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Iceland's underlying external position
and balance of payments

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Iceland's underlying external position and balance of payments

This report contains the Central Bank of Iceland's assessment of Iceland's underlying external position; that is, its external assets and liabilities and the difference between them (the net international investment position, or NIIP). It also examines errors in previous Central Bank estimates and, based on those errors, draws conclusions about uncertainties in the assessment of the IIP. The estimated NIIP, the repayment profile of foreign debt, the Bank's most recent macroeconomic forecast, and other data are used to map out the underlying balance of payments for the next few years and estimate Iceland's potential refinancing need. This report also examines the outlook for medium-term developments in the NIIP, although the analysis omits the króna assets held by non-residents and the estates of the failed financial institutions, which must be addressed with special measures. In essence, Iceland's underlying NIIP – that is, the net external position as of year-end 2012, excluding Actavis and the deposit money banks (DMBs) in winding-up proceedings, but including the calculated results from the settlement of the DMBs and several other large companies in winding-up proceedings – is negative by roughly 60% of GDP. This figure is subject to some uncertainty but probably lies within the -80% to -35% range. Based on the current macroeconomic forecast, the NIIP as a share of GDP will improve by about 18 percentage points by end-2017, or just over 3 percentage points per year. In spite of an underlying current account surplus, particularly during the early part of the forecast horizon, this will not suffice to cover known foreign loan payments. Refinancing a portion of those debts is therefore a precondition for a stable exchange rate. This report does not explore a number of important factors that could strongly influence the balance of payments and could cause instability in the absence of capital controls, such as króna-denominated payments to the failed financial institutions' creditors and the balance of krónur owned by non-residents (generally referred to as offshore krónur).

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Underlying net international investment position

During the upswing preceding the collapse of Iceland's large commercial banks, the external position deteriorated year by year, as the current account balance was often negative – sometimes by a large margin. When the banks collapsed, Iceland's external debt position took a sharp turn for the worse, when foreign asset values fell and the failed banks' foreign liabilities remained unchanged. An examination of official data could indicate that Iceland faces not only a balance of payments problem but a debt sustainability problem as well. The official figures are highly misleading, however, primarily because they include the full amount of the debt of the failed banks and other companies in winding-up proceedings – debt that will never be paid by domestic parties – plus accrued interest on it. To gain a clearer perspective on the issue, it is therefore necessary to peer through the tangle of information related to the failed banks' estates and give due consideration to the fact that a large share of Iceland's debt is due to a single company that is now foreign-owned and whose operations take place largely outside Iceland.

The Central Bank has analysed Iceland's debt in recent years, with varying results. The findings were presented in memoranda to the Parliamentary Budget Committee and Economics and Tax Committee in 2009, in an article appearing in *Economic Affairs* in February 2011, and in updated analyses published in *Monetary Bulletin* and other

Central Bank publications. These differing results reflect changes in assessment of the value of assets and liabilities in a balance sheet that is very large relative to Iceland's GDP, but they also reflect variations in the quality of the underlying data.

In order to re-evaluate the methods that have been used for this analysis, the Governor decided to appoint expert work groups in several Central Bank departments and assign them the task of examining various aspects of the balance of payments and reassessing the underlying NIIP. The following analysis is based on considerably more detailed data than were previously available, as regards the winding-up committees' estimates of asset values, on the one hand, and the division of claims against the failed financial institutions' estates, on the other hand. Nonetheless, it is essential to bear in mind that significant uncertainty remains about asset values, the legitimacy of claims, and the classification of assets as domestic or foreign. A special expert work group within the Central Bank has been tasked with analysing these assets in much greater depth than has been done previously. As a result, the findings could still change as time passes. The aim is therefore to update this assessment regularly in the future.

Assessing the underlying IIP and the resulting balance of payments provides certain indications of long-term debt sustainability, but there is much more uncertainty about the implications for balance of payments stability. Although the Icelandic economy is not conspicuously more indebted than that of other countries, the foreign debt about service burden of individual companies – particularly companies that have little or no foreign-denominated revenues and do not enjoy enough confidence that they can refinance or renegotiate their debt abroad – could lead to a balance of payments problem, with the associated pressure on the exchange rate of the króna. Several aspects of this problem are explored below. The analysis that follows should not be viewed as a debt tolerance analysis, as that term applies rather to individual sectors or entities within an economy rather than to the economy as a whole, and this report does not discuss the problem stemming from offshore krónur or the króna-denominated assets of the failed banks' estates, which must be addressed separately.¹

In the next section, various parties' debts are analysed by type and probability of refinancing. This is followed by a discussion of the assets and claims against the failed financial institutions and a few other large firms that are in bankruptcy proceedings or have concluded composition agreements. This information is then used to estimate the underlying NIIP. The section thereafter examines the uncertainties associated with the estimate. Finally, a scenario is presented of the Icelandic economy's refinancing need based on the macroeconomic forecast published in *Monetary Bulletin* 2013/1 and an extrapolation using the Bank's macroeconomic model and assumptions concerning direct inward and outward investment. This analysis does not include foreign currency outflows due to the failed financial institutions, krónur owned by non-residents, or the overall removal of capital controls.

