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## What does Iceland owe?

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**Icelandic letters:**

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þ/Þ (pronounced like th in English think)

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

**Symbols:**

- \* Preliminary or estimated data.
- 0 Less than half of the unit used.
- Nil.
- ... Not available.
- . Not applicable.

# What does Iceland owe?<sup>1</sup>

*Information on Iceland's external assets and liabilities is always subject to some uncertainty, which stems in part from uncertainty about the true value of assets and liabilities and the timing of cross-border investments. In addition, it is often difficult to obtain timely information on the transactions. Uncertainty about asset values and the legality of claims escalated sharply with the collapse of Iceland's commercial banks in the fall of 2008. Although the situation has been clarified somewhat since then, significant uncertainty remains. A substantial share of private sector assets and liabilities are now in the custody of resolution committees and winding-up boards, whose role is to eliminate the uncertainty (together with the courts) and ultimately sell assets in order to settle with creditors that are considered to have legitimate claims against the assets of the failed financial institutions. Moreover, the fate of a number of other companies is uncertain and could end in bankruptcy or massive write-downs of claims. The assets and liabilities of the public sector can be assessed more reliably than those of the private sector, although there is some uncertainty about the Government's obligations related to the Icesave dispute. In view of these factors, it is difficult to state with assurance what Iceland's actual debt position is. The balance of payments and external position are calculated in accordance with international standards. Under current conditions, however, the results of the standard accounting methods do not accurately reflect the debt position that will be the principal determinant of Iceland's welfare in years to come. In this report, we attempt to peer through the fog that settled in after the financial system collapsed and to estimate the value of the assets and liabilities likely to emerge once the air has cleared. The debt position revealed by this analysis can be called Iceland's "latent" debt position, but the term "underlying" debt position has also been used. Although these findings are still shrouded in uncertainty, it appears highly likely that when the estates of the failed financial institutions have been settled, Iceland's international investment position (IIP) will be considerably improved (albeit still negative) compared to the pre-crisis years. Net public sector debt, on the other hand, will be considerably higher.*

## I Introduction

### **Indebted country**

Iceland has long been among the most indebted of the world's developed countries. Heavy indebtedness need not necessarily indicate an unhealthy economy, however. On the contrary, it can reflect heavy investment in export sectors that will generate foreign exchange revenues over the long term, or profitable foreign investment that will generate enough revenues abroad to cover interest and dividend payments. Massive foreign assets and liabilities also reflect the small size of the Icelandic economy, as small countries are proportionally more de-

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pendent on external trade to counter fluctuations in domestic production and demand and utilise global financial markets to smooth out the effects of external shocks. If debt grows unusually large or unusually rapidly, however, or is accumulated in order to maintain surging private or public consumption, then it is reasonable to be concerned about the consequences. Under such circumstances, the debt accumulation is likely to be unsustainable and, if no action is taken, could trigger a currency crisis or even cause financial system instability. Iceland's debt accumulation showed various signs of unsustainability in 2003-2008.

Iceland's pre-crisis debt accumulation falls broadly into two categories. First, enormous investment in foreign assets was financed with foreign credit, largely through domestic banks. A large share of that investment was related to the banks' own acquisition of foreign financial institutions. Second, Iceland's large banks played an ever-increasing role in intermediating credit to Icelandic businesses for domestic investment. During the 2003-2008 period, investment in the domestic economy far outpaced that in preceding decades. The banks also began offering mortgage loans in competition with the Housing Financing Fund (HFF), and later, to an ever-increasing extent, they began offering exchange rate-linked mortgages that were funded with foreign loans and deposits. In many instances, the banks paid a high price for assets purchased with foreign credit. A large share of Iceland's debt is therefore the debt of the failed banks. Offsetting this are the banks' substantial foreign assets, whose value deteriorated sharply after the crash; furthermore, foreign authorities appropriated assets at scrap value during the crisis. The Icelandic financial crisis is almost unique in that virtually the entire banking system collapsed. The authorities responded by establishing new banks amidst the wreckage of the failed ones. The rule of thumb was that domestic deposits were transferred to the new banks and domestic assets were purchased from the failed banks at appraised value. Assets in excess of appropriated liabilities were paid for with a special financial instrument. Furthermore, the winding-up boards of the old banks were given the opportunity to acquire a stake in the new banks on behalf of creditors. That stake varied in size and was smallest in Landsbanki, as it is estimated that there will be little left once the bank has settled with priority creditors, primarily the Depositors' and Investors' Guarantee Fund (DIGF) and the Dutch and British governments, on behalf of depositors in those countries.

#### **Asset values and legitimacy of claims against failed banks' estates the greatest uncertainty**

Uncertainty about Iceland's debt in coming years lies primarily in uncertainty about asset values and the legitimacy of claims against the failed banks' estates. That uncertainty will not be reduced to any marked degree until late 2011; therefore, any estimate of the likely outcome should be interpreted with great caution. It can be assumed, however, that when assets have been sold and debts to creditors have been settled, debts will be netted against assets and no net debt will remain. This does not mean, however, that Iceland's net external debt will decline correspondingly. Although the rule of thumb during asset division was to transfer domestic assets to the new banks, some do-

mestic assets did remain in the old banks. However, some creditors with claims against the estates of the failed banks are domestic entities such as pension funds. The ultimate impact will be determined largely by the classification of assets, on the one hand, and creditors, on the other, as domestic or foreign.

Both the new banks and the failed ones are domestic legal entities; consequently, the new banks' debt to the old banks is not classified as external debt. If non-residents – creditors or others – ultimately acquire the new banks, the failed banks' stake in the new ones will change, and presumably a financial instrument will be drawn up between them, partly in the form of debt to the non-residents and partly in the form of share capital. The financial instruments between old and new Landsbanki (NBI) weigh most heavily in this category.

### **Uncertainty also surrounds the debt of many large companies**

In addition to the uncertainty concerning the ultimate settlement of the old banks' estates, the status of many heavily indebted companies is unclear as well. A single company, Actavis, owes its owner the equivalent of 70% of Iceland's GDP.<sup>2</sup> If this company, which has nearly all its revenues in foreign currency, is solvent, the returns on its foreign operations should cover the interest payments on the loans, which are bullet loans where accrued interest is added to the principal. As a result, the company does not use the Icelandic foreign exchange market unless its domestic operating expenses should exceed its revenues from domestic sales. This arrangement will hardly change even if the company experiences major liquidity problems. For the long term, the debt to the company's foreign owner is primarily the problem of the debtor and the debtor's foreign creditors. In the event of liquidity problems, the matter could result in a reduction in Iceland's debt.

Many large holding companies are undergoing winding-up proceedings. Some of their debts are owed to non-residents, and their assets are also largely foreign. While information on the status of many such companies is in short supply, the available data show that their dissolution will increase Iceland's debt somewhat, but not by a critical amount. With regard to the reduction of net corporate foreign debt, it can be argued that highly leveraged companies with debt far in excess of assets are most likely to disappear from the scene following bankruptcy or restructuring. The remaining companies will be less leveraged and are more likely to have positive net assets in the future. Another significant fact is that the vast majority of these holding companies were established around securities holdings and not actual operating enterprises. As a result, their bankruptcy will affect the domestic economy much less than would the bankruptcy of an operating company engaged in production.

2. It should be noted that information on Actavis and its impact on the IIP and the measured current account balance is published with the permission of Actavis. Data that the Central Bank of Iceland compiles on individual companies for its statistical reporting are considered confidential, in accordance with rules of procedure on statistical reporting. In publication, care is taken to ensure that the information cannot be traced to individual persons or entities. Because of the nature and importance of data from Actavis hf. for this report, permission was sought from the company's senior management to separate the company from aggregate figures, as the settlement of the company's debt involves related parties and should have insignificant effect on the Icelandic economy.

### External public sector debt on the rise

To the extent that foreign credit is intermediated through domestic financial institutions, there is the risk that private sector debt will be transferred indirectly to the public sector in the aftermath of a financial crisis, as occurred after the Icelandic banks collapsed. The financial crisis has probably resulted in the direct and indirect transfer to the public sector of debt equalling approximately 60% of GDP.<sup>3</sup> Of that total, external debt accounts for 210 b.kr., or 13% of GDP.

Thus it can be argued that, although Iceland's IIP will improve overall, the composition of the debt will deteriorate to the extent that a larger share will be debt of the public sector, which neither has sufficient revenue from foreign assets to support the interest nor generates export revenues in any direct way. The collapse of the banks affected public sector debt in two main ways. First, it is likely that the Treasury will bear some debt for the settlement with depositors in Landsbanki's foreign branches, although much less than previously thought. It is assumed that Landsbanki's assets will cover the bulk of that debt. Interest on the deposit insurance payouts to the British and Dutch governments may possibly accumulate until settlement can take place. This interest expense will accrue to the Republic of Iceland and therefore increases the public sector's foreign debt. Contractual agreements have been concluded with the UK and Netherlands. If they are approved, the resulting obligation will probably be much less than previously estimated, or 0-5% of GDP.

Second, a considerable portion of the post-crisis increase in Treasury debt is due to the expansion of the foreign exchange reserves. Offsetting that debt are sound, liquid foreign-denominated assets; therefore, these borrowings in and of themselves should not erode Iceland's IIP. This could happen to some degree, however, if the Central Bank sells from its foreign exchange reserves in order to finance a current account deficit or if returns on the reserves do not cover the interest on the loans taken to build up reserves. The current account excluding the failed banks has been approximately in balance since the collapse and has shown a modest surplus in recent quarters. It can be assumed that the Central Bank's sale of foreign currency has made little impact on the net IIP. However, it will temporarily increase the public sector's net foreign debt, partly offsetting lower debt in the private sector, which is having debt written off or is paying down loans rather than refinancing, owing to the limited access to foreign credit. The Central Bank has begun to buy foreign currency in the market on a regular basis, which will lead to an increase in the net foreign exchange reserves. Some of the reserves have also been used to buy back Treasury foreign debt maturing in the next two years. Because that debt is bought back at a price below book value, the purchases will somewhat reduce net public sector debt and net overall debt. To the extent that larger foreign exchange reserves facilitate the Treasury and the Icelandic export sector's access to foreign credit, thereby facilitating export growth, borrowing to expand the foreign exchange reserves could improve Iceland's IIP in the long run.

3. The effect of the collapse on public sector finances is discussed in an unpublished paper by Arnór Sighvatsson and Gunnar Gunnarsson, "Iceland's financial disaster and its fiscal impact", in the book *Managing Risk in the Financial System*, by Edward Elgar, forthcoming in 2011.

### Is Iceland's debt a problem?

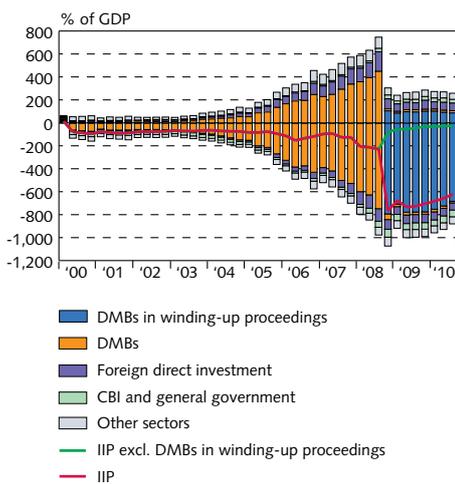
A highly leveraged economy could be an indication of an underlying problem or an unsustainable situation, which increases the likelihood of instability in the near term and, at worst, could be a harbinger of a currency crisis. The extremely rapid accumulation of debt was only one of many ill omens in the prelude to the financial and currency crisis that struck Iceland in the fall of 2008. There were strong indications that the rapid accumulation of debt was unsustainable. In order to come to any other conclusion, it was necessary to assume very strong return on the foreign and domestic assets that were bought with foreign credit. The fundamental problem was that the rapid expansion of domestic income, which was maintained with foreign credit, was unsustainable.

The financial and currency crisis entails an adjustment of debt to the prospective stream of revenue in domestic and foreign currency required to cover the interest and dividends on the debt. To the extent that the private sector's foreign debt can be kept separate from that of the public sector, the problem stemming from private sector debt centres on short-term payment balance rather than long-term sustainability. Liquidity and refinancing problems faced by large companies can lead to exchange rate instability, even though operations can sustain the long-term debt service burden and the value of foreign assets exceeds that of liabilities. Close inspection of official balance of payments statistics suggests, however, that Iceland's current account balance is stronger than appears at first perusal. If the conclusions in this report are correct, it appears as though the trade surplus will be sufficient not only to cover interest and dividend payments to non-residents but also to pay down a considerable amount of domestic debt.

Although Iceland's external debt is certainly large, it is difficult not to conclude that it is fully sustainable in the sense that economic activity domestically and abroad will generate sufficient revenue to cover interest payments and instalments on foreign debt. How sustainable it actually is, however, depends on the public sector's ability to generate revenues in excess of expenditures other than interest; that is, to generate a primary surplus large enough to cover interest payments on domestic and foreign loans to such an extent that debt does not increase relative to GDP. When debt has grown large, it can also be important to reduce the debt ratio so as to create a cushion to respond to external shocks. The public sector's revenue-generating capacity is ultimately a political issue that can depend heavily on the political traditions and level of development of the country concerned.

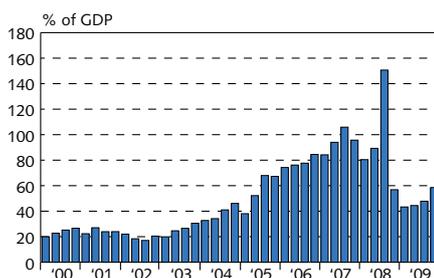
The debt service burden on foreign loans has a dual effect on the external balance of the economy. To the extent that taxes are raised in order to cover foreign debt service, disposable income contracts; other things being equal, this increases the trade surplus. In addition, the Treasury will ultimately have to acquire currency in order to service the debt. Other things being equal, this will lead to a lower exchange rate and therefore also a larger trade surplus. The public sector foreign debt service burden increased substantially in the wake of the financial crisis. In a longer historical context, however, the foreign debt service burden that remains after the crisis will probably be slightly higher than that in the mid-1980s.

Chart II-1  
International investment position  
Q1/2000 - Q3/2010



Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-2  
Net equity investment  
Q1/2000 - Q4/2009



Sources: Statistic Iceland, Central Bank of Iceland.

In this report, we focus primarily on two issues: the value of the external assets and liabilities that are likely to remain after the estates of the failed financial institutions are settled, and the prospective payment flows stemming from these assets and liabilities. The report is divided into seven sections: Section II discusses private sector economic developments in the run-up to the crisis and explains the effects of the crisis on the IIP as calculated according to standard methods.<sup>4</sup> Section III assesses the impact of the settlement of the financial institutions in winding-up proceedings on Iceland's latent debt position. Section IV analyses the effect of the collapse on the public sector's external debt. Section V discusses the net position and the concept of sustainability, and Section VI explores developments in the underlying balance of payments. The results are summarised in Section VII. The main conclusion is that, when the dust has settled, Iceland's latent IIP will be negative but probably less negative than it has been for decades, or close to one-fourth of GDP. It is estimated that the latent current account surplus amounted to nearly 13% of GDP in 2010 and will be of a similar size in 2011 and 2012.

## II Private sector balance sheet expansion and the IIP

From 2003 until the financial system collapsed in October 2008, Iceland's external assets and liabilities grew rapidly from year to year. Liabilities grew faster than assets, and both far outpaced annual output growth. For this reason, the international investment position (IIP) – that is, external assets less external liabilities – deteriorated as a share of GDP (see Chart II-1).<sup>5</sup> Proportionally, debt accumulation was greatest in 2005. Iceland's total external debt rose by nearly 90%, or by the equivalent of over 170% of GDP for that year, and the net IIP deteriorated by nearly one-fourth of GDP.

