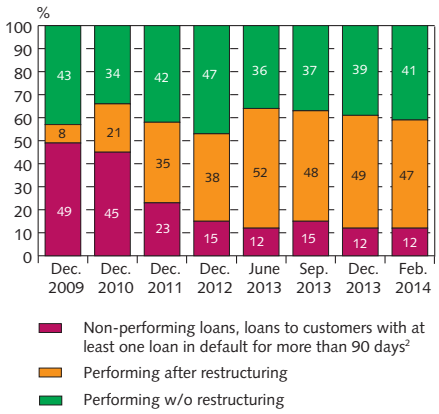
6-month average, June 2009 - February 2014



Sources: CreditInfo, Central Bank of Iceland.

Chart V-26

Status of the three largest commercial banks' corporate loans[1]

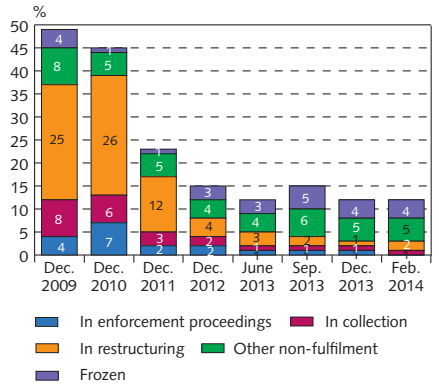


1. Parent companies, book value. 2. Non-performing loans are defined as loans in default for more than 90 days or deemed unlikely to be paid. The cross-default method is used; that is, if one loan taken by a customer is non-performing, all of that customer's loans are considered non-performing.

Source: Financial Supervisory Authority.

Chart V-27

Status of non-performing corporate loans[1]



1. Parent companies, book value. Non-performing loans are defined as loans in default for more than 90 days or deemed unlikely to be paid. The cross-default method is used; that is, if one loan taken by a customer is non-performing, all of that customer's loans are considered non-performing. Corporate loans include loans granted by the three largest commercial banks.

Source: Financial Supervisory Authority.

Bankruptcies on the wane, but default register numbers remain unchanged

Corporate bankruptcies have declined sharply in the past two years. At the peak in 2011, about 4.6% of companies with actual commercial operations were declared bankrupt (Chart V-23). By 2013, however, that figure had dropped by two percentage points, to 2.6%. A total of 918 firms were declared bankrupt in 2013. Unsuccessful distraint measures were more numerous in 2013 than in 2012, however, rising by 7%, from 4,708 to 5,033. As in 2012, most bankruptcies were among companies in building and construction, on the one hand, and wholesale and retail trade and motor vehicle repair, on the other. About 38% of all bankruptcies during the year were in these two sectors, each of which accounted for about 19%. Bankruptcies were also relatively common among real estate companies and financial and insurance firms. There were 2,983 new company registrations in 2013, including 2,312 operating companies, which accounted for 78% of the total. A total of 1,938 new private limited companies were registered during the year. Because of deregistrations and bankruptcies, however, the number of operating companies rose by 1,059 year-on-year, including 768 private limited companies.

Although bankruptcies have declined steadily in number, the same cannot be said about the CreditInfo default register. The number of firms on the default register peaked in mid-2011, but the share of companies in default has fallen very little since then and has hovered around 17% (Chart V-24). Developments in recent months suggest that the corporate default register will not shrink in the near future, as there were about 10% more firms added to the register in H2/2013 than in H2/2012. The same is true of the first two months of 2014, although the difference between the percentage of companies added to and removed from the default register narrowed slightly in January and February. It should be noted, though, that delistings from the default register are subject to a time lag, as there is a delay before companies drop off the register after having satisfied their creditors.

Default on DMB loans continues to decline

Instances of default on corporate loans from the three largest commercial banks have continued to subside, falling by 3.2 percentage points year-on-year to measure 12.1% in December 2013.[11] Actual declines were larger than this, however, as the Financial Supervisory Authority (FME) required a change in methodology for defining default at mid-year, which increased default numbers by 3.3 percentage points in August and September. The largest increase was in the categories "frozen loans" and "other non-fulfilment", which include debt that customers are not servicing in full. Since September, default has fallen by 2.9 percentage points. Overall, the largest decline was among corporate loans in restructuring. About 26% of corporate loans were in restructuring in 2010, but by 2012 the share had fallen

11. Based on book value and the cross-default method.

to about 4.2%, and by February 2014 it was down to less than 1.9%. As before, however, there is uncertainty about some exchange rate-linked loans, and this has delayed the restructuring of some firms. Loans that are performing after restructuring accounted for 47% of the loan portfolio in February 2014, an increase of almost 9 percentage points year-on-year.

Because the banks gave priority to large companies' debt restructuring, these firms' default numbers declined most during the period right after the new banks were established. Default among small and medium-sized firms declined much more rapidly than among large firms in 2013. In December 2013, default numbers were 7.6 percentage points lower than at year-end 2012 among small firms, 11.3 percentage points among medium-sized firms, and less than half a percentage point among large firms.

Closer scrutiny of the methods used by the banks to restructure corporate debt reveals that substantial debt has been written off, which has greatly improved the equity position of Iceland's largest firms. Later in this chapter is a discussion of the position of Iceland's 500 largest firms in terms of turnover. At the beginning of the restructuring period, when uncertainty was still considerable, the banks wrote off little debt. After 2011, they began writing debt off more frequently, but at that time they were also investing more effort in recalculating firms' exchange rate-linked loans. Loan maturities have also been lengthened in many cases, although the option of converting debt to equity has not been used to any significant degree.[12]

Corporate debt declines

Icelandic firms' debt to domestic and foreign financial institutions, plus their issued marketable bonds, totalled 141% of GDP at the end of 2013, after falling 24 percentage points between years. Naturally, the pace of the decline in the debt-to-GDP ratio has slowed down, after peaking at nearly 73 percentage points between Q4/2010 and Q4/2011. At present, the corporate debt ratio is similar to that at the beginning of 2005. Proportionally, firms' foreign-denominated debt has declined most, as it accounts for more than two-thirds of the reduction during the year. Corporate debt levels have fallen sharply since the collapse of the banking system, and increased GDP growth has reduced the debt-to-GDP ratio in the recent term.

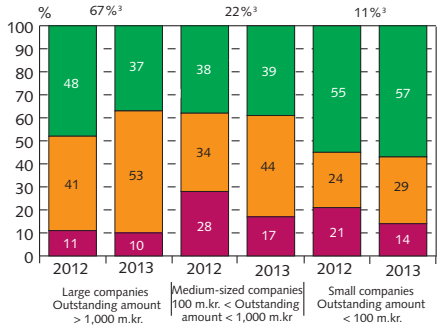
DMB loans to holding companies and construction firms have risen in comparison with loans to other sectors, while loans to fishery companies have contracted (Chart V-31). The contraction in loans to fisheries is probably due to write-offs, as data on new lending during the year indicate that the proportional increase in net new lending (new loans net of prepayments) is greatest in that sector (Chart V-33).

12. Corporate loans that are performing after restructuring are classified by the measures used for restructuring. In many cases, more than one measure is used; in such instances, the loans are classified in a predetermined order, based on the severity of the restructuring measures used. Loans to each borrower can only be listed in one category, however, and it is therefore unclear from the data whether more than one measure was applied to each loan.

Chart V-28

Status of the three largest commercial banks' corporate loans, by claim amount[1]

Year-end 2012 and 2013

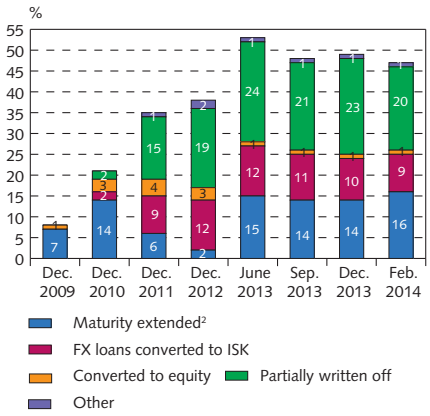


1. Parent companies, book value. 2. Non-performing loans are defined as loans in default for more than 90 days or deemed unlikely to be paid. The cross-default method is used; that is, if one loan taken by a customer is non-performing, all of that customer's loans are considered non-performing. 3. Percentage of total loans.

Source: Financial Supervisory Authority.

Chart V-29

Corporate debt restructuring measures[1]



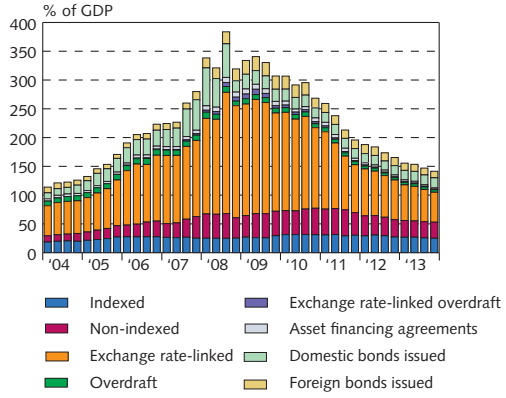
1. Parent companies, book value. Corporate loans include loans granted by the three largest commercial banks. 2.This is a residual item, but maturites for loans that fall in other categories might also have been extended.

Source: Financial Supervisory Authority.

Chart V-30

Corporate debt as % of GDP[1]

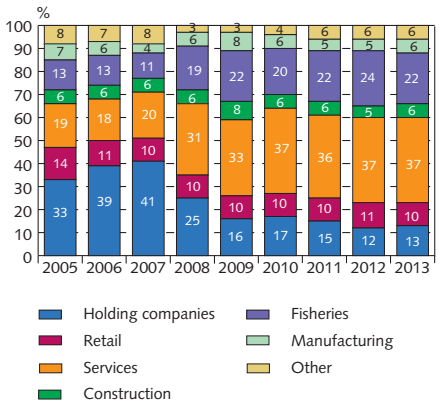
Q1/2004 - Q4/2013



1. Debt owed to domestic and foreign financial undertakings and market bonds issued.

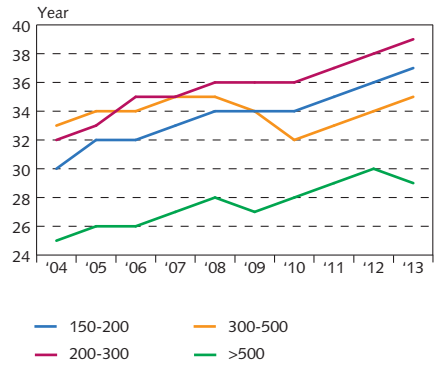
Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-31
DMB lending to companies, by sector[1]



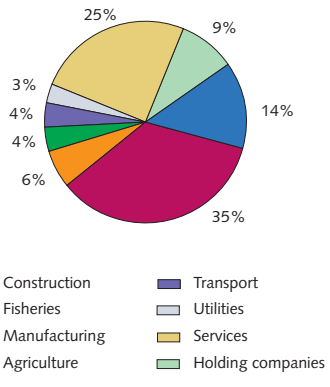
1. Parent companies, book value.
Source: Central Bank of Iceland.

Chart V-32
Average age of Icelandic fishing vessels by size, measured in gross tonnes[1]
Average age at the beginning of each year



1. A ship's gross tonnage is its volume as measured according to the International Convention on Tonnage Measurement of Ships from 1969. It includes the total volume of all closed compartments of the ship.
Sources: Icelandic Register of Ships 2004-2013.

Chart V-33
Net new corporate lending[1] by the three commercial banks in 2013, by sector
Total net new lending to firms amounted to 80 b.kr.[2]



1. New loans net of prepayments. 2. Net new loans to retail firms were negative by slightly under 1 b.kr.
Source: Central Bank of Iceland.

Financing and the investment outlook

Corporate bond issuance has picked up in the past two years, and institutional investment funds have been active in issuing listed bonds, primarily to finance real estate projects. Issuance of unlisted bonds has grown substantially as well, which is a step towards a more effective financial market in Iceland. Much of this unlisted issuance has been in connection with the Central Bank's Investment Programme, however. Further discussion of this topic can be found in Box I-2, entitled "Shadow banking and corporate bond issuance".

According to Capacent Gallup's most recent survey among executives of Iceland's 400 largest firms, carried out in March, optimism is on the rise. Only 20% of respondents consider current conditions poor, and 42% believe they will be better in six months' time, while only 7% expect them to be worse. This is a major shift in attitude since the November 2013 survey. In November, nearly 46% considered current economic conditions poor, and only 33% believed they would be better after six months. Icelandic executives therefore appear to be relatively upbeat about the future, doubtless buoyed up by improvements in the inflation outlook, GDP growth, and exchange rate stability. About 38% of transportation, transport, and tourism executives consider current economic conditions poor, but a large share of them are nonetheless expecting this year's profits to exceed those from last year. Executives in construction and utilities companies are most optimistic that their profit margins will increase this year.

Pessimism is relatively widespread among fishing companies, with nearly 21% projecting that they will invest less in fixed operational assets this year than they did in 2013. According to the Icelandic Transport Authority's registry of ships, published at the beginning of 2013, the average age of large fishing vessels was about 29 years.[13] In general, the average fishing vessel age has been on the rise in recent years. Smaller ships – those weighing 150-500 tonnes – are about three years older, on average, than they were in 2010. Generally speaking, the expected life span of larger fishing vessels is 25-30 years. The need for investment in fixed operational assets in the fishing industry is therefore growing.

It should also be noted that, even though executives in the fishing industry envision reduced investment in fixed operational assets this year, the three large commercial banks' net lending to the fishing sector has grown the most relative to other sectors over the past 12 months. Net corporate lending totalled about 80 b.kr., some 35% of it to firms in the fishing industry.[14] In addition, about 25% of net corporate lending was to companies in the services sector, which appear to be moving away from exchange rate-linked financing. Net FX lending to the services sector contracted by 5 b.kr., while non-indexed loans increased by 23 b.kr. Overall, net FX lending to businesses excluding the fishing industry contracted, and non-indexed loans were the most popular product.

13. Based on 500 gross tonnes. At the beginning of 2013, the average stern trawler was approximately 1,300 gross tonnes.
14. Net lending refers to new loans net of prepayments.

Growth and adaptation for the 500 highest-turnover companies[15]

The 500 Icelandic companies with the largest operating revenues each year recorded strong growth in both assets and liabilities during the 2004-2007 period. A radical change took place in 2008, with the fall of the banking system and the collapse of the króna. In real terms, liabilities grew by 82% year-on-year, while assets grew by only 55%. The companies' equity ratios fell from about 32% to under 20%.[16] Domestic liabilities grew 118% year-on-year in real terms and foreign-denominated debt by 184%, also in real terms.

Although corporate debt surged between 2004 and 2008. it has fallen substantially in recent years. In some cases, debt has been written off commensurate with the company's value and capacity to pay, and in others the company has been wound up. Furthermore, illegal exchange rate-linked loans have been recalculated and some firms have made systematic efforts to deleverage. In real terms, total corporate debt has decreased approximately 34% since 2008 and is now about 20% higher than it was in 2007. Foreign-denominated debt has declined by over 53% in real terms since 2008.

In addition, their debt-to-EBITDA ratio, which reflects a company's ability to pay off its debt, was 7.6 in 2012. The debt/EBITDA ratio is often used to indicate how likely a company is to be able to fulfil its obligations. Historically, debt/EBITDA ratios have been relatively high in Iceland, averaging 7.9 over the period from 1997 to 2007. It should be noted, though, that they are generally higher among companies that are heavily reliant on credit; i.e., those that have not obtained equity market financing. This description applies to a large proportion of Icelandic firms. The debt/EBITDA ratio in Iceland rose slightly between 2011 and 2012, from 7.5 to 7.6, but it is still below the average for the decade preceding the collapse of the banking system. At present, it is similar to the level from 2006, but it would be desirable to see it move towards the 2004 figure of 6.8. Interest rates have been relatively high in Iceland in recent decades; therefore, it is even more important for Icelandic companies to maintain a strong equity position and avoid overleveraging. When the banks failed, Icelandic firms' debt service skyrocketed, pushing many companies over the edge.

The corporate debt situation appears to be moving in the right direction, but it should be emphasised that the analysis above is based on data that are more than a year old. It is therefore likely that firms' position is even better today, as the operating environment has improved slightly in the past year. Furthermore, corporate debt restructuring proceeded quickly in 2013, and many companies are making systematic efforts to deleverage. In addition, equity ratios have risen strongly in recent years, approaching 36% in 2012. The equity position of Iceland's 500 highest-turnover companies is therefore much stronger than it was during the prelude to the banking crisis.

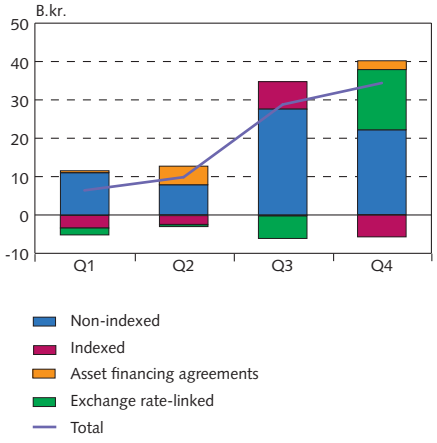
15. The analysis extended only to non-financial companies with actual commercial activities. The data were taken from corporate income tax returns.

16. The equity ratio is determined by calculating the sum of the equity of the 500 highest-turnover companies and dividing it by their aggregate assets. This same method is used later in the chapter to determine other ratios.

Chart V-34

Net new corporate lending[1] by the three commercial banks, by loan form

Q1/2013 - Q4/2013

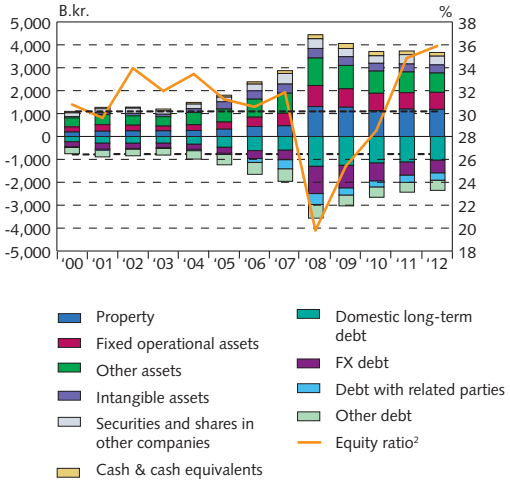


1. New loans net of prepayments.
Source: Central Bank of Iceland.

Chart V-35

Assets, liabilities, and equity ratio at 2012 prices

500 firms with the highest turnover[1]

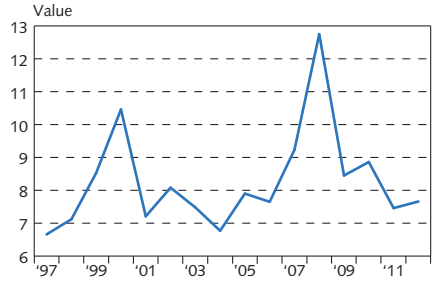


1. Based on operating revenues. 2. Sum of total equity for all 500 firms divided by the sum of their total assets.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-36

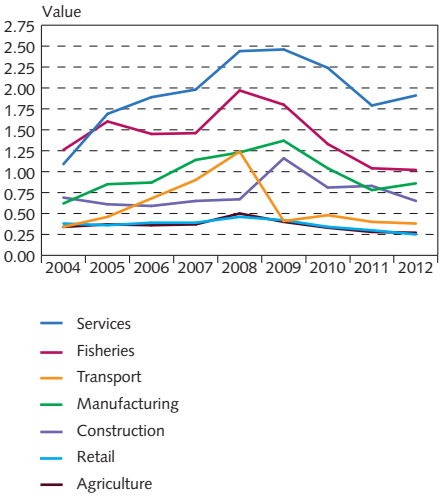
Debt to EBITDA[1]

500 firms with the highest turnover[2]



1. Sum of total debt for all 500 firms divided by the sum of their EBITDA. 2. Based on operating revenues.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-37
Total debt to total revenues by industry[1]
500 firms with the highest turnover[2]



1. Sum of total debt for all 500 firms divided by the sum of their total revenues. Total revenues is the sum of operating revenues, interest revenues and revenues from extraordinary items. 2. Based on operating revenues.
Sources: Statistics Iceland, Central Bank of Iceland.

Corporate debt rose substantially in proportional terms in almost all sectors in 2004-2008. Firms in services, fishing, industry, and transport and transportation suffered the largest increase in debt levels when the króna collapsed. In terms of total debt relative to total revenues, most sectors are in a much better position now. Services companies have lagged behind, however, due in part to the fact that their revenues are primarily in Icelandic krónur and their financing was partially in foreign currency, which means that the collapse of the currency severely dented their ability to service their debt.

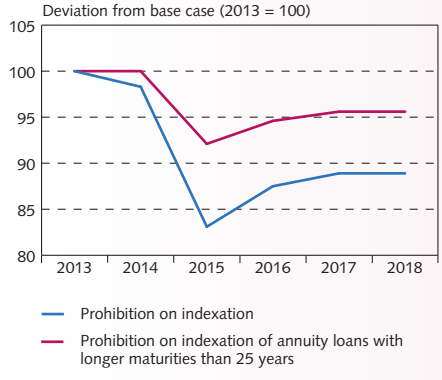
Box V-1

Recommendations from the expert group on abolition of indexation on new consumer loans

In accordance with the Government's policy statement and a Parliamentary resolution from June 2013, the Prime Minister appointed an group tasked with submitting recommendations on the abolition of price indexation from consumer loans. The group submitted its recommendations on 23 January 2014.[1] The recommendations are: 1) that it be prohibited to grant new indexed annuity loans with maturities longer than 25 years; 2) that the minimum maturity for indexed consumer loans be raised from five years to up to 10 years; 3) that restrictions be placed on loan-to-value ratios for indexed mortgage loans; and 4) that incentives for non-indexed borrowing and lending be increased.

The group recommended three incentives for non-indexed borrowing and lending: first, to make even further use of the tax incentives in the current mortgage interest subsidy system, so that subsidies are based on nominal rates for non-indexed loans and real rates for indexed loans; second, to require that financial institutions maintain a balance between indexed assets and liabilities in their balance sheets; and third, to ensure effective monitoring of loan-to-value (LTV) ratios for existing mortgages, so that higher LTV ratios require increased capital reserves from credit institutions.[2] The group also recommends that disposal of indexed mortgage

Chart 1
Housing prices



Sources: Central Bank of Iceland.