1. See, for example, Central Bank of Iceland, Capital Account Liberalisation Strategy. Report to the Minister of Economic Affairs, March 2011.

Analysis of assets and liabilities

The Central Bank publishes figures on the balance of payments and the net external position of the economy on a quarterly basis.² The last such figures, published on 4 March 2013, included a preliminary summary of the balance of payments in Q4/2012 and the net external position at year-end 2012. Those figures include the current account balance and NIIP, both including and excluding the deposit money banks (DMBs) in winding-up proceedings.

In the present report, external assets and liabilities are analysed in greater depth than has been done previously. Outward foreign direct investment (foreign assets) and inward foreign direct investment (foreign liabilities) are classified into several subcategories, for instance. Particular attention is given to whether loans for foreign direct investment require refinancing. Furthermore, foreign loans – both direct loans and bond issues abroad – and Icelandic residents' debts to the failed banks are classified into subcategories. Debts are classified in the conventional manner, by borrower: the Treasury, the Central Bank, municipalities, miscellaneous credit undertakings, companies backed by a State guarantee, companies owned by municipalities, and other companies. The debt of other companies is then broken down into the four following categories:

Firms with the majority of their operations abroad

This category includes companies that have 80% of their revenues and expenses abroad and that fulfil the conditions set forth in Article 13(n), Paragraph 6 of the Foreign Exchange Act, no. 87/1992, which, among other provisions, allows for an exemption from the obligation to repatriate foreign currency and places limitations on foreign investment and foreign borrowing. The operations of many such companies take place largely abroad.³

Firms that can refinance their debt abroad

This category includes export companies with reliable foreign-denominated revenue flows or those that have recently been successful in tapping foreign credit markets. These firms are considered to have the possibility of refinancing their foreign debt abroad.

Firms without access to foreign credit markets

This category includes companies that are carrying foreign debt but are not considered likely to be able to refinance that debt abroad under current market conditions. These companies' revenues are largely in Icelandic krónur, so that their foreign borrowings generate exchange rate risk.

2. The international investment position (IIP) refers to foreign assets and liabilities. Foreign assets include shareholdings in foreign companies and direct ownership stakes, and foreign liabilities comprise shareholdings in Icelandic companies owned by non-residents of Iceland, and companies and other domestic assets owned in whole or in part by non-residents.

3. A list of these companies can be found on the Central Bank website: [http://www.sedlabanki.is/library/Skráarsafn/Gjaldeyrismal/Listi%20yfir%20félög%20með%2080%20undanþágu%20-%20Copy%20\(1\).pdf](http://www.sedlabanki.is/library/Skráarsafn/Gjaldeyrismal/Listi%20yfir%20félög%20með%2080%20undanþágu%20-%20Copy%20(1).pdf).

Firms in winding-up proceedings or with composition agreements, other than failed financial institutions

These are firms that are attempting to maximise the sale value of their assets in order to pay their creditors. They include failed financial institutions and other large holding companies that have negotiated or aim to negotiate composition agreements. Upon concluding composition agreements, a small share of the debt is converted to equity and a new debt instrument is issued for the remainder of the debt, which has been written down very little since the financial crisis of October 2008. The book value of the companies' assets is much lower than the face value of the debt instruments.

Effects of the settlement of DMBs in winding-up proceedings

When the estates of the DMBs in winding-up proceedings – Glitnir, Kaupthing, and LBI (previously Landsbanki Íslands) – are settled, their creditors will be paid the value of their assets or will be granted control of them. The amount creditors recover on their claims can never exceed the sale value of the estates' assets. Obligations can develop between residents and non-residents during the winding-up process, if the ratio of domestic to foreign assets is not the same as the ratio of domestic to foreign claims. In order to gain perspective on such potential obligations, it is necessary to examine the estates' assets and claims more closely.