By year-end 2006, Iceland's net debt was already among the highest in the world. Icelandic residents' net equity investment abroad<sup>6</sup> was also very high in comparison with other countries.<sup>7</sup> To that extent, it can be said that the asset and liability position of Iceland and many major industrial countries bore many of the characteristics of hedge funds; that is, net external debt was negative, while the net position in foreign equity investment was positive. In other words, the domestic private sector borrowed funds abroad and allocated a considerable amount of that capital towards investments in foreign firms and securities. In a comparison carried out among 122 countries in 2004,

- Appendix 1 describes in greater detail the methods used for standard balance of payments calculations and the assessment of the international investment position.
- Chart II-1 shows how assets and liabilities are divided among various sectors; that is, the general government and the Central Bank, on the one hand, and other sectors, most of which belong to the private sector, on the other. The item "other sectors" also includes pension funds and Government-owned companies such as energy companies, however.
- In this context, the term equity investment is defined as the sum of direct investment and portfolio investment in equity. Net equity investment is the difference between residents' outward exposures (assets) and non-residents' inward exposures (liabilities).
- See Svavarsson and Sigurdsson (2007), p. 74.

Iceland's foreign equity investment relative to GDP was second only to that of the United Arab Emirates.<sup>8</sup>

As Chart II-2 shows, the net equity investment ratio rose virtually unimpeded until the banking system collapsed. The steep rise at the end of Q3/2008 is due largely to the plunge in the exchange rate of the króna, which increased the value of external assets while the value of inward foreign direct investment changed very little in krónur terms. The following section further analyses the debt accumulation by source of debt, with the aim of shedding light on how individual sectors' investment and borrowing affected developments in overall external debt accumulation.

### Changes in external debt of parties other than financial institutions made little impact on the IIP

In order to shed light on the interplay between the financial system and other sectors during the years before the crisis, it is useful to examine in particular the legal entities that are not deposit money banks and do not belong to the public sector. At the end of September 2008, 13% of Iceland's holdings in foreign securities and other financial assets<sup>9</sup> and 7% of its foreign liabilities were held by legal entities classified as "other sectors" in official statistics. At that time, the external balance of these entities was positive by 30% of GDP. The largest group of legal entities falling into this category of securities investment is Iceland's pension funds. The pension funds own substantial foreign assets, but their foreign liabilities are negligible. Excluding the pension funds and other financial institutions, Iceland's net external debt position has long been negative. During the period 2005 to 2007, liabilities grew much faster than assets, but they approached balance in early 2008, shortly before the crash, by end-September it was -9%. Chart II-3 shows the net external position of other sectors, both including and excluding the pension funds. Further analysis of the net position of individual sectors is relatively meaningless, however, as most of those sectors' foreign borrowing took place through the intermediation of domestic financial institutions. Their debt is therefore owed to a domestic entity, even though their assets are foreign and the borrowed funds originated abroad.

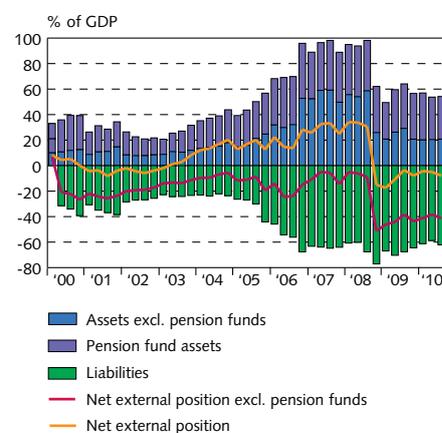
In Charts II-5 and II-6, which illustrate developments in direct investment in all sectors except financial institutions, it can be seen that holding companies account for a large share of direct investment by both domestic and foreign entities. The findings of the Parliamentary Special Investigation Commission (SIC) and the declared claims against the banks' estates show that a significant proportion of holding company investment, on the asset side and the liabilities side, is linked to resident entities, probably for tax reasons or possible attempts by the investors to mask ownership. Based on the available data, it is not possible to correct the calculations for this.

As is stated above, the net external position of sectors other than financial institutions and pension funds is estimated to have been nearly in balance at the beginning of 2008 (see Chart II-7) and, in-

8. See Svavarsson and Sigurdsson (2007), p. 60.

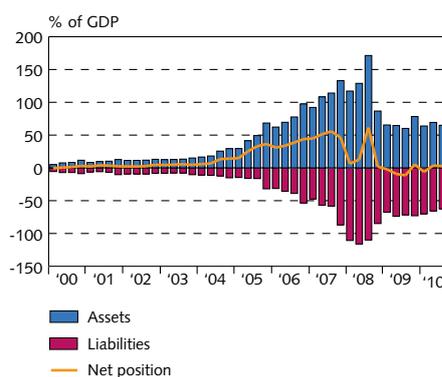
9. In this section, references to securities and other financial assets apply to marketable securities, deposits, loans, derivatives, and other financial assets apart from direct investment.

Chart II-3  
External position – other sectors  
Q1/2000 - Q3/2010



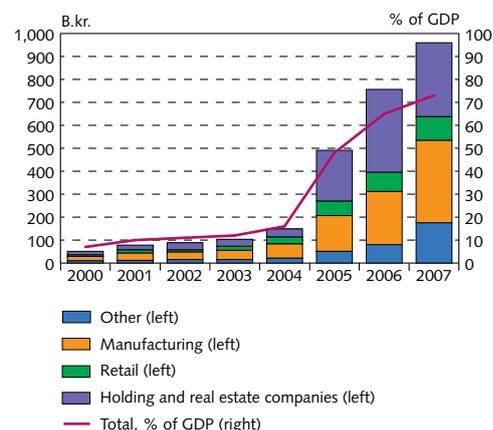
Sources: Statistic Iceland, Central Bank of Iceland.

Chart II-4  
Foreign direct investment  
Q1/2000 - Q3/2010



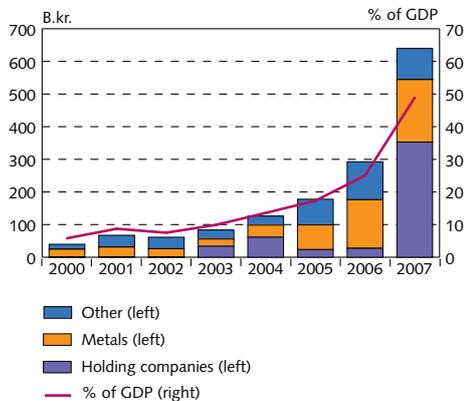
Sources: Statistic Iceland, Central Bank of Iceland.

Chart II-5  
Outward foreign direct investment, excluding financial sector  
2000-2007



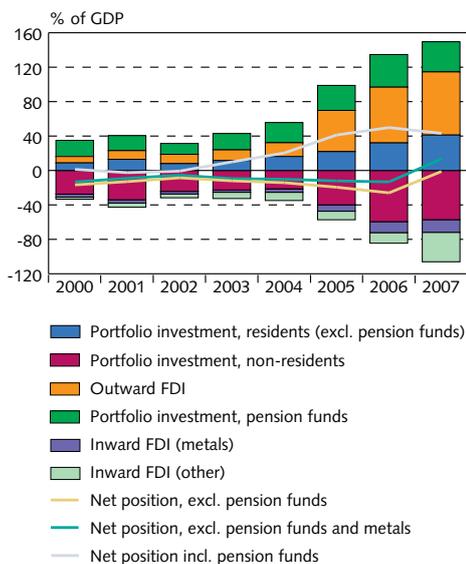
Sources: Statistic Iceland, Central Bank of Iceland.

Chart II-6  
Inward foreign direct investment,  
excluding financial sector  
2000-2007



Sources: Statistic Iceland, Central Bank of Iceland.

Chart II-7  
External position, excluding financial sector  
2000-2007



Sources: Statistic Iceland, Central Bank of Iceland.

cluding the pension funds, it was positive. It may seem incredible that there should be a positive position in spite of extremely rapid growth in holding companies' foreign debt related to leveraged purchases of foreign assets, which are valued at book value in official statistics, usually at far below the purchase price.<sup>10</sup> The reason for this is that a large share of the foreign investment of holding companies and other firms was financed by Icelandic banks. The acquisitions therefore showed up as a more strongly negative external position of the financial institutions, not of other sectors. To some extent, the companies were financed by foreign banks, or with foreign share capital, especially in 2005 and 2006, but when access to foreign capital became tighter, domestic financing increased. Any assessment of the external position of individual sectors should therefore take account of the fact that it can fluctuate widely with changes in domestic financial institutions' position vis-à-vis foreign competitors; moreover, the ownership ties between holding companies and domestic banks were so close that the banks became a sort of lender of last resort for these companies.

#### External liabilities increase with the banks' expansion

Because of the banking system's role in channelling foreign credit to domestic entities, the increased foreign liabilities of those entities appear not in the balance of payments accounting for the sectors concerned but in an increase in the banking system's external liabilities. Relatively few firms have sought to borrow directly from foreign banks or in foreign bond markets, and the domestic banks' role in intermediating credit to domestic firms expanded as the banks grew more powerful.

In September 2002, the Icelandic banks' external debt position excluding direct investment was negative by 42.5% of GDP. The debt was related primarily to their foreign-denominated lending to domestic borrowers with foreign-denominated income. After a short slump in the wake of a burst of lending growth at the turn of the century, lending by domestic banks and savings banks began to increase markedly in 2003, following the privatisation of the three largest commercial banks. This growth was funded to a large extent with foreign short- and medium-term loans. Domestic financial institutions' foreign operations were still very limited, and their foreign assets grew much less than their liabilities. During the period from 2004 to 2008, however, the foreign operations of the banks themselves and companies connected to them grew. As Chart II-1 shows clearly, the increase in external debt during this period is attributable in large part to the Icelandic banks' foreign borrowings for foreign and domestic investments or lending.

#### Bond issuance facilitated the banks' rapid growth

The Icelandic banks began to accumulate debt in earnest in 2004. By that time, the three largest banks had credit ratings from foreign rating

10. Cross-border mergers and acquisitions often have a significant impact on the official calculation of the international investment position. When an Icelandic firm takes over a foreign firm, the investment is listed at the book value of the acquired firm. In some instances, the actual purchase price can be quite a bit lower; for example, due to impairment of goodwill. If the acquisition is financed directly or indirectly with a loan from a non-resident, the investment can lead to a deterioration of the IIP according to official figures.

agencies, usually a prerequisite for bond issuance in foreign markets.<sup>11</sup> Ready access to foreign credit was required if the banks were to continue their rapid growth. As long as credit was readily available, deposits declined as a source of the banks' funding. By year-end 2003, the three large banks had issued EMTN bonds valued at 2.6 billion euros,<sup>12</sup> or 25% of that year's GDP.<sup>13</sup> Between 2004 and 2007, the banks' balance sheets expanded by more than a factor of seven.

Charts II-9 and II-10 illustrate the banks' foreign bond issuance between 2004 and 2008. Their penetration of the European bond market peaked in 2005, when they borrowed nearly 14 billion euros, slightly more than Iceland's GDP for that year, through bond markets abroad. Most of the loans were for a period of 3-5 years. In comparison, the Central Bank estimated the total cost of the hydropower and aluminium smelter construction projects undertaken in 2005 at approximately 90 b.kr. Of that total, foreign expense (imported investment goods and services) was estimated at 55 b.kr.<sup>14</sup> The total cost was therefore about 1.15 billion euros, or just over 8% of the banks' foreign borrowings for that year.

In 2006, European investors' interest in the Icelandic banks' bonds declined sharply. The banks then focused their attentions on the US bond markets, in response to demand for their bonds for use in collateralised debt obligations (CDOs). The banks borrowed about 12 billion euros in foreign bond markets in 2006. That same year, investment related to the aluminium smelter in East Iceland, often referred to as the largest development project in the history of Iceland, peaked at roughly 117 b.kr.,<sup>15</sup> or 11% of the banks' foreign borrowings for the year.

### Foreign deposits and short-term loans supplant bond issues

The banks dramatically reduced their bond issuance in 2007. By then there were clouds on the horizon in the global financial markets, due in part to mounting unrest over sub-prime mortgages in the US. Criticism of the Icelandic banks by foreign analysts had escalated in the first half of 2006. As can be seen in Chart II-9, the composition of the banks' foreign debt changed radically thereafter. The amount of outstanding bonds contracted, but direct foreign borrowing rose more or less commensurably. But the banks' expansion overseas continued. From 2006 onward, the banks depended on foreign short-term funding – both direct borrowing and deposit-taking through their foreign branches – to finance continued growth.

### A large share of the banks' domestic lending was used for foreign investment

The report prepared by the SIC contains a detailed analysis of the banks' loan portfolios. In its investigation, the Commission defined

11. Foreign funding of domestic banks can take place in a number of ways: i) direct foreign borrowings (bank loans); ii) foreign bond issues; iii) accumulation of deposits in foreign branches; iv) non-residents' investment in the shares of Icelandic banks; and v) loans granted from a foreign subsidiary to the Icelandic parent company.

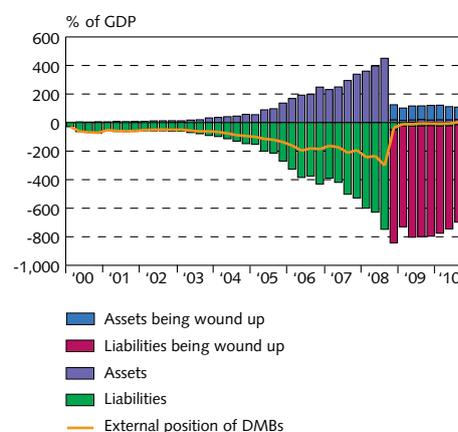
12. EMTN stands for Euro Medium-Term Notes, which are medium-term bonds issued in euros according to a framework agreement.

13. See, for example, the Parliamentary Special Investigation Commission report, Volume 2, p. 11.

14. *Monetary Bulletin* 2006/1, p. 38.

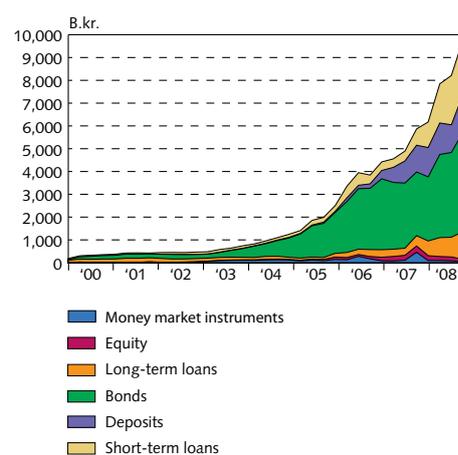
15. *Monetary Bulletin* 2007/1.

Chart II-8  
External position, DMBs  
Q1/2000 - Q3/2010



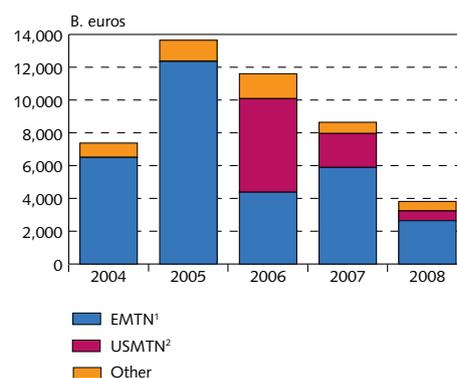
Sources: Statistic Iceland, Central Bank of Iceland.