1. See http://www.forsaetisraduneyti.is/afnam-verdtryggingar/.
2. According to Article 18 of the Financial Supervisory Authority Rules on the Capital Requirement and Risk-Weighted Assets of Financial Undertakings, no. 215/2007, mortgage loans generally carry a risk weight of 100%. A 35% risk weight can be used if the loan is secured in full by a fully finished residential property used by the borrower as a residence or as a rental property, and if the loan amount is less than 80% of the property value as assessed by Registers Iceland, or of the market value, whichever is lower. A risk weight of 50% may be used if the loan is secured in full by commercial property (see http://www.stjornartidindi.is/Advert.aspx?ID=f051707c-8c23-4e99-a305-68dcb6f97a29).

loans be restricted to financing for the property in question and that LTV ratios be subject to a maximum that will vary depending on the state of the domestic economy and the payment arrangements for the loan. It is premature to discuss these ideas in depth, however, as their likely impact will depend greatly on how they are implemented.

The most sweeping change is the proposed prohibition on indexed annuities with maturities longer than 25 years, as these have been the most popular mortgage loan type since 1996, when the State Housing Board lengthened the maximum mortgage maturity from 25 years to 40. These loans have gained in popularity in the recent term. The debt service burden is lower on 40-year indexed annuity loans than on other loan types available to consumers. As a result, prohibiting them will affect borrowers, lenders, and house prices, other things being equal. In this context, it should be noted that individuals have been deleveraging in recent years.

Assessment of economic effects of abolishing indexation

The group's report includes the Central Banks' assessment of the economic effects of abolishing indexation on new mortgage loans. In that assessment, it is stated that a total prohibition on indexed loans could have a strong negative effect on house prices and therefore on the domestic economy, as higher real lending rates and higher debt service at the beginning of the loan period would reduce demand for housing. The effect of a total prohibition on indexed loans would probably be most pronounced in the second year after implementation, when house prices would be some 14-20% lower than they would be otherwise.

Ultimately, the group's recommendations entailed only a prohibition on indexed annuity loans with maturities longer than 25 years; therefore, it is clear that the economic effects will be somewhat less than the Bank's previous assessment indicated. Based on the same premises as were used in the Bank's previous assessment, it can be assumed that, in the year after the prohibition takes effect, house prices will be about 8% lower than they would otherwise have been (Chart 1). Furthermore, it can be expected that the impact on other economic variables will be somewhat weaker than they would be under a total prohibition. Private consumption will be about 1-1½% weaker and GDP growth about ½% weaker if the prohibition applies to maturities of more than 25 years (Chart 2).

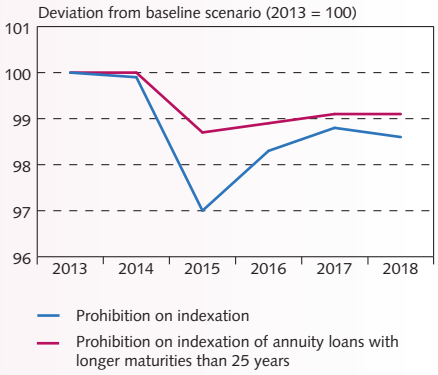
If it is no longer possible to grant indexed annuity loans for periods longer than 25 years, the lowest mortgage debt service available to consumers will rise by 25-30%. If indexation of consumer loans had been entirely abolished, the lowest debt service would have risen by more than 50%. It is likely that borrowers with lower income and/or assets will feel the effects of these changes the most. The group's report recommends that various measures be introduced to meet the needs of lower-income individuals and first-time buyers – such as better defined mortgage interest subsidies, tax deductions, and special authorisations for third-pillar pension savings withdrawals, which are intended to mitigate the adverse effects of restrictions on indexation for this group. On the other hand, it is not assumed that financial contributions from the State will increase because of support measures for these groups, and no detailed plans have been announced in this connection.

Impact on various groups in society

In order to assess further the potential impact of abolishing indexation on consumer loans, the Central Bank requested information from large credit institutions on mortgage loans granted between

Chart 2

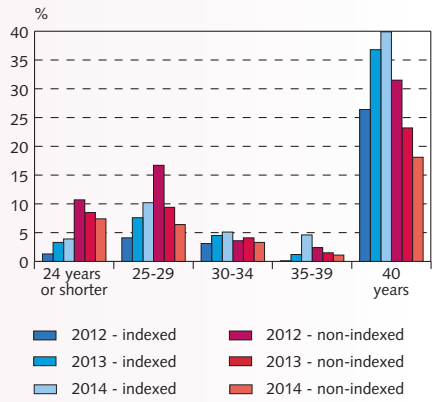
Private consumption



Sources: Central Bank of Iceland.

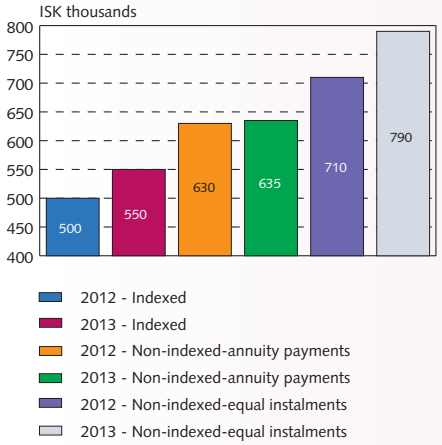
Chart 3

Granted household mortgage loans, by maturity[1]



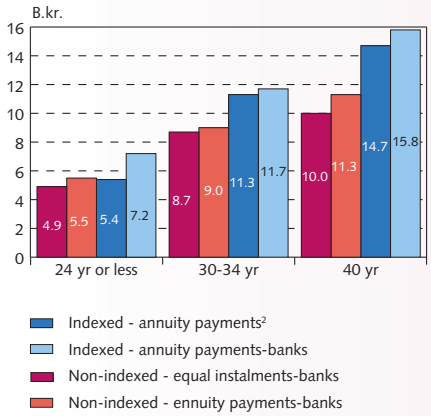
1. According to information from the three largest banks and the Housing Financing Fund. Each year counts as 100% for combined amount for indexed and non-indexed loans.
Source: Central Bank of Iceland.

Chart 4
Borrowers' average income[1]



1. Indexed loans for the three largest banks and the Housing Financing Fund and non-indexed loans only for the three largest banks.
Source: Central Bank of Iceland.

Chart 5
Average amount of household mortgages granted in 2013[1]



1. According to information from the three largest banks and the Housing Financing Fund. 2. For the three largest banks and the Housing Financing Fund.
Source: Central Bank of Iceland.

January 2012 and February 2014.[3] Chart 3 shows that demand for long indexed loans has been on the rise, particularly 40-year annuities. About 92% of all indexed loans and 97% of 40-year loans fall into this category. Indexed annuities with maturities longer than 25 years accounted for some 30% of all mortgage loans granted in 2012, but by the beginning of 2014 they constituted over half of all mortgages granted. Most likely, this is due to rising interest rates on non-indexed loans and falling real rates on indexed loans. Since the beginning of 2012, non-indexed lending rates have risen by 1-1.25%, while real indexed rates have held steady or declined. Over the same period, short-term inflation expectations declined somewhat, while long-term expectations declined less. Credit institution data show that demand is now strong for long indexed annuity loans; therefore, it is clear that a prohibition on such loans will affect demand for housing, which in turn will affect house prices.

In the request for information, credit institutions were asked to project what the impact would be if the expert group's recommendations should be implemented. Credit institutions agreed that tightened access to credit would weaken demand, with the associated pressure on house prices, and that there would probably be a contraction in mortgage lending. When asked which societal groups would feel the effects of the change most, they responded that the impact would be greatest for those who rely on long indexed annuities in order to fulfil credit assessment criteria. They were of the opinion that the changes would have adverse effects on those buying their first property, which would tend to push certain societal groups into the rental market.

Chart 4 shows that lower-income buyers tend to take indexed loans. About 90% of indexed loans are annuities maturing in more than 25 years. The higher the borrower's income, the more frequently he or she chooses loans with higher debt service and more rapid equity formation. A prohibition on long indexed loans would primarily affect lower-income borrowers. Higher-income borrowers would primarily feel indirect effects such as lower house prices and weaker economic activity.[4]

Chart 5 shows that the average loan amount rises substantially as maturities grow longer. Borrowers requesting larger loans appear to request longer maturities in order to reduce debt service. It is also interesting that the loan amounts for indexed loans are considerably higher than for non-indexed loans – about 50% longer for 40-year bank loans.

The credit institutions' responses did not indicate a connection between the borrower's age and the loan type or loan maturity. The average age of long-term borrowers and shorter-term borrowers was roughly equal, and the average age of indexed borrowers and non-indexed borrowers was broadly similar as well.

It therefore appears that the restrictions on credit supply and the increased interest rate and debt service burden on new loans will have a negative effect on the real estate market and will reduce households' equity and disposable income. Furthermore, the decline in house prices will adversely affect the nearly one-third of households whose debt exceeds their equity.[5] It is appropriate to emphasise that individuals have been deleveraging in the recent term. Increasing the pace of payments on new loans with forced measures could have a negative effect on household balance sheets and demand; therefore, it would be advisable to implement such changes in stages over a longer period.

3. The request for information was sent to the Housing Financing Fund, Arion Bank, Íslandsbanki, and Landsbankinn.
4. Some 75% of non-indexed loans have equal payments, and 25% have equal instalments.
5. Based on the end-2012 position according to income tax returns.

Box V-II

Government mortgage debt relief measures: impact on the financial system

At the end of March, the Government presented two bills of legislation based on the recommendations of a work group on mortgage debt relief. One centres on reduction of indexed mortgage principal, which is to be financed through the Treasury. The other authorises wage-earners to use their third-pillar pension savings tax-free to pay down their mortgage debt. The bills of legislation are broadly consistent with the ideas presented by the work group in November, although a few changes have been made.[1]

Earmarked tax used for prepayment of mortgage loans

It is assumed that the indexed debt reduction intermediated by the Treasury will be subject to a maximum of 4 m.kr. per household, less any debt relief assistance previously received, such as write-offs exceeding 110% of collateral value and special interest subsidies paid in 2011 and 2012 (totalling 600,000 kr. per couple and 400,000 kr. per individual). This measure will be most beneficial to those who have mortgage debt but have not experienced severe difficulties in servicing it. According to the comments accompanying the bill of legislation and data from Statistics Iceland, just under a fourth of the proposed debt reduction will revert to the 50% of households with lower income, and just over a fourth will revert to the one-sixth of households with the highest income.

According to the bill, the amount of the write-downs under this measure will be based on a portion of the increase in the CPI in 2008 and 2009, but it is unclear how large a portion that will be. The work group recommended basing the write-downs on the twelve-month rise in the CPI in excess of 4.8% between December 2007 and August 2010, while the bill is based on the calendar years 2008 and 2009. It is not clear whether 4.8% will be used as the maximum annual increase in the CPI. It is said that the total scope of the measure will be known at the end of the application period.

Tax-free mortgage payments

According to the bill of legislation on allocation of third-pillar pension savings for payment of mortgages or mortgage savings accounts, it will be permissible to allocate up to 4% of wages, plus a 2% matching contribution, tax-free to the reduction of mortgage principal. The use of third-pillar pensions savings for prepayment of mortgages will be limited to 500,000 kr. per family per year, from 1 July 2014 through 30 June 2017. It is not assumed that the Housing Financing Fund will be permitted to demand a prepayment penalty for payments made in this manner (Parliamentary Document no. 836, Chapter III). Those who do not own property during the period in question are permitted to use their third-pillar pension savings, subject to the same maximum amount, to purchase property no later than 30 June 2019.

Economic impact

The measures are broad in scope. The reduction of indexed mortgage principal could amount to 72 b.kr. over four years, and prepayment of mortgages with tax-free pension savings could amount to another 70 b.kr. Included in *Monetary Bulletin* 2014/1 is an assessment of the economic impact of the measures. According to the assessment, some increase in private consumption and domestic demand will probably accompany the measures. To a degree, the increase in demand will probably be directed at imports, which will dampen the impact on GDP growth. On the other hand, the trade

1. See Prime Minister's Office (2013). "Government Action Plan for Household Debt Relief", November 2013.

surplus will be reduced. This, together with the increase in economic activity, will cause inflation to rise higher than it otherwise would in the next few years, particularly because the spare capacity in the economy is forecast to disappear next year.

Impact on the financial system

It is planned to finance the measures by increasing the bank tax and abolishing the failed deposit money banks' exemption from the tax. The tax is calculated as 0.376% of the failed and operating financial institutions' liabilities in excess of 50 b.kr., or about 38.5 b.kr. per year. Of that total, 29.5 b.kr. will be paid by the failed banks and about 9 b.kr. by operating financial institutions (for further information, see *Monetary Bulletin* 2014/1). According to the National Budget for 2014, 23 b.kr. of the bank tax will be used to pay down indexed mortgage loans.

The bank tax for 2013 totalled 8.5 b.kr., or about a third of the profit on the banks' core operations. In order to maintain unchanged returns in spite of the increase in the bank tax, bank will have to widen their interest rate spreads by more than 0.376 percentage points, as a portion of their assets and liabilities do not bear interest. It is not unlikely that, as long as competition (including with foreign banks) prevents banks from raising lending rates, the tax on their liabilities will be shifted to a large extent over to deposits in the form of lower deposit rates. As a result, it can be expected that the increase in the interest rate spread will be somewhat less than the tax increase, or about 0.25-0.30 percentage points.[2]

Incentives for increased mortgage loan prepayments could also have a marked effect on the Housing Financing Fund (HFF) by reducing the Fund's future interest income, as the bonds it uses for funding are non-callable. In addition, the reduction in debt will create increased collateral capacity, which will further exacerbate the Fund's prepayment risk. These effects are highly dependent on developments in domestic interest rates.

Weighted interest rates on HFF funding excluding equity were 4.3% at year-end 2013, and the average time to maturity of its financial assets was just under 11 years. At present, the yield on HFF bonds with a 10-year average time to maturity is about 3.35%. Assuming unchanged interest rates, about 300 m.kr. will be lost in 2014 because of the interest rate spread, and the loss will increase each year until 2017, when it will be 1.2 b.kr. per year and remain there, in line with the average time to maturity of the Fund's financial assets. For the first four years, the loss will amount to just over 3 b.kr.

The HFF's increased prepayment risk because of increased collateral capacity will be determined by households' loan-to-value (LTV) ratios. It can be assumed that collateral capacity for refinancing will develop in the amount of almost 100 b.kr.[3] If none of the roughly 10 b.kr. in non-performing loans with LTV ratios in the 81-100% range are returned to performing status, about 90 b.kr. could become prepayable following the debt reduction. The resulting interest expense could total nearly 1 b.kr. per year. The extent to which these prepayments materialise will depend on interest rate developments during the period.

2. The Central Bank's analysis as presented in *Monetary Bulletin* 2014/1 does not assume that credit institutions will respond by widening their interest rate spreads. Other things being equal, increased lending rates should mitigate the demand-side impact of the measures, and reduced deposit rates should reduce saving, and could therefore offset it.
3. Adjusted for amounts that are hedged in the Fund's accounts.

Box V-III

New Act on Consumer Loans

The new Act on Consumer Loans, no. 33/2013,[1] which entered into force on 1 November 2013, extends to all consumer loans granted after that date. The new Act covers the vast majority of loans granted to individuals, including mortgages, motor vehicle loans, pension fund loans, overdraft privileges, instalment payment agreements, and microcredit. The Act tightens the requirements made of consumers and credit institutions alike. Lenders are required to provide more detailed information to consumers before granting loans and are required to check the borrower's creditworthiness for all consumer loans. Furthermore, a full credit assessment must be carried out for all loans exceeding 2 m.kr. for individuals and 4 m.kr. for married or cohabiting couples. In connection with credit assessments, borrowers must provide lenders with detailed information on their finances, expenses, income, and assets. The new Act also places limitations on credit institutions. The annual cost may not exceed 50% plus the Central Bank policy rate, and prepayment penalties may not exceed 1%.

The aims of the new legislation, which is based on a European Union directive, are to promote responsible lending and to prevent borrowers from taking on debt beyond their capacity to pay. Alongside more detailed requirements for creditworthiness checks and full credit assessments, cost-of-living references shall now be based on the basic reference according to Icelandic consumption guidelines (published on the website of the Ministry of Welfare website[2]) and estimates of the cost of operating homes and motor vehicles. In many cases, the cost-of-living references are higher than before. Market agents and stakeholders are of the opinion that the new Act on Consumer Loans restricts lenders' opportunities to loan to consumers with limited capacity to pay. As a result of the new legislation, a greater number of potential buyers will not be approved for loans – mortgage loans, for instance – which could stimulate demand for rental housing.[3] The more responsible lending practices provided for in the new Act will also reduce arrears, other things being equal, which should reduce write-offs and ultimately result in more favourable lending terms for borrowers.

One effect of the new Consumer Loan Act can be seen, for example, in the new motor vehicle loans now being offered by virtually all automobile dealers. The loans are advertised as being free of interest and lending costs, which exempts them from the Act, according to Article 3. As a result, it is not required to carry out a creditworthiness check or a full credit assessment. In a market economy, credit is not granted free of charge; therefore, it is worth asking how costs are split between the parties. Are the car dealers absorbing the costs themselves, or are they charging buyers a higher price than they would otherwise? No matter how the costs are distributed, these new loans have reduced transparency and consumer protection. This is a disturbing development, and it is important that very popular types of consumer loans not be exempt from consumer loan legislation.

It is unclear what the impact of the new Act has been since its entry into force. Motor vehicle sales contracted 40% year-on-year in November 2013; however, it is not clear whether the new legislation was a major factor in this development. According to loan data collected by the Central Bank, net deposit money bank (DMB) lending to households contracted by more than 40% over a three-month period from November 2013 through January 2014,[4]

1. See: http://www.althingi.is/altext/stjt/2013.033.html.
2. See: https://www.velferdarraduneyti.is/neysluvidmid/nanar/nr/33453.
3. See, for example, http://www.asi.is/desktopdefault.aspx/tabid-2/19_read-3903.
4. The first three months after the Act entered into force.

as compared with the previous three months (for further discussion of net lending to households, see *Chapter IV,* "DMB assets and borrowers' position"). These data support the assessment of other commentators, including the Icelandic Federation of Labour, that the new consumer loan legislation will restrict access to credit for those borrowers who do not meet the tighter creditworthiness standards. The Financial Stability Department of the Central Bank requested detailed information from leading credit institutions,[5] in order to study the impact of the legislation in greater depth.

The written responses from the three large commercial banks suggest that there is no noticeable contraction in mortgage and motor vehicle loans to households. There has been a discernible contraction in unsecured consumer loans, however, both in terms of the number of new loans and the amounts borrowed. When asked which parties they considered likeliest to feel the effects of the new law, the banks responded that lower-income individuals and families were most likely to be affected when applying for short-term credit (for example, overdraft privileges), as they would always be subjected to a creditworthiness check and, in many instances, a full credit assessment. The Housing Financing Fund (HFF) reported a 25% decline in approved credit assessments following the entry into force of the new Act but did not wish to estimate how much of it was due to the new legislation.

Credit institutions were also asked to provide information on how cost-of-living references had changed with the new legislation. Three out of the four institutions reported a 10-25% increase in cost-of-living references for single parents and couples with children, while the fourth reported a reduction in the reference amounts for these borrowers. According to the credit institutions' responses, it appears that children's cost of living is more clearly defined, as the references now take account of whether children are in pre-school or primary school, whether they participate in after-school activities, and whether they eat in the school cafeteria. The provision of more detailed cost-of-living references for families with children is a welcome change that should result in reduced arrears among these borrowers. For individuals and childless couples, however, three credit institutions' cost-of-living references declined by 8-15% with the new Act. The other institution's references rose after the Act entered into force.

The contraction in net outflows of new loans to households and the increased cost-of-living references for families with children indicate that the new legislation has made some impact on new lending to households. Low-income families with children have probably felt the changes most keenly, although individuals applying for short-term credit have probably been aware of them as well. The new Act on Consumer Loans is a positive step for consumers, however, as it provides for greater consumer protection and more responsible lending practices.

5. The request for information was sent to the Housing Financing Fund, Arion Bank, Íslandsbanki, and Landsbankinn.

6. For example, the Ministry of Welfare's basic reference for a couple with two children (one in pre-school and the other in primary school), one automobile, and a home worth 30 m.kr. is about 415,000 kr. per month. Mortgage instalments and interest expense are not included in this figure.

Comprehensive review of mortgage lending system underway

Total financial system assets declined marginally year-on-year in real terms. The savings banks' position is generally weak at present. Housing Financing Fund (HFF) lending continues to contract, but default is on the decline and sales of property owned by the Fund have picked up. Two insurance companies' shares were admitted for trading on the NASDAQ OMX Iceland exchange (OMXI) last year, and a third insurer has just completed an initial public offering. The capital controls place limitations on the pension funds' investment options, and over time, their investment need could cause a system-wide distortion of asset prices.

Financial system structure

The Icelandic financial system[1] consists of four commercial banks and eight savings banks, which comprise about 36% of the system; 32 pension funds, which account for just under a third; and the HFF, Central Bank, and other companies, which constitute the remaining third. Risk is related primarily to deposit money banks,[2] particularly the three large commercial banks, whose assets total about 169% of GDP. An analysis of commercial bank operations can be found in Chapter III, "Operations and equity". Their debt is discussed in Chapter IV, "Funding and liquidity", and their assets are covered in Chapter V, "DMB assets and borrowers' position". This chapter therefore focuses on other financial system entities and the overall structure of the system.

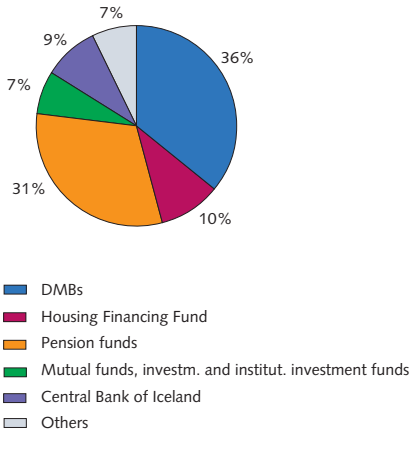
Table VI-1 Financial system assets

Assets, b.kr	*31.12. 2009*	*31.12. 2010*	*31.12. 2011*	*31.12 2012*	*31.12 2013*	*Change from 31.12 '12*
Banking system[1]	3,967	3,878	4,402	3,862	3,874	13
– Central Bank of Iceland	1,011	1,114	1,466	902	800	-101
– commercial banks	2,573	2,627	2,875	2,903	3,016	113
– savings banks	383	137	60	57	58	1
Other credit institutions	1,194	1,129	1,097	1,076	1,062	-14
–Housing Financing Fund	795	836	864	876	859	-17
Pension funds	1,849	1,989	2,169	2,439	2,695	256
Insurance companies	131	138	145	155	165	10
Mutual funds, investment and institutional funds	195	284	516	583	618	36
Government credit funds	146	161	171	192	199	7
Total assets	7,483	7,579	8,500	8,306	8,614	308

1. The banking system consists of commercial banks, saving banks, and the Central Bank of Iceland. Internal trades between the Central Bank of Iceland and other parties are excluded.