The sale value of the failed banks' assets is still a source of considerable uncertainty. Caution has been observed in assessing the value of individual assets, and the book value of assets has increased as more claims have been collected and assets divested. At year-end 2012, the estimated recovery of assets of Glitnir, Kaupthing, and LBI combined was estimated by winding-up committees at 2,678 b.kr., including 1,739 b.kr. in foreign assets and 939 b.kr. in domestic assets. An estimated 35% of the estates' assets are domestic and the other 65% foreign. The estates have already paid priority creditors nearly 900 b.kr., nearly all of it with foreign assets.

Classification of claims

Until now, the Central Bank has based its classification of foreign versus domestic claims on balance sheet summaries submitted to the Bank by the winding-up committees of the failed banks. These summaries reflect outstanding claims, both approved and disputed. Some of the creditors are other domestic DMBs in winding-up proceedings, and to a large extent, the actual owners of those claims are foreign creditors of the DMBs in question. As a result, the Central Bank has undertaken a thorough analysis of the underlying owners of the domestic claims of the defunct DMBs. The upper portion of Table 1 shows claims classification according to approved claims from the estates' claim registers. As the table shows, domestic claims account for just over 14% of total claims against the Glitnir estate, just under 12% against the Kaupthing estate, and a negligible share of priority claims and almost 11% of general claims against LBI. If these figures are examined to reflect the actual owners of the claims, domestic

Table 1 Classification of the claims of DMBs in winding-up proceedings according to approved claims in claims registers

	Share of domestic claims (%)	Share of foreign claims (%)
Glitnir	14.4	85.6
Kaupthing	11.6	88.4
LBI, priority claims	0.1	99.9
LBI, general claims	10.7	89.3
<i>Central Bank classification of claims¹</i>		
Glitnir	6.2	93.8
Kaupthing	8.5	91.5
LBI, priority claims	0.1	99.9
LBI, general claims	5.8	94.2
Total, weighted	5.3	94.7

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

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

claims against the three estates are as follows: Glitnir, 6%; Kaupthing, 8.5%; LBI priority, close to 0%; and LBI general, 6% (see the bottom portion of Table 1). After weighting with respect to the size of the estates and the priority claims against LBI, the above analysis indicates that 5.3% of underlying claims are actually domestic and 94.7% foreign. This represents a significant reduction in the share of domestic claims in comparison with previous analyses.⁴ The present analysis is subject to some uncertainty, however. A considerable number of claims are still in dispute, and parties often reach voluntary agreements among themselves by netting out debt. This could change the ratio of domestic to foreign claims still further.

Effects of estate settlement on the balance of payments

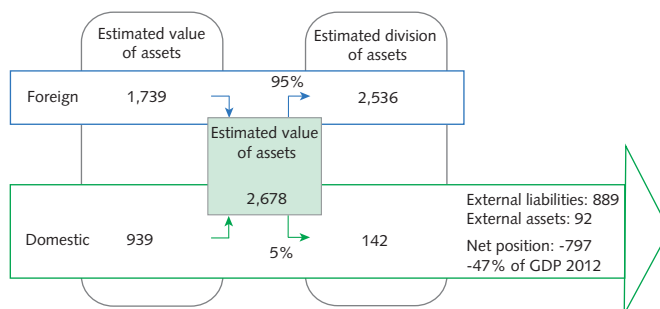
Based on the above-described estimates of assets and claims classification, it can be seen that the classification of claims (5.3% domestic and 94.7% foreign) diverges widely from the classification of assets (35% domestic and 65% foreign). Because of this difference, when the ultimate reimbursements are made following winding-up or composition, foreign creditors' share of the value of domestic assets will exceed domestic creditors' share of the value of foreign assets. Based on the calculated settlement, it is assumed that 2,546 b.kr. of assets will revert to foreign creditors and about 142 b.kr. to domestic creditors. Therefore, domestic assets valued at about 889 b.kr., or some 52% of year-2012 GDP, would revert to foreign creditors and create an external debt. However, 92 b.kr. of foreign assets (5% of year-2012 GDP) would revert to domestic creditors and create an external asset. The net position, then, is an external debt in the amount of 797 b.kr., or 47% of year-2012 GDP (Chart 1).

Underlying net international investment position

Under normal conditions, the NIIP should reflect the foreign assets owned by those residing in a country and the debts they must pay to foreign creditors. However, the conditions prevailing in Iceland are not conventional in this sense. A large share of Icelandic residents' foreign

4. See, for example, the analyses in *What Does Iceland Owe?*, *Monetary Bulletin* 2012/2, and *Financial Stability* 2012/1.