Chart II-9  
External liabilities, DMBs  
Q1/2000 - Q3/2008



Source: Central Bank of Iceland.

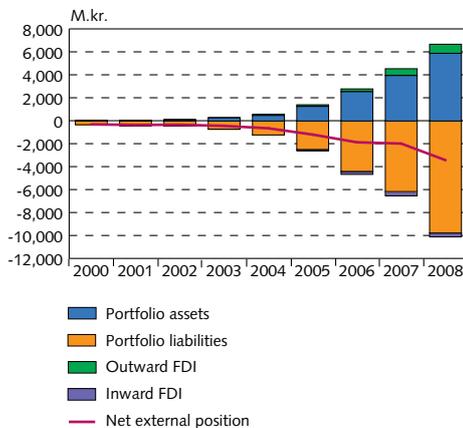
Chart II-10  
Bond issuance, Icelandic banks  
Landsbanki Íslands, Kaupthing and Glitnir



1. European bond market.  
2. US bond market.

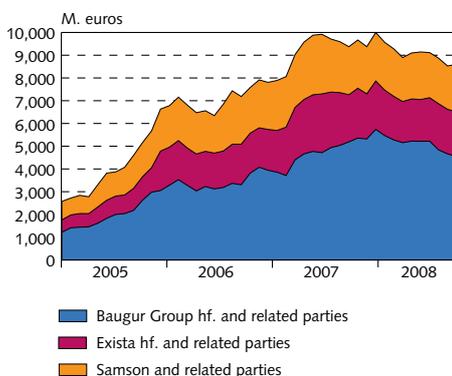
Source: Parliamentary Special Investigation Commission (SIC).

Chart II-11  
External position, DMBs  
2000-2008<sup>1</sup>



1. Data for 2008 are for the end of Q3  
Source: Central Bank of Iceland.

Chart II-12  
Three largest banks' total lending to largest corporate groups<sup>1</sup>  
January 2005 - September 2008



1. Corporate groups defined based on SIC analysis of cross-ownership, large exposures, etc.  
Source: Parliamentary Special Investigation Commission (SIC).

groups of companies in terms of an analysis of, among other things, cross-ownership ties and large exposures.<sup>16</sup> The three largest groups were connected with the holding companies Baugur Group hf., Exista hf., and Samson. These groups' debt to the parent companies of the three banks peaked at year-end 2007, at about 912 b.kr., or 10 billion euros, which corresponded to nearly 29% of the banks' lending (see Chart II-12). Baugur Group and related parties accounted for 5.7 billion euros (520 b.kr.) of that total.<sup>17</sup> Most of the companies involved were registered in Iceland; thus the loans concerned were to domestic parties. On the other hand, it is interesting to examine the lending to these corporate groups in view of the fact that they were all investing actively abroad. It can be determined from official data on Iceland's external liabilities and the SIC's findings concerning the operations of Iceland's banks that the parent companies of many of the most active groups were funded for the most part by domestic entities; that is, the banks themselves and the mutual and investment funds operated by the banks' subsidiaries. A list of the creditors of the estates of several of the largest holding companies indicates that their foreign subsidiaries had easier access to foreign credit, which required collateral in the underlying operating companies. Domestic lenders' loans to the companies in question, however, were backed to a large degree by shares in the parent companies or were simply unsecured.

To an extent, the Icelandic banks loaned money to foreign entities through foreign subsidiaries. This did not affect foreign assets and liabilities or the IIP except to the extent that increased lending by subsidiaries increased their book value because shares in the subsidiaries are considered foreign direct investment, which is recognised at book value. In the same manner, it is important whether deposits are acquired through branches, as in the Landsbanki Icesave accounts, or through subsidiaries, as in the case of Singer & Friedlander and FIH, which were owned by Kaupthing. In the former instance, deposit growth is recognised in official statistics as an increase in the DMBs' liabilities, whereas in the latter instance, the impact is limited to the book value of the subsidiary.

The share of loans granted through the parent company varied from bank to bank. According to Kaupthing's six-month interim financial statements in 2008, just over half of loans to the bank's customers on a consolidated basis were posted to the parent company, and just under half of them were posted to the subsidiaries. At the same time, Glitnir's share of loans posted to the parent company was 73%, and Landsbanki's was 83%.<sup>18</sup> According to the SIC report, data submitted to the Commission from the banks' subsidiaries, apart from branches in Luxembourg, indicated that their loans had been granted primarily to foreign parties.

16. Parliamentary Special Investigation Commission report, Volume 2, Chapter 8.

17. In addition, the companies concerned owed substantial amounts to UCITS and investment funds operated by the banks' subsidiaries. For further discussion, see the Parliamentary Special Investigation Commission report, Volume 4, Chapter 14.

18. Parliamentary Special Investigation Commission report, Volume 2, Chapter 8, p. 93.

### Shares in Icelandic banks owned predominantly by domestic investors

Share capital is one of the three foundations of bank funding, together with deposits and borrowings. Chart II-9 shows that non-resident investors' shareholdings in the Icelandic banks constituted only a small portion of the banks' foreign funding. It is interesting to note that non-residents' shareholdings in the Icelandic banks more or less disappeared just before the banks failed. At the end of Q3/2007, non-residents' shareholdings were valued at 277 b.kr., whereas a year later, at the end of Q3/2008, they were valued at only 105 b.kr.<sup>19</sup> In order to gain a comprehensive view of non-residents' shareholdings in the Icelandic banks, it is also necessary to include foreign direct investment. Thus it is necessary to add the banks' direct investment abroad, plus the corresponding non-resident holdings in Iceland's banks.

At year-end 2007, 594 b.kr., or 38% of Icelandic legal entities' outward foreign direct investment, was in the financial sector. A large share of foreign legal entities' foreign direct investment in Iceland was also in financial services, or about 376 b.kr., roughly 37% of total inward foreign direct investment.<sup>20</sup> Net investment in financial institutions in 2007 was therefore positive by 218 b.kr. By the end of Q3/2008, the financial institutions' net direct investment had increased substantially, to 452 b.kr., with the rise stemming in large part from the depreciation of the króna during the period. It is not a given that the Icelandic banks are behind all of residents' investments in foreign financial activities, but they are probably behind a large share of them. Including direct investment, it can be estimated that the Icelandic banks' external position was negative by 1,993 b.kr. (152% of GDP) at year-end 2007 (see Chart II-11). Their net external liabilities continued to rise in 2008, until they collapsed. The financial sector's estimated external position is estimated to have been negative by 3,438 b.kr., or 233% of GDP, by the end of Q3.

### Iceland's external debt accumulation due largely to the banks

As the above discussion indicates, analysing the external liabilities of the entire economy is quite complicated. Table II-1 summarises the results of calculations of the private sector's external position at year-end 2007, with the reservations discussed above.

With considerable simplification, and with reservations concerning the accuracy of the recorded values of Iceland's external assets and liabilities, it can be estimated roughly that about 152% of year-2007 GDP was tied up in loans granted to Icelandic residents but funded by non-residents through the Icelandic banking system.<sup>21</sup> By the end of Q3/2008, just before the banks collapsed, this amount had risen to

19. This is a decline of about 62%; at the same time, the market value of financial companies on the stock exchange fell 51%. This only takes account of non-residents' direct portfolio investment in the shares of the Icelandic banks; that is, shareholdings under 10%.

20. At year-end 2007, Kaupthing's two largest shareholders were foreign holding companies owned by Icelandic residents. Their holdings in the bank were valued at about 214 b.kr. at year-end 2007. Therefore, non-resident investors accounted for only a small share of inward foreign direct investment in Icelandic financial companies.

21. This is probably an overestimation rather than an underestimation because the book value of the direct investment was likely somewhat lower than the market value of the assets, at least until 2007.

233% of GDP. These loans were extended, to some extent, to Icelandic households (partly in the form of mortgages) and to firms engaged in a variety of operations, but a large share of the foreign credit obtained by the banks was loaned to residents active in overseas investment. A sizeable share of Iceland's so-called "expansion" was funded via the Icelandic banks.

Table II-1 Net external position of private sector excluding pension funds, year-end 2007

<i>M.kr.</i>	<i>Assets</i>	<i>Liabilities</i>	<i>Net</i>	<i>% of GDP</i>
<b>DMBs</b>				
Securities and other assets	3,962,421	-6,173,638	-2,211,217	-169
Foreign direct investment	593,988	-375,968	218,019	17
<b>Total</b>	<b>4,339,998</b>	<b>-6,549,606</b>	<b>-1,993,197</b>	<b>-152</b>
<b>Other sectors<sup>1</sup></b>				
Securities and other assets	538,585	-748,188	-209,603	-16
Foreign direct investment	959,813,5	-639,525	320,289	24
There of Smelters		191,656		
<b>Total</b>	<b>1,498,398</b>	<b>-1,387,713</b>	<b>110,686</b>	<b>8</b>
<b>Total</b>				
Securities and other assets	4,501,006	-6,921,826	-2,420,820	-185
Foreign direct investment	1,553,801	-1,015,493	538,308	41
<b>Total</b>	<b>6,054,807</b>	<b>-7,937,319</b>	<b>-1,882,512</b>	<b>-144</b>

1. Pension funds are not included.

Sources: Statistics Iceland, Central Bank of Iceland.

This massive expansion of Iceland's balance sheet, caused by the Icelandic banking system, would lead to a dramatic contraction of that national balance sheet after the collapse. To begin with, the contraction surfaced in particular on the assets side of the balance sheet when residents' assets – not least those of the banks in winding-up proceedings – fell in value, whereas liabilities remain unchanged in official statistics and accumulate interest that will not be paid because asset values will hardly support more than a portion of the claims against the estate. When the banks have been wound up, the assets will be sold and the liabilities in excess of asset values will be written off. In the next section, an attempt is made to estimate the results of that process.

### III Estimated effect of settlement of the financial institutions' estates and restructuring of other cross-border holding companies

The financial collapse led to three types of uncertainty about the value of assets and the legitimacy of obligations: first, uncertainty about the failed financial institutions' assets and liabilities; second, uncertainty about the assets and liabilities of large holding companies with cross-border operations; and third, uncertainty about the Government's obligations relating to Dutch and British claims on behalf of depositors in Landsbanki's foreign branches. The last of these is discussed in the next section, while the present section concentrates on the estates of the failed financial institutions and the holding companies undergo-

ing restructuring. An attempt is made to estimate how the ultimate settlement or sale of domestic and foreign assets of the failed financial institutions and allocation of the proceeds to domestic or foreign creditors, while claims exceeding that amount are written off, will affect Iceland's IIP. Even though the estates' liabilities will never exceed their assets, obligations between residents and non-residents could develop during the bankruptcy proceedings. As a result, it is not enough to examine Iceland's net position excluding the companies in winding-up proceedings. In order to estimate Iceland's IIP after the bankruptcy proceedings are over, it is necessary to consider the settlement of the estates.

### **Treatment of estates when estimating the external position**

According to international standards for the calculation of the balance of payments and external position of the economy, it is necessary to include assets and liabilities, as well as revenue and expenditure flows resulting from them, even though the debts are in default and the debtor undergoing official winding-up proceedings. This is because a debt is considered the debtor's legal obligation until it is paid or a bilateral settlement agreement has been concluded between debtor and creditor stipulating, for example, that the debt shall be converted to share capital or cancelled in part, or that the terms and conditions shall be modified in some other way. As a result, the assets and liabilities of the DMBs in winding-up proceedings are included in official calculations of the balance of payments and external position until the resolution committees have concluded their work and have been dissolved. On the other hand, the position of these financial institutions is identified clearly in the explanations accompanying the presentation of the balance of payments and external position.

Assets will probably not cover all of the liabilities of the failed banks, and the outstanding amount will be written off. Consequently, it can be misleading to combine the position of companies in winding-up proceedings and the position of those in operation and to include the accrued interest on the companies' assets and liabilities. The accrued interest does not reflect actual foreign currency outflows, as it will probably not be paid except to a very small degree. In conducting this type of analysis, it is appropriate to deviate from the conventional presentation of statistics pertaining to the balance of payments and the external position.

### **Assets and liabilities of the failed financial undertakings**

Creditors of the failed banks have declared claims against the banks' estates. A number of disputes concerning the legitimacy of the claims are still unresolved; therefore, there is considerable uncertainty about how the claims are divided between residents and non-residents. The courts will rule in the legitimacy of some of the claims. How much those who consider themselves to have legitimate claims receive in payment for them will be determined by how much is obtained for the estates' assets once they have been settled or sold. It is estimated that a majority of the claimants against the estates are non-residents, although residents are also among the creditors. While the majority of

the old banks' assets are foreign, there are domestic assets as well, including claims against the new banks. Those claims are one of the old banks' principal assets which will ultimately revert to creditors. There is still considerable uncertainty about the value of the assets, the division of the claims, and the timing of the final settlement. The figures presented in this report must therefore be interpreted with particular caution.

### Establishment of the new banks

The passage of Act no. 125/2008, the so-called Emergency Act, in October 2008, granted the Financial Supervisory Authority (FME) extensive powers to intervene in financial companies' operations under extraordinary circumstances. Soon thereafter, the Financial Supervisory Authority took over the management of Iceland's three largest banks and placed them under resolution committees. In order to ensure the continuation of banking services in Iceland, three new State-owned banks were established on the ruins of the old ones. General deposits held by Icelandic residents in the failed banks were transferred to the newly established banks. According to Article 6 of the Emergency Act, deposits were assigned a higher priority than general claims in the banks' estates. On the basis of this Article, as well as Article 5, Paragraph 4 of the Emergency Act, the failed banks' domestic assets were transferred to the new banks to cover the deposit obligations taken over by the new institutions. The general rule was that the banks' domestic assets (including real estate and claims against residents) were transferred to the new banks. The valuation of the transferred assets was based on an appraisal by an impartial third party. The highlights of the settlement between the new and old banks are shown in Table III-1.

Table III-1 Key figures on the new banks 31 December 2008<sup>1</sup>

<i>B.kr.</i>	<i>Arion banki</i>	<i>Íslandsbanki</i>	<i>NBI</i>	<i>Total</i>
Total assets on date of establishment	452	630	932	2,014
Total assets 31 December 2008	641	658	1,029	2,328
Total share capital 31 December 2008	77	67	143	287
Capital injection from Treasury	33.3	28.3	121	182.6
Subordinate loan from Government	24	25	0	49
Settlement between new and old bank				
New bank debt to old bank	0	0	305	305
Old bank shareholding in new bank (%)	87	95	19	

1. NBI hf. was established on 7 October 2008, Íslandsbanki hf. on 15 October 2008, and Arion Bank hf. on 18 October 2008.  
Sources: Ministry of Finance; Arion Bank, Íslandsbanki, and NBI annual accounts for 2008.

### Settlement of transferred assets

The difference in the value of the assets and liabilities transferred from Glitnir to Íslandsbanki, and from Kaupthing to Arion Bank, was paid with shareholdings in the new banks, Íslandsbanki and Arion Bank. In the case of Landsbanki, however, the settlement was carried out with a debt instrument and part-ownership of the bank. The settlement between NBI hf. and Landsbanki Íslands hf. due to the transfer of the old bank's assets net of liabilities was completed on 15 December 2009.