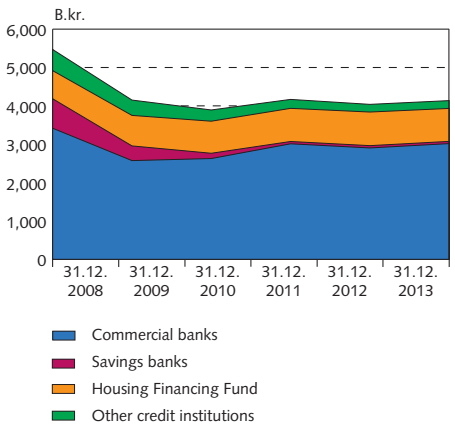
Source: Central Bank of Iceland.

Chart VI-1
Breakdown of financial system assets[1]
Year-end 2013



1. Parent companies.
Source: Central Bank of Iceland.

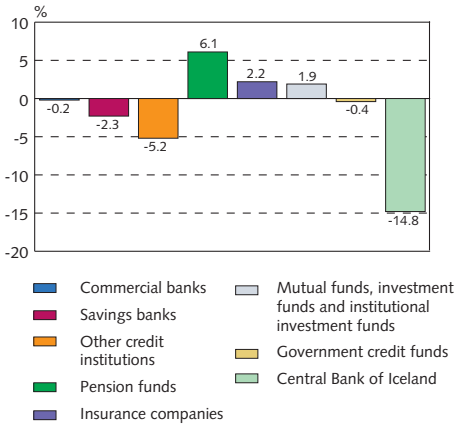
Chart VI-2
Credit institutions' total assets[1]



1. Parent companies.
Source: Central Bank of Iceland.

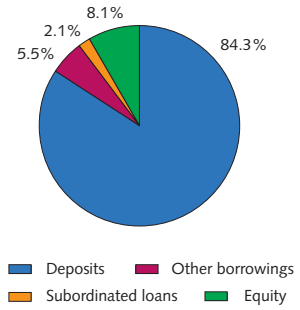
1. The financial system consists of the banking system, miscellaneous credit undertakings (including the Housing Financing Fund), pension funds, insurance companies, mutual funds, investment funds, and institutional investment funds, and Government credit funds.
2. Deposit money banks (DMBs) are commercial banks and savings banks.

Mynd VI-3
Changes in financial system assets[1]
December 2013, year-on-year change



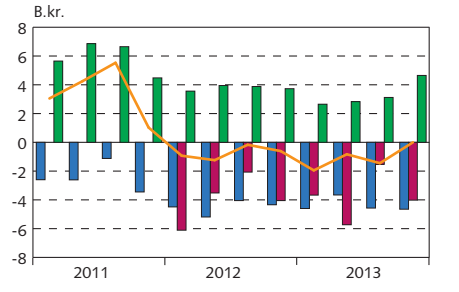
1. Parent companies.
Source: Central Bank of Iceland.

Chart VI-4
Saving banks' funding[1]
Year-end 2013



1. Parent companies.
Source: Central Bank of Iceland.

Chart VI-5
Prepayments by HFF customers and new loans



1. Data for 2011 not available.
Source: Housing Financing Fund.

Financial system assets increase

At the end of 2013, total financial system assets amounted to 8,614 b.kr., after declining by nearly 37 b.kr., or 0.4%, in real terms since year-end 2012. Pension fund assets grew most, rising by 6% in real terms. On the other hand, Central Bank of Iceland assets declined by nearly 15% in real terms, due primarily to the appreciation of the króna, but also because of changes in the value of gold and revaluation of securities holdings. The HFF's assets contracted by nearly 6% in real terms, and total assets held by miscellaneous credit undertakings[3] excluding the HFF declined by over 2% in real terms. In real terms, there was little change in the total asset position of the commercial banks, savings banks, and insurance companies, or in the position of mutual, investment, and institutional investment funds.

Total credit institution[4] assets amounted to 4,136 b.kr. at year-end 2013, nearly 73% of them owned by the commercial banks. The HFF owned nearly 21% of total credit institution assets, while other credit institutions owned 5% and savings banks just over 1%.

Savings banks' situation difficult

At year-end 2013, the savings banks' total assets amounted to just under 58 b.kr., an increase of 1 b.kr. year-on-year in real terms. Of this total, domestic assets accounted for over 57 b.kr. The largest domestic asset item consists of loans, about half of which are indexed. Since the financial crisis struck, the share of exchange rate-linked loans has contracted sharply, comprising less than 10% of total loans by year-end 2013. Just under 58% of loans to domestic borrowers were to households, while 38% were corporate loans. Just over a third of the corporate loans were to service companies, and another fourth were to companies in the fishing industry. The savings banks are funded primarily with deposits, which comprise some 84% of their funding.[5]

At the beginning of 2014, there were eight savings banks in operation. Last summer, the Financial Supervisory Authority (FME) approved the merger of Sparisjóður Svarfdæla and Sparisjóður Norðurlands (previously Sparisjóður Þórshafnar og nágrennis). Of these eight savings banks, six were operating at a profit, generating a combined profit of 233 m.kr. in 2013, while the other two recorded a combined operating loss of 96 m.kr.

The savings banks' impact on financial stability is negligible, as their total assets account for less than 1% of financial system assets and about 3.2% of GDP. Because of their small size, the savings banks do not achieve the same operational streamlining as the commercial banks, which makes it difficult for them to offer comparable deposit and lending rates. Furthermore, Icelandic State Financial Investments (ISFI) points out that public levies, supervisory fees, and contributions to the Depositors' and Investors' Guarantee Fund (DIGF) place a

3. Miscellaneous credit undertakings include Borgun hf., the Icelandic Regional Development Institute, the Housing Financing Fund, Municipality Credit Iceland Plc., Lýsing hf., Straumur Investment Bank, and Valitor hf.
4. Credit institutions are commercial banks, savings banks, and miscellaneous credit undertakings.
5. Based on savings banks' balance sheet summaries, collected by the Central Bank of Iceland. Based on preliminary figures.

heavy burden on savings bank operations.[6] High operating expenses relative to regular income exacerbate the need for streamlining – for instance, with further mergers.

In mid-2011, Parliament decided to appoint a three-member investigation commission tasked with investigating the prelude to and causes of the operational difficulties and subsequent collapse of Icelandic savings banks. The investigation is well advanced, and the commission's findings are expected in the first half of this year.

The HFF's uncertain future

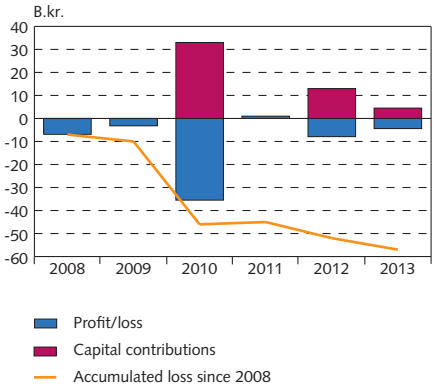
At year-end 2013, HFF assets totalled 863 b.kr., including loans in the amount of 768 b.kr. Securities issued by the Fund totalled 834 b.kr., a reduction of 15 b.kr. during the year. No HFF mortgage bonds have been issued since January 2012. The share of loans and interest-bearing debt rose in 2013. The HFF recorded an operating loss of 4.4 b.kr. in 2013, but impairment at the end of the year totalled 5.7 b.kr., more than 3 b.kr. less than in 2012. Net interest income rose by nearly 500 m.kr. between years. Including the capital injection[7] of 4.5 b.kr., to be paid to the Fund in the form of securities, the HFF's capital ratio is 3.4%, as opposed to 3.2% at the beginning of 2012. The ratio is still well below the Fund's long-term target of 5%.

New HFF lending contracted further in 2013. New loans declined in number by 251 year-on-year, to 1,501. The total amount of the new loans was 11.5 b.kr., as opposed to 14.1 b.kr. in 2012. Early retirement of debt also contracted between years (Chart VI-9). It is likely, however, that the Government's household debt relief measures will lead to further prepayment (see Box V-II).

According to the HFF's monthly report, the number of households in default declined by nearly 25% in 2013, to a year-end total of 3,561. The underlying value of household loans that are frozen or in default declined between years, to 10.4% of the Fund's household debt portfolio at year-end 2013. Default on household debt declined continuously in the second half of the year. Restructuring of legal entities' debt has not been as successful, however. The underlying value of legal entities' frozen or non-performing loans was 22.4% of the total portfolio value at the end of 2013, as opposed to 20.3% at year-end 2012. Default and frozen loans accounted for 12.6% of the Fund's loan portfolio at the end of 2013, as compared with 14.7% at year-end 2012.

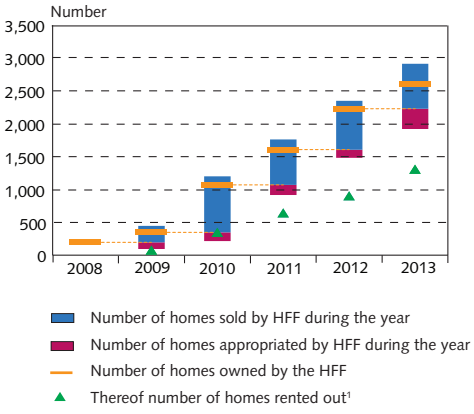
In 2013, the HFF appropriated 689 residential properties, 56 fewer than in 2012, and sold 307, an increase of 184 year-on-year. The HFF has sold 882 homes since the beginning of 2008. At year-end 2013, it owned 2,060 residential properties, 1,306 of which were being rented out. Just over a third of the Fund's properties are located on the Suðurnes peninsula, and just under a fourth are in the capital area.

Chart VI-6
HFF profit/loss and capital contributions from the Treasury



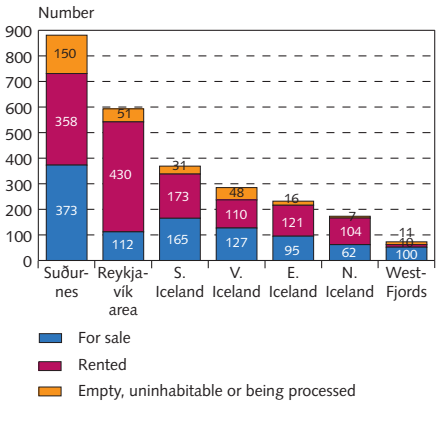
Sources: HFF annual financial statements.

Chart VI-7
Residential properties owned by the Housing Financing Fund



1. The Housing Financing Fund began renting out residential property in March 2009.
Sources: HFF annual financial statements and monthly reports.

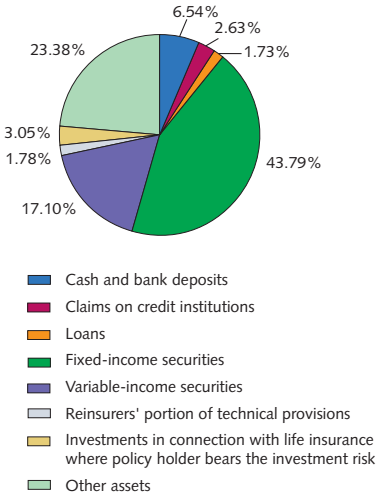
Chart VI-8
HFF real estate by region
End-December 2013



Source: Housing Financing Fund.

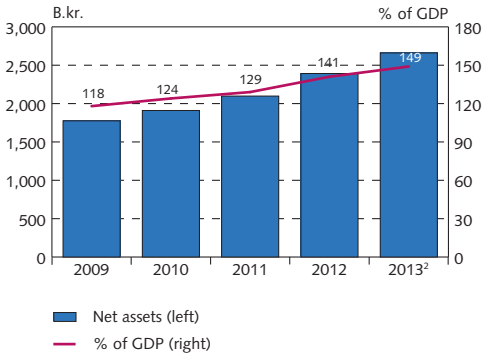
6. Report on the activities of Icelandic State Financial Investments in 2013. (http://bankasysla.is/files/Skýrsla%20um%20starfsemi%20Bankasýslu%20ríkisins%202013_336081393.pdf). Because of their small size, the savings banks are exempt from the bank tax.
7. In the budget supplement for 2013, the Minister of Finance and Economic Affairs was authorised to provide the Housing Financing Fund with a capital contribution to improve its capital position.

Chart VI-9
Insurance companies' assets[1]
Year-end 2013



1. Parent companies.
Source: Central Bank of Iceland.

Chart VI-10
Pension funds' net assets[1]



1. Year-end figures based on monthly reports for December are revised as soon as annual financial statements are received. 2. The funds' final results are not available and the figures are therefore provisional and may change.
Sources: Statistics Iceland, Central Bank of Iceland.

In March, consultancy firms KPMG and Analytica submitted a joint report containing an analysis and recommendations for the future mortgage lending architecture to the Government-appointed task force on the future of housing affairs in Iceland. The report will be used as a contribution to the work of the task force, which plans to submit its recommendations to the Minister of Social Affairs and Housing at the end of April. In the report, it is recommended that the HFF be closed down in its current form and that the Fund stop all new lending, and that its operations be divided into two parts: a new state housing board, which would take over the Fund's social role and would ensure compliance with the authorities' housing policy, and a housing financing fund, which would oversee the current portfolio of loans and debt.[8]

Insurance company shares listed on the OMXI

The total assets of the 12 insurance companies in operation at the end of 2013 amounted to just over 164.5 b.kr., an increase of 6% from the previous year. The insurance companies' largest single asset item is their indexed marketable bonds, which amounted to some 61 b.kr., after having increased by nearly 7.7 b.kr. between years. Securities generating variable income – i.e., stock and unit shares – amounted to just over 28 b.kr. at the year-end. Of that total, shareholdings amounted to 9 b.kr., an increase of 2.7 b.kr., or 43%, year-on-year.

By the end of March 2014, VÍS shares, which were admitted for trading on the OMXI in April 2013 following a public offering in which Klakki hf. sold about 70% of the company's share capital, had appreciated by just over 1%. TM shares, which began trading on the exchange in May 2013, had appreciated by over 10% by the end of March. Stoðir originally owned a 33.6% holding in TM but sold 28.6% in a public offering. Shares in both companies have fallen in price year-to-date, however. Sjóvá held an initial public offering of 23% of its shares in March. Plans are to list the shares on the OMXI.

Substantial investment need among pension funds[9]

Of the 32 pension funds currently in operation, 20 of them held 97.5% of total net pension fund assets as of end-2013. Pension fund assets totalled 2,695 b.kr. at the end of the year, after having increased by 256 b.kr., or nearly 11%, since end-2012.[10] Assets held by the pension funds' coinsurance departments accounted for 90% of the total, and third-pillar savings the other 10%. Net assets totalled 2,660 b.kr., or 149% of GDP, at the end of 2013. Bonds comprised a majority of pension fund assets at the end of the year, at 56%, followed by unit share certificates (23%), equity securities (13%), DMB deposits (6%), other assets (just under 1%), and the Enterprise Investment Fund (just

8. Housing Financing Fund notification to the NASDAQ OMX Iceland exchange: Consultants' report on the future structure of housing affairs (https://newsclient.omxgroup.com/cdsPublic/viewDisclosure.action?disclosureId=599584&lang=is).
9. Based on pension funds' balance sheet summaries, collected by the Central Bank of Iceland. Monthly data are compiled from samples from the largest pension funds in Iceland and total assets are estimated from these data. Based on preliminary figures.
10. In addition, assets held by custodians of private pension savings are estimated at 154 b.kr. as of end-2013.

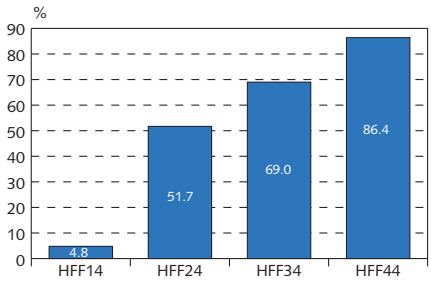
over 1%). The Enterprise Investment Fund (EIF) is an Icelandic investment fund founded in December 2009 by 16 pension funds. Its owner group was later expanded to include Landsbankinn and VÍS. The EIF's role is to invest in Icelandic firms with a viable operational foundation, with the objective of building up sound companies with strong potential for leadership and good returns to investors over the 10-year lifetime of the Fund, thereby contributing to the resurrection of the Icelandic economy in the wake of the financial crisis. The EIF has already paid its shareholders nearly 21 b.kr., and it recently approved a reduction of its share capital in order to pay 3.6 b.kr. to shareholders following the sale of Fund assets in 2013.[11] Foreign assets remained broadly unchanged year-on-year as a share of total pension fund assets, as the funds are not authorised to undertake new investments abroad. As of end-2013, the pension funds' foreign assets totalled 640 b.kr., or 24% of total assets. Over 83% of these foreign assets are in foreign equity securities or mutual funds. Investments related to refinancing of foreign assets held by the pension funds before the capital controls were imposed are permitted, however.

Over 81% of the funds' bonds are marketable securities, half of them HFF bonds. The funds own more than half of the bonds in the HFF24, HFF34, and HFF44 series (Chart VI-11). Just under a fourth of their marketable bonds are Treasury bonds, about 30% of them indexed and 70% nominal. An estimated 45% of the pension funds' bond products are indexed.[12] Less than half a percent were issued by foreign entities. At year-end 2013, unlisted bonds accounted for just under 10% of total pension fund assets. The funds' unlisted bondholdings grew by just over 556 m.kr., or 20%, in 2013.

The largest proportional increase year-on-year was in equity securities, which rose by 110 b.kr., or 45%. Domestic equities accounted for nearly 97 b.kr. of the total. Eimskip and Fjarskipti listed their shares on the OMXI in December 2012, and VÍS, TM, and N1 followed suit in 2013. The largest increase in unit share holdings was in foreign mutual funds, which rose by 44 b.kr. in spite of the appreciation of the króna during the year. The increase is therefore primarily due to returns from abroad. Equity securities and unit shares accounted for about 36% of total pension fund assets as of end-2013.

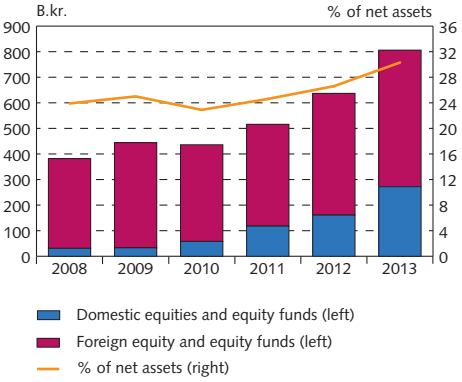
The pension funds still have a significant need to invest, but like others, they are restricted by the capital controls. Domestic equity securities have accounted for only a limited share of pension fund assets since the crash. Further growth in the equity market will provide the pension funds an avenue for increased risk diversification and will broaden the range of investments available to them. According to the FME's summary of the pension funds' annual accounts, their investment need will equal at least 130 b.kr. in 2014. This year's issuance of listed securities will probably not meet that need, however, and they will need to seek out other options. Their real returns in 2012 were 7.3%, well above the 3.5% actuarial threshold – the first time since

Chart VI-11
Pension funds' share of outstanding HFF bonds
31 December 2013



Source: Housing Financing Fund.

Chart VI-12
Pension funds' equity holdings[1]
Year-end 2013



1. Figures are based on the pension funds' summaries of assets and liabilities, which are gathered by the Central Bank of Iceland. Monthly data is collected from a sample of the largest Icelandic pension funds and total pension fund assets are estimated on this basis. Based on provisional figures.
Source: Central Bank of Iceland.

11. Enterprise Investment Fund (http://framtakssjodur.is/index.php).
12. Bond products are marketable bonds, unlisted bonds, unit shares in bond funds, and mixed funds.

2006 that their real returns have exceeded the threshold. The outlook is for their average returns to be above the 3.5% threshold in 2013 as well.[13]

Attention has been directed recently at the pension funds' investments in listed securities issued by institutional investment funds. A more detailed discussion of institutional investment funds' issues can be found in Box I-1, entitled "Shadow banking and corporate bond issuance". The pension funds have financed a large share of the issuance to date, much of which has been in connection with targeted real estate development projects. It is vital to ensure that these investments are consistent with the pension funds' investment authorisations.

13. Icelandic Pension Funds Association news release dated 7 January 2014: Pension fund returns above threshold in 2013 (http://ll.is/?p=6947).

VII Settlement of the failed banks' estates

Impact of the winding-up of Glitnir, Kaupthing, and LBI on the economy

Glitnir, Kaupthing, and LBI total assets are currently valued at about one-and-a-half times GDP. Domestic assets currently account for 38% of the estates' total assets, whereas domestic claims are less than 6%. Other things being equal, domestic assets worth nearly half of GDP will revert to foreign creditors when the estates are settled. The domestic economy does not generate enough foreign currency to enable creditors to redeem these assets from the current account balance; therefore, there is uncertainty about the next stages of the winding-up proceedings. The foreseeable disturbances to Iceland's balance of payments must be minimised by scaling down the domestic assets in the estates' portfolios. The future of the winding-up proceedings depends to a degree on how the estates will convert domestic assets into liquid funds. Finding a comprehensive solution to the estates' affairs is a prerequisite for lifting of the capital controls.

Settlement of Glitnir, Kaupthing, and LBI

Over five and a half years have now passed since the collapse of Iceland's three large commercial banks, Glitnir, Kaupthing, and Landsbanki Íslands (now named LBI). Since the banks fell, the estates' winding-up committees have been working to maximise recoveries on their assets, as is provided for by law. Under the current statutory framework, the estates will be placed in composition or in liquidation after priority claims have been paid. Glitnir paid all of its priority claims in 2012, Kaupthing completed paying its priority claims in 2013, and LBI has made four partial payments totalling about 51% of its priority claims.[1] In autumn 2012, the Glitnir and Kaupthing winding-up committees requested exemptions from the Foreign Exchange Act in order to conclude composition agreements.[2] The LBI winding-up committee intends to conclude a composition agreement after its priority claims have been paid. Under the current statutory framework, before exemptions are granted to the winding-up committees so that they can proceed with composition agreements, both the Central Bank and Minister of Finance and Economic Affairs must approve them after presenting the case concerned to the Parliamentary Economics and Commerce Committee. The future of the winding-up proceedings depends largely on how the estates will convert domestic assets into liquid funds.