Chart 1
Estimated impact of Glitnir, Kaupthing and LBI on the NIIP



Amounts in b.kr. Based on estimated portfolio balances as of end-2012. Domestic assets backed by foreign collateral are considered foreign assets.
Sources: Statistics Iceland, Central Bank of Iceland.

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assets are the assets of the failed banks' estates. The same is true of a large proportion of foreign liabilities, which are the estates' liabilities of which only a small part will be paid. In order to obtain the clearest possible view of Iceland's external position, it is necessary to examine how disbursements to the failed banks' creditors will be divided between non-residents and residents of Iceland. The Bank has also considered it appropriate to omit the assets and liabilities of pharmaceuticals company Actavis. The figures that the Bank has about the company indicate that Actavis Iceland's external position is negative by almost half of GDP. Actavis sells virtually all of its production abroad and was recently acquired by an American company. Although its Icelandic operations are not extensive relative to its total turnover, they are an important part of the Icelandic economy. Actavis' negative external position in the amount of half of GDP does not give an appropriate view of the financial burden the company places on the Icelandic economy.

Table 2 gives a summary of Iceland's foreign assets and liabilities. Appearing first are the total figures, calculated according to official standards and broken down by sector; then the assets and liabilities of the DMBs in winding-up proceedings are subtracted; and then the calculated effect of their settlement is added. Thereafter, Actavis is subtracted, and finally, several other companies in winding-up proceedings are subtracted and the calculated effect of their settlement added. As is stated above, the category *Firms in winding-up proceedings or with composition agreements, other than failed financial institutions* consists of firms that have concluded composition agreements or are in the winding-up process, primarily large holding companies. For the most part, their debts have not been written down since before the October 2008 collapse, and they far exceed the underlying asset values. In most cases, the objective of their operations is to maximize asset values and paying creditors. These companies have very few domestic assets that will revert to foreign creditors, but they own considerable foreign assets.

Underlying external liabilities – that is, liabilities including the estimated settlement of the DMBs in winding-up proceedings, but excluding other companies in winding-up proceedings and Actavis – are estimated at 185% of GDP but are offset by foreign assets amounting to an estimated 125% of GDP.

Table 2 External assets and liabilities at year-end 2012

	Assets		Liabilities	
	B.kr.	% of GDP 2012	B.kr.	% of GDP 2012
Total	4,430	259	13,352	782
Excl. DMBs in winding-up proceedings	2,453	143	3,495	204
Based on calculated settlement of DMBs in winding-up proceedings	2,545	149	4,384	256
Underlying debt according to calculated settlement of DMBs in winding-up proceedings and excl. Actavis	2,208	129	3,341	195
Underlying debt according to calculated settlement of DMBs in winding-up proceedings, excl. other firms in winding-up proceedings or firms that have concluded composition agreements and Actavis	2,138	125	3,154	185

Sources: Statistics Iceland, Central Bank of Iceland.

An estimate of the underlying NIIP can be seen in Table 3. The net external position calculated according to standardised accounting procedures was negative by 522% of GDP as of year-end 2012. If the DMBs in winding-up proceedings are excluded, the result is negative by 61% of GDP. As is stated above, it is now assumed that, based on the book value of these DMBs' assets, their settlement will be negative by 47% of GDP. The combined underlying position is therefore negative by 108% of GDP. After subtracting Actavis' assets and liabilities, the position is negative by 66% of GDP, and if the effects of the settlement of several other firms in winding-up proceedings or with composition agreements are estimated as well, it is negative by 60% of GDP. A comparison with the previous estimate and a discussion of uncertainties in the current estimate can be found in Appendix II and in the following section.

Table 3 Net international investment position at year-end 2012

	B.kr.	% of GDP 2012
Net international investment position	-8,922	-522
Excl. DMBs in winding-up proceedings	-1,042	-61
Based on calcul. settlem. of DMBs in winding-up proceedings	-1,839	-108
Underlying NIIP based on calculated settlement of DMBs in winding-up proceedings but excl. Actavis	-1,133	-66
Underlying NIIP according to calculated settlement of DMBs in winding-up proceedings, excl. other firms in winding-up proceedings or firms that have concluded composition agreements and Actavis	-1,016	-60

Sources: Statistics Iceland, Central Bank of Iceland.