The settlement was twofold. First, debt instruments<sup>22</sup> were issued in the following currencies:

- Euros: 871 million (EURIBOR + 1.75/2.90)
- Pounds sterling: 275 million (LIBOR +1.75/2.90)
- US dollars: 734 million (LIBOR +1.75/2.90)

In NBI hf.'s interim financial statements for the first six months of 2010, a debt was entered in the amount of 290 b.kr. due to these debt instruments. The possible issuance of a contingent debt instrument was also negotiated. Its value depends on the total value of specified assets transferred to the new bank on 7 October 2008.<sup>23</sup> In NBI hf.'s interim financial statements for the first six months of 2010, a debt was entered in the amount of 18 b.kr. due to the contingent debt instrument. Icelandic State Financial Investments holds an 81.3% stake in NBI hf. on behalf of the Treasury, and Landsbanki Íslands hf. owns 18.7%. The bank's recorded equity at the end of the first six months of 2010 was just under 167 b.kr. Cautiously estimated, then, the value of old Landsbanki's holding in the new bank is approximately 31 b.kr. However, old Landsbanki's share in NBI reverts to the Treasury if the contingent debt instrument is issued. The estimated total value of NBI hf. debt instruments issued to the Landsbanki estate, together with the estate's holding in NBI hf., is roughly 335 b.kr. This amount, plus other domestic assets of the failed banks, will eventually be allocated towards settlement with foreign and domestic creditors.

### Domestic assets and division of the failed banks' claims

As is described above, the rule of thumb was that the old banks' domestic assets should be transferred to the new banks to offset deposits. For a number of reasons, however, a considerable number of claims against Icelandic residents remained in the old banks. In most instances, these were assets that had been pledged specially or that were linked to both residents and non-residents. There were also derivatives contracts, many of which have been disputed since the official foreign exchange market for Icelandic krónur ceased operation temporarily following the fall of the banks.

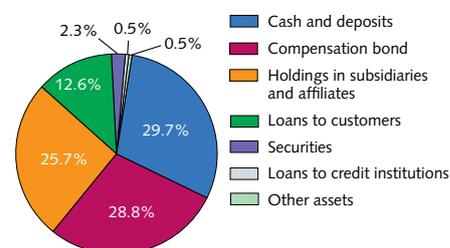
When the failed banks' estates are settled, all of the estate assets will be used to reimburse legitimate creditors in accordance with the law. The majority of the three old banks' claims are from non-residents. Residents also have claims against the estates, among them pension funds, UCITS and other investment funds, the Treasury, and the Central Bank. Although a minority of the claims are domestic, those claims correspond to a rather large percentage of GDP. A final

22. These bonds mature in the latter half of 2018. No payment of principal is made for the first five years. For the first five years, the premium on the base interest rate is 1.75%, and for the last five years it rises to 2.9%. Owners of the bonds could demand of the issuer that the bonds be listed on the stock exchange after mid-2010.

23. The discussed assets will be revalued at year-end 2010, and the bond will be based on that revaluation. The total amount of the contingent bond will never exceed 92 b.kr. If the bond is issued, the Treasury's holding in NBI hf. will increase accordingly. The bond will bear variable interest with quarterly instalments beginning in 2014, and it will be issued in euros based on the official year-end 2012 exchange rate. In all, 85% of the potential excess value of the asset portfolio will constitute the principal of the bond, and 15% will revert to NBI hf.

Chart III-1

Domestic assets of DMBs  
in winding-up proceedings  
30 June 2010



Source: Central Bank of Iceland.

list of approved claims against the estates is not yet available, and there is still uncertainty about the final division between resident and non-resident owners of claims against the old banks' assets.

Table III-2 summarises the estimated domestic assets of Landsbanki, Glitnir, Kaupthing, and Straumur. The value of the above-specified assets is estimated from the reports submitted by the banks to the Central Bank and to creditors, information on deposits in domestic banks and the Central Bank, and the new banks' financial statements. These assets, which are valued at 1,110 b.kr., together with foreign assets valued at 1,780 b.kr., will be divided among the estates' final creditors.

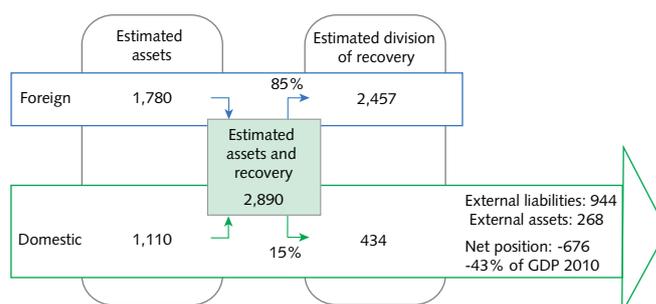
Table III-2 Estimated domestic assets of failed banks, 30 June 2010

	<i>B.kr.</i>
Deposits in krónur	55
Foreign currency deposits with DMBs	80
Foreign currency deposits with Central Bank	195
Loans to customers	140
Loans to financial institutions	5
Compensation bond from new bank for asset transfer	320
Securities	25
Holdings in subsidiaries and affiliates	285
Other assets	5
<b>Total</b>	<b>1,110</b>

Source: Central Bank of Iceland.

The division of claims varies by bank. For simplification, this analysis assumes that all Landsbanki creditors are non-residents. Thus it ignores the fact that the Depositors' and Investors' Guarantee Fund (DIGF) is a resident entity with claims against the Landsbanki estate but instead takes account of the final allocation of sold assets. It is estimated that 15% of the claims against Landsbanki, Glitnir, Kaupthing, and Straumur are from residents and 85% from non-residents; however, it must be borne in mind that there is still considerable legal uncertainty about the division of the claims. Based on this estimate, it can be assumed that domestic assets valued at 1,110 b.kr. and foreign assets valued at 1,780 b.kr., or a total of 2,890 b.kr., will be divided so that 434 b.kr. are allocated to residents and 2,456 b.kr. are allocated to non-residents.

Chart III-2  
Estimated impact of Glitnir, Kaupthing, Landsbanki and Straumur on the IIP



Amounts in ISK billions.  
Source: Central Bank of Iceland

It is not easy to determine exactly what residents' net debt to non-residents will be when settlement is complete. One way to approximate this figure is to determine what the result would be if the current domestic and foreign assets were divided between residents and non-residents according to the proportions presented above. Thus 944 b.kr. of domestic assets would revert to non-residents and create external liabilities. In addition, 268 b.kr. of foreign assets would revert to residents and create an external financial asset. The result is a net debt of 676 b.kr., or 43% of 2010 GDP; that is, the debt would be similar to that in 2002, before the upswing began in earnest. This analysis is based on estimates from the old banks' resolution committees; however, during the compilation of data, it emerged that asset recovery is subject to considerable uncertainty. If recovery is not in line with the estimates, the situation could change materially. Thus it is appropriate to allow for the possibility of a sizeable deviation. This report assumes a deviation amounting to 5% of GDP in each direction. It is virtually impossible to be more exact at the present time.

### **Smaller financial companies**

The analysis above pertains to the situation that is expected to arise with respect to the three old commercial banks – Glitnir, Kaupthing, and Landsbanki – and Straumur. In the months following their collapse, smaller financial companies failed as well: SPRON, Sparisjóðabankinn (SPB), Sparisjóðurinn í Keflavík, and Byr Savings Bank. The value of these banks was much lower, and most of the assets were domestic. A large portion of the assets had been pledged and will be allocated directly to claims or deposit obligations, as with the commercial banks. It is estimated that these smaller companies' net reduction of the IIP will not exceed 4% of GDP, but the claims process is less advanced than it is for the commercial banks.

### **Assets and liabilities of cross-border firms**

The operations of many firms other than financial institutions are in disarray following the collapse of the financial system. Many of these are holding companies<sup>24</sup> that owned, among other things, large stakes in the failed banks. Because of their size, it can be assumed that settling the estates of domestic holding companies could make a considerable impact on the IIP.

In the years before the crash, residents – holding companies in particular – invested heavily abroad. From the beginning of 2003 until the banks failed, foreign direct investment by domestic holding companies grew from 102 b.kr. to 2,242 b.kr. Increased equity accounted for 2,073 b.kr. of that total. Loan claims against foreign subsidiaries increased by only 67 b.kr. during that period, however. Many companies with international operations sustained severe blows when the banks collapsed. Residents' investment in foreign companies therefore declined rapidly, or by 1,495 b.kr., to 748 b.kr. by the end of Q2/2010. Of that amount, equity declined by 1,653 b.kr., whereas loan claims against foreign subsidiaries increased by 158 b.kr.

24. Holding company operations entail owning shares in other companies without manufacturing any goods or rendering any services. Holding companies that belong to this sector do not provide the companies in which they own shares any other service.

As is discussed in Section II of this report, holding companies received a large part of their financing from domestic credit institutions. Their external asset position was therefore positive until the crash. At the end of Q3/2008, domestic holding companies' foreign assets classified as direct investment totalled 927 b.kr., whereas foreign liabilities were only 184 b.kr.

Asset impairment has already emerged in official statistics to a large degree. According to information available upon the last calculation of foreign direct investment, domestic holding companies' foreign assets totalled 136 b.kr. at year-end 2009. While the difference is due primarily to the estates' sales of foreign companies, a fair number of foreign companies have been taken over by domestic or foreign creditors. It is common that, upon takeover, the companies' value is set much lower than it was for the previous calculation of foreign direct investment. Many foreign companies previously owned by domestic holding companies have become insolvent.

Table III-3 Holding companies' external assets and liabilities

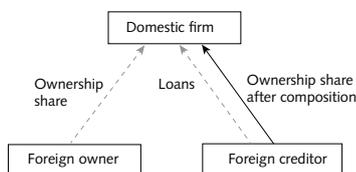
B.kr.	Q3/2008	Q4/2009	Difference
Assets (net worth)	822	1	-821
Assets (loans to foreign subsidiaries)	105	135	30
Assets, total	927	136	-791
% of total direct investment	41	12	.
Liabilities, loans from foreign subsidiaries	58	4	-54
Liabilities, other loans	126	94	-32
Liabilities, total	184	98	-86
% of total direct liabilities	13	9	.

Source: Central Bank of Iceland.

**Inward foreign direct investment has also declined in value**

Since the financial collapse, non-residents' equity in domestic firms has declined by just over 700 b.kr., whereas their loan claims against domestic firms have increased by 236 b.kr. Inward foreign direct investment has therefore declined by 470 b.kr., to 970 b.kr. as of the end of Q2/2010. A large number of domestic firms with non-resident owners have become insolvent, and others have been operated at a loss since the banks failed. In both cases, equity is eroded. The increase in loan claims can be traced mainly to the fact that many of the claims are listed in foreign currency and are thus vulnerable to exchange rate movements. The depreciation of the króna has therefore increased the amounts owed by domestic firms to their foreign parent companies.

Chart III-3  
Example of impact of composition agreements on the IIP<sup>1</sup>



1. The broken grey lines show the position before bankruptcy, and the black line shows the position after composition.

**Holding companies – composition or winding-up**

The effect of holding companies' estates on Iceland's IIP depends on the agreements reached with their creditors. It is possible to reach a composition agreement with creditors instead of filing for bankruptcy, winding up the company, and selling all of its assets to pay off claims. A composition agreement entails restructuring the company's finances so that an operationally viable company remains. The impact of this process on the IIP depends on how ownership is treated when composition of creditors is requested, including the division of claims between domestic and foreign creditors. When a domestic firm owned

by residents is taken over by foreign creditors, non-residents' equity investment in Iceland increases. However, Iceland's liabilities are reduced by the amount of the debt cancelled at the time of the takeover. If both owners and creditors are non-residents, however, the creditors' takeover of the company could have a positive effect on the IIP in the amount of the cancelled debt.<sup>25</sup>

The effect of restructuring holding companies' financing on the IIP also depends on the composition of the company's asset portfolio at the time composition of creditors is requested, and whether the assets end up owned by residents or non-residents. If the assets end up in the hands of residents, the IIP is not affected, as a foreign asset is transferred from one resident to another. If ownership is transferred to a non-resident, however, the asset is no longer considered a domestic asset.

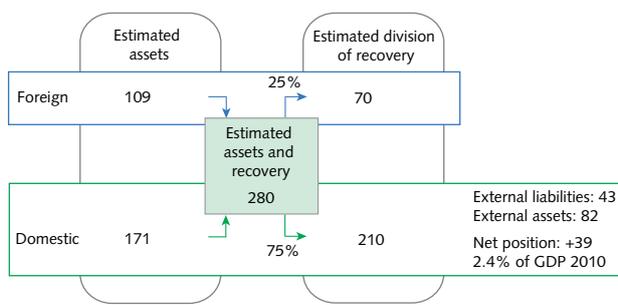
If no composition agreement is concluded, it is the role of the trustee in liquidator to sell the company's assets and divide the proceeds among creditors according to the applicable rules. The effect of that sale of assets on the IIP depends on whether the assets are purchased by residents or non-residents, as is described above. When claims have been paid, the company is wound up and the remaining debt cancelled. If the creditors are foreign, Iceland's external liabilities decline by the amount of the cancelled debt, but if creditors are domestic, there is no effect on the IIP.

### The fate of assets held by holding companies in winding-up proceedings

As in the case of financial institutions undergoing winding-up proceedings, there is still considerable uncertainty about the value of assets, division of claims, and timing of final settlement of the estates of many holding companies. The fate of various holding companies that were very active before the crisis is now becoming clearer, however. Most of their assets will probably be sold and the proceeds disbursed to creditors when final settlement is made. As before, the implications for the IIP depend on the division of claims between residents and non-residents.

Chart III-4

Estimated impact of holding companies in winding-up proceedings on the IIP



Amounts in ISK billions.  
Source: Central Bank of Iceland.

25. The ownership of an underlying domestic company is transferred from one non-resident entity to another and the loan liability is written off.

According to a study of holding company estates, residents own about 75% of the claims, while non-residents own about 25% (see Chart III-4).<sup>26</sup> A portion of holding companies' domestic recovery will ultimately revert to the DMBs in winding-up proceedings and be allocated from there to foreign creditors, as is shown in Chart III-2.

## IV The role of the public sector in the external debt position

The public sector's balance sheet and budgets suffered a severe shock with the collapse of the financial system and the króna. The loss to the public sector (excluding Government-owned companies) amounts to an estimated 60% of GDP in the first year after the collapse.<sup>27</sup> The government sector's operating performance deteriorated by as much as 12% of GDP afterwards, measured from peak to trough. Taking into account the increased revenues that the preceding upswing generated for the Government, some of which were used to pay down debt, the estimated net loss one year after the collapse amounted to over 30% of GDP, and the operating performance deteriorated by about 5% of GDP. Only a small portion of this loss has a direct effect on the IIP. On the other hand, the gross debt of the government sector and the Central Bank increased substantially due to borrowings to expand the foreign exchange reserves. This raises interest expense, although assets do offset the debt, as assets bear lower interest rates than liabilities.

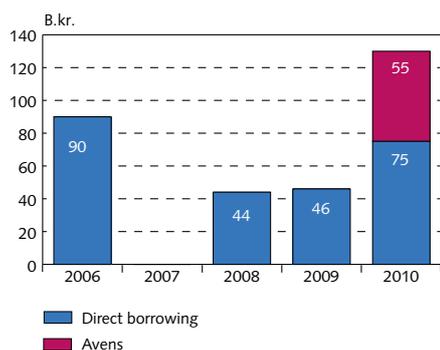
Efforts to fund deficit spending in the domestic bond market have been successful and are expected to remain so. Because of the capital controls, it has not been necessary to borrow funds abroad to cover the expense accruing to the Government as a result of the crash, and it will not be necessary to do so in coming years, although it is not unlikely that some foreign borrowing will take place.