Classification of claims as domestic or foreign

When the estates are settled, the assets will be distributed to creditors, or the creditors will be given control over the assets, in compliance with the law. Because assets will not cover all of the claims against the estates, the outstanding amount will be written off. The amount

1. It is possible to declare priority claims falling under Articles 109 and 110 of the Act on Bankruptcy, etc., no. 21/1991, at any time during the winding-up proceedings.
2. Act no. 87/1992.

creditors recover on their claims can never exceed the sale value of the estates' assets. Obligations can develop between residents and non-residents during the winding-up process, however, if the ratio of domestic to foreign assets differs from the ratio of domestic to foreign claims.

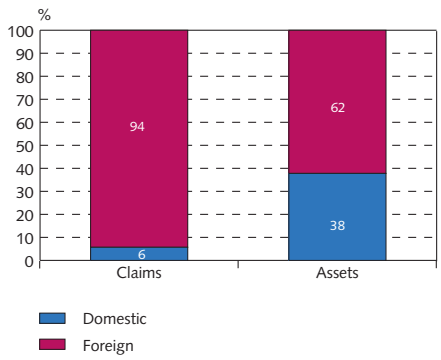
Table VII-1 shows the classification of approved claims according to the estates' claim registers as of year-end 2013. It is estimated that about 5.7% of the underlying claims are actually domestic and the other 94.3% foreign.[3] This represents a slight increase in the share of domestic claims in comparison with previous analyses.[4] The change has occurred because it is now assumed that all of the claims of SPB hf. (previously Sparisjóðabankinn or Icebank) will revert to residents, which increases the proportion of domestic claims against Kaupthing. In Glitnir's case, however, the probable netting of debt will reduce the share of domestic claims. The changes to LBI's situation are insignificant.

The present analysis is subject to some uncertainty, however. A considerable number of claims are still in dispute, and domestic claims represent a larger percentage of disputed claims than of approved claims. This means that the share of domestic claims is a cautious estimate based on claims that have been approved. Further netting could also change the proportions. Furthermore, it should be borne in mind that claims are a salable commodity and could be transferred before payments are made. The creditor groups have changed markedly since the winding-up proceedings began, and some changes have occurred in the past month. Nearly all of the recent transactions have been between non-residents, although in some instances residents have sold their claims to non-residents. This could change the ratio of domestic to foreign claims still further before disbursements are made.

Chart VII-1

Estimated domestic/foreign breakdown of assets and claims of DMBs in winding-up proceedings

Book value 31.12.2013



Sources: Claims list and financial information from Glitnir, Kaupthing and LBI; Central Bank of Iceland.

Table VII-1 Classification of approved Glitnir, Kaupthing, and LBI claims according to claims registers at year-end 2013

	Share of domestic claims[1] (%)	*Share of foreign claims (%)*
Glitnir	5.8	94.2
Kaupthing	9.5	90.5
LBI, priority claims	0.1	99.9
LBI, general claims	7.5	92.5
Total: weighted	5.7	94.3

1. A portion of domestic claims are from DMBs in winding-up proceedings. The analysis examines the underlying and actual owners of those claims.

Sources: Creditor registers of Glitnir, Kaupthing, and LBI, Central Bank of Iceland.

The failed banks' assets

About 62% of the failed banks' assets are foreign and 38% domestic. The bulk of these are claims against the new banks, both deposits and bonds, and ownership shares in them. The proportion of domestic assets rose in 2013 because of continued payouts of foreign assets,

3. Adjusted for LBI priority claims and weighted in terms of the size of the estates.
4. See also Special *Publication no. 9* and *Financial Stability* 2013/1.

exchange rate movements, and value increases on domestic assets. The value of both domestic and foreign assets is still quite uncertain. After adjusting for payouts, the estates' assets have increased as recoveries have improved and assets have been sold.[5] Table VII-2 summarises the end-2013 book value of the estates' assets as recognised by the winding-up committees. Total assets are estimated at 2,523 b.kr., plus another 29 b.kr. held in escrow accounts to pay priority claims that are still in dispute. These are earmarked as the estates' assets, however, and experience shows that some portion of their value will revert to the estates' balance sheets. The assets plus suspense account balances are therefore entered at 2,552 b.kr., or 143% of GDP. This is a considerable reduction from the previous year's total of 2,750 b.kr. The change is due primarily to the appreciation of the króna and continued payment of priority claims, which has reduced suspense account balances related to disputed priority claims. The reduction is offset to a degree by valuation increases, however. The greatest difference is that, for Glitnir and Kaupthing, the book value of their holdings in the new banks is now, equal to their equity. This has raised the value of Glitnir's stake in Íslandsbanki considerably.

In total, the estates have paid priority creditors just under 947 b.kr., and LBI has made four partial payments in the total amount of 716 b.kr. Glitnir paid all of its priority claims in March 2012. Although a portion of them are still in dispute, payments to creditors amount to 82 b.kr. Kaupthing paid all of its priority claims in 2013. Just under half of them are still disputed, but some 19 b.kr. have been paid out to creditors. In addition, before the claim filing deadline in 2009, Kaupthing paid about 130 b.kr. to depositors abroad, in connection with deposits for which the parent company was deemed liable.

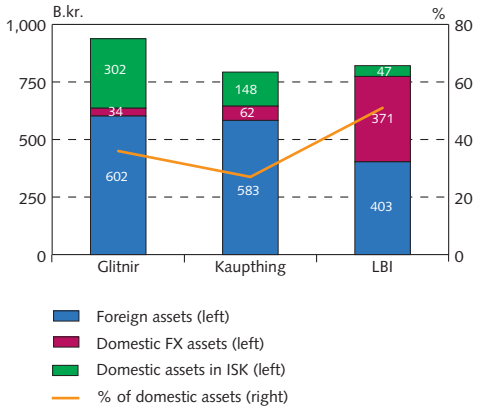
Table VII-2 Book value of Glitnir, Kaupthing, and LBI assets at year-end 2013

	Domestic assets			*Foreign assets*	*Total*
B.kr.	*in ISK*	*in FX*	*Total*	*in FX*[1]	*assets*
Liquid assets	117	147	264	1,029	1,293
Loans to customers	43	20	63	355	418
Loans to financial institutions	0	0	0	37	37
Securities	36	46	82	92	174
Dervatives	12	0	12	27	39
Compensation bonds from new bank for asset transfer	0	238	238	0	238
Holdings in subsidiaries and affiliates	280	8	288	13	301
- thereof stakes in the new banks	*280*	*0*	*280*	*0*	*280*
Other assets	7	9	16	7	23
Total	495	468	963	1,560	2,523
Position in escrow accounts	2	0	2	27	29
Assets and position in escrow accounts	497	468	965	1,587	2,552
Domestic assets backed by foreign collateral	7	28	35	0	0

1. An insignificant portion of foreign claims are in ISK.
Sources: Financial information from Glitnir, Kaupthing and LBI; Central Bank of Iceland.

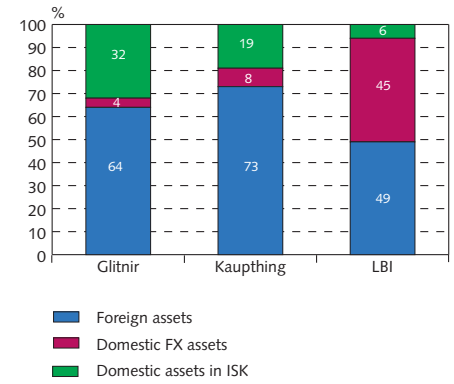
5. The estates recognise asset values using different methods; therefore, it is not a given that book values are comparable.

Chart VII-2
Estimated domestic/foreign breakdown of assets of DMBs in winding-up proceedings
Book value 31.12.2013



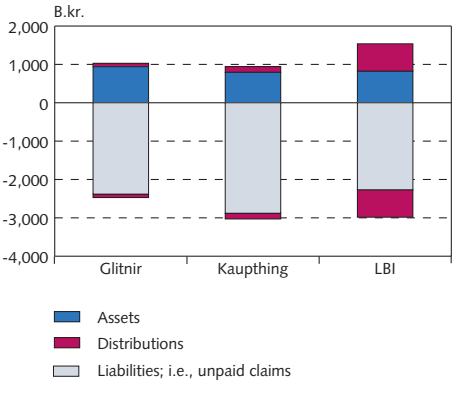
Sources: Financial information from Glitnir, Kaupthing and LBI; Central Bank of Iceland.

Chart VII-3
Estimated % of domestic/foreign assets of DMBs in winding-up proceedings
Book value 31.12.2013



Sources: Financial information from Glitnir, Kaupthing and LBI; Central Bank of Iceland.

Chart VII-4
Assets, claims and distributions of DMBs in winding-up proceedings
Book value 31.12.2013



Sources: Financial information from Glitnir, Kaupthing and LBI; Central Bank of Iceland.

Domestic assets now total 965 b.kr., including 497 b.kr. listed in Icelandic krónur and 468 b.kr. in foreign currencies. About 35 b.kr. worth of domestic assets are backed by foreign collateral. Domestic assets listed in krónur have risen in price by 50 b.kr. year-on-year, due almost solely to a valuation increase of 54 b.kr. in the holdings in the new banks over the same period. Domestic assets listed in foreign currencies have declined by 42 b.kr., due mainly to exchange rate movements. Foreign assets have declined by 212 b.kr. between years, primarily due to 120 b.kr. in payouts to priority creditors and to exchange rate movements during the year.

The estates' liquid funds and the escrow account balances, which are the equivalent of liquid funds, total 1,322 b.kr., or 52% of the estates' total assets. About ¼ of the liquid funds listed in krónur and nearly a third of the estates' liquid funds abroad are held in short-term Treasury bonds or bills. Other liquid funds in Iceland are held as deposits with commercial banks, and foreign liquidity other than Treasury bonds and bills is held with foreign commercial banks.

The ratio of domestic and foreign assets varies from one estate to another. Domestic assets comprise the largest share for LBI (just over half) and the smallest for Kaupthing (27%) (Charts VII-2 and VII-3). It should be borne in mind that LBI has paid more from its estate than the other two have, and it has paid out proportionally more foreign than domestic assets. Of the domestic assets denominated in krónur, LBI owns the least and Kaupthing and Glitnir more, due to the estates' stakes in Arion and Íslandsbanki. The difference in the proportion of the three estates' domestic assets is due primarily to the original division of assets between the new and old banks.

The failed banks' liabilities

Net outstanding claims that have been declared against the failed banks' estates pursuant to Articles 109-113 of the Act on Bankruptcy, etc., totalled 7,530 b.kr. as of end-2013 (Table VII-3). It should be noted, though, that the classification of outstanding claims differs from one estate to another, and it is still possible to declare priority claims pursuant to Articles 109 and 110 of the Act. These figures factor in estimated netting of debt. Disputed claims that have been paid into escrow accounts are not listed as outstanding in Table VII-3. General claims amount to 6,905 b.kr. and other claims prior to them 625 b.kr., due primarily to 610 b.kr. in priority claims against the LBI estate, most of them related to Icesave accounts. There is some uncertainty about

Table VII-3 Outstanding claims against the Glitnir, Kaupthing, and LBI estates at year-end 2013[1]

B.kr.	*Glitnir*	*Kaupthing*	*LBI*	*Total*
Specific claims (Article 109)	6	0	0	6
Claims against estate (Article 110)	0	0	0	0
Collateralised claims (Article 111)	2	5	0	7
Priority claims (Article 112)	1	1	610	612
General claims (Article 113)	2,373	2,874	1,658	6,905
Total	2,382	2,880	2,268	7,530

1. The classification of outstanding claims may differ from one estate to another.
Sources: Glitnir, Kaupthing, and LBI balance sheet summaries.

the ultimate amount of outstanding claims, which has fallen markedly during the winding-up proceedings as claims are netted, agreements reached, and court judgments handed down.

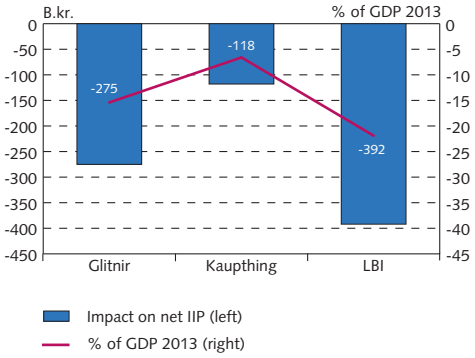
Effects of estate settlement on the balance of payments and the external position

Based on the book value of the estates' assets, shown in Table VII-2, and accounting for domestic assets backed by foreign collateral, it is estimated that 36.4% of the estates' assets are domestic and 63.6% foreign. The division of the claims against the estates – 5.7% domestic and 94.3% foreign – differs radically from the estimated division of assets (Table VII-1). As a consequence, when distributions are made upon winding-up or composition, according to the calculated settlement, domestic assets reverting to foreign creditors will outweigh foreign assets reverting to domestic creditors, other things being equal. This will adversely affect Iceland's external position and balance of payments. Based on the calculated settlement and assuming equal distribution of assets among creditors, it is assumed that 2,408 b.kr. of assets would revert to foreign creditors and about 145 b.kr. to domestic creditors. Therefore, domestic assets valued at about 877 b.kr. would revert to foreign creditors and create an external debt. In addition, 92 b.kr. of foreign assets would revert to residents and create an external asset. The net position, then, is an external debt in the amount of 785 b.kr., or roughly 44% of GDP. If more of the estates' domestic assets are backed by foreign collateral than is assumed here, the impact on the balance of payments has already been made. The balance of payments could therefore be affected less than the net external position.

Kaupthing's estate features the highest proportion of domestic claims and the lowest proportion of domestic assets. According to the current asset portfolio position, the estimated calculated distributions will create external liabilities for all of the estates: the effect deriving from Kaupthing is estimated at just under -7% of GDP (Chart VII-5), as opposed to -15% and -22%, respectively, for Glitnir and LBI. The total is therefore a negative position amounting to 44% of GDP.

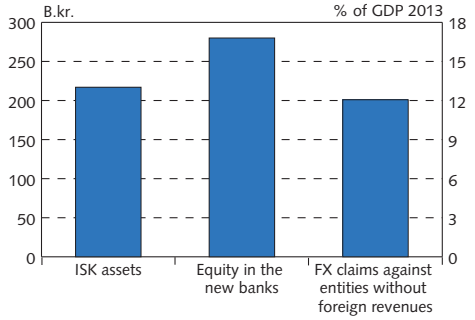
There is no need to refinance domestic assets that are foreign-denominated claims against parties that own foreign assets to cover the claims, have accumulated foreign currency, or have access to foreign credit markets. On the other hand, it is clear from Landsbankinn's statement of 23 December that the bank will have to refinance the LBI claims maturing in 2016-2018. The estates' króna-denominated domestic assets must be financed in full if these amounts are to be paid to creditors in foreign currency (Chart VII-6). The above-mentioned domestic claim amounts that must be paid to foreign creditors could decline substantially with contractual agreements on distributions from the estates. If ISK assets are sold at prices below book value, it will mitigate the negative effects of the winding-up on the external position and balance of payments. The effect of the winding-up on the external position is reduced by just over 1.5% of GDP for each 10% reduction in recovery of the estates' holdings in the new banks.

Chart VII-5
Estimated impact of settlement of DMBs' winding-up on net IIP
Year-end 2013



Sources: Claims lists and financial information from Glitnir, Kaupthing and LBI; Statistics Iceland, Central Bank of Iceland.

Chart VII-6
Failed banks' domestic assets that must be financed
Book value 31.12.2013



Sources: Financial information from Glitnir, Kaupthing and LBI; Statistics Iceland, Central Bank of Iceland.

Claim values

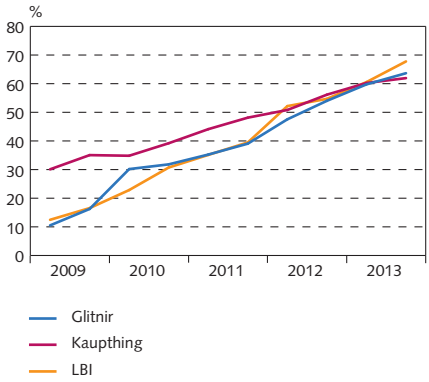
Claims against the banks' estates are bought and sold. They are not listed on regulated markets, trading is sparse, and their prices are highly uncertain. The market for the claims is therefore ineffective, and its depth is uncertain as well. Several foreign entities publish bid and ask prices for the claims on a regular basis. To a degree, domestic financial institutions have brokered transactions with the claims, and in some instances the creditors have sold them directly. The estates maintain creditor registers that are updated when trades are reported. Glitnir has published several business plans, most recently in autumn 2013. It is the only one of the estates to do so. The business plans show the pace at which asset recovery is expected to take place. Recovery is assumed for all assets other than the stake in Íslandsbanki, for which no sale price or sale timing is estimated. Glitnir projects that it will liquidate its assets other than the stake in Íslandsbanki according to the following timetable: 71% by end-2013, 86% by end-2014, and 97% by end-2015. The last of the assets covered by the business plan will have been converted to liquid funds by 2016.

If it is assumed that Glitnir's stake in Íslandsbanki will be sold for book value in 2014 and that disbursements to creditors will begin at that time, so that there is always a time lag of 12 months from recovery to payout, it can then be assumed, based on Glitnir's business plan and the outstanding claims on its balance sheet at year-end 2013, that recovery will be about 34.7% based on a 10% yield and about 32.5% based on a 15% yield. This is a somewhat higher percentage than corresponds to the secondary market value, which lies in the 27-29% range. In making this comparison, it is appropriate to note several uncertainties. First, the final amount of outstanding claims against the estates is unclear, as some of the claims on their balance sheets are disputed.[6] Another uncertainty centres on asset values and taxation. The winding-up committees have been cautious in estimating asset values; however, there is some market risk concerning the sale price of Glitnir's stake in Íslandsbanki. If the holding were sold for half of book value, recovery based on a 10% yield would decline by about 2.8% per share, from 34.7% to 31.9%. Based on a 15% yield, it would decline by 2.6%. Added to this market risk is uncertainty about taxation; for instance, the bank tax will reduce recovery ratios by almost 1.0% per share. The third uncertainty concerns the timing of the distributions. If payments begin a year later than is estimated above, expected recoveries will decline by about 2.7% per share based on a 10% yield and by 3.8% based on a 15% yield. The fourth uncertainty centres on foreign exchange risk. If Glitnir's ISK assets are sold for foreign currency based on the last Central Bank auction exchange rate, recoveries will decline by nearly 2.5% per share based on either yield, 10% or 15%. These uncertainties must be factored into the price of the claims concerned. If all of them develop in the manner described above, the actual value of the claims will be well below the current secondary market price. Because of this, secondary market transac-

6. Furthermore, it is still possible to declare claims falling under Articles 109 and 110 of the Act on Bankruptcy, etc., no. 21/1991. These claims can be declared at any time during the winding-up proceedings.

tions with the claims bear substantial risk premia over and above calculated recovery estimates. These uncertainties also affect domestic developments. Direct economic costs result from maintaining capital controls due to issues of the banks' estates. This has to be factored in when assessing the risk involved.

Chart VII-7
Estimated ratio of liquid assets to total assets, adjusted for distributions[1]



1. The estates' settlements are not fully comparable with one another or across time periods. Early in the period, the estates did not take account of the effects of estimated netting on total assets. No account is given to exchange rate changes in distributions after they have been paid.
Sources: Financial information from Glitnir, Kaupthing and LBI; Central Bank of Iceland.

Liquidation of assets

The aim of the estates' winding-up proceedings is to maximise asset values, convert asset to liquid funds, and distribute the proceeds to creditors. Chart VII-7 shows the estimated ratio of liquid assets to total assets, adjusted for disbursements. The estates have now converted some 2/3 of their total assets to liquid funds. For all the estates, this process has taken place rather steadily over time. It does not appear that the conversion of assets to liquid funds has slowed down in recent months, in spite of growing uncertainty about the next steps in the winding-up process. Differences in the pace of liquidation from one estate to another are due largely to the composition of the estates' assets. The Kaupthing estate owns proportionally more assets composed of equity, while the other estates have proportionally more debt instruments. As the winding-up proceedings advance, it will become more difficult to convert the remaining assets to liquid funds, as the most salable assets are sold first. There are signs, however, that the estates are waiting before liquidating their assets, probably because of the uncertainty about the next stage in the process.

Smaller estates

In addition to the three failed commercial banks discussed above, there are a number of smaller financial undertakings and large holding companies that are either in winding-up proceedings or have negotiated composition agreements with their creditors. Creditors have gained control of assets in some of these companies, while other firms remain under the administration of winding-up committees. Based on the current book value of their assets and the classification of both assets and claims as foreign or domestic, it is estimated that some 40 b.kr. in domestic assets will revert to foreign creditors when the estates are wound up. The amount of foreign assets reverting to domestic creditors would not be substantial, however. According to the calculated settlement, virtually all of the domestic assets that belong to foreign creditors are listed in krónur, and if they were distributed to creditors, they would add a commensurate amount to the stock of offshore krónur, other things being equal.

A comprehensive solution to the estates' affairs is a prerequisite for lifting of the capital controls

Based on the current book value of the failed banks' assets and the calculated settlement according to the current classification of assets and claims as domestic or foreign, distribution of the proceeds will severely disturbances Iceland's balance of payments, other things being equal. Whether this happens, and to what degree, depends both on the next steps in the winding-up process and the methods the estates use to convert domestic assets into liquid funds.

If the Foreign Exchange Act had not been amended to cover the failed banks' estates on 12 March 2012, making it possible to control their distributions, these disbursements could have caused severe instability, both in the financial system and, in particular, in the foreign exchange market. The next stages of the winding-up proceedings must safeguard financial stability and ensure that domestic entities have access to foreign credit markets. Finding a comprehensive solution to the estates' affairs is a prerequisite for lifting of the capital controls.

Appendix I

Macroprudential tools and indicators for systemic risk assessment

The main objectives of macroprudential policy are to contribute to the stability of the financial system as a whole, to strengthen its resilience, and to mitigate systemic risk, thereby ensuring that the financial system makes a sustainable contribution to GDP growth.[1] In June 2013, the European Systemic Risk Board (ESRB) recommended that the authorities define and enforce certain intermediate objectives, both because systemic risk is difficult to quantify and because it is difficult to define the ultimate objectives of macroprudential policy. The intermediate objectives support the main objectives of macroprudential policy and lay the foundation for the selection of macroprudential tools. Table 1 shows the ESRB's recommendations for intermediate objectives and possible policy instruments that could be used to minimise risk. Each country must then chose indicators to assess systemic risk in line with the intermediate objectives and thereby support decisions on the application of policy instruments. It is important to use indicators and analysis to rationalise decision-making based on clear objectives, thereby minimising the probability of unexpected repercussions of the use of the instruments. This will enhance the credibility of macroprudential policy, which is important. The selection of indicators is not etched in stone, and the list of indicators can be expected to change over time with improved access to data and developments in the financial system.