The effects of the winding-up of the defunct DMBs are estimated using the book value of the estates' assets as set forth by the winding-up committees. The DMBs in winding-up proceedings are restricted by the Foreign Exchange Act, no. 87/1992, but are nonetheless exempt from certain provisions, such as those pertaining to repatriation of foreign currency, foreign investment, foreign borrowing and lending, etc. In March 2012, movement of foreign-denominated capital by DMBs in winding-up proceedings was restricted, with the exception of the failed DMBs' foreign-denominated cash balances with foreign financial institutions or the Central Bank of Iceland, as

those balances were at the end of the day on 12 March 2012. In addition, the exemption for cross-border movement of domestic currency due to payment of claims from the estates and payment of contractual claims according to composition agreements was revoked.

Of the estates' assets, domestic assets denominated in krónur are entered at a book value of about 440 b.kr. and domestic assets denominated in foreign currency at just under 500 b.kr. Of domestic assets denominated in krónur, the estates' stakes in Íslandsbanki and Arion Bank are the largest. The book value of the holdings is close to the banks' equity. If that price cannot be obtained for the estates' holdings in the banks, this will reduce the negative effect of the winding-up of the estates on the NIIP. For each one-fourth reduction in recovery of the estates' share in the banks in foreign currency, the effect of the winding-up on the NIIP is reduced by just over 3% of GDP.

Uncertainties in the estimate of the underlying NIIP

Appendix II contains a detailed discussion of the Central Bank's previous estimates of the underlying NIIP and the errors in those estimates. The errors in previous estimates are due mainly to revision of figures that the Central Bank has published on the net external position excluding the DMBs in winding-up proceedings. The figures were based on information that companies, institutions, and individuals provided the Bank with concerning their foreign assets and liabilities. From Q4/2006 through Q4/2012, the first figures on the net external position excluding the DMBs in winding-up proceedings have been revised by an average of -10% of GDP. The standard deviation of the revisions for the period measured 20% of GDP. The data on the revision of figures pertaining to the NIIP excluding the DMBs are the data that are available for the assessment of uncertainty in the figures. There is reason to assume that the conditions reigning for the vast majority of the period under scrutiny were extraordinary and therefore give an exaggerated view of the uncertainty in the Central Bank figures, both now and in the future. This is particularly true of the period after the collapse of the three commercial banks in autumn 2008. Although it may appear realistic to assume that the time for revision exceeding 30% is past, it is hardly realistic to assume that the uncertainty in the figures is so small that a 95% confidence interval for it is less than 10-15% of GDP. It is likely that the uncertainty is tilted less to the downside than is depicted in Chart 7 in Appendix II, and even that the 95% confidence interval could be nearly symmetrical with respect to zero. It is assumed here that the interval is +10% of GDP on the upside and -15% of GDP on the downside.

There is reason to assume that not all uncertainty about the NIIP emerges upon revision of the Central Bank figures. It is highly likely that some parties, particularly smaller ones – for instance, individuals who own vacation property abroad – own foreign assets that have not been reported to the Central Bank and they do not receive requests to submit such information to the Bank. NIIP figures are based on domicile, so that when an individual who lives abroad and owns property there moves to Iceland, his assets and liabilities become part of the country's external position. It is very likely that some such individuals

do not report their overseas assets and liabilities. Unfortunately, there are also cases where parties that receive queries on external assets and liabilities from the Central Bank submit inadequate information, respond late, or send no response at all. It is extremely difficult to guess the size of the error resulting from such factors.

There is also considerable uncertainty about the outcome of the winding-up of the defunct DMBs. Earlier in this report, it is stated that the effects of the classification of the estates' assets on the NIIP was -47% of GDP in the baseline scenario, but that asset values and the proportion of domestic versus foreign claims were uncertain. Uncertainty about asset values is estimated at 10% of GDP, with the uncertainty tilted to the upside, while uncertainty about claims percentages is estimated at $\pm 5\%$ of GDP. Adding these figures to the confidence interval for the estimated NIIP excluding the DMBs in winding-up proceedings gives a confidence interval of +25% (10%+15%) on the upside but -20% (-15%-5%) on the downside in comparison with the estimate of -60% of GDP. The upper threshold is therefore -35% of GDP and the lower threshold -80% of GDP.

It should be noted that these figures do not take account of uncertainties about the outcome of the winding-up or composition agreements of companies other than the DMBs in winding-up proceedings, which are expected to have a positive effect on the NIIP in the amount of 6% of GDP (see Table 3).