### Foreign borrowing mainly for expansion of the foreign exchange reserves

The largest individual foreign loans taken in the latter half of 2010 are related to the expansion of the foreign exchange reserves. Both the Treasury and the Central Bank were involved in these. Loans taken to expand the reserves are offset by assets in equal amounts. These borrowings therefore do not affect the net IIP except to the extent that a negative interest rate differential is added to the debt or the reserves are used to fund a current account deficit.

There are no other direct foreign borrowings, but there is still some uncertainty about the value of a possible Government guarantee

Chart IV-1  
Treasury borrowing 2006-2010<sup>1</sup>



1. At exchange rate on date of disbursement.  
Source: Ministry of Finance.

26. Appraisal prepared by the Statistics and IT Department of the Central Bank of Iceland. Responses were received from the estates of 10 holding companies whose combined foreign assets at the end of Q3/2008 totalled nearly 700 b.kr., or about 85% of all foreign assets held by all domestic holding companies.

27. The effect of the collapse on public sector finances is discussed in an unpublished paper by Arnór Sighvatsson and Gunnar Gunnarsson, "Iceland's financial disaster and its fiscal impact", in the book *Managing Risk in the Financial System*, by Edward Elgar, forthcoming in 2011.

of the Icesave agreements, although it is clear that the burden borne by the Treasury will be only a fraction of the original estimate. The Icesave guarantee is not included in official figures because an agreement between the countries concerned has yet to be signed. If an agreement is reached, the claims of the Dutch and British governments will be transferred to the DIGF, which recognises the claims as a debt backed by a guarantee from the Republic of Iceland. This debt borne by the DIGF would amount to just under half of Iceland's GDP for one year. Offsetting that debt is the claim against the Landsbanki estate, which is considered sufficient to pay 91% of the principal amount of the debt to the British and the Dutch. Because this claim is against the Landsbanki resolution committee, a resident entity, it is not included in figures on Iceland's IIP until the bankruptcy of the bank has been settled. In official figures on Treasury debt, the estimated present value of the Treasury's expense for the conferral of the guarantee will be charged in accordance with international standards.

### Treasury borrowing for expansion of reserves totals 25% of GDP

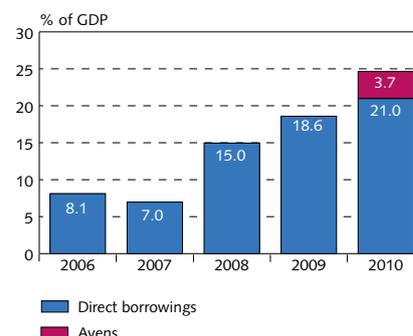
The Treasury's gross foreign debt ratio bottomed out at 14% of GDP in 2005. The Treasury's debt began to rise again two years prior to the banks' collapse. The increase can be linked to the run-up to the crisis. It is estimated that the Treasury's total borrowings for expansion of the foreign reserves amounted to 25% of year-2009 GDP at the end of October 2010. The Treasury may still avail itself of loan facilities in connection with bilateral loan agreements in the amount of 750 million euros. If it draws the full amount of those facilities, borrowings will rise to 31% of GDP.

Doubts about the Central Bank of Iceland's ability to fulfil its obligation to act as a lender of last resort (LOLR) escalated early in 2006. In order to boost confidence in the Icelandic financial system, the authorities decided to issue bonds in international markets later that year, so as to expand the foreign exchange reserves. The amount borrowed was 1 billion euros, and the loans were obtained on very advantageous terms. No new foreign loans were taken in 2007, but in September 2008, a foreign loan of 300 million euros was taken to reinforce the reserves still further.

In 2009, foreign borrowing for expansion of the reserves continued, but now in connection with the Government's IMF-supported economic programme. The Treasury's new foreign borrowings during the year, according to bilateral agreements with the Faeroe Islands and the Nordic countries apart from Norway,<sup>28</sup> totalled 250 million euros. Loans were taken again in June 2010, in accordance with bilateral agreements: just over 50 million euros from Poland and 430 million euros from the Nordic countries apart from Norway, for a total of 75 b.kr.

Another transaction that somewhat affects Iceland's debt position, in addition to the loans taken to expand the reserves, is the fact that, through the intermediation of the Central Bank of Iceland, the ISK holdings of the largest individual holder of krónur outside

Chart IV-2  
Treasury accumulated borrowings related to reserves<sup>1</sup>

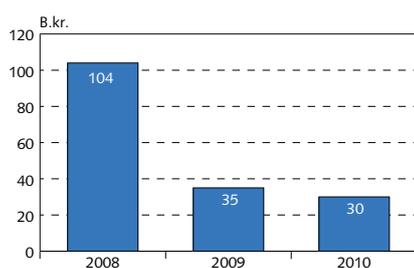


1. At exchange rate for each year.

Sources: Ministry of Finance, Statistics Iceland, Central Bank of Iceland.

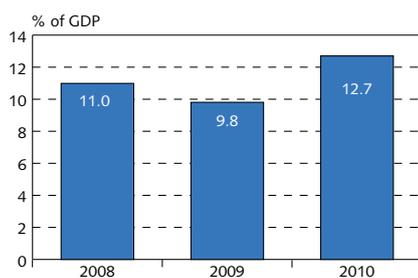
28. The loans from Norway are from Norges Bank to the Central Bank of Iceland.

Chart IV-3  
Central Bank of Iceland long-term borrowings<sup>1</sup>



1. At exchange rate on date of disbursement.  
Source: Central Bank of Iceland.

Chart IV-4  
Central Bank accumulated borrowings  
for expansion of reserves<sup>1</sup>



1. Long- and short-term loans at exchange rate for each year.  
Sources: Ministry of Finance, Statistics Iceland, Central Bank of Iceland.

Iceland, Avens B.V., which the Banque centrale du Luxembourg had accepted as collateral, were purchased and sold to resident entities. Avens B.V.'s assets consisted largely of Treasury bonds and other Government-guaranteed assets. Through these transactions, the Central Bank gained full control of these ISK assets, which were valued at 120 b.kr., or one-fourth of all non-resident ISK holdings. The Central Bank paid for the assets with a bond amounting to 402 million euros (64 b.kr. at the then-current exchange rate), issued by the Treasury for a period of 15 years, plus 11 b.kr. in cash. The net external debt therefore declined from 120 b.kr. in krónur to 64 b.kr. in euros. The króna-denominated debt was composed of ISK deposits, Housing Financing Fund (HFF) bonds, and Treasury bonds. The Treasury's gross foreign debt increases from a 9 b.kr. króna-denominated debt to a 64 b.kr. euro-denominated debt as a result. The HFF bonds were resold to the pension funds for 88 b.kr. The pension funds paid in euros, and the proceeds were used to expand the foreign exchange reserves. The FX position therefore improved by 82 b.kr. in euros with the purchase and sale of the ISK assets. If the gross foreign debt totalling 64 b.kr. in euros is deducted, the net external position of the Treasury and the Central Bank improves by 18 b.kr.

Table IV-1 Long-term borrowings for expansion of reserves

Loan from	Borrower	Date	Review	Foreign amount	Domestic amount, b.kr. <sup>1</sup>
Market	Treasury	Sep 06	None	EUR 1000 m.	154
Market	Treasury	Sep 06	None	EUR 300 m.	46
IMF	Central Bank	Dec 08	Orig. pymt.	USD 827 m.	96
Faeroe Islands	Treasury	Mar 09	None	DKK 300 m.	6
IMF	Central Bank	Oct 09	1st review	USD 155 m.	18
Nordic countries <sup>2</sup>	Treasury	Dec 09	1st review	EUR 220 m.	34
Norway	Central Bank	Dec 09	1st review	EUR 80 m.	12
IMF	Central Bank	Apr 10	2nd review	USD 155 m.	18
Market	Treasury	Jun 10	None	EUR 402 m.	62
Poland	Treasury	Jun 10	2nd review	EUR 50 m.	8
Nordic countries <sup>2</sup>	Treasury	Jun 10	2nd review	EUR 430 m.	66
Norway	Central Bank	Jun 10	2nd review	EUR 160 m.	25
IMF	Central Bank	Dec 10	3rd review	USD 155 m.	18

1. At closing exchange rate on 30 December 2010.

2. Denmark, Sweden and Finland.

Sources: Ministry of Finance, Central Bank of Iceland.

### Central Bank borrowing for expansion of reserves equals 13% of GDP

At the end of August 2010, the Central Bank's borrowings for the expansion of the foreign exchange reserves totalled 13% of year-2009 GDP. This borrowing began in Q4/2008, with a foreign loan amounting to 1,550 million euros. Some of this amount was drawn on the currency swap agreements negotiated with Norway, Denmark, and Sweden. The withdrawal was reversed at the beginning of 2009. A longer-term loan from the IMF in the amount of 827 million US dollars was taken in December 2008.

The first review of the Government-IMF programme was not completed until October 2009, at which time a new long-term loan of 155 million US dollars was received from the IMF. Concurrent with

this, the authorities drew on an 80 million euro loan facility in accordance with a bilateral agreement with Norway.

In the first half of 2010, long-term loans were taken from the IMF (155 million US dollars) and Norway (160 million euros) after the second review of the Government-IMF programme. Furthermore, the authorities drew on the IMF loan facility following the third review of the programme. If the full amount is drawn on the loan facilities from the IMF and Norway, the Central Bank's borrowings for the expansion of the foreign exchange reserves will total 21% of year-2009 GDP.

### Net external position related to the foreign exchange reserves

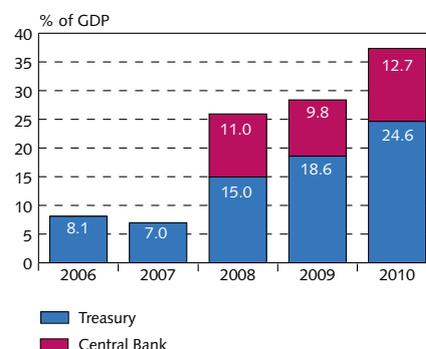
If loans are taken only to expand the foreign exchange reserves and the interest on those loans does not exceed the interest earned on the reserves, leveraged expansion of the reserves has no effect on the net position. Two factors could cause the net position to deteriorate. First, liquid assets that can be freely allocated usually bear lower interest rates than long-term loans taken to expand foreign exchange reserves. This creates a negative interest rate differential that, other things being equal, erodes the net FX position. If the increased reserves are used to some extent to shore up the exchange rate of the currency and finance a current account deficit, this can also increase the net debt.

In 2006 and 2007, the net position related to the reserves – that is, the foreign exchange reserves less loans taken to expand the reserves – was positive by 6.3% and 5.5% of GDP, respectively, in those years, and the reserves themselves constituted 14.4% and 12.4% of GDP, respectively, for those same two years. By year-end 2008, the net position related to the reserves had declined to 3.2% of GDP, while the reserves themselves had grown to 29% of GDP. The net position and the reserves as a whole continued to improve in 2009. The reserves peaked relative to GDP in July 2009, at 38% of GDP, and then fell to 31.4% of GDP in October after part of the reserves, which took the form of deposits from the banks' estates, were paid back. The reserves deteriorated in 2010, and by the end of October 2010, the net position of the reserves was negative by 4.8% of GDP. The deterioration of the net position in October 2010 occurred because Kaupthing was granted a 500 million euro loan just before the banks failed, but the deterioration did not show until foreign currency from the banks' estates (in the form of deposits), which was included with foreign assets in the reserves, was paid out. It had not been recognised as a foreign debt related to the foreign exchange reserves because the estates were considered resident entities. In addition, net sales of foreign currency in the market since October 2008 total 60 b.kr. Since the end of August 2010, however, the Central Bank has been purchasing foreign currency on a regular basis.

### Sale of FIH bank will bolster the reserves

The loan from the foreign exchange reserves that was granted to Kaupthing and was backed by general collateral in FIH Erhvervsbank in Denmark is now been collected through the sale of FIH in September 2010, for as much as 500 million euros. The first payment, which was remitted at the beginning of 2011, improved the Central Bank's

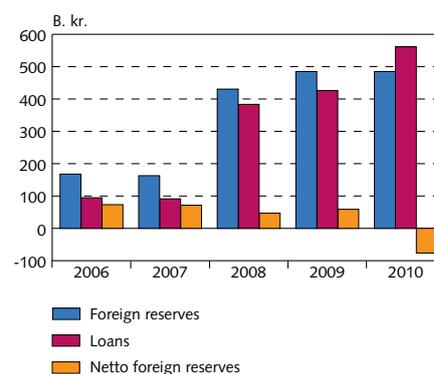
Chart IV-5  
Treasury and Central Bank accumulated borrowings related to reserves<sup>1</sup>



1. At exchange rate for each year.

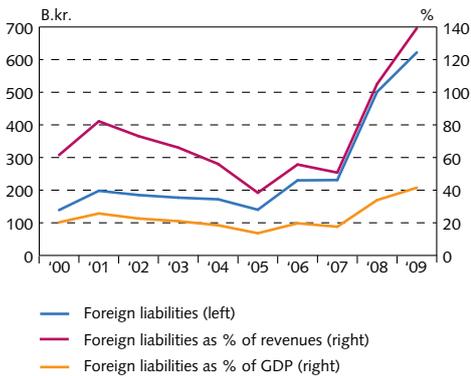
Sources: Ministry of Finance, Statistics Iceland, Central Bank of Iceland.

Chart IV-6  
Foreign assets and liabilities related to foreign reserves



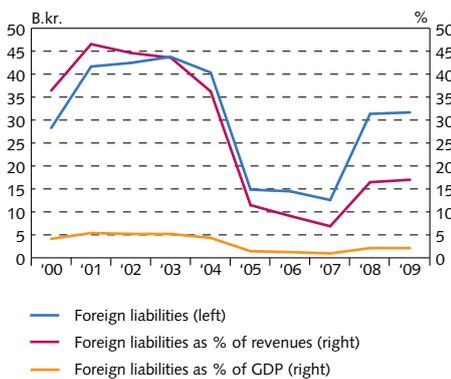
Sources: Ministry of Finance, Central Bank of Iceland.

Chart IV-7  
Foreign liabilities, Treasury



Sources: Ministry of Finance, Statistics Iceland, Central Bank of Iceland.

Chart IV-8  
Foreign liabilities, municipalities



Sources: Statistics Iceland, Central Bank of Iceland.

reserve balance by 250 million euros, and payment of the remainder, up to 250 million euros, is expected over a period of several years.

#### Non-residents' CD holdings were considerable at one time

Non-residents' holdings of Central Bank of Iceland certificates of deposit totalled 107 b.kr. as of year-end 2008. However, that amount declined rapidly as soon as the CDs matured in early 2009, and non-residents' holdings in short-term Treasury debt increased correspondingly. Foreign short-term liabilities totalled only 60 b.kr. at year-end 2009, including accounts payable (in Icelandic krónur) to foreign payment intermediation companies in the amount of 35 b.kr. The Central Bank's net external position excluding the foreign exchange reserves was negligible until 2008, when it was negative by 134 b.kr., mostly due to CDs. At the end of 2009 and 2010, the Bank's net position excluding the foreign exchange reserves was negative by 60 b.kr.

#### Króna bonds owned by non-residents

Excluding loans taken to bolster the foreign exchange reserves, the treasury's net external position was 23% of GDP as of year-end 2009, as compared with 14% at year-end 2005. The increased net Treasury debt to non-residents can be traced to non-residents' increased position-taking with the króna during the period 2005-2008.