The first section of this Appendix reviews possible indicators that could identify excessive credit growth or leverage and could suggest when special tools should be applied in order to achieve intermediate objective 1. Particular attention is given to the indicators recommended by the ESRB and used in neighbouring countries. Historical experience of using the indicators in Iceland is also reviewed. The indicators examined are listed in Table 2. The second section of the Appendix focuses on indicators related to instruments used to achieve intermediate objective 2; i.e., to mitigate and prevent excessive maturity mismatches and market illliquidity. Progress in applying macroprudential tools varies from country to country in the Nordic region. This is discussed further in Box 1 in this Appendix.

Intermediate objective 1

Strong credit growth and increased leverage in the economy exacerbate systemic risk and are therefore common harbingers of financial crises.[2] When banks have ready access to foreign credit and competi-

1. European Systemic Risk Board (ESRB) (2013)
2. Numerous studies confirm the close relationship between credit growth and systemic risk. For instance, Bernanke (1998) and others have discussed this. Geanakoplos (2009) and Brunnermeier (2009) have discussed the relationship between increased leverage and systemic risk, among other topics.

Table 1 ESRB list of intermediate objectives for macroprudential policy

1. To mitigate and prevent excessive credit growth and leverage
2. To mitigate and prevent excessive maturity mismatches and market illiquidity
3. To limit direct and indirect exposure concentrations;
4. To limit the systemic impact of misaligned incentives with a view to reducing moral hazard
5. To strengthen the resilience of financial infrastructure

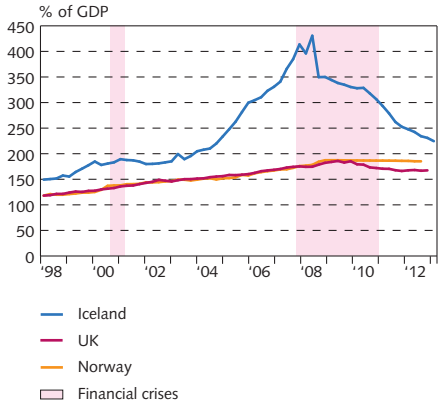
Source: European Systemic Risk Board (2013)

Table 2 Central Bank of Iceland list of policy instruments and leading indicators for Intermediate Objective 1

1. Countercyclical capital buffers
   - Deviation of credit-to-GDP ratio from long-term trend
   - Credit growth
   - Loans as a share of deposits
   - Banks' foreign debt
2. Sector-specific capital requirements
   - Private sector credit-to-GDP ratio
   - Private sector credit growth
   - Growth in lending to non-residents
   - Lending and claims against financial institutions
   - Lending by sector
   - Foreign-denominated lending
   - Real estate prices
3. Systemic risk buffers
   - Current account balance
   - Real estate prices
   - Unemployment
   - Private sector indebtedness
   - Mortgage loans as share of total assets
   - Foreign loans as share of total loans
   - Deposits as share of GDP
4. Leverage ratio
5. Restrictions on LTV and LTI ratios
   - Credit terms
   - New mortgage lending
   - Real estate prices
   - Growth in lending and disposable income
   - Household wealth
   - Debt service

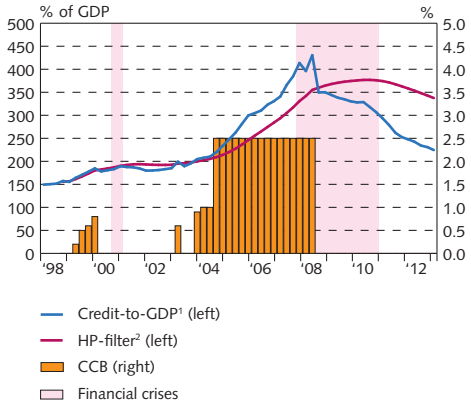
Source: European Systemic Risk Board (2013 and 2014).

Chart 1
Credit-to-GDP[1]



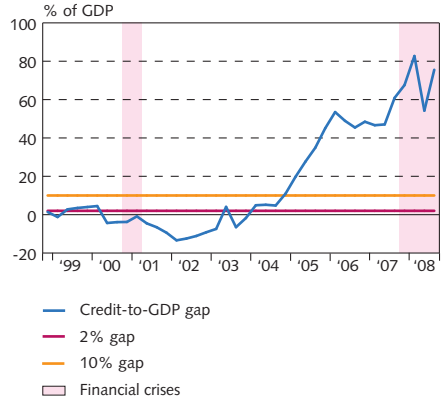
1. Parent companies. Credit-to-GDP ratio refers to the ratio of total nominal private sector lending to GDP.
Sources: Bankscope, Statistics Iceland, Central Bank of Iceland.

Chart 2
Countercyclical capital buffer



1. Parent companies. Credit-to-GDP ratio refers to the ratio of total nominal private sector lending on to GDP. 2. Long-term trend is measured using the Hodrick-Prescott (HP) filter with λ = 400,000.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 3
Credit-to-GDP[1] gap



1. Parent companies. Credit-to-GDP ratio refers to the ratio of total nominal private sector lending to GDP.
Sources: Statistics Iceland, Central Bank of Iceland.

tion in the credit market increases, credit institutions tend to relax their credit assessment criteria, which results in lending growth. It is therefore important for macroprudential policy that there be intermediate objectives aimed at mitigating and preventing excessive credit growth and leverage. Five tools can be used to achieve such objectives:[3] i) countercyclical capital buffers; ii) sector-specific capital requirements; iii) systemic risk buffers; iv) restrictions on banks' macroprudential leverage ratios; and v) restrictions on loan-to-value (LTV) ratios and loan-to-income/debt service-to income requirements (LTI).

Countercyclical capital buffer

A countercyclical capital buffer (CCB) is intended to enhance banks' resilience during upswings, thereby increasing the likelihood that they will maintain lending during the downward cycle. The CCB reduces the credit supply because banks are required to set aside additional capital to cover it. This raises the cost of capital, which reduces lending and therefore reduces lending rates.[4]

When is the CCB applied ...

Research has shown that the deviation of the credit-to-GDP ratio from its long-term trend (also known as the credit-to-GDP gap) is a reliable measure of excessive credit growth. The credit-to-GDP ratio is the ratio of total private sector lending to GDP, and its long-term trend is assessed according to Basel Committee guidelines.[6]

The surge in private sector leverage in Iceland during the prelude to the financial crisis was a clear sign of increased systemic risk. Private sector debt rose from 150% of GDP in 1998 to over 400% by autumn 2008 (Chart 1). In comparison, private sector debt in Norway and the UK rose from 120% of GDP to about 180% over the same period. The Basel Committee recommends that a countercyclical buffer be imposed on banks if the credit-to-GDP gap exceeds 2% and that the maximum buffer of 2.5% be imposed when the gap exceeds 10%.[7] Based on this definition, a countercyclical buffer should have been imposed in March 2004 and raised to the 2.5% maximum in December 2004 (Charts 2 and 3). According to the findings of Srobona et al. (2011) in their study of 76 financial crises in 40 countries, a credit-to-GDP gap in excess of 3% is a sign of a financial crisis two to three years ahead. In Iceland, the gap exceeded 3% from mid-2004 onwards. It had also risen above 3% in the run-up to the dot-com bubble in June 1999 (Chart 3).

Growth in lending irrespective of GDP growth can also be used as an indicator of excessive credit growth. In Iceland, growth in private sector lending averaged 30% per year from the beginning of 2005 until autumn 2008. Annual credit growth in Spain and Ireland

3. European Systemic Risk Board (ESRB) (2014).
4. See also Basel Committee for Banking Supervision (2013) and European Systemic Risk Board (2013).
5. Dell'Ariccia et al. (2012), Borio et al. (2011), and Drehmann et al. (2013).
6. The Basel Committee recommended the use of such a metric in 2010, in "Countercyclical capital buffer proposal – consultative document", July. See also Box IV-2 in *Financial Stability* 2013/1.
7. Basel Committee for Banking Supervision (2010).

averaged 17% and 15%, respectively, over this period. Risk thresholds for credit growth and most of the other indicators described below have not been formally defined; however, possible metrics are the percentage deviation or the standard deviation from the long-term average. The discussion that follows assumes one-and-a-half standard deviations[8] as an example of a risk threshold. The standard deviation criterion is probably more applicable in Iceland than the percentage deviation criterion, in part because fluctuations in real economic variables are generally greater in Iceland than in other countries.[9] Credit growth exceeded 1.5 standard deviations above mean credit growth in June 2005 (Chart 4). Credit growth is extremely volatile and can be very strong over a short period without leading to financial instability. It is therefore most effective to monitor developments both in the credit-to-GDP gap and in credit growth when assessing excessive credit growth.[10]

The *loan-to-deposit ratio (LTD)* indicates how large a proportion of loans are funded with sources other than deposits. According to Srobona et al. (2011), a financial shock is likely to occur within a year if the LTD ratio rises above 120%. Deposit money banks (DMBs) in Iceland have been above this threshold since the end of 1995 (Chart 5), which indicates that systemic risk had begun to accumulate in the Icelandic financial system after capital movements were liberalised, and that it grew substantially during the dot-com boom around the turn of the century. It had risen above 300% by the end of 2005. Excluding non-residents' deposits in bank branches abroad, it peaked at nearly 600% in autumn 2008. In Denmark, the LTD ratio has never breached the 120% threshold, while in Ireland it rose to nearly 200% in 2008. The largest banks in the UK exceeded the threshold in 2003. The LTD ratio can also be a reliable indicator of funding risk and therefore a metric for the application of macroprudential tools for liquidity and funding (see the section of this Appendix entitled "Intermediate objective 2").

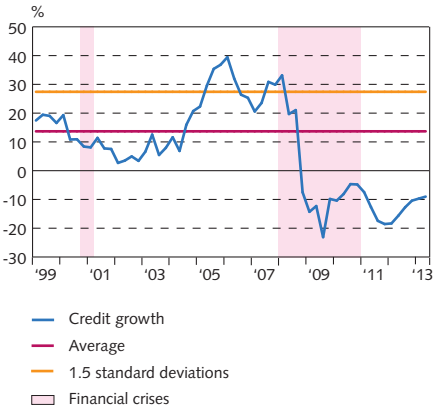
Banks' gross foreign debt relative to GDP gives an overview of how reliant they are on foreign funding. Furthermore, if banks amass substantial short-term foreign debt, it can be a sign of escalating imbalances in the financial system. Growth in foreign debt accelerated in the wake of the 1993 financial crisis, in the wake of the dot-com bubble, and in the wake of the 2008 financial crisis (Chart 6). During the prelude to the dot-com bubble, foreign long-term debt grew well in excess of short-term debt, but the reverse was true of the prelude to the 2008 financial crisis.

… and when is it lifted?

Emphasis is placed on lifting the CCB when a financial shock strikes and when there is the risk of a contraction in lending, with the associated negative impact on the real economy. The purpose of lifting the CCB is to prevent a contraction in lending and cover losses due

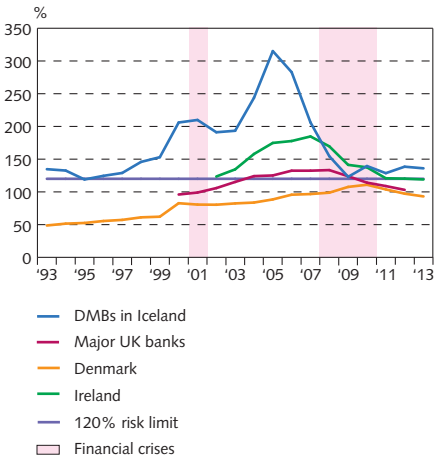
8. Dell'Ariccia et al. (2012).
9. "Iceland's currency and exchange rate policy options", Central Bank of Iceland *Special Publication* no. 7.
10. See BIS (2004), Bank of England (2013), and Schularick et al. (2012).

Chart 4
Real credit growth[1] to private sector



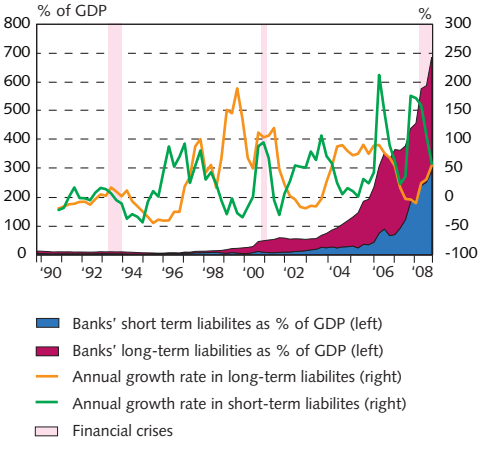
1. Parent companies. 2006 price levels.
Source: Central Bank of Iceland.

Chart 5
Loan-to-deposit ratio[1]



1. Consolidated statement
Sources: Bankscope, Macrobond, Central Bank of Iceland.

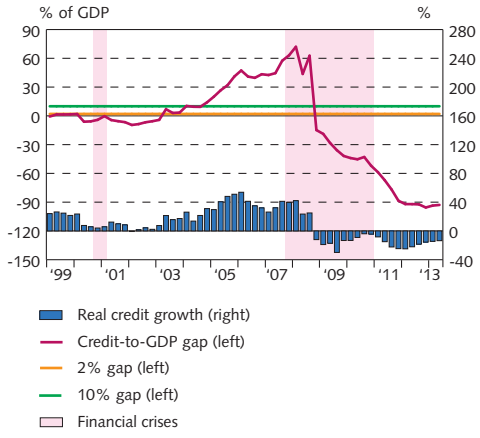
Chart 6
Gross external liabilities to GDP[1]



1. Parent companies.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 7

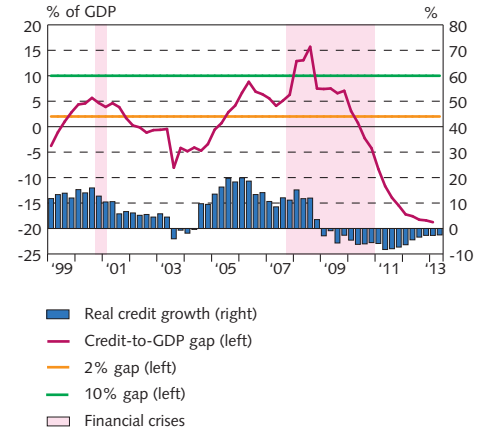
Credit-to-GDP[1] gap and real credit growth for non-financial corporations



1. Parent companies. Credit-to-GDP ratio refers to the ratio of total nominal private sector lending to GDP.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 8

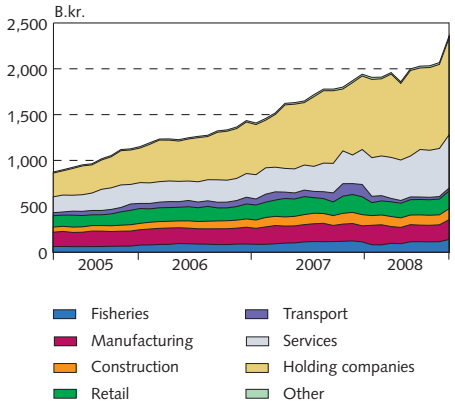
Credit-to-GDP[1] gap and real credit growth for households



1. Parent companies. Credit-to-GDP ratio refers to the ratio of total nominal private sector lending to GDP.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 9

DMBs' lending[1] to non-financial corporations, by sector



1. Parent companies. 2006 price levels.
Source: Central Bank of Iceland.

to the increased default associated with a financial shock. In order to assess when it is appropriate to *reduce the CCB*, indicators are needed that show the position of the financial markets, banks' resilience, and the position of the economy. According to the ESRB (2014), possible indicators would be those that show increased interest premia on new loans and rising CDS spreads on financial institutions. It is important that these indicators be based on high-frequency data. It has proven difficult to find sound indicators for the removal of macroprudential instruments, and research in this field is not yet far advanced; therefore, it is important to rely on professional judgment.[11]

Sector-specific or risk-specific capital requirements

In the main, this tool works in the same way as the CCB, but it restricts the premium to certain sectors or specified risk factors. This can be done in two ways: by requiring a specific premium, or by increasing risk weights for specified factors, thereby raising capital requirements.

Sector-specific capital requirements

If focus is directed at the financial system as a whole, there is the risk that it will be impossible to identify elevated systemic risk within individual sectors. Systemic risk within individual sectors can spread rapidly across the economy, however, and can be the source of a financial crisis. Consequently, it is important to arrest the build-up of systemic risk in individual sectors. Sector-specific capital requirements are macroprudential instruments that curb lending growth to the sectors in question, in addition to enhancing financial institutions' resilience against shocks in those sectors.

In the run-up to the 2008 crisis, the surge in private sector credit growth was driven by loans to firms – holding companies in particular (Chart 7). Firms' leverage increased much sooner and much more rapidly than households' leverage (Chart 8). If a CCB had been imposed on the entire banking system in December 2004, as the above-described risk threshold for the credit-to-GDP gap indicated, it is possible that excessive premia would have been applied to households, which posed much less risk. If the Basel Committee guidelines for risk thresholds had been followed – i.e., to apply a premium when the credit-to-GDP gap in a given sector exceeds 2% – a buffer should have been applied to the banks' corporate lending in June 2003 and raised to the maximum in March 2004. For household lending, however, buffers should not have been applied until September 2005.

An examination of DMBs' lending reveals pockets of elevated risk within sectors. For example, risk within the corporate sector rose with the surge in lending to holding companies (Chart 9). DMBs' credit risk also rose due to the increased share of foreign-denominated lending relative to total lending, which rose from 20% in 2003 to 75% by September 2008. It would have been possible to address this increased risk by imposing buffers on lending to holding companies and on foreign-denominated lending, or by increasing the risk weights for these classes of loans.

11. See European Systemic Risk Board 2014: "The ESRB Handbook on Operationalising Macro-prudential Policy in the Banking Sector".

It is also possible to use other indicators to impose sector-specific capital requirements, as is described above; for instance, gross credit growth to a given sector, irrespective of GDP. An increased premium on a given sector could reduce systemic risk, but it could also shift risk to other sectors and leave systemic risk unaffected.[12] Removal of the buffer is based on the indicators discussed above.

Specific capital requirements for mortgage lending

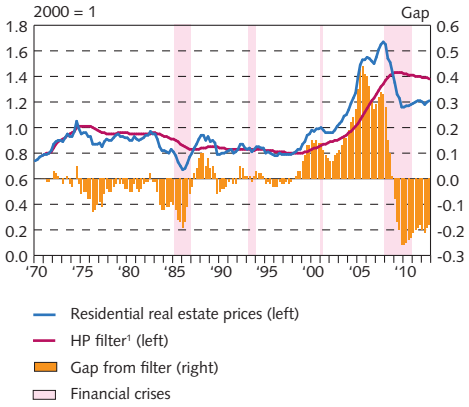
Instead of conducting an analysis and examining responses by sector, it is possible to look at specific cross-sectoral risk factors. One such example is mortgage lending. It is possible to impose a countercyclical buffer on mortgage lending only. In mid-2005, for instance, mortgage lending growth was about 28%. Indicators for the imposition of a capital requirement due to a specific risk factor such as mortgage lending include the credit-to-GDP gap for that risk factor, developments in gross lending to that risk group, and changes in real estate prices relative to long-term developments.

It is not possible to estimate the credit-to-GDP gap for mortgage lending in Iceland retroactively because of inadequate data, but an examination of data for Norway, Denmark, the UK, and Canada shows that they all exceeded the recommended Basel Committee reference in 2003-2005.

House prices in Iceland were well above their long-term trend from end-1997 to end-2008 (Chart 10). The annual nationwide increase in real house prices peaked at 25% in mid-2005 (Chart 11). At the same time, the annual increase in capital area house prices peaked at 35%. For reference, the annual increase was 14% nationwide at the end of 1999 and 18% in greater Reykjavík in February 2000. If it is assumed that the risk threshold is 1.5 standard deviations above mean annual growth in house prices, there were signs of overheating in the real estate market by year-end 2004. In comparison, the annual increase in Norway and the UK exceeded the 1.5 standard deviation threshold in 2006. It exceeded the threshold in France in 2003. Commercial property prices also rose steeply from end-1997 onwards, and they were above their long-term trend during the prelude to the dot-com bubble (Chart 12). Unlike house prices, commercial property prices dipped below their long-term trend during the downturn just after the turn of the century, but they had risen back above it by 2005. In terms of a risk threshold of 1.5 standard deviations above mean annual growth in real commercial property prices, there were signs of overheating in the commercial real estate market at the end of 2005 (Chart 13).

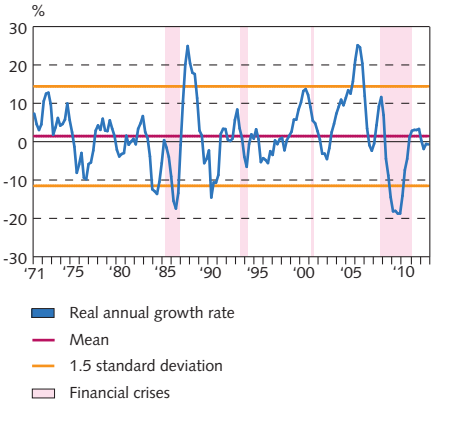
As yet, there is little experience of the effectiveness of countercyclical buffers for mortgage lending, as is the case with other macroprudential tools. In the beginning 2013, the Swiss authorities applied a capital buffer to mortgage loans used to finance purchases of residential property. The measure was adopted in response to rising real estate prices and credit growth in the years prior.[13] The Australian

Chart 10
Residential real estate prices



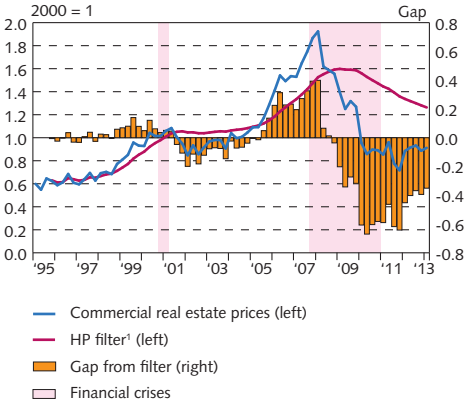
1. Long-term trend is measured using the Hodrick-Prescott (HP) filter with λ = 400,000.
Source: Central Bank of Iceland.

Chart 11
Annual changes in residential real estate prices



Source: Central Bank of Iceland.