Underlying balance of payments

Outward foreign direct investment (foreign assets) and inward foreign direct investment (foreign liabilities) are classified into several subcategories in Table 4. It has come to light that in the vast majority of cases, outward FDI is connected either to companies with a general exemption according to Article 13(n), Paragraph 6 of the Foreign Exchange Act, no. 87/1992 – including Actavis, with 568 b.kr., or 43% of the total – or DMBs and other firms in winding-up proceedings, with a total of 589 b.kr., or 45% of the total. Companies falling into neither of these two categories account for only 155 b.kr., or about 12% of outward FDI. Particular attention was given to whether there was a need to refinance loans falling under outward FDI. It was assumed that firms with loans from foreign parent companies would have access to foreign refinancing. A comparable pattern can be seen in inward FDI. Companies with a general exemption according to Article 13(n), Paragraph 6 of the Foreign Exchange Act, no. 87/1992 – primarily Actavis – accounted for 1,120 b.kr., or 70% of the total. Companies in the energy-intensive sector account for 376 b.kr., or 24%, while investments of other companies engaged in inward FDI are much smaller in scope.

The loans owed by residents to non-residents, foreign-issued bonds, and foreign-denominated debt to the failed banks totalled about 1,677 b.kr., or just under 100% of GDP, at year-end 2012, as is shown in Table 5. These debts are offset by substantial foreign assets. For instance, direct borrowings and other foreign-denominated debt owed by the Central Bank of Iceland and the Treasury to non-residents and the failed banks totalled 575 b.kr. at year-end 2012, but

Table 4 Foreign direct investment at year-end 2012

B.kr. at 31 Dec 2012 exchange rate

<i>Outward foreign direct investment</i>	1,313
Firms exempted per Art. 13(n), Para. 6 of Act no. 87/1992	568
- portion due to Actavis and related companies	337
DMBs in winding-up proceedings	502
Other firms in winding-up proceedings or that have concluded composition agreem.	87
Other firms	155
<i>Inward foreign direct investment</i>	1,597
Firms exempted per Art. 13(n), Para. 6 of Act no. 87/1992	1,120
- portion due to Actavis and related companies	1,043
Other firms in winding-up proceedings or that have concluded composition agreem.	17
Energy-intensive industry	376
Other firms	66

Source: Central Bank of Iceland.

the Bank and the Treasury owned 513 b.kr. in the foreign exchange reserves. More than half of the foreign debt is therefore owed by parties that have access to foreign credit markets, have foreign revenues, or to some degree have accumulated foreign assets to cover debt payments. It is appropriate to note that it is highly unlikely that the debts of other firms in the winding-up or composition process will be paid in full. Recovery of those debts will take place primarily through the sale of foreign assets. These debts are therefore excluded from the external repayment profile.

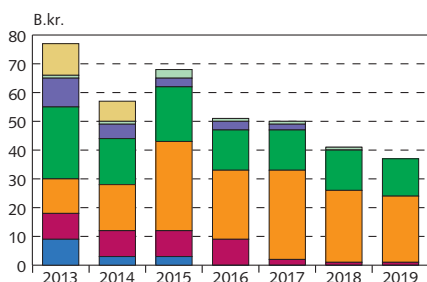
Table 5 Loans owed to non-residents, foreign-issued bonds, and foreign-denominated debt to the failed banks, year-end 2012

B.kr. at 4 Mar 2013 exchange rate

Central Bank of Iceland	143
Treasury	389
Municipalities	17
Misc. credit institutions	46
Government-guaranteed firms	259
Municipality-owned firms	206
Other firms	239
- Portion from firms exempted per Art. 13(n), Para. 6 of Act no. 87/1992	25
- Portion that can obtain foreign refinancing	8
- Portion without access to foreign refinancing	19
- Portion from other firms in winding-up proceedings or that have concluded composition agreements	187
Residents' foreign-denominated debt to DMBs in winding-up proceedings	378
- Portion due to Landsbankinn	300
Total	1,677

Source: Central Bank of Iceland.

Chart 2
Estimated foreign loan repayments excluding
Treasury and Central Bank¹



- Municipalities
- Miscellaneous credit undertakings
- Government-guaranteed firms
- Municipality-owned firms
- Firms exempted per Art. 13(n), Para. 6 of Act no. 87/1992
- Firms with access to foreign refinancing
- Firms w/o access to foreign refinancing

1. All values in b.kr., based on 31 Dec 2012 positions and 04 Mar 2013 exchange rate.
Source: Central Bank of Iceland.

With the exception of the Treasury and exporters with solid foreign-denominated revenue flows, Icelandic residents have had limited access to foreign credit markets since the banking system collapsed. Under the current external market conditions, domestic borrowers have had a tendency to pay down their foreign debt rather than refinance it abroad, in part because of the borrowing terms on offer. It could create risks in external trade if the repayment profile is too heavy relative to the underlying surplus. The repayment profile of foreign loans and foreign-denominated debt to DMBs in winding-