#### Treasury interest payments reach new high

At year-end 2009, the Treasury's external debt totalled 42% of GDP. The Treasury itself has no foreign assets to offset this debt. The Treasury's interest payments, relative to either Treasury revenues or to GDP, have increased rapidly since 2005, when they fell to a low for that decade. The Treasury's foreign interest payments amounted to only 0.71% of GDP in 2005, and then quadrupled to a peak of 2.85% of GDP in 2008. By comparison, in the 1980s interest payments probably peaked in 1984, at 2.3% of GDP, and in the 1990s they peaked at 1.7% of GDP in 1995 and 1996.<sup>29</sup>

#### Municipalities' external position

As a share of revenues, Icelandic municipalities' debts to non-residents amounted to 17%, and interest payments to 0.3%, towards the end of 2010. For the national Treasury, these same figures are 140% and 2.8% of revenues, respectively. Municipal funding changed radically in 2005, when Orkuveita Reykjavíkur (OR) took over debt of the City of Reykjavík in the amount of 17.4 b.kr. In the first half of the last decade, foreign loans accounted for 55-75% of municipal debt, whereas they have accounted for about 22-28% since 2005. Exchange rate risk was partially transferred to a firm operating under the aegis of the municipality. To some degree, municipalities also took exchange rate-linked loans from resident entities. The legality of those loans is uncertain, and while they entail foreign exchange risk for the municipality concerned, the loans are payable to a resident entity and, as such, can be paid in

29. Data on the Treasury's interest payments in the 1980s are not available. Information on external liabilities is available, as is the average nominal interest rate on foreign debt. This information is used to estimate the amount of the interest payments.

domestic currency. Although exchange rate-linked loans substituted for foreign borrowings to an extent, the municipalities' foreign exchange risk declined somewhat from the levels at the beginning of the decade.

Municipalities' foreign debt was at a minimum in 2007, when it amounted to only 1% of GDP and 7% of municipal revenues, as opposed to 36-46% during the period 2000-2004. The percentage at the turn of the century must be considered relatively high given the fact that the municipalities have very little opportunity to increase revenues, as they are provided with a revenue framework by the State and they usually do not have any foreign-denominated revenues.

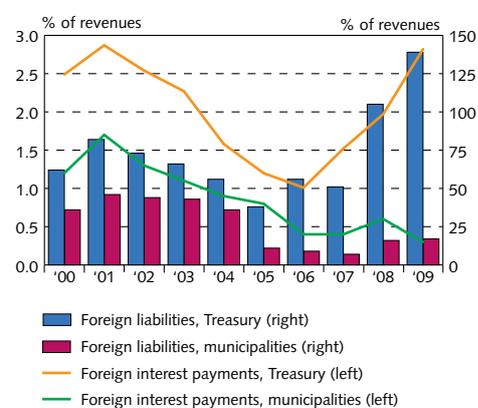
The municipalities' external liabilities nearly doubled in krónur terms in 2008. During the first year after the collapse, the loss on external liabilities amounted to just under 1% of GDP, and an exchange rate loss (1.1% of GDP) was borne by OR, which did not have sufficient foreign-denominated revenues to absorb that loss. The municipalities have very limited access to foreign credit; therefore, their operations have been funded domestically, like those of the Treasury. The municipalities' external liabilities at year-end 2009 were therefore almost as high as at year-end 2008, or 2.1% of GDP, although exchange rate-linked debt of individual municipalities is much higher.

#### External position of some Government-run companies was difficult

The debt of Landsvirkjun (LV) and Orkuveita Reykjavíkur (OR) accounts for nearly 95% of Government-run companies' external liabilities. LV's debt management has changed little in the past decade, whereas OR's debt management policy has changed. For example, LV's foreign debt has been about 70-80% of its total liabilities in the past decade, and its foreign-denominated revenues have been in the same range. OR's foreign debt accounted for only 7% of its total debt at the beginning of the decade but had risen to 82% by the end of the decade. At the same time, OR's foreign-denominated revenues rose from 0% of total revenues to 18%. OR's foreign-denominated revenues did not rise sufficiently to cover foreign debt service; thus the strategy of taking on additional foreign exchange risk during the pre-crisis years did the company severe damage. As Chart IV-10 illustrates, OR's foreign debt followed a pattern similar to that of other publicly owned companies until 2005, whereupon OR changed its strategy when it took over the foreign debt of its largest owner, the City of Reykjavík.

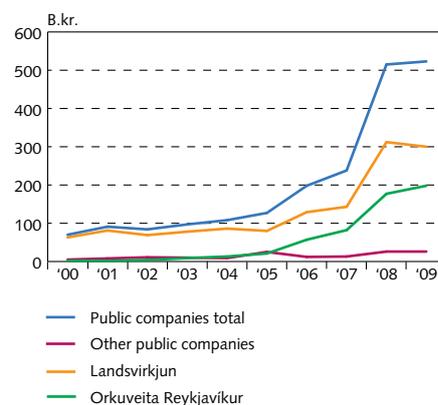
Like OR, many other Government-run companies increased their appetite for foreign debt between 2000 and 2005. Debt increased sharply overall, due to heavy investment, but the share of exchange rate-linked debt rose far more than was justified by foreign-denominated revenues. This happened in spite of the depreciation of the króna in 2001, and perhaps because of the speed with which the depreciation reversed itself, foreign exchange risk was stepped up steadily. The foreign debt of other companies doubled between 2000 and 2007. The debt ratio rose from 0.7% of GDP to 1.4% in 2007 and had risen to 2.8% by 2009, following the collapse of the króna. The ratio will probably decline again if the króna appreciates, but the historically low real exchange rate of the króna has a negative effect on the equity and earnings of firms whose revenues are in krónur while their debt is

Chart IV-9  
Foreign interest payments and government debt



Source: Central Bank of Iceland.

Chart IV-10  
Foreign liabilities, public companies



Source: Central Bank of Iceland.

Table IV-2 Gross and net public sector debt development and interest balance 2010-2011

% of GDP	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Foreign debt</b>											
Related to reserves	2.3	1.9	2.0	0.0	0.0	0.0	8.1	7.0	25.9	28.4	36.2
Treasury excl. reserves	20.3	25.7	22.6	21.0	18.5	13.6	11.6	10.7	18.9	22.9	14.6
Central Bank excl. reserves	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.2	3.8	4.4
Municipalities	4.1	5.4	5.2	5.2	4.3	1.4	1.2	1.0	2.1	2.1	1.9
Public companies	10.2	11.8	10.2	11.5	11.6	12.3	16.9	18.2	34.8	34.9	32.6
<b>Net position</b>											
Related to reserves <sup>1</sup>	2.7	2.8	2.6	6.9	7.1	6.6	6.3	5.5	3.2	3.9	-4.8
Treasury excluding reserves	-20.3	-25.7	-22.6	-21.0	-18.5	-13.6	-11.6	-10.7	-18.9	-22.9	-14.6
Central Bank excluding reserves	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-9.0	-3.8	-4.3
Municipalities	-4.1	-5.4	-5.2	-5.2	-4.3	-1.4	-1.2	-1.0	-2.1	-2.1	-1.9
<b>Interest balance</b>											
Foreign reserves	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.5	-0.3	...
Treasury excluding reserves	-1.0	-1.1	-0.9	-0.8	-0.7	-0.7	-0.7	-0.8	-2.5	-2.0	...
Central Bank excluding reserves	-0.1	-0.2	0.0	-0.1	0.0	0.0	0.0	-0.1	-0.8	-0.2	...
Municipalities	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	...

1. Reserve assets net of debt incurred to expand the reserves.

Sources: Statistics Iceland, Central Bank of Iceland.

in foreign currency. By the end of 2009, LV's external liabilities totalled 300 b.kr., OR's were 198 b.kr., and those of other Government-run companies were 26 b.kr.

#### Net external liabilities of all public entities constitute 58% of GDP

Given how large a share of government sector debt is due to the expansion of the foreign exchange reserves, it is appropriate to discuss the two topics simultaneously. The foreign debt undertaken to expand the reserves amounted to 36.3% of GDP as of end-October 2010, whereas the foreign assets in the reserves totalled 31.4% of GDP. The foreign exchange reserves are thus fully leveraged, but a portion of a reserve loan from 2006 was converted to a 44 b.kr. equity contribution to the Central Bank of Iceland in May 2007.

The Treasury and Central Bank's external debt excluding that related to the reserves totalled 19% of GDP at the end of Q3/2010, after having declined considerably as non-resident holdings of Treasury bonds and CDs have diminished. The foreign debt of the municipalities and publicly owned companies has held stable after having nearly doubled following the collapse of the financial system. By the end of Q3/2010, it totalled 35% of GDP. At that time, the foreign liabilities of all publicly owned entities totalled 1,392 b.kr., or 93% of GDP. The net liabilities of the same entities amount to 58% of GDP.

## V Underlying IIP and sustainability of net debt position after the collapse

### Underlying IIP to improve in coming years

The underlying international investment position (IIP) can be defined as the position that will emerge when the estates' domestic and foreign assets have been sold, the proceeds have been distributed to domes-

tic and foreign creditors, and adjustments have been made for other factors that currently distort official data on assets and liabilities. It is assumed that the international investment position excluding the financial institutions in winding-up proceedings amounted to roughly one-fourth of GDP at year-end 2010. This large difference can be attributed to the fact that a large share of Iceland's assets and liabilities were those of the failed banks and that, according to standardised calculations, their liabilities far exceeded their assets, particularly after they collapsed. When all of the estates' assets have been sold and the proceeds distributed among creditors, substantial debt owed by residents to non-residents will remain. Section III presented a rough estimate of the amount. The result is that Iceland's IIP adjusted for this estimate was approximately -70% of GDP at year-end 2010. Accordingly, Iceland's underlying IIP at year-end 2010 was just under one-third of the amount calculated according to international standards just before the collapse.

No consideration has been given, however, to the probable debt due to a possible Government guarantee of the DIGF's debt, according to the agreement currently before Parliament. According to the Icesave bill, the Treasury's debt will be less than 4% of GDP. The Icesave debt will probably not be added to Iceland's debt position in official calculations, however, as it will be in the form of interest and will therefore affect only the balance on income and thus the current account balance. Other uncertainties are due primarily to corporations – for example, holding companies, as the settlement of holding companies with substantial foreign assets and liabilities is not yet complete – and finally, the assessment of the IIP is influenced strongly by the inclusion or exclusion of one company, Actavis.

As is discussed in further detail in the next section, there is good reason to ignore Actavis' assets and liabilities in the assessment of Iceland's underlying position because of the nature of the debt and because of the likelihood that the value of foreign assets is underestimated in official statistics. If Actavis' assets and liabilities are excluded, Iceland's IIP is considerably lower, as can be seen in Table V-1. Consequently, the underlying IIP can be estimated in various ways, depending on which uncertainties are omitted.

Looking farther ahead in time, it can be assumed that the Government, companies with Government guarantees, and the private sector will all refinance their debt to some degree and that new borrowing will take place, but the extent, timing, and terms of such borrowing are all subject to considerable uncertainty. As a result, forecasts of the external position are extremely uncertain. While Table V-1 does not give particular consideration to the obligations that could accrue to the Government because of the Icesave accounts these are included in the confidence intervals. The fact remains, however, that the position will be much more favourable than before the financial collapse. There will be a current account surplus in coming years, and the Government will reduce its debt. Iceland's underlying IIP (including Actavis) therefore improves over and above the Central Bank's forecasts, to about 50-55% of GDP in 2012-2013.

Table V-1 Iceland's debt position

% of GDP	2010	2011	2012	2013
Total liabilities	-867	-866	-800	-754
- excl. DMBs in winding-up proceedings	-218	-224	-202	-191
- underlying liabilities based on calculated settlement from estates	-261	-265	-242	-227
- underlying liabilities based on calculated settlement from estates, excl. Actavis	-208	-212	-193	-181
Net international investment position	-594	-584	-540	-507
- excl. DMBs in winding-up proceedings	-28	-25	-20	-17
- underlying IIP based on calculated settlement from estates	-72	-66	-59	-54
- underlying IIP based on calculated settlement from estates, excl. Actavis	-23	-18	-14	-12
Confidence interval <sup>1</sup>	-38/ -18	-33/ -13	-29/-9	-27/-7

1. The confidence interval assumes +/- 5% due to the banks' estates and - 10% due to Icesave.

Sources: Statistics Iceland, Central Bank of Iceland.

### Iceland's debt to contract in coming years

Revenues not used for purchases of goods and services will improve the net position. If debt becomes too large, revenues must be increased or fewer goods and services purchased (or both) in order to reduce debt. In order to gain perspective on the debt position and its relationship to net revenues from external trade, it is often convenient to define a sustainable debt position as the debt position and the surplus or deficit on external trade that ensures that debt remains unchanged as a share of GDP, given realistic assumptions concerning GDP growth and interest rates. It is possible to show (see Appendix 2) that, when this definition is used, the net position is sustainable if the net external position as a share of GDP ( $IIP_t / GDP_t$ ), the nominal increase in GDP ( $g_t$ ), returns on foreign assets and liabilities ( $r_t$ ), and the share in GDP of the difference between exports and imports are as follows:

$$\frac{g_t - r_t}{1 + g_t} \frac{IIP_t}{GDP_t} = \frac{EXP_t - IMP_t}{GDP_t}$$

If GDP growth is greater than returns on foreign assets and liabilities and the net position ( $IIP_t$ ) is negative, the trade surplus – that is, the difference between exports and imports – is sustainable even if imports exceed exports and generate a deficit. If GDP growth is less than returns, however, exports must exceed imports in order to ensure a sustainable net debt position. The Central Bank and the International Monetary Fund have projected Iceland's debt position based on various assumptions concerning debt, GDP growth, and other factors that are important in such calculations. These calculations have yielded the result that Iceland's net debt as a share of GDP will decline gradually (see Table V-1 and the IMF report).<sup>30</sup> According to the definition above, this means that the debt burden is sustainable.

These projections assume that the real exchange rate will be low in coming years, which means that imports can be expected to be relatively expensive and exports relatively profitable, which in turn will

30. See International Monetary Fund (2010), Staff Report for the 2010 Article IV Consultation and Third Review Under the Stand-By Arrangement and Request for Modification of Performance Criteria (<http://www.imf.org/external/pubs/ft/scr/2010/cr10305.pdf>).

generate a trade surplus. Many critics have taken exception to this assumption, pointing out that if it is assumed that the real exchange rate of the Icelandic króna returns to the average of the past several decades, imports will be greater than is assumed in the Central Bank and IMF calculations, even to the point that unsustainable debt accumulation will result. It should be noted, however, that imports are now close to the historical average as a share of GDP and that, based on the conclusions in Section VI of this report, the latent surplus will be sufficient to cover significant import growth. Imports considerably in excess of currently forecasted levels could be related primarily to more investment, which would presumably be investment in export operations, and would therefore be sustainable. Of course, it is impossible to exclude the possibility of unsustainable import growth, but it is difficult to envision how this would develop unless access to foreign credit were to open up. If Iceland's debt accumulation threatened to become unsustainable once again, credit ratings would quickly deteriorate, the supply of foreign credit would shrink and, as a result, the real exchange rate of the króna would fall.