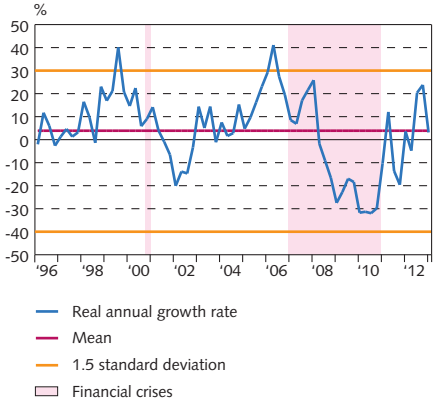
Chart 12
Commercial real estate prices



1. Long-term trend is measured using the Hodrick-Prescott (HP) filter with λ = 400,000.
Source: Central Bank of Iceland.

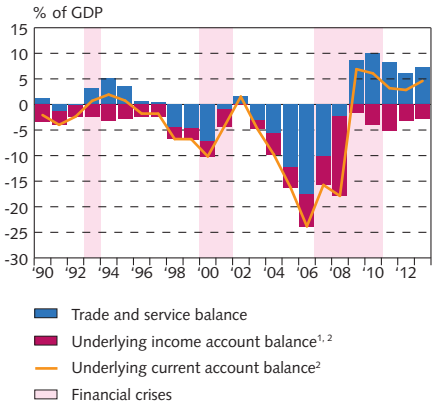
12. See European Systemic Risk Board (2013) and Bank of England (2011).
13. See Swiss National Bank (2013).

Chart 13
Annual changes in commercial real estate prices



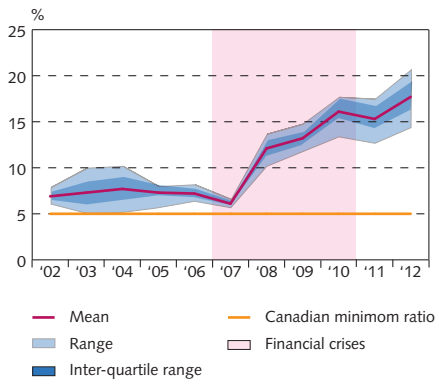
Source: Central Bank of Iceland.

Chart 14
Underlying current account balance 1990-2013



1. Operating contributions included with factor income. 2. Excluding DMBs in winding-up proceedings and the pharmaceutical company Actavis in factor income.
Source: Statistics Iceland, Central Bank of Iceland.

Chart 15
Icelandic banks' leverage ratio[1]



1. Parent companies.
Source: Bankscope.

financial supervisor increased risk weights for unsecured residential mortgage loans. The Central Bank of India increased risk weights for commercial housing loans, reducing credit growth in the sector, and in Sweden the minimum risk weights for mortgage lending have been raised.

Systemic risk buffers

Systemic risk buffers are intended to limit system-wide risk that threatens the economy as a whole; they are not intended as countercyclical capital buffers.[14] There is reason to impose a buffer when indicators signal: i) elevated likelihood of major economic shocks; ii) escalating risk; iii) extreme importance of the financial sector for the real economy, with signs that a shock to the financial system would have severe repercussions.

Indicators for item i) include private sector leverage, the current account balance, and other variables showing external imbalances, as well as developments in real estate prices and unemployment, which show possible weaknesses in the composition of important markets. For item ii), indicators could include possible concentration of risk such as mortgage loans as a share of total assets, foreign-denominated loans as a share of total loans, the Herfindahl coefficient for asset concentration, and others. Indicators for item iii) are those that measure the size of the financial sector, such as total financial sector assets relative to GDP and the ratio of total deposits to GDP.

As is stated above, the current account balance is one indicator of systemic risk (Chart 14). A negative current account balance indicates that national saving is too limited, and research shows that a persistent current account deficit increases both the likelihood of a financial crisis and the frequency of financial crises.[15] There was a persistent current account deficit during the prelude to the 2008 financial crisis in Iceland, the debt crisis in South America in the 1980s, the Southeast Asian crisis of 1997-98, and the financial crisis in the US in 2008.

Targeted systemic risk indicators should take into account the economy in question in each case. Guideline thresholds should be developed for each indicator, but because of the complexity of the risk factors, it is necessary to rely on professional judgment in selecting the thresholds.

Restrictions on banks' leverage ratios

Minimum leverage ratios are imposed on banks in order to ensure that a baseline level of resilience is in place, irrespective of how risky the banks' assets are. The Basel Committee has recommended that a minimum leverage ratio be applied. The current minimum is 3% (see Box III-1).[16] Minimum leverage ratios must be in place, no matter what systemic risk is estimated to be. Minimum leverage ratios create

14. On the other hand, countercyclical capital buffers are intended to mitigate cyclical fluctuations. European Systemic Risk Board (2014).
15. Obstfeld, Maurice and Kenneth Rogoff (2005). "Global Current Account Imbalances and Exchange Rate Adjustments." Brookings Papers on Economic Activity.
16. Basel Committee for Banking Supervision (2014).

a counterweight to the accumulation of systemic risk, as they impede rapid growth of financial institutions, thereby hindering excessive credit growth and leverage. The Canadian authorities have years of experience with this tool, as they first imposed restrictions on leverage in 1980. In their opinion, the required minimum leverage ratio diminished systemic risk during the run-up to the financial crisis in 2008.[17] In recent years, banks' leverage ratios have been more effective than capital adequacy ratios in indicating which banks will experience difficulties when a financial crisis strikes. For example, banks' leverage ratios declined during the prelude to both the 2008 financial crisis and the Nordic crisis in the early 1990s.[18]

The Icelandic banks' leverage ratios did not clearly signal elevated systemic risk during the run-up to the 2008 crisis (Chart 15). They fell only slightly during the pre-crisis period, but they were above the limit set by the Canadian authorities and the threshold recommended by the Basel Committee. During the pre-crisis years, leverage ratios declined more in the UK than in Iceland, falling from 5% to 3%, on average. As a macroprudential tool, restrictions on leverage are a simple and transparent instrument. One of the major advantages of minimum leverage ratios is also the main disadvantage: because there are no sanctions on risk, banks looking to maximise their return on equity tend to turn to riskier investments. Requirements for risk-weighted capital must therefore be used simultaneously.

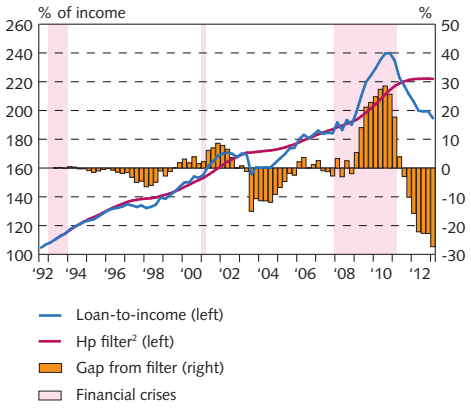
The same indicators are used to assess changes in either the minimum or the calculation of the leverage ratio, but it is appropriate to consider also the ratio of risk-weighted assets to total assets, which gives an indication of the average risk weight of banks' assets. In addition, it is important to monitor banks' off-balance sheet items and how they are handled in calculations of the leverage ratio.

Restrictions on loan-to-value (LTV) ratios and debt service

Countercyclical capital buffers, premia for systemic risk, and leverage ratios are all tools that affect the supply of credit. It is important to affect borrowers' demand by placing limitations on LTV ratios and debt service. Reduced demand for credit reduces lending, thereby diminishing the risk of bubble formation during an upswing. Using these tools can also decrease systemic risk, both by reducing the risk of borrower default and by restricting credit institutions' loss given default.

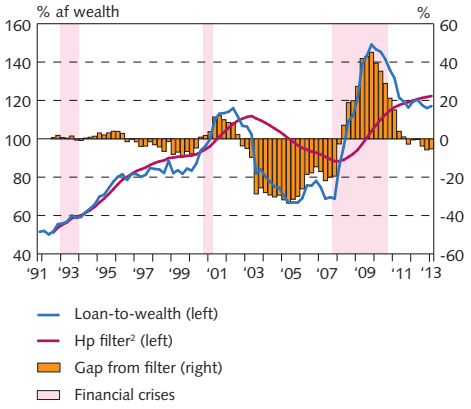
The same indicators are used in applying these macroprudential tools, but there are targeted indicators as well. If credit institutions relax their credit assessment criteria at a time when real estate prices and other prices are rising beyond their long-term trend, or if a credit-to-GDP gap develops, consideration should be given to these instruments. Indicators concerning LTV ratios for new loans and the relationship between LTV ratios and real estate prices, share prices, etc., can be an important sign of the need for a ceiling on LTV ratios. Other

Chart 16
Loan[1]-to-Income ratio



1. Parent companies. Real credit to households. 2. Long-term trend is measured using the Hodrick-Prescott (HP) filter with λ = 400,000.
Source: Central Bank of Iceland.

Chart 17
Loan[1]-to-wealth ratio

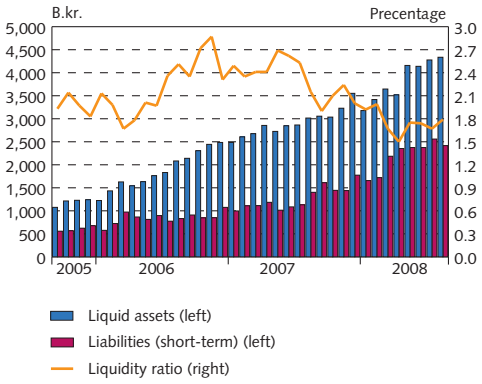


1. Parent companiees. Real credit to households. 2. Long-term trend is measured using the Hodrick-Prescott (HP) filter with λ = 400,000.
Source: Central Bank of Iceland.

17. Bordeleau et al. (2009).

18. Barrell et al. (2010) and Haldane and Madouros (2012).

Chart 18
Liquidity ratio according to liquidity rules, 2005-2008[1]



1. DMBs' parent companies. Overnight one-month ratio.
Source: Central Bank of Iceland.

Table 3 List of policy instruments and leading indicators for intermediate objective 2

1. Liquidity coverage ratio (LCR)
   Market indicators: turnover, bid-ask spreads, bond issuance
   Long-term averages for market indicators
   Funding indicators that show the composition of new borrowing (secured or unsecured)
   CDS spreads
   Standard deviation and correlation of market indicators and banks' CDS spreads
2. Net stable funding ratio (NSFR)
   Central bank funding
   Weighted average time to maturity of assets and liabilities
   Loan-to-deposit ratio and/or loan-to-stable funding ratio (i.e., deposits + equity + long-term funding)
   General stable funding ratio: (deposits + equity + long-term liabilities)/total obligations
   General liquidity ratio: liquid assets/total assets
3. Restrictions on unstable funding; loan-to-deposit (LTD) ratio
   Same indicators as above
4. Liquidity surcharge
   Same indicators as above

indicators are the ratio of annual credit growth to disposable income (Chart 16), the ratio of debt services to disposable income, and the ratio of lending to household wealth (Chart 17). These last indicators were unfavourable during the prelude to the financial crisis in Iceland. During the upswing, disposable income rose almost as rapidly as lending did, and household wealth grew even faster. Increased household wealth was driven largely by rising asset prices. The ratio of lending to disposable income was far above its long-term trend, and the ratio of lending to household wealth fell to more than 25% below its long-term trend. These developments made households more vulnerable to loss of income, changes in asset prices, changes in interest rates, inflation, and other developments in the real economy that affected their ability to service their debt when the crisis escalated. In Iceland's case, it would have been necessary to consider other indicators for application of macroprudential tools in order to restrict demand for credit.

The authorities in Hong Kong have used ceilings on LTV ratios as a macroprudential instrument for 20 years. As is discussed in Box 1 in this Appendix, the Norwegian financial supervisor has also placed limitations on LTV ratios for residential mortgages. On the other hand, such ceilings can prevent borrowers who meet solvency requirements from being approved for loans because they cannot make a large enough down payment. In some countries, borrowers take out unsecured supplemental loans from other financial institutions, which reduces the impact of the tool on real estate prices and exacerbates potential risk in the financial system.[19]

In a downswing, it is possible to stimulate demand for credit by easing minimum LTV ratios or debt service requirements. During the downturn in the early 2000s and in the current crisis, the ratio of lending to disposable income signalled borrowers' straitened circumstances (Chart 16). When this ratio exceeds its long-term trend, as it did in early 2001 and in 2009, it can be used as an indication that LTV ratios and debt service requirements should be eased. With regard to lifting these restrictions, it is also possible to use the same indicators as are used with the other tools.

Intermediate objective 2 – Mitigate and prevent excessive maturity mismatches and market illiquidity

In the wake of a liquidity crisis

The global financial crisis began as a liquidity crisis. The banks had taken advantage of an abundant, readily available supply of cheap credit and funded long-term lending with short-term funding. There were significant maturity mismatches in the financial system, enormous risk had accumulated, and the banks were vulnerable to liquidity shortages.

The second of the intermediate objectives set forth by the ESRB centres on liquidity, with the stated objective of mitigating and preventing excessive maturity mismatches and market illiquidity. The macroprudential instruments identified by the ESRB in this respect are i) minimum liquidity ratios for banks, ii) restrictions on funding

19. See also Wong et al. (2011) and Crowe et al. (2011).

composition (funding ratios), iii) restrictions on unstable funding (i.e., loan-to-deposit ratios, or LTD), and iv) liquidity surcharges (see Table 3). The following is a discussion of the instruments used to achieve intermediate objective 2 and the indicators that could suggest when the instruments should be applied.

Liquidity ratio

Liquidity ratios measure the ratio of liquid funds to short-term obligations. The Basel Committee on Banking Supervision has developed and issued the liquidity coverage ratio (LCR), which is used as an international reference and is being incorporated into regulatory instruments in most jurisdictions. The LCR assumes that banks can withstand shocks either in the market or related to individual entities over a period of 30 days. It is a sort of stress test that assumes a bank can fulfil its obligations over a 30-day period of stressed market conditions and liquidity shortage.[20]

The objective of the LCR as a countercyclical macroprudential tool is that it can be raised if substantial liquidity risk is escalating in the financial system, so that banks will be prepared to pay out a large share of their deposits and short-term liabilities if market conditions should change and they cannot roll over their funding. It could be advisable to raise the LCR during times of reduced risk, abundant credit, relatively limited volatility, and narrow interest rate spreads.

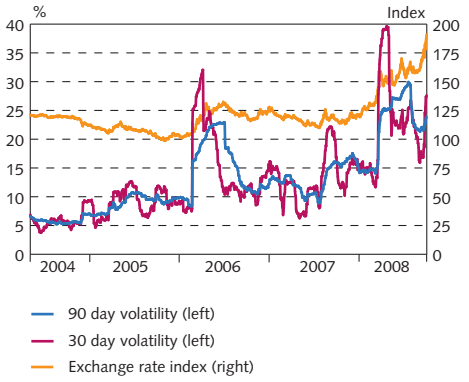
The important considerations in applying these rules are that they must address systemic risk, which can differ from country to country, and that they must be countercyclical. The composition and definition of the ratios are important as well. For instance, it is important that assets considered liquid according to the rules also be liquid in a liquidity crisis and maintain their value when capital markets dry up. Furthermore, the composition of the ratio is designed to reduce contagion; for instance, by preventing banks from relying on other banks for all their liquidity (i.e., through credit lines or deposits with other banks).

The liquidity rules in place in Iceland proved flawed in various ways and were therefore inadequate as prudential tools.[21] Among other things, liquid assets were overestimated, as credit lines in other banks were included with liquid assets, as were various other assets that did not retain their value when put to the test. The ratio was therefore procyclical. Risk attached to some depositors was underestimated, as was risk due to off-balance sheet items, as no precautionary outflows were assumed because of possible margin calls on deriva-

20. The Basel Committee on Banking Supervision has issued guidelines for rules designed to limit liquidity risk and maturity mismatches. One ratio is the liquidity coverage ratio (LCR), which aims to enable banks to cover their obligations over a 30-day period of reduced market liquidity. The other, the net stable funding ratio (NSFR), addresses maturity mismatches and aims to encourage banks not to rely unduly on risky short-term funding. The NSFR is still being designed by the Basel Committee and is therefore less developed than the LCR. The LCR is being incorporated widely into regulatory instruments, including in Europe. In Iceland it was incorporated into Central Bank rules in December 2013, supplanting the previous Rules on Liquidity Ratio.

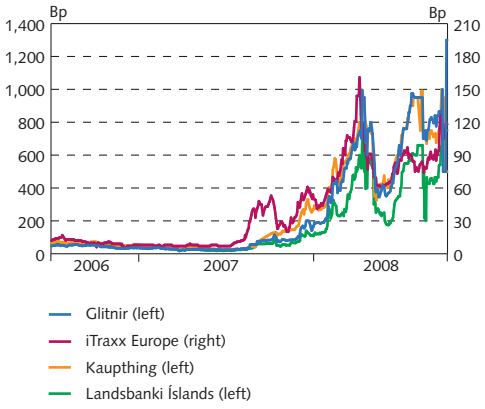
21. The liquidity rules then in effect in Iceland were based on those of Deutsche Bundesbank, the German central bank. There were no harmonised international liquidity rules in existence until 2010, when the Basel Committee issued drafts of the aforementioned liquidity ratios. Some countries had liquidity rules in place, but the structure and enforcement of the rules varied widely.

Chart 19
Exchange rate index and volatility[1]



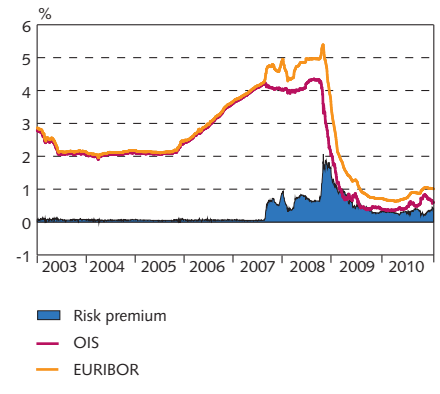
1. Annualised volatility.
Source: Central Bank of Iceland.

Chart 20
CDS spread, 2006-2008



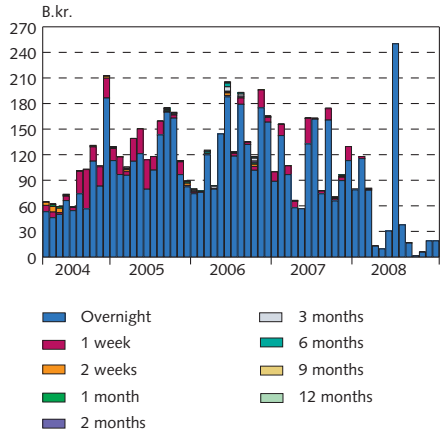
Sources: Reuters,Central Bank of Iceland.

Chart 21
Spread between three-month EURIBOR and OIS



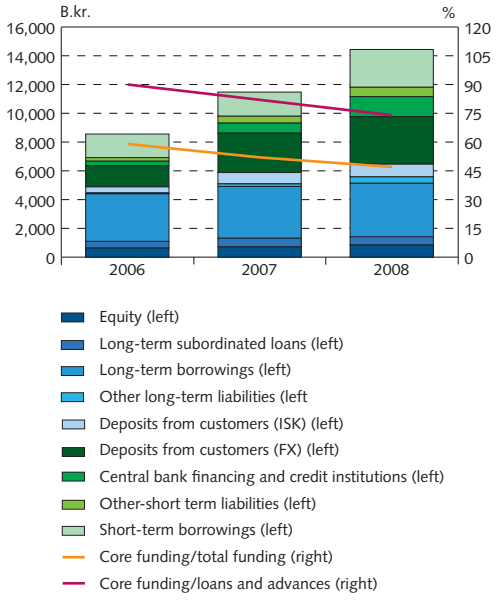
Source: Bloomberg.

Chart 22
Interbank market 2004-2008



Source: Central Bank of Iceland.

Chart 23
Funding composition



Sources: The three largest banks' consolidated annual accounts, June 2008 figures.

tives contracts or possible changes in their market price. The Icelandic banks' liquidity ratios fell from mid-2007 onwards but remained at or above the regulatory minimum until the banking system collapsed (Chart 18). Stress tests conducted on the banks' liquidity position indicated their weakness, however, and changing the weight of items based on market conditions and the banks' risk generated a more accurate view of their actual liquidity risk.

What indicators can tell when liquidity reserves should be expanded?

There has been a surge in research on banks' liquidity needs and the liquidity characteristics of assets, with emphasis on the importance of containing maturity mismatches. Experience of applying rules or ratios related to these objectives is still limited, however, and there are limited data available for use in either assessing the impact of such rules or identifying appropriate indicators. Indicators that could be useful in determining when minimum liquidity ratios should be raised have been presented, however.

Among them are various market indicators that could provide indications of market conditions and reduced access to liquidity. These are high-frequency data, such as market turnover, bid-ask spreads, new bond issues, and interest rate spreads in the interbank market. It is also possible to examine developments in CDS spreads and their correlation with market indicators. Deviations in these indicators from their long-term averages are also useful, as they can indicate whether risk is building up in the system.

These market indicators have actually proven to be a sort of metric for the liquidity market situation rather than a predictor of financial shocks. On the other hand, the metrics become more volatile before a shock occurs. It could be appropriate to build up liquidity reserves while volatility is limited.

Chart 19 shows the *trade-weighted exchange rate index and its volatility* during the run-up to the banks' collapse in autumn 2008. From spring 2004 through February 2006, annualised 30-day volatility ranged between 4% and 13%. Chart 19 shows what has been called the mini-crisis of 2006, when the banks were first forced to seek new sources of funding. Volatility was in the 20-30% range from end-February 2006 until the beginning of June 2006, when it subsided again. It increased again in late March 2008, ranging between 30% and 40% until the end of April, and then tapered off again, measuring 15-30% until the banks failed early October that year.

In autumn 2007, the Icelandic banks' *CDS spreads* began rising. The same occurred elsewhere. Developments in CDS spreads can be seen in Chart 20, where the left axis shows the Icelandic banks and the right axis shows the iTraxx credit default swap index for European financial companies.

The Icelandic banks were funded largely with foreign short-term funding. It is also useful to consider risk premia in foreign interbank markets. Chart 21 shows the difference between three-month EURIBOR rates and three-month overnight index swap rates. The risk premium grew strongly in August 2007 and again in September and October 2008.