Table 6 Estimated repayments on foreign loans, foreign-issued bonds, and foreign-denominated debt to the failed banks

B.kr. at 4 Mar 2013 exchange rate	2013	2014	2015	2016	2017	2018	2019
Central Bank of Iceland	0	0	64	32	0	0	11
Treasury	0	25	2	130	2	0	31
Municipalities	9	3	3	0	0	0	0
Misc. credit institutions	9	9	9	9	2	1	1
Government-guaranteed firms	12	16	31	24	31	25	23
Municipality-owned firms	25	16	19	14	14	14	13
Firms exempted per Art. 13(n), Para. 6 of Act no. 87/1992	10	5	3	3	2	0	0
Firms that can refinance their debt abroad	1	1	3	1	1	1	0
Firms w/o access to foreign refinancing	11	7	0	0	0	0	0
Residents' foreign-denominated debt to DMBs in winding-up proceedings, excl. Landsbankinn	17	17	4	4	4	12	4
Landsbankinn	0	17	60	74	74	74	0
Total	94	116	198	292	131	127	83
Total, excl. Treasury and Central Bank ¹	90	87	128	125	125	123	37

1. A small portion of the Treasury's foreign-denominated debt is owed to the DMBs in winding-up proceedings. See also Table 9 in Appendix I.
 Source: Central Bank of Iceland.

up proceedings is shown in Table 6.⁵ Apart from the Treasury and the Central Bank, the majority of the loan repayments are related to the foreign debt of firms with a Treasury guarantee, firms owned by municipalities, and Landsbankinn. The repayment profile (excluding the Treasury and the Central Bank) shown in Chart 4 becomes significantly heavier in 2015, when payment on the debt instruments between old and new Landsbanki begins in earnest. According to the current repayment profile, without any refinancing or extension of maturities, Iceland's foreign debt will be paid off very rapidly. The estimate of developments in the balance of payments, shown in the following section implies that either capital inflows from investment or borrowings abroad or extension of maturities will be required in order to service the debt according to this profile.

Forecast of balance of payments and external position

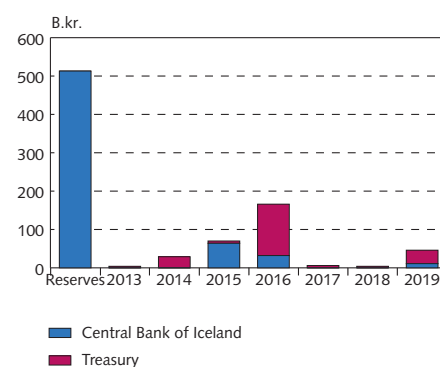
The Central Bank has assessed possible developments in the balance of payments in coming years. The assessment is based on the Bank's base-line forecast of developments in the domestic economy as published in *Monetary Bulletin* 2013/1, extrapolated to include 2016 and 2017.

Table 7 presents the Bank's estimate of the balance of payments until year-end 2017. Items are shown in billions of Icelandic krónur. The forecast of the balance on income takes account of the calculated settlement of the DMBs in winding-up proceedings and the estimated interest expense on the assets that will revert to non-residents. Debt service on foreign loans and foreign-denominated debt to the failed banks, excluding the Treasury and the Central Bank, is then included, in line with the repayment profile shown in Table 6 and Chart 4. No outflows of "volatile" króna-denominated assets owned by non-residents or the estates of the failed banks are assumed. It is assumed that the Treasury and the Central Bank will refinance all of their foreign debt. A comparison of the underlying current account balance

5. A further breakdown of payments is shown in the tables in Appendix I.

Chart 3

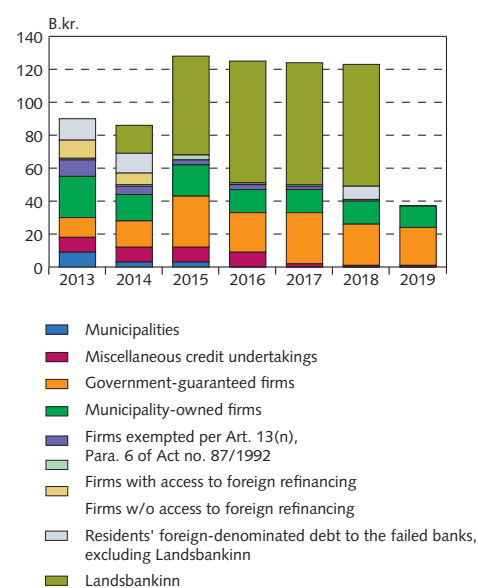
Estimated Treasury and Central Bank repayments on foreign loans and foreign-denominated debt to failed banks, plus Central Bank foreign exchange reserves¹



1. All values in b.kr., based on 31 Dec 2012 positions and 04 Mar 2013 exchange rate.
 Source: Central Bank of Iceland.

Chart 4

Estimated foreign loan and residents' foreign-denominated debt to the failed banks repayments, excluding Treasury and Central Bank¹



1. All values in b.kr., at 31.12.2012 positions and 04.03.2013 exchange rate.
 Source: Central Bank of Iceland.

with the debt service burden reveals that, without additional capital inflows from investment, refinancing abroad, or extension of maturities, there will be a refinancing need throughout the forecast horizon (Refinancing I in Table 7). The assessed underlying current account balance alone cannot cover the debt service burden unless further capital inflows are forthcoming.

Included in the baseline forecast in Table 7 are capital movements in accordance with the Central Bank of Iceland's most recent forecast of economic developments, including investment in the energy-intensive sector and new projects financed by energy companies with funds borrowed abroad. It is also assumed that the pension funds will invest dividends from their foreign assets abroad. According to the baseline forecast, there will be a surplus in 2013 and 2014, but refinancing will be required later on, particularly in 2016 and 2017, if the foreign exchange reserves and the repayment profile for foreign debt remain unchanged (Refinancing II in Table 7). This is due in particular to reduced capital inflows, owing to less energy-intensive investment in 2017, and to large payments on the debt instruments between old and new Landsbanki after 2014. The need for capital is estimated at 93 b.kr. in 2016 and 150 b.kr. in 2017. It should be emphasised, however, that based on historical data, the assumptions concerning the financial balance are cautious (see the bottom line in Table 7). If the financial balance is similar to that in 2010 and 2011, larger capital inflows can be expected than are assumed here.

The forecast in Table 7 is subject to various uncertainties – for instance, about the net external position at year-end 2012, but particularly about the forecast for exports and imports and the balance on income. It consists of the forecast for 2013-2015 that was published in the last *Monetary Bulletin* and an extrapolation to 2016-2017 using the Bank's quarterly macroeconomic model (QMM). In that

Table 7 Balance of payments¹

B.kr.	2010	2011	2012 ²	2013	2014	2015	2016	2017
Exports of goods and services	865	964	1,011	1,095	1,131	1,180	1,238	1,331
Imports of goods and services	710	826	903	957	1,007	1,080	1,177	1,286
Trade balance	155	138	108	138	125	100	61	44
Balance on income, incl. calculated settlement of DMBs in winding-up proceedings and excl. Actavis	-44	-84	-55	-68	-68	-75	-85	-87
Current account balance excl. DMBs in winding-up proceedings and Actavis	111	54	52	70	58	26	-23	-42
Instalments on foreign loans and foreign-denominated debt to DMBs in winding-up proceedings, excl. Treasury and Central Bank				-90	-87	-128	-125	-125
Refinancing I (+surplus, -need)				-20	-29	-102	-149	-167
Baseline forecast (see explanation in text)				31	57	77	56	17
Refinancing II (+surplus, -need)				11	28	-25	-93	-150
Financial balance excl. DMBs in winding-up proceedings and Actavis (excl. reserves)	16	105	-416	-59	-30	-51	-69	-108

1. Baseline forecast 2013-2015 from *Monetary Bulletin* 2013/1, extrapolated for 2016-2017. 2. Preliminary figures.

Sources: Statistics Iceland, Central Bank of Iceland

extrapolation, it is assumed that foreign interest rates will rise towards equilibrium and be around 7% by the end of the period. This is based on the assumption that the global economy will recover over the next five years from the deepest contraction by far since the end of World War II. It is also assumed that Iceland will continue to maintain sizeable foreign exchange reserves bearing a low rate of interest. Imports are projected to grow strongly in the latter half of the period, owing to expected output growth. Import growth will outpace export growth, according to the forecast. It is assumed as well that the real exchange rate will remain low and that terms of trade will remain broadly unchanged from their present historically weak level. The assumptions underlying the extrapolation of the balance of payments for 2016 and 2017 are therefore relatively pessimistic.

Near-term outlook for the NIIP

The underlying current account balance was 52 b.kr. in 2012. This positive balance implies that the NIIP improved by that amount during the year. Other factors, such as