#### **Sustainability of the net external position depends also on its composition**

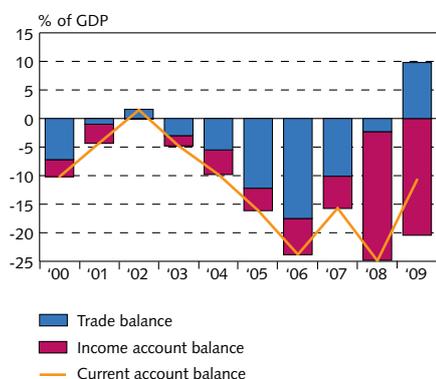
Although it is possible to assess unsustainability based on given assumptions concerning developments in certain variables – such as GDP growth, import and export growth, and global interest rate developments – all such estimates are extremely uncertain and are sensitive to relatively small deviations in interest rate and GDP growth developments. The nature of the current account deficit and the debt accumulation is important as well – for example, whether the deficit develops because of large-scale investment, which will eventually increase exports, or whether it stems from a deficit in public sector operations.

After 2003, Government debt as a share of total liabilities declined rapidly, to 4-6% of Iceland's total liabilities in 2006, where it still is according to official calculations. As a share of underlying assets and liabilities, however, it is estimated that Government debt (including the Central Bank) is approximately one-fourth of Iceland's total liabilities, broadly unchanged from about 10 years ago, and net Government debt to non-residents is approximately 37% of Iceland's net debt. Based on the Central Bank's forecast, Government debt as a share of Iceland's total liabilities will soon rise to 40% and, other things being equal, remain high in coming years.

## **VI Iceland's latent current account balance**

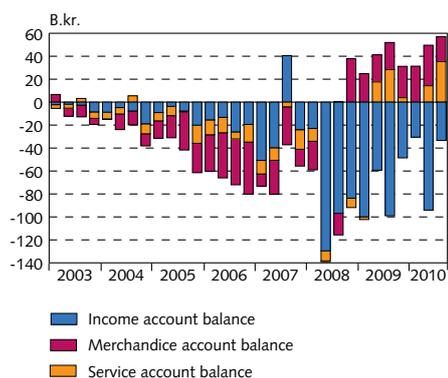
Financial and currency crises generally lead to radical changes in an economy's external balance. Imports contract and export values rise. However, a weaker currency can have a negative effect on an indebted country's balance on income. In Iceland, these changes are more complicated because of the considerable uncertainty about the division of the assets and liabilities of the failed financial and holding companies. Although there are also many uncertainties about the trade balance, it appears clear, according to the Central Bank's baseline

Chart VI-1  
Current account balance 2000-2009<sup>1</sup>



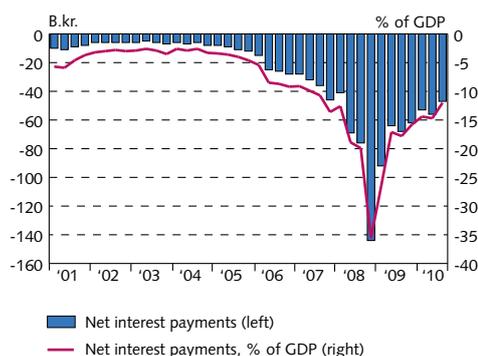
1. Net current transfer is included in the balance of income.  
Sources: Statistic Iceland, Central Bank of Iceland.

Chart VI-2  
Current account balance components<sup>1</sup>  
Q1/2003 - Q3/2010



1. Net current transfer is included in the balance on income.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart VI-3  
Net foreign interest payments  
Q1/2001 - Q3/2010



Sources: Statistics Iceland, Central Bank of Iceland.

forecast (see, for example, *Monetary Bulletin* 2011/1), that there will be a sizeable trade surplus in coming years, after a prolonged deficit. The balance on income, whether the official balance or the underlying one, will be strongly negative, however. The underlying income account deficit will diminish in 2011 but will grow again in 2013-2014 as global interest rates rise.<sup>31</sup> Furthermore, it is assumed that the settlement of the failed banks' estates will be either complete or well advanced by 2013, and as has been stated previously, the settlement is expected to generate a net external debt, which will have a negative effect on the balance on income. Although the trade surplus will not be sufficient to ensure a positive current account balance according to official calculations in coming years, it can be said that a latent surplus has already developed and appears likely to continue over the next several years. The latent balance ignores the effects on the balance of payments of the accrued interest expense and revenues of the failed banks and other firms undergoing winding-up proceedings; instead, an attempt is made to estimate probable net interest payments on the external debt that remains once the winding-up proceedings are complete. This will not appear in official statistics until the proceedings are complete, however. Moreover, it is highly likely that the interest revenues of multinational companies headquartered in Iceland – such as Actavis – are underestimated in Icelandic balance of payments calculations. Consequently, the outlook for the current account balance is probably brighter than is shown here.

Table VI-1 Breakdown of balance on income

% of GDP	2010	2011	2012	2013
Balance on income	-14.8	-13.9	-13.0	-12.9
- underlying balance on income based on calculated settlement from estates	-4.7	-4.6	-4.1	-5.6
- underlying balance on income based on calculated settlement from estates, but excluding Actavis	1.7	0.3	0.5	-1.1
Portion due to consolidated accounts of central government and Central Bank	-1.1	-1.2	-0.6	-0.4
Portion due to consolidated accounts of central government and Central Bank incl. Icesave <sup>1</sup>	-2.4	-2.5	-1.4	-0.8

1. Interest due to Icesave is based on contract currently before Parliament.  
Sources: Statistics Iceland, Central Bank of Iceland.

Table VI-2 Breakdown of current account balance

% of GDP	2010	2011	2012	2013
Current account balance	-3.7	-1.9	-1.4	-2.0
- underlying current account balance based on calculated settlement from estates	6.4	7.4	7.4	5.4
- underlying current account balance based on calculated settlement from estates, but excluding Actavis	12.8	12.3	12.0	9.8

Sources: Statistics Iceland, Central Bank of Iceland.

31. The deficit in the balance on income grew substantially in 2008, when interest payments rose sharply, particularly due to interest payments by DMBs. Interest expense contracted in 2009, in tandem with declining global interest rates; however, interest income declined as well. In the first half of 2010, there was still a deficit in the balance on income, particularly due to interest expense, but also due to negative reinvested earnings

### Latent current account surplus excluding bankruptcy estates

The main uncertainty related to the current account balance lies in the balance on income. The balance on income is calculated based on accrued interest, not interest paid. In some instances, interest expense is calculated on debts even though it is unlikely that the debts will be paid. The deficit in the balance of income is due in large measure to the failed banks. Because the winding-up proceedings for the banks are not complete, their accrued interest income and expense are still included in official statistics even though only a small portion of them will be paid. The official balance on income and current account balance therefore do not reflect capital flows into and out of the country.

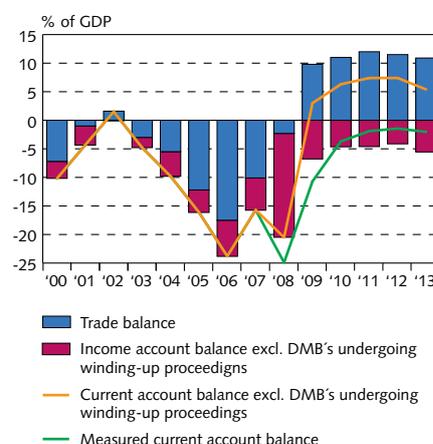
In order to shed light on the role of the failed financial institutions, it is useful to calculate the current account balance and balance on income excluding the banks in winding-up proceedings; that is, excluding the accrued interest income and expense due to banks being wound up. Calculated in this manner, the current account balance was positive by 3% of GDP in 2009. It remained positive in the first three quarters of 2010 and, according to forecasts, will be strongly positive for 2010 and 2011 as a whole (see Table VI-2). Rising interest rates in Iceland's trading partner countries will cut into the surplus in 2013, however. Developments in interest rates and exchange rates, which are subject to considerable uncertainty, will significantly affect near-term developments in the current account balance.

The deficit in the balance on income that remains once the financial institutions in winding-up proceedings are excluded is due in large part to the estimated net interest payments of one company, Actavis. There is reason to exclude this portion of the balance on income because it involves revenues and expenses between related parties. Actavis' owners expect that the company's revenues from foreign operations will cover interest payments on a loan to the owners when it matures, but even if they did not, there would be no foreign currency outflows because Actavis has not had sufficient ISK inflows to cover the operating expenses generated by its domestic operations. Actavis' operational plans do not assume that this will change; they assume instead that the company will continue to sell foreign exchange in return for krónur through its commercial bank.

Although the outlook for the current account balance does not indicate otherwise than that it will be well within sustainable limits, the composition of the balance on income will be less favourable in that a large share of the underlying interest expense will be borne by the Government. The returns on the foreign exchange reserves offset somewhat the interest expense on foreign loans, however. Before the collapse of the financial system, the private sector (financial institutions in particular) paid the majority of Iceland's interest expense. As can be seen in Table VI-1, the interest balance of the Government and the Central Bank explains the surplus in the balance on income (after adjustment for accrued interest due to Actavis and the DMBs in winding-up proceedings) to a large extent.

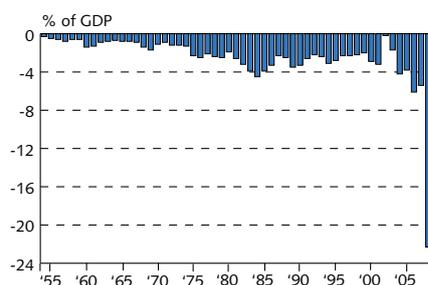
The settlement of holding companies in winding-up proceedings, which previously accounted for a large share of Iceland's external

Chart VI-4  
Current account balance 2000-2013<sup>1</sup>



1. Net current transfer is included in the balance of income. Central Bank forecast 2010-2013.  
Source: Statistic Iceland, Central Bank of Iceland.

Chart VI-5  
Income account 1954-2009



Sources: Statistics Iceland, Central Bank of Iceland.

position (see Chart III-4), do not appear likely to have a strong impact on developments in the balance on income, as can be discerned from the conclusions in Section III. If the net debt owed by resident entities to non-residents following the winding-up proceedings is only 2-3% of GDP, the net interest burden will be insignificant in comparison with other uncertainties.

In Section III, it is roughly estimated that, when the winding-up proceedings for the old banks are complete, the net debt owed by resident entities to non-residents will amount to 43% of year-2010 GDP. It is assumed that the banks' winding-up proceedings will be more or less complete by 2013 and that this net debt will appear in Iceland's external debt position and affect the balance on income – and therefore the current account balance – from that time onward. These payments are included in the forecast for 2013. According to this, the current account balance should decline to just over 5%, but provided that Actavis can cover its interest expense on loans to the company's owners, there would be a surplus in the amount of 10% of GDP.

#### **Uncertainty about developments in the balance of payments**

According to the conclusions above, most indications suggest that Iceland's current account balance will not only be sustainable in the sense that debt will remain stable relative to GDP, but also that the debt ratio will decline rather quickly if recent forecasts materialise. It is possible, however, that this positive situation will lead to stronger appreciation of the króna than is assumed in the forecasts before the end of the forecast horizon.

Although the current account is in balance and the debt situation is improving, irregularity in payment flows could still cause exchange rate volatility. This is the case when short-term liabilities are substantial and creditworthiness lacking, which makes it difficult to refinance a portion of the payments, particularly if they involve large corporations, municipalities, or even the Treasury. Under normal conditions, when creditworthiness is not a concern, a large share of the instalments, and perhaps even the interest payments, for each period are refinanced.

In coming years, it could prove necessary to solve a variety of problems with payment flows. With the IMF Stand-By Arrangement and the related external funding, the Treasury's payment problems should be solved through 2015, however. The foreign-owned króna-denominated assets that are locked in Iceland due to the capital controls represent another problem that must be addressed by the capital account liberalisation strategy. The third problem lies in the settlement of the estates of the old banks and large companies. To the extent that the estates' assets are domestic and the creditors foreign, the settlement could affect the exchange rate of the króna, assuming that the purchasers of the assets pay in krónur and the creditors wish to be paid in foreign currency, or vice versa. It is important that this settlement take place in a manner that disturbs the foreign exchange market as little as possible.

## VII Conclusion

Substantial uncertainties remain regarding Iceland's latent IIP and the true situation will only come to the fore once the assets of the failed banks and other firms have been sold to new owners, proceeds allocated to creditors, and remainder of the debt written off. This process will take several years, at least. Nonetheless, it can probably be stated with some certainty that, when the fog currently shrouding the old banks' estates clears, Iceland's net debt will be considerably less than before the financial crisis struck. At the end of Q3/2008, the net position was negative by 210% of GDP. In this report, it has been estimated that Iceland's underlying net position was negative by 57-82% of GDP at year-end 2010 (by only 18-38% of GDP, excluding Actavis' assets and liabilities) and would decline rather quickly thereafter. The confidence interval reflects mainly the uncertainty about the settlement of the old banks' estates. If this estimate is reasonably accurate, Iceland's debt position has not been this favourable since 2005. If Actavis' assets and liabilities are excluded, it has not been this favourable since 1987. Above all, though, the national balance sheet has been downsized significantly.

Is this debt position sustainable? The meaning of the term "sustainable debt position" is not unambiguous when it refers to the balance sheet of the entire economy. Asking what the country owes, as is done in the title of this report, is misleading in a sense. The national economy is neither a legal entity nor an individual; it is a collection of individuals and firms and the public sector. The country as such is liable for no debt except perhaps the debt of its public sector. Even this, however, is a dubious assertion, for an individual or company that moves away from the country leaves its public sector debt behind. When an individual or company's accumulated debt becomes unsustainable, an adjustment will take place through the bankruptcy procedures. The bankruptcy of a large domestic entity that has borrowed funds from foreign banks in order to buy foreign assets need not have profound or prolonged negative implications for the national economy, even though both assets and liabilities are registered to the country concerned, particularly in the case of a company that has relatively limited domestic manufacturing operations. The impact is determined primarily by the scope of the domestic operations of the company in question, its links to the domestic financial system, and the impact that those links could have on public sector debt.

Although applying the term sustainability to the debt of a national economy is ambiguous, this does not mean that contemplating the sustainability of a country's debt is a futile exercise based on unfounded fear. Iceland's experience is a clear example of how unsustainable accumulation of external debt by individuals and legal entities can undermine the stability of a country's financial system and currency, with the result that a portion of private sector debt is shifted to the Treasury. This risk relates primarily to the role played by the financial system of each country in channelling foreign credit to domestic

firms and, in the final years of the most recent upswing, to individuals as well.

When the banks collapsed, the Treasury had to carry a large share of the cost of rebuilding the financial sector, as well as the indirect social and economic costs of the crash. The largest share of the cost to the public sector may be attributed to the loss on collateralised loans granted by the Central Bank, the recapitalisation of the banking system, and perhaps reimbursement to depositors in the failed banks' foreign branches. It can be assumed that the collapse of the financial system placed debt in the amount of 60% of GDP on taxpayers' shoulders. This does not take into account the fact that the pre-crisis income bubble, which generated substantial tax revenues for the Treasury, had for years lightened taxpayers' debt burden, and even if the banks had withstood the strain, Treasury revenues would have contracted sharply and caused an accumulation of debt. If this is taken into account, it is more likely that the net effect of the financial collapse amounts to about 40% of GDP. Only a small portion of this debt is foreign debt, but it is still enough to make a significant impact on the balance on income in coming years, as the public sector's net external liabilities are more than one-third of Iceland's net position.