Indicators for reducing the ratio are clearer

According to this, by summer 2007 there were clear signs that funding had become scarcer and more expensive. The signals appear to have been implied by the long previous period of limited volatility and cheap funding. Therefore, the indicators are a more effective gauge of when premia should be lowered than when they should be raised. The forecasting value appears to be greater for balance sheet related indicators, such as rising unstable funding ratios, which are discussed below.[22]

Funding ratio

Funding ratios are intended to encourage banks not to rely too heavily on risky, short-term funding. The funding ratio is very important, given the incentives in place concerning funding and risk-taking in banks and in the system as a whole. It is designed to encourage banks to fund illiquid assets to some degree with stable funding sources such as term deposits and long-term bonds. Rules of this type can also prompt banks to hold shorter-term assets. As a result, they reduce risk due to maturity mismatches, both in individual banks and in the system as a whole. Maturity mismatches are an essential part of banking activities, however, and the purpose of the rules is not to eliminate them. Definitions of stable funding and liquid assets can change from one period to another and from one country to another. As a macroprudential tool, funding ratios must be responsive to changes of this kind.

The Basel Committee published its first funding ratio in 2010. It then published a revised ratio in January 2014 and solicited commentary on it. The ratio assigns weights to assets and liabilities, based on stability of funding and liquidity of bank assets, from which *available stable funding* and *required stable funding* can be derived. The ratio measures the proportion of long-term assets financed with stable funding. There are simpler ratios based on the same concept; for instance, the core funding ratio or another similar ratio implemented by the Reserve Bank of New Zealand, which shows stable funding as a share of loans and claims. Another tool worth considering is the LTD ratio.

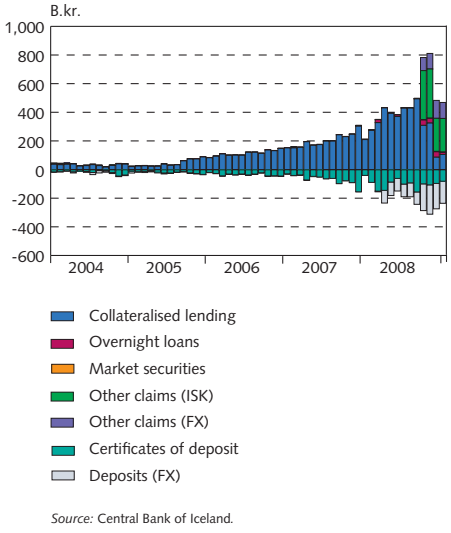
Indicators

The indicators used in connection with this tool are those pertaining to *banks' balance sheet composition*, such as central bank funding, weighted time to maturity of assets and liabilities, LTD ratio, and/or the ratio of loans to stable funding (i.e., stable deposits, equity, and long-term funding). Another possibility is the general ratio of stable funding to total obligations.

The section on intermediate objective 1 includes a discussion of *LTD ratios*. During the prelude to the financial crisis, the Icelandic banks far exceeded sustainable levels with respect to other funding.[23] They all collected deposits abroad when access to funding began to

Chart 24

Central Bank of Iceland claims and liabilities against financial institutions

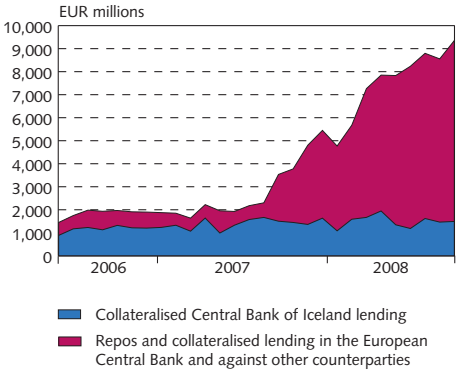


Source: Central Bank of Iceland.

Chart 25

Repos and collateralised lending

The three largest banks, 2006-2008

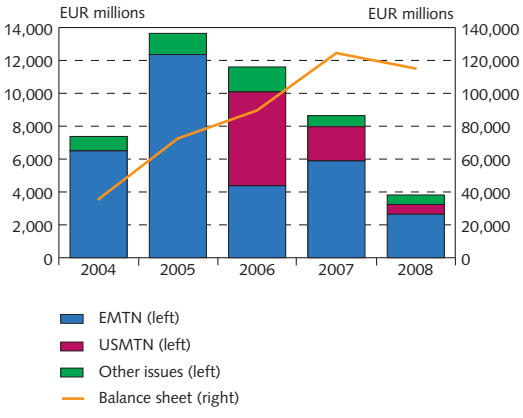


Sources: Special Investigation Commission, Central Bank of Iceland.

Chart 26

Bond issuance, 2004-2008[1]

LBI, Kaupthing and Glitnir



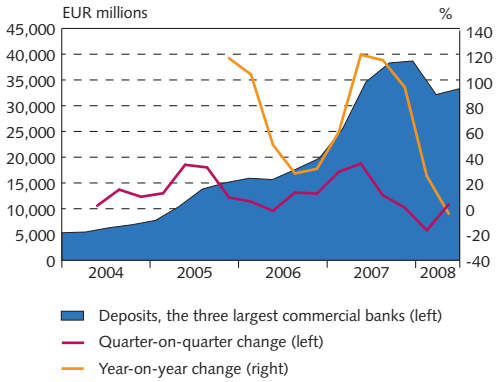
1. EMTN: Euro Medium-Term Notes; USMTN: US Medium-Term Notes.

Sources: Special Investigation Commission, Central Bank of Iceland.

22. European Systemic Risk Board (ESRB) (2014).

23. Based on an LTD ratio of 120%. Portugal has set this as the maximum for its largest bank.

Chart 27
Deposits 2004-2008
LBI, Kaupthing and Glitnir



Sources: Special Investigation Commission, Central Bank of Iceland.

tighten. The LTD ratio is a convenient indicator because of its simplicity; however, it assumes that all deposits are classifiable as stable funding. In this context, it must be important to consider the type of deposits in question and the risks attached to them. In the case of the Icelandic banks, where the vast majority of the deposit growth took place in foreign branches and subsidiaries, the *ratio of loans to stable funding* can be an even more effective indicator. Stable funding includes stable deposits, equity, and funding with a maturity of more than one year. Chart 23 shows the composition of the Icelandic banks' funding, including short- and long-term classification. It also shows the banks' *ratios of stable funding to total funding*, where stable funding is defined as all funding maturing in more than one year, plus domestic deposits. The chart shows clearly how the ratio declined as the share of short-term funding increased.

Central bank funding gained in importance during the years leading up to the collapse of Iceland's banks. The total balance of the three largest banking groups' collateralised loans accounted for 2% of their balance sheets at year-end 2006 and 4.4% at the end of 2007, before surging to 8% by the end of September 2008. Chart 24 shows the Central Bank of Iceland's transactions with credit institutions. On the other hand, the banks were funded to a large degree in foreign currencies and to some degree with collateralised loans from the European Central Bank, through their foreign subsidiaries. Chart 25 shows collateralised lending to the Icelandic banks from mid-2006 onwards. Charts 23, 25, and 26 all illustrate the developments at the Icelandic banks, where funding grew steadily shorter while their balance sheets expanded. Collateralised loans from foreign central banks increased enormously in the first half of 2008, strongly signalling a liquidity crisis.

According to studies conducted on the forecasting value of funding indicators, LTD ratios have generally risen during the prelude to a financial crisis.[24] The ESRB has pinpointed the LTD ratio as one of the instruments that could be applied to reduce maturity mismatch risk.

Restrictions on unstable funding

Among possible macroprudential tools presented by the ESRB are further restrictions on unstable funding. These restrictions include rules on funding ratios similar to the above-mentioned LTD ratios. Another ratio that is slightly broader in scope is the ratio of loans to stable funding; i.e., loans as a share of deposits and other stable funding sources, such as equity and long-term bonds. Experience in applying such ratios is relatively limited, but South Korea (2012) and Portugal (2011) have recently set maximum ratios of 100% and 120%, respectively, for their banks.

These ratios are simpler than the net stable funding ratio (NSFR) currently being developed by the Basel Committee; therefore, they are even more transparent and easy to apply. On the other hand,

24. Srobona et al. (2011). Show the connection between an LTD ratio above 120% and the onset of a financial crisis within a year.

they only extend to a portion of the balance sheet and do not cover off-balance sheet items, and they are not equally applicable to different business models. It is also important to define them carefully so as to ensure that they extend to all of the items the ratio is intended to cover.

The indicators for assessment of market conditions and systemic risk are the same as those mentioned above.

Price-based instruments

The instruments and metrics discussed above are volume-based, but there are also instruments based on pricing. Price-based instruments assume that banks must pay for the funding risk they take on. Risk can be quantified, as is done with the NSFR, and the premium diminishes as funding grows longer, assets grow shorter, or more stable funding sources are used. The underlying concept is that banks must pay for the risk they take with their funding – risk that has not been priced correctly hitherto. The risk premium could revert to the national treasury or could be deposited to some sort of bank crisis guarantee fund. As yet, there is virtually no experience with the application of such premia.[25]

Countercyclical buffers and targeted liquidity requirements due to systemic risk

The ratios mentioned herein are countercyclical in themselves. They reduce banks' reliance on short-term funding that must constantly be rolled over, thereby reducing the risk that they will be forced to sell assets at distressed prices. The banks obtain proportionally more long-term funding as a result. Longer funding is generally more expensive than short-term funding, which raises lending prices. This could curb credit growth. But banks must remain able to carry out their maturity transformation role. It could be possible to apply the ratios with countercyclical buffers on top of minimum ratios in order to smooth out the financial cycle by applying higher required ratios during upswings, to contain credit growth, and then lowering minimum ratios during downswings, to cushion against the effects of higher funding costs, in the manner discussed above.

It is assumed that the ratios are applied with a view to systemic risk, so that they can be adapted to circumstances and their countercyclical properties can have maximum effect. This can be done, for instance, by assigning variable weights to individual items with respect to various assets and liabilities or currencies. This is done with liquidity rules in Iceland, where the liquidity ratio applies both overall and for foreign currencies in particular, and higher outflow rates are applied to riskier deposits, in part because of the capital controls. It is extremely important to ensure flexibility and transparency when applying these instruments.

In assessing risk and deciding to apply countercyclical buffers, it is necessary to consider currency mismatches and concentration of funding or liquid assets in addition to the indicators discussed above.

25. European Systemic Risk Board (ESRB) (2014).

The indicators highlight structural risk and cyclical risk. It would be appropriate to examine a large group of indicators that identify risk and indicate its development over time.

As is mentioned above, there is limited experience with the application of rules of this type, and it is important to determine whether the rules promote reduced asset liquidity and greater concentration in markets where all banks are seeking the same assets. It is also important to monitor other entities that carry out banks' conventional maturity transformation role, such as those engaged in shadow banking, so as to determine whether new rules actually reduce risk rather than merely shifting it from one part of the system to another.

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Box 1

Macroprudential policy in the Nordic countries

In the wake of the financial crisis that struck in 2007-2008, increased emphasis has been placed on macroprudential policy. The main objective of macroprudential policy is to maintain financial system stability by using policy instruments to contain systemic risk.[1] The Asian financial crisis in the late 1990s marks the advent of the term macroprudential, which had previously been known mainly in central banking circles.[2] In recent years, there has been rapid development in macroprudential policy, including through the establishment of the European Systemic Risk Board (ESRB) and the drafting of the new Basel III rules. The Basel III rules contain instructions on the implementation and application of macroprudential instruments, including requirements for countercyclical capital buffers (CCB). In Europe, the Basel III rules have been implemented with the Capital Requirements Directive (CRD IV), which was approved in June 2013.[3] In April 2013, the ESRB issued instructions on intermediate objectives and application of macroprudential tools, together with metrics to be used for reference (see Appendix 1).[4] This Box explores the application of key macroprudential tools in the Nordic region.

Norway

Rules on countercyclical capital buffers took effect in Norway on 15 October 2013. The purpose of CCBs is to contribute to banks' financial stability and enhance their resilience during economic downturns, thereby increasing the likelihood that they can maintain lending activity during the downward cycle.[5] The rules aim to ensure that banks accumulate increased capital during upward cycles so that they can draw on it when the cycle turns (see Appendix 1). Each quarter, the Norwegian finance ministry will decide what the CCB should be during the period, based on analysis and assessments from Norges Bank. The assessment is to lie in the range of 0-2.5% of risk-weighted assets. Norges Bank bases its analysis and

1. International Monetary Fund (IMF), Macroprudential Policy: An Organizing Framework (http://www.imf.org/external/np/pp/eng/2011/031411.pdf).
2. BIS Quarterly Review, The term "macroprudential": origins and evolution, March 2010 (http://www.bis.org/publ/qtrpdf/r_qt1003h.pdf).
3. Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC.
4. Recommendation of the European Systemic Risk Board of 4 April 2013 on intermediate objectives and instruments of macro-prudential policy (ESRB/2013/1).
5. Norges Bank, Regulation on the Countercyclical Capital Buffer (http://www.norges-bank.no/en/financial-stability/countercyclical-capital-buffer/regulation-on-the-countercyclical-capital-buffer/).

assessment on the following four key indicators: credit-to-GDP ratio[6], the ratio of house prices to household disposable income, commercial property prices, and the wholesale funding ratio.[7]

In December, Norges Bank recommended that the CCB be set at 1% of risk-weighted assets effective 1 January 2015.[8] The finance ministry approved the recommendation but postponed the effective date until 1 July 2015. In recent years, rising debt service, high loan-to-value ratios, and mortgage lending without down payments have been a common feature of Norwegian household finances. Heavy indebtedness exacerbates households' vulnerability to interest rate hikes, unemployment, or reduced income. Experience shows that there are severe repercussions when housing bubbles burst.

In 2010, the Norwegian financial supervisor authority issued guidelines for lenders in order to stem the tide of steeply rising house prices and household debt levels. It updated the guidelines in 2011. The new guidelines contain 10 rules of thumb designed to promote cautious household lending policy, including lowering the maximum LTV ratio from 90% to 85%, requiring additional collateral or a precautionary assessment for mortgages with LTV ratios above 85%, and requiring payment of instalments from the first payment date on mortgages with an LTV above 70%.[9]

In order to support financial stability even further, the Norwegian finance ministry increased the minimum requirements for loss given default from 10% to 20%, which increases capital requirements for banks using the Internal Ratings-Based Approach (IRBA) to calculate regulatory capital.[10]

Sweden

In Sweden, mortgage loans represent the majority of household debt. In October 2010, the Swedish financial supervisor issued instructions to lower the maximum LTV ratio from 90% to 85% on new mortgages, so as to increase consumer protection and arrest unhealthy developments in the housing market.[11]

In May, the Swedish supervisor announced an increase in the risk weight floor for mortgages to 15%, in order to combat the risk associated with high (and growing) household indebtedness. This increase in the minimum risk weight increases the capital reserves the Swedish banks must maintain in order to protect against possible losses on mortgage loans up to three times.[12]

The Swedish government has also announced new measures designed to contribute to financial stability in Sweden, including the establishment of a financial stability council and the authority to impose countercyclical capital buffers.

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6. The credit-to-GDP ratio is the ratio of total private sector lending to GDP.
7. Norges Bank, Monetary Policy Report with financial stability assessment 4l13 (http://www.norges-bank.no/Upload/Publikasjoner/MPR/MPR_4_2013.pdf).
8. Ministry of Finance, press release of 12.12.2013, Countercyclical buffer at 1 pct. (http://www.regjeringen.no/en/dep/fin/press-center/press-releases/2013/countercyclical-buffer-at-1-pct.html?id=747825).
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11. Finansinspektionen, press release of 7.9.2010, Mortgages capped at 85 percent as of 1 October (http://www.fi.se/Folder-EN/Startpage/Press/Press-releases/Listan/Mortgages-capped-at-85-percent-as-of-1-October/).
12. Finansinspektionen memorandum, "Risk weight floor for Swedish mortgages".

Denmark

In Denmark, the parliament reached an agreement in October 2013 on new regulations authorising, among other things, the application of special capital buffers for systemically important financial institutions. Systemically important institutions are those that are so large that, if they experience difficulties, they could affect the entire economy, owing to the high rate of concentration in the Danish financial system. The Danish parliament has also agreed to authorise the application of countercyclical capital buffers. It is assumed that it will be permissible to impose a buffer of 0.5% beginning in 2015. The maximum permissible buffer will increase by 0.5 percentage points per year until it reaches 2.5% in 2019. The Danish economic affairs minister will be permitted to impose CCBs, based in part on recommendations from the Danish financial supervisor or systemic risk board.[13]

Finland

In January 2012, the Finnish finance ministry appointed a special committee tasked with recommending measures to introduce macroprudential supervision. The committee recommends that the board of the Finnish financial supervisory authority take decisions on various macroprudential tools such as CCBs, but that it request opinions on the decisions from the ministries of finance and social affairs and the Bank of Finland.[14]

13. Agreement between the Government and Venstre, Dansk Folkeparti, Liberal Alliance and Det Konservative Folkeparti concerning the regulation of SIFIs as well as requirements imposed on all banks and mortgage-credit institutions to have more capital and capital of a higher quality as well as higher liquidity (http://www.evm.dk/~/media/oem/pdf/2013/2013-pressemeddelelser/10-10-13-pm-vedr-sifi-aftale-xxxxxx/agreement-10-10-13.ashx).

14. Ministry of Finance, Macroprudential Regulation and Supervision of the Financial Market/Report by the Working Group, 32/2012 (http://www.financeministry.fi/vm/en/04_publications_and_documents/01_publications/07_financial_market/20121106Macrop/name.jsp).

Appendix II

Iceland's international investment position: current situation and medium-term outlook

Underlying international investment position

The Central Bank publishes figures on the balance of payments and the external position of the economy on a quarterly basis. The last such figures, published on 4 March 2014, included a preliminary summary of Q4/2013. Official figures show the situation including the deposit money banks (DMB) in winding-up proceedings, and the position excluding the failed DMBs is shown for explanatory purposes. This gives a rather misleading view of the position of the economy, primarily because the debts of the failed banks and other companies being wound up are shown at nominal value, including accrued interest. These debts will never be paid in full. In order to obtain a clearer picture of the underlying position, it is therefore necessary to project what will happen when the estates of the failed DMBs and other firms in winding-up proceedings are settled.

Table 1 gives a summary of Iceland's external assets and liabilities and the net international investment position (IIP). First the total figures are given, and then the assets and liabilities of the failed DMBs are subtracted. After that, the calculated settlement is added, and finally, account is given of the winding-up of several companies (other than the failed banks) that are currently being wound up or have concluded composition agreements. Virtually none of the debt of the companies being wound up has been written down since before the banks failed; therefore, it far exceeds the value of the underlying assets. Underlying external liabilities – that is, liabilities including the estimated settlement of the DMBs and other companies in winding-up proceedings – are estimated at 3,690 b.kr., or 207% of GDP, but are offset by external assets amounting to 2,746 b.kr., or 154% of GDP.

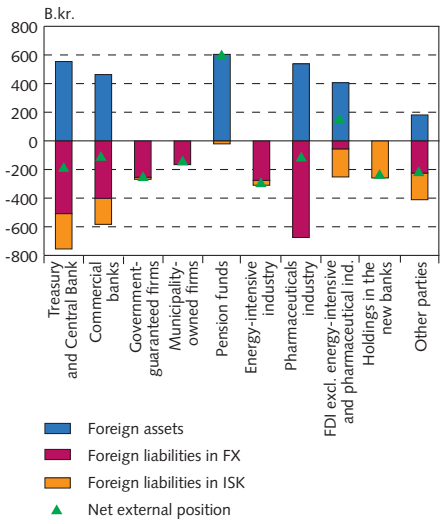
An estimate of the underlying IIP can also be seen in Table 1. The IIP calculated according to standardised accounting procedures was negative by 422% of GDP as of year-end 2012. If the DMBs in winding-up proceedings are excluded, the result is negative by 12%

Table 1 Estimated external assets and liabilities at year-end 2013

	Assets		*Liabilites*		*Net position*	
	B.kr.	*% of GDP*	*B.kr.*	*% of GDP*	*B.kr.*	*% of GDP*
Total	4,698	263	12,230	685	-7,532	-422
Excl. DMBs in winding-up proceedings (WUP)	2,735	153	2,949	165	-214	-12
Based on calculated settlement of DMBs in WUP	2,827	158	3,826	214	-999	-56
Based on calculated settlement of DMBs and other firms in WUP	2,746	154	3,690	207	-944	-53

Sources: Statistics Iceland, Central Bank of Iceland.

Chart 1
Estimated foreign assets and liabilities in underlying net external position
Year-end 2013



Sources: Financial information from Glitnir, Kaupthing and LBI; Central Bank of Iceland.

of GDP. As is discussed in Chapter VII, it is now assumed, based on the book value of these DMBs' assets, that their settlement will create external liabilities in the amount of 44% of GDP. The combined underlying position is therefore negative by 56% of GDP. After adjusting for the settlement of the other companies being wound up, the position is negative 944 b.kr., or 53% of GDP. This position has improved by 180 b.kr., or 10% of GDP, since end-2012.

Net position improves markedly year-on-year

Table 2 and Chart 1 give a breakdown of foreign assets and liabilities by type of entity. As is discussed in Chapter II, this is a more detailed itemisation than has been published heretofore. Among other things, the failed DMBs' foreign assets that are considered to belong to domestic creditors are specified by owner. The largest domestic creditor is the Central Bank of Iceland Holding Company (ESÍ). According to an analysis of ESÍ's assets based on calculated settlement, the Treasury and Central Bank's external position in foreign currencies is now estimated to be positive by just under 50 b.kr. The majority of foreign debt is in the hands of the Treasury, the Central Bank, the commercial banks, Government-guaranteed firms, and municipality-owned firms. These parties' net external position improved considerably between years, or by 17% of GDP, owing to a reduction in debt and an increase in foreign assets, which in turn is due to improved classification and GDP growth.

Table 2 Estimated underlying external assets and liabilities at year-end 2013

B.kr.	*Foreign assets*	*Foreign FX liabilities*	*Net FX position*	*Foreign ISK liabilities*	*Net position*	*% of GDP*
Treasury and Central Bank	554	-507	47	-247	-200	-11
Commercial banks	463	-400	63	-182	-120	-7
Government-guaranteed firms	0	-253	-253	-14	-267	-15
Municipality-owned firms	0	-165	-165	0	-165	-9
Pension funds	604	0	604	-20	584	33
Energy-intensive industry	0	-275	-275	-34	-309	-17
Pharmaceuticals industry	538	-674	-136	0	-135	-8
FDI excl. energy-intensive industry and pharmaceuticals industry	406	-55	351	-196	155	9
Holdings in the new banks	0	0	0	-258	-258	-15
Other parties	181	-224	-43	-186	-229	-13
Total	2,746	-2,553	193	-1,137	-944	-53

Sources: Financial information from Glitnir, Kaupthing and LBI; Statistics Iceland, Central Bank of Iceland.

Nearly a third of external liabilities króna-denominated

About half of Iceland's external assets and liabilities are due to relatively few entities, such as the foreign exchange reserves and related loans, and the assets and liabilities of the commercial banks and pharmaceuticals industry (Table 2 and Chart 1). It is possible to reduce external debt to some degree by selling foreign assets and downsizing Iceland's balance sheet, without creating obligations between residents. This would not affect the net external position, however. Only

two of the categories shown in Table 2 and Chart 1 have a positive net external position: the pension funds and foreign direct investment excluding energy-intensive industry and the pharmaceuticals industry. It should be noted that ownership of assets in foreign direct investment is widely diversified.

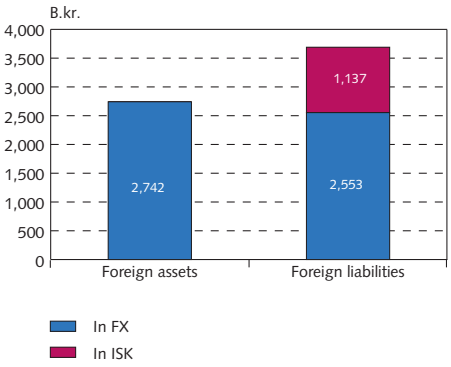
A portion of Iceland's external liabilities are listed in krónur. Non-residents' ISK assets fall into three categories:

- Short-term ISK assets, or offshore krónur, totalling 327 b.kr. at year-end 2013
- The domestic ISK assets of the failed DMBs, which will revert to foreign creditors upon settlement, were entered at 463 b.kr. at year-end 2013, in accordance with winding-up committee estimates.
- Non-residents also own shareholdings in Icelandic companies. These holdings were valued at 300 b.kr. at year-end 2013, including 34 b.kr. related to non-residents' energy-intensive investment projects. The majority of this holding is listed in krónur. Unlisted equity securities are recognised at nominal value. The market value of these assets is uncertain.

Therefore, it is estimated that underlying external liabilities listed in krónur totalled 1,137 b.kr. at the end of 2013. This is somewhat more than the net external debt at the same time. At the end of 2013, external assets totalled 2,746 b.kr. and foreign-denominated external liabilities were 2,553 b.kr. (Chart 2). Therefore, external assets and foreign-denominated external liabilities are broadly in balance, and exchange rate movements have a negligible effect on the IIP, even though the impact on individual entities and sectors may vary.

Non-residents' offshore krónur and the failed DMBs' króna-denominated domestic assets belonging to foreign creditors totalled 790 b.kr. as of end-2013. If these assets are included in the underlying IIP at the average exchange rate in the last three Central Bank foreign currency auctions (218 kr. per euro instead of 159 kr. per euro, the Bank's listed end-2013 exchange rate), the external debt position is reduced by 214 b.kr. and net external debt is 730 b.kr., or 41% of GDP.

Chart 2
Estimated external assets and liabilities at year-end 2013



Source: Central Bank of Iceland.

Assets and liabilities in foreign direct investment

Foreign direct investment (FDI) is defined as a foreign party's investment in 10% or more of the equity of a firm registered in a country other than the country of the investor's legal domicile. FDI consists of outward direct investment (residents' investment abroad) and inward direct investment (non-residents' investment in Iceland). Outward foreign direct investment is shown in Table 3. At the end of 2013, these assets totalled 1,461 b.kr., or just under 82% of GDP. Assets of companies that have been granted exemptions from the Foreign Exchange Act totalled 763 b.kr., or 52% of the total, including the pharmaceuticals industry, with 538 b.kr., or 37% of the total.[1] The

1. A general exemption pursuant to Article 13(n), Paragraph 6 of the Foreign Exchange Act, no. 87/1992, applies to firms with 80% of their revenues and expenses abroad.

failed DMBs and other companies in winding-up proceedings account for 517 b.kr., or 36% of the total. Assets of other entities in outward FDI are assessed at 181 b.kr., or 12% of the total. Outward FDI is therefore dominated by firms with exemptions from the Foreign Exchange Act and firms (DMBs and others) in winding-up proceedings.

Table 3 Outward foreign direct investment at year-end 2013

	B.kr.
Firms exempted under Article 13(n), Paragraph 6 of Act no. 87/1992	763
- Portion due to pharmaceuticals industry	*538*
DMBs in WUP	459
Other firms in WUP	58
Other parties	181
Total	1,461

Source: Central Bank of Iceland.

Inward foreign direct investment is shown in Table 4. As of year-end 2013, assets due to inward FDI totalled 1,239 b.kr., or just over 69% of GDP. Assets of companies that have been granted exemptions from the Foreign Exchange Act totalled 736 b.kr., or 60% of the total, including the pharmaceuticals industry, with 674 b.kr., or 54% of the total. Other firms in winding-up proceedings account for about 4 b.kr., or less than 0.5% of the total. Companies in the energy-intensive sector account for 309 b.kr., or 25% of the total, and assets of other foreign entities that are classified as FDI are assessed at 189 b.kr., or 15% of the total. Inward FDI derives mainly from firms with exemptions from the Foreign Exchange Act and companies in the energy-intensive sector.

Table 4 Inward foreign direct investment at year-end 2013

	B.kr.
Firms exempted under Article 13(n), Paragraph 6 of Act no. 87/1992	736
- Portion due to pharmaceuticals industry	*674*
Other firms in WUP	4
Energy-intensive industry	309
Other non-residents	189
Total	1,239

Source: Central Bank of Iceland.

Debt to non-residents

The loans owed by residents to non-residents and foreign-denominated loans to the failed banks totalled about 1,274 b.kr., or just under 71% of GDP, at year-end 2013, as is shown in Table 5. These debts are offset by substantial foreign assets. For example, the Treasury and Central Bank's net position in foreign currencies is positive, as Table 2 indicates. About 86% of external debt excluding the Treasury and the Central Bank is due to claims against firms with Government guarantees, municipality-owned firms, and Landsbankinn.

Chapter II discusses Icelandic residents' improved access to foreign credit markets in the recent term. Residents have a tendency, however, to pay down foreign debt rather than refinance it, in part

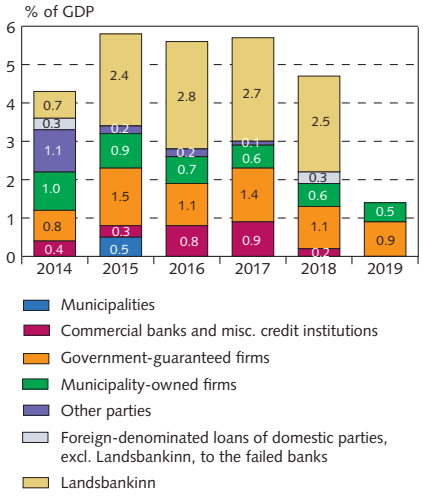
Table 5 Loans owed to non-residents and foreign-denominated loans to the failed banks at year-end 2013

	B.kr.
Central Bank of Iceland	122
Treasury	351
Municipalities	11
Commercial banks	24
Miscellaneous credit institutions	33
Government-guaranteed firms	245
Municipality-owned firms	165
Other firms	33
- Portion from firms exempted per Art. 13(n), Para. 6 of Act no. 87/1992	*15*
- Portion without access to foreign refinancing	*13*
- Other parties	*5*
Residents' foreign-denominated loans to DMBs in WUP	290
- Portion due to Landsbankinn	*238*
- Portion due to the Treasury	*38*
- Portion due to Government-guaranteed firms	*8*
- Other parties	*6*
Total	1,274

Sources: Financial informations from Glitnir, Kaupthing, and LBI; Central Bank of Iceland.

Chart 3

Estimated payments by parties other than the Treasury and CBI on foreign loans and foreign-denominated loans to the failed banks[1]

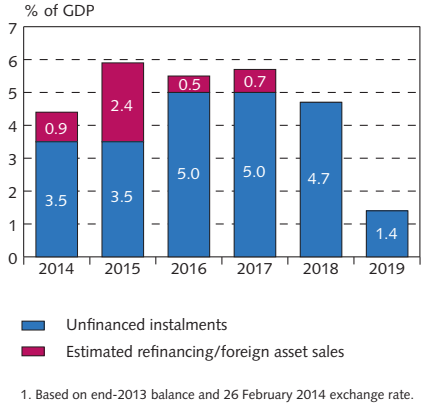


1. Based on end-2013 balance and 26 February 2014 exchange rate.
Sources: Statistics Iceland, Central Bank of Iceland.

because of the terms offered to them. This could create pressure on the exchange rate of the króna if the repayment profile is too heavy for the underlying current account surplus.[2] In 2013, the underlying current account surplus was 82 b.kr., or 4.6% of GDP. The repayment profile for residents' foreign loans is shown in Table 6, and the profile for foreign-denominated loans to DMBs in winding-up proceedings is shown in Table 7. The repayment profile (excluding the Treasury and the Central Bank) shown in Chart 3 becomes significantly heavier in 2015, when payment on the debt instrument between LBI and Landsbankinn begins in earnest. According to the current repayment profile, without any refinancing or extension of maturities, Iceland's foreign debt will be paid off very rapidly. Chapter II presents a cautious assessment of the actual repayment profile during the first years, with account given to expected refinancing and to the fact that residents have saved up for a portion of the payments or will cover them by selling foreign assets. It is assumed, other things being equal, that the commercial banks will continue to roll over their market funding, that credit lines will be rolled over, and that Landsbankinn will sell foreign assets to cover 2014 and 2015 payments on the LBI bonds. The estimated repayment profile adjusted for these assumptions can be seen in Chart 4. It should be noted, however, as is stated in Chapter II, that the assumptions concerning refinancing are extremely cautious. It is not assumed, for example, that the commercial banks will seek out market funding in spite of their need to refinance subordinated FX loans from the Treasury and FX loans from the Central Bank, and fulfil swap agreements with the Central Bank in coming years.

Chart 4

Estimated payments by parties other than the Treasury and CBI on foreign loans and foreign-denominated loans to the failed banks[1]



1. Based on end-2013 balance and 26 February 2014 exchange rate.
Sources: Statistics Iceland, Central Bank of Iceland.

2. Underlying current account surplus excluding the effects of the DMBs in winding-up proceedings and pharmaceuticals company Actavis on the balance on income.

Table 6 Estimated foreign loan repayments

In b.kr., based on 31 Dec 2013 balance and exchange rate	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Central Bank of Iceland	0	60	30	0	0	10
Treasury	23	2	120	2	0	30
Municipalities	1	10	0	0	0	0
Commercial banks	0	0	10	14	0	0
Misc. credit institutions	7	7	6	6	5	1
Government-guaranteed firms	16	29	23	31	25	22
Municipality-owned firms	18	19	14	14	13	12
Firms exempted under Article 13(n), Paragraph 6 of Act no. 87/1992	7	3	3	2	0	0
Firms w/o access to foreign refinancing	13	0	0	0	0	0
Other firms	1	2	1	1	0	0
Total	86	132	207	70	43	75
Total, excl. Treasury and Central Bank	63	70	57	68	43	35

Source: Central Bank of Iceland.

Table 7 Estimated payments of foreign-denominated loans to DMBs in winding-up proceedings

In b.kr., based on 31 Dec 2013 balance and exchange rate	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Treasury	3	3	3	3	3	3
Government-guaranteed firms	0	0	0	0	8	0
Landsbankinn	14	48	59	59	59	0
Other firms	6	0	0	0	0	0
Total	23	51	62	62	70	3
Total, excl. Treasury	20	48	59	59	67	0

Sources: Financial information from Glitnir, Kaupthing and LBI; Central Bank of Iceland.

The outlook for the balance on income and the financing balance

The outlook for developments in Iceland's balance of payments is highly uncertain at this juncture. As is stated in Chapter II, the trade balance is extremely sensitive to changes in the real exchange rate and terms of trade. Developments in the real exchange rate over the next few years depend in part on the progress made in lifting the capital controls and on medium-term developments in terms of trade, which in turn depend largely on unknown developments in the price of a few goods categories. There is also uncertainty about inward foreign direct investment in the next few years, including in the energy-intensive sector, and its impact on the trade balance. Other uncertainty factors centre on the impact of capital account liberalisation on capital flows to and from Iceland and the effects related to the estates of the DMBs in winding-up proceedings. The confidence intervals in all medium-term forecasts of the balance of payments are therefore wide and become wider further out the forecast horizon.

In spite of these uncertainties, it is possible to sketch out scenarios illustrating future developments in the balance of payments. But such scenarios will never be more accurate than the assumptions on which they are based. Table 8 shows Iceland's restated balance on income and financing balance, assuming an unchanged situation and the continued existence of the capital controls. This is therefore a stylised example based on given assumptions, not a forecast of the

likeliest developments. It is a sort of status quo scenario assuming that the capital controls remain in effect, that the exchange rate holds stable, and that there are no major changes in the assets or liabilities of Iceland's balance sheet. It also assumes, however, that resident entities will continue to service their foreign debt:

- No refinancing takes place apart from the Treasury and the Central Bank, which refinance all of their instalments in full; the commercial banks roll over their market funding, and short credit lines are rolled over as well.
- Landsbankinn pays its 2014 and 2015 instalments with liquid funds and foreign assets.
- On average, the five foreign currency auctions advertised for 2014, two of them already past, will be as large as the 2013 average, adjusting for the fact that no bids were accepted in the 18 March auction.
- Residents pay all contractual instalments on foreign loans and foreign-denominated loans to DMBs in winding-up proceedings when due.
- No outward or inward foreign direct investment will take place. No investment-related inflows or outflows or any effects on the balance on income, are assumed.

The main assumptions in the balance on income and financing balance are based on no change in current assumptions concerning capital flows:

- Foreign interest rates rise steadily, reaching long-term equilibrium in 2018.
- The long-term equilibrium interest premium between Iceland and other countries is 1.5%.
- Owners of offshore krónur reinvest about half of their interest income in Iceland.
- The estates of the DMBs in winding-up proceedings reinvest in Iceland all interest income on the estates' domestic assets.
- Residents reinvest abroad a large proportion of their dividend and interest income from foreign assets.
- Non-residents expatriate a large proportion of their dividend and interest income from domestic assets.
- No outflows of offshore krónur or ISK assets owned by the DMBs in winding-up proceedings are assumed, with the exception of advertised foreign currency auctions.

The balance on income shown in Table 8 is the underlying balance adjusted for the calculated settlement of the DMBs in winding-up proceedings. The underlying balance on income is not comparable to the measured balance on income, as interest on the estates' domestic assets is not included in the measured balance. The yearly difference between the measured balance and the one shown in Table 8 is roughly estimated at 2.0-2.5% of GDP. Because it is assumed that the estates will reinvest their interest income from domestic assets in Iceland, this difference is corrected in the financing balance. This reinvestment of the estates' interest income on domestic assets,

together with offshore ISK owners' reinvestment of half of their interest income, is the main reason the financing balance is positive. A higher financing balance in 2016 is due to the maturity of a bond for a non-resident's acquisition of a domestic company.

The outcome from Table 8 must be financed with the trade surplus or with other net inflows, such as further refinancing, extension of loan maturities, or other capital inflows. In comparison, the trade surplus in 2013 was 132 b.kr., or 7.4% of GDP. Based on the above-described assumptions, there is a medium-term funding need, and there is no scope for further outflows such as those related to offshore krónur or the DMBs in winding-up proceedings. It is appropriate to note that in the balance on income shown below, no consideration is given to whether there is a funding need that must be met by borrowing, and no interest expense on further refinancing is assumed, apart from that mentioned above.

Table 8 Restated underlying balance on income and financing balance

B.kr.	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Underlying balance on income, adjusted for calculated settlement of DMBs in WUP (-outflows)	-107	-116	-123	-112	-103	-99
Estimated payments on foreign loans and foreign-denominated loans to DMBs in WUP (-outflows)	-65	-69	-106	-112	-109	-35
Expected financing balance (+inflows)	38	36	54	22	17	11
Total	-134	-149	-175	-202	-195	-123
% of GDP						
Underlying balance on income, adjusted for calculated settlement of DMBs in WUP (-outflows)	-5.7	-5.8	-5.8	-5.0	-4.4	-4.0
Estimated payments on foreign loans and foreign-denominated loans to DMBs in WUP (-outflows)	-3.5	-3.5	-5.0	-5.0	-4.6	-1.4
Expected financing balance (+inflows)	2.0	1.8	2.6	1.0	0.7	0.4
Total	-7.2	-7.5	-8.2	-9.0	-8.3	-5.0

Source: Central Bank of Iceland.

Appendix III

FSI core indicators for the three largest commercial banks (FSI)[1]

	2011				2012				2013			
%	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Regulatory capital to risk-weighted assets[2]	21.7	23.5	24.2	21.6	21.6	23.1	23.4	25.0	25.5	25.9	25.5	26.2
Regulatory Tier 1 capital to risk-weighted assets[2]	19.7	21.0	21.8	19.4	19.2	20.9	21.1	22.6	23.1	23.6	23.3	24.0
Return on assests[2]	3.0	3.3	2.7	1.1	2.5	2.5	2.1	2.4	2.0	2.3	2.2	2.2
Return on equity[2]	19.0	20.2	15.7	6.7	16.5	15.5	12.8	13.8	11.3	13.0	12.3	12.1
Interest margin to gross income according to EBA definitions[2]	57.2	47.1	53.4	53.9	56.7	50.3	53.3	48.8	51.7	41.7	45.1	45.2
Non-interest expenses to gross income according to EBA definitions[2]	75.9	88.8	86.5	108.1	72.9	79.0	80.7	79.9	77.4	77.2	75.5	77.5
Liquid assets to total assets[3]	19.2	18.2	21.3	18.0	18.0	17.5	19.5	20.7	21.0	20.3	20.5	21.4
Liquid assets to short-term liabilities[3]	32.3	30.9	35.3	30.1	31.4	30.5	34.6	35.9	36.9	35.2	35.3	36.3
Net open position in foreign exchange to capital[3]	68.1	61.1	29.1	22.6	25.9	18.2	18.4	7.7	3.7	3.6	6.4	6.3

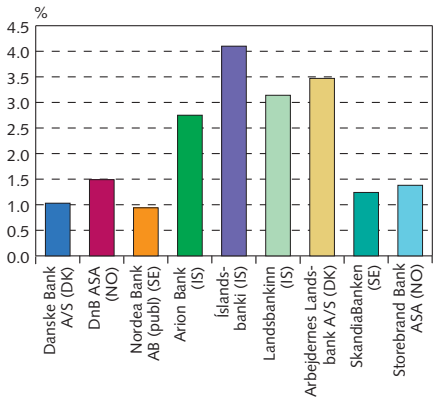
1. The Central Bank intends to publish core indicators of financial stability in collaboration with the IMF. All definitions used by the Central Bank accord with IMF definitions or have been approved by the IMF. These are still provisional figures, which could change, and comprise only part of the indicators. Results for Q1 and Q3 are unaudited. 2. Consolidation, non-interest expense and net operating income calculated in accordance with definitions of the European Banking Authority (EBA). 3. Parent company; definitions differ from those in Central Bank rules.

Sources: Financial Supervisory Authority, Central Bank of Iceland.

Appendix IV

Nordic comparison

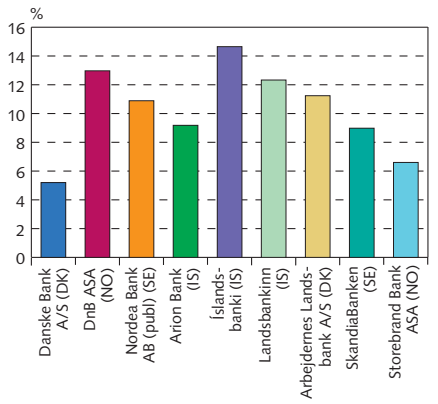
Chart 1
Net interest margin 2013[1]



1. Íslandsbanki's large net interest margin is due largly to a difference in financial reporting methods used by the banks; Íslandsbanki uses a different method for redemption of interest income from transferred loans.

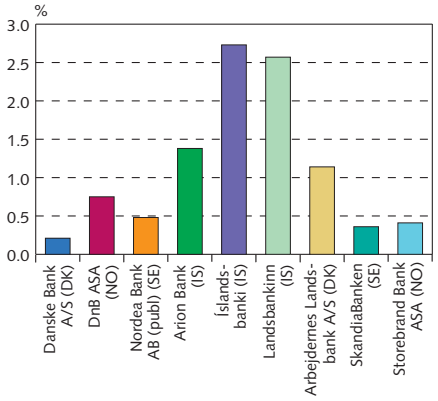
Source: Bankscope.

Chart 2
Return on equity 2013



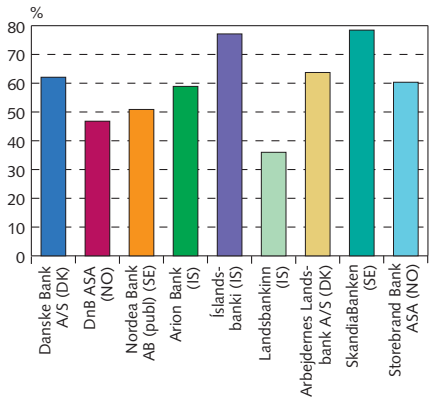
Source: Bankscope.

Chart 3
Return on total assets 2013



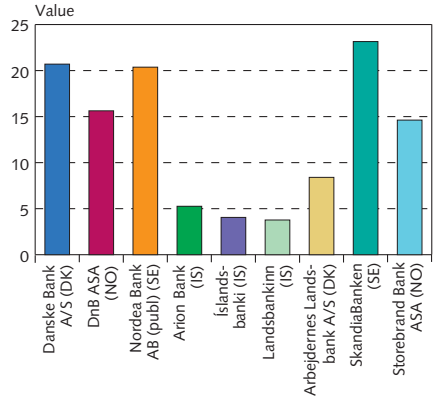
Source: Bankscope.

Chart 4
Cost-to-income ratio 2013



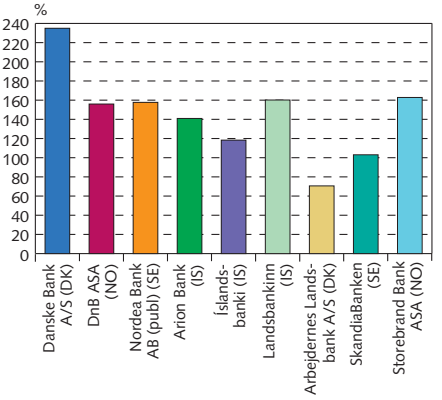
Source: Bankscope.

Chart 5
Leverage 2013
Debt as proportion of equity



Source: Bankscope.

Chart 6
Loans/customer deposits 2013



Source: Bankscope.