Before the crisis, the Treasury's external liabilities were very limited. The Treasury took a 1 billion euro loan in late 2006, however, to strengthen the foreign exchange reserves. Although this loan was taken almost two years before the collapse, it can be said that it is related to the financial crisis, as it was taken in response to foreign liquidity problems experienced by the banks earlier in the year. There was no net increase in debt, and the return on the investment roughly equalled the interest expense on the loan. Since the collapse, the public sector's external liabilities have increased – or will increase – for two main reasons: because of continued expansion of the foreign exchange reserves and because of settlement with the Dutch and British governments concerning depositors in those countries' branches of Landsbanki. The latter of these will make a greater impact on the net debt position. It is estimated that the public sector's gross external liabilities will peak at approximately 44% of GDP, which is much higher than in recent decades. The previous maximum was reached in 2001, when the debt ratio was 31% of GDP; before that, the maximum debt ratio was 29% in 1995. Net external public sector debt will never exceed one-fourth of GDP, however. As is mentioned in the introduction to this report, the debt service burden on the public sector's external liabilities will probably not be much higher than in the mid-1980s, when interest rates were generally much higher than they are now.

What do the conclusions presented here imply for probable exchange rate developments in coming years? This is not easy to answer. In view of historical developments, there is little reason to conclude that the private sector's prospective external debt will, in and of itself, have a significant long-term effect on the range of fluctuation of the real exchange rate, as the level of private sector debt will ultimately be lower than before the collapse. Sizeable overall private sector debt could certainly reduce domestic economic activity, but if efforts to address corporate debt problems are successful, in the long run, lever-

age is unlikely to exceed the levels experienced in the years before the financial crisis. Heavier public sector foreign debt could indicate, however, that the króna will be weaker for a while than it has been on average in recent decades, particularly if strong emphasis is placed on reducing debt. This accords with the experience of other countries that have been struck by financial crises. The exchange rate problem facing Iceland centres not on the debt position as such, but on the fact that a large share of the króna-denominated debt of the public sector and the financial system is owed to non-resident entities. As things stand, a sizeable share of those entities would sell their ISK holdings immediately if the capital controls did not prevent it. This problem can be solved in two ways: by allowing distressed investors to exit in small increments or by allowing them, or long-term investors wishing to buy their krónur, to invest their capital for a longer period of time. If attempts to restore confidence in the Icelandic economy are successful, it should be possible to lift the capital controls without jeopardising exchange rate stability. In order to reinstate confidence in the domestic economy, the fog currently shrouding the debt of the public sector and the economy as a whole must lift. This report may be viewed as an attempt to shine a fog light into the clouds so as to reveal the landscape beyond. It is a rough landscape, to be sure, but quite navigable.

## Appendix 1

### Methods for regular calculation of the balance of payments and the international investment position

The balance of payments (BoP) and international investment position (IIP) of the Icelandic economy are compiled according to international standards followed by member countries of the IMF.<sup>32</sup> Standardised methods are necessary for comparison between countries. In preparing such standards, an attempt is made to take into account the various conditions reigning in the countries concerned, as well as the countries' ability to compile the necessary data. The standards provided limited scope for interpretation of special circumstances in individual countries, but attempts are made to prepare them so that they can be used under a variety of conditions. This requires that they be extremely detailed. The calculation measures trading between resident and non-resident parties and obligations between the two. In this context, it does not matter whether trading takes place in Icelandic krónur or in foreign currency.

For the purpose of calculating the balance of payments and external position of the economy, a resident (domestic party) is defined as any individual or legal entity with a permanent residence in Iceland pursuant to legislation on legal addresses. The nationality or citizenship of the party in question is therefore immaterial. A foreign national with a permanent residence in Iceland is thus considered a resident, and an Icelandic national with a permanent residence abroad is considered a non-resident. As regards legal entities, a company whose headquarters are in Iceland is considered a resident entity even though it may be wholly owned by non-residents, and a company whose headquarters are not in Iceland is considered a non-resident entity even though its owners may be domiciled in Iceland. The only exceptions to this rule are students and embassy employees. Icelandic students and their families who live abroad are considered residents. Similarly, foreign embassy employees and foreign students in Iceland are considered non-residents.

#### Balance of payments

The *balance of payments* shows the scope of trade and flow of capital between residents and non-residents. The balance of payments includes revenues and expenses for trade with foreign countries and flow of capital between residents and non-residents. The balance of payments consists of the current account and the capital and financial account, which – theoretically – should balance each other out, so that their sum should, at any given time, equal zero because all trading and investment must be financed in some way or another. Actually, though, there is always a difference between these two items, and the difference is shown as the item called net errors and omissions.<sup>33</sup>

32. Balance of Payments Manual, 5th Edition.

33. In Box 2 of *Monetary Bulletin* 2005/3, pp. 37-39, is a discussion of errors and omissions in the balance of payments.

### Current account

The current account measures revenues and expenditures from trading with non-residents over a given period of time. Expenditure items are shown with a negative mathematical sign.<sup>34</sup> If revenues exceed expenditures during the period, the current account is considered to be in surplus, while a current account deficit occurs when expenditures exceed revenues.

The current account consists of four parts: the goods account, the services account, the balance on income, and transfers. Transfers include the State's contributions to international agencies and development aid. For this report, the goods and services accounts and transfers are not of primary importance; thus they are not discussed further here.<sup>35</sup>

### Balance on income

The balance on income (factor income) is divided into two parts: compensation of employees and investment income. Employee compensation expenditures include wages paid to people working in Iceland but domiciled abroad, while wage compensation receipts are wages received by workers domiciled in Iceland from employers in another country. Investment income includes income from residents' assets abroad, both equity investment income (which consists of dividends and reinvested earnings) and interest income. Investment expenditures are payments remitted by residents to non-residents due to the latter's assets in Iceland. The revenue and expenditure items in the balance on income are itemised by the nature of the underlying investment; that is, direct investment, portfolio investment, and from other assets.

Interest and dividend payments are entered as receipts if the underlying asset is a foreign asset owned by a resident, and they are entered as expenditures if the underlying asset is a domestic asset owned by a non-resident. *Reinvested earnings*, which is the owner's share in profit that is not paid out as a dividend, is more complex. When a foreign company owned by residents generates a profit, the portion of the profit that is not paid out as a dividend is measured as investment income in the balance on income. Because this income is not paid to owners, it is also considered a new investment (positive reinvestment) in the foreign company. Positive reinvestment is also entered in the capital and financial account as a capital outflow. If the same company sustains an operational loss, however, it is called negative reinvestment and is entered with a negative mathematical sign on the receipts side of the balance on income and an offsetting entry in the capital and financial account as a capital inflow.

Until 2008, the method for estimating dividends and reinvested earnings took into account capital gains and losses. A change in the value of share capital – for example, due to goodwill – can make a strong impact on factor income if it is included in the calculation. When this method is used, the balance on income can fluctuate widely, particularly if the equity of companies in direct investment consists to a

34. The exception to this rule is negative reinvestment in direct investment.

35. A more detailed description of the methodology for calculating the trade balance can be found on the Statistics Iceland website: [www.hagstofa.is](http://www.hagstofa.is).

large degree of goodwill or other assets that could be subject to extreme price volatility. Since the beginning of 2009, the calculation of dividends and reinvested earnings has taken account only of firms' operating performance. For the sake of consistency in the measurement of factor income, figures for 2005-2008 were recalculated using the new method as soon as it was introduced.<sup>36</sup>

### Capital and financial account

The capital and financial account, or more appropriately, its balance, measures capital flows between residents and non-residents. The flow of capital between residents and non-residents could include borrowing, lending, loan payments, or payment for equity investment. In the case of net capital inflows, residents have borrowed more from non-residents than they have loaned them, after adjusting for repayments. In the case of net capital outflows, residents have loaned non-residents more than they have borrowed during a given period (a quarter or a year). Capital outflows can also be attributable to payment of non-residents' loans.

### International investment position

The *international investment position* (IIP) is the economy's balance sheet vis-à-vis non-residents, which specifies residents' assets and liabilities with respect to non-resident counterparties. The balance of assets and liabilities is assessed at the end of a given period, and the difference between the two is referred to as the net position of the economy, or the net IIP. If asset values exceed liabilities, the IIP is positive, and if liabilities are greater than assets, it is negative.

### The relationship between the IIP and the capital and financial account

The calculation of the IIP follows the same itemisation as that applying to the capital and financial balance, as there is a connection between the two. The difference between the IIP at the beginning and the end of a given period is reflected in the capital and financial balance less the revaluation due to price changes and exchange rate movements. This applies provided that information on all of the occurrences during the period is available at the time compilation is done. Because this is usually not the case, some unexplained difference develops. The picture could also be skewed if trading is distributed over more than one period (time lag). A time lag can occur, for example, if an equity purchase by a non-resident takes place during one period and the settlement of the transaction takes place in a later period, thus creating a mismatch between the external position and the capital and financial balance.

### Direct investment

When an investor in one country owns more than 10% of equity in a company in another country, this is referred to as *foreign direct investment* (FDI). It is assumed that, when a shareholding is this large (or

36. Opinion has been divided on the Central Bank's methodology for calculating factor income. The various methods for determining the balance on income have been discussed widely, including the paper by Svavarsson and Sigurdsson entitled "Iceland's international investment position and balance on income," in *Monetary Bulletin* 2007/2.

larger), the investor's intention is to influence the management and policy of the company and establish a long-term business relationship. Investment in securities (portfolio investment) is usually carried out for a shorter period of time, however. The loans of an investor or companies owned by him or her are viewed as additional investments in the firm concerned. An investor's foreign direct investment therefore consists of a share in net worth and the credit position between related parties. Equity is assessed at book value plus reinvested earnings.<sup>37</sup>

### **Loans between related parties**

Borrowing and lending activity between companies that are parties to direct investment (between resident and non-resident entities) is considered FDI for the purpose of compiling the balance of payments and the IIP. In the case of a foreign parent company's investment in an Icelandic subsidiary, it is entered on the liabilities side and net transactions between them appear there. Lending activity between them could be loans from parent company to subsidiary or vice versa. The same applies when residents invest in companies abroad. All lending activity between them appears on the assets side.

It can easily occur that a resident subsidiary loans a non-resident parent company an amount larger than the parent company's investment in the subsidiary's equity. In that instance, a paradoxical situation develops: a positive liability. If the example is reversed, a negative asset can develop as well. This method of treating debt in direct investment is different from that used for loans between unrelated parties. Such transactions are measured on a gross basis and are entered on both the assets side and the liabilities side.

### **Changes in methods for measuring direct investment**

The Central Bank has recently adopted a new method for measuring income from direct investment in its balance of payments compilations. This change covered data extending back to 2006, which had a significant effect on the balance on income in 2006-2008, and therefore on the current account balance during that period.

International standards provide for two ways to measure revenues from direct investment: by measuring the operating performance of a company, on the one hand, and by measuring its overall performance, on the other. The former method focuses only on profit or loss related to the company's regular activities and does not take into account capital gains and losses, such as changes in asset values or changes in currency exchange rates. The latter method takes into account all factors, including revenues and expenses due to value changes or exchange rate movements.

Although the latter method gives a more accurate view of the position of a company on a given day, asset prices can often be difficult to determine. For this reason, current standards for preparing

37. Opinion has been divided on the Central Bank's methodology for assessing direct investment. The various assessment methods have been discussed widely, including the paper by Svavarsson and Sigurdsson entitled "Iceland's international investment position and balance on income," in *Monetary Bulletin* 2007/2, and in the paper by Svavarsson, "International investment position: market valuation and the effects of external changes," *Monetary Bulletin* 2008/1.

national accounts recommend the former method. In recent years, international organisations such as the International Monetary Fund (IMF) and the Organisation for Economic Co-operation and Development (OECD) have recommended the former method of evaluating direct investment for national accounts, and this is the method used by most countries within the OECD.<sup>38</sup>

Until 2009, the Central Bank used the latter method. The Bank had planned for some time to change its methodology, but a number of factors prevented it, including difficulty in obtaining the necessary data from companies. With the new method, which was adopted at the beginning of 2009, figures on foreign direct investment are more comparable between Iceland and its main trading partners.

## Appendix 2

The sustainability of the net external position (the net debt position if the net position is negative) can be defined in various ways. Commonly, the external position is considered sustainable if it does not deteriorate relative to GDP during the period under consideration.

The net external position may change from one time to another because of changes in the price of assets and liabilities, write-offs of assets and liabilities, and a surplus or deficit on the current account. Excluding price changes and write-offs (or if capital losses and gains because of price changes are entered as expenditures and income in the balance on income), it follows that:

$$IIP_t = IIP_{t-1} + CA_t \quad (1)$$

where  $IIP_t$  is the net position at the end of period  $t$  and  $CA_t$  is the current account balance during period  $t$ .

The current account balance is the difference between exports ( $EXP_t$ ) and imports of goods and services ( $IMP_t$ ) plus the balance on income, which consists of compensation to employees and investment income flowing into and out of the country. Excluding compensation to employees, a relatively small part of the whole, the relationship between the current account balance, exports, imports, interest, and liabilities can be expressed as follows:

$$CA_t = EXP_t - IMP_t + r_t \cdot IIP_{t-1} \quad (2)$$

where  $r_t$  is the nominal interest rate (or nominal returns) during period  $t$ .

A discussion of debt sustainability assumes that net liabilities do not rise relative to GDP. If GDP growth is non-existent and the price level does not change, rising net debt is considered unsustainable. If GDP grows, however, as it most commonly does, and if prices rise, net debt can rise and still remain sustainable if it does not rise as a percentage of GDP.

38. See also the Balance of Payments Manual, 5th Edition and the OECD Benchmark Definition of Foreign Direct Investments, 4th Edition.

If it is assumed that GDP grows by  $g_t$  during period  $t$  so that GDP during period  $t$  is  $GDP_t = (1 + g_t)GDP_{t-1}$  dividing on both sides of equation (1) gives:

$$\frac{IIP_t}{GDP_t} = \frac{IIP_{t-1}}{(1 + g_t)GDP_{t-1}} + \frac{CA_t}{GDP_t} \quad (3)$$

As is stated above, the net position relative to GDP may not grow but must remain constant; that is,  $IIP_t/GDP_t = IIP_{t-1}/GDP_{t-1}$ . If this condition is inserted into equation (3) and the equation is simplified, then:

$$\frac{CA_t}{GDP_t} = \frac{g_t}{1 + g_t} \frac{IIP_t}{GDP_t} \quad (4)$$

If the net position is negative by 100% of GDP and the economy grows by 5% ( $g_t = 0.05$ ), equation (4) says that a current account deficit amounting to just under 5% of GDP and the debt burden is still sustainable.

Inserting into equation (2) gives:

$$\begin{aligned} \frac{CA_t}{GDP_t} &= \frac{EXP_t - IMP_t}{GDP_t} + r_t \frac{IIP_{t-1}}{GDP_t} \\ \Rightarrow \frac{g_t}{1 + g_t} \frac{IIP_t}{GDP_t} &= \frac{EXP_t - IMP_t}{GDP_t} + \frac{r_t}{1 + g_t} \frac{IIP_t}{GDP_t} \quad (5)^{39} \\ \Rightarrow \frac{g_t - r_t}{1 + g_t} \frac{IIP_t}{GDP_t} &= \frac{EXP_t - IMP_t}{GDP_t} \end{aligned}$$

This equation shows how GDP growth and interest affect the sustainability of the net position of the economy. If GDP growth is strong relative to interest, imports can exceed exports, and a negative net position will still be sustainable. This is because, even if the debt burden grows in this instance, it will not grow more than GDP. If interest exceeds GDP growth, however, and the net position is negative, exports must exceed imports in order for debt growth to remain sustainable.

39. This equation was published in the paper by Robert Tchaidze, "Estimating Iceland's real equilibrium exchange rate," IMF Working Paper no. 276 2007 (December 2007) (<http://www.imf.org/external/pubs/ft/scr/2007/cr07296.pdf>), p. 11.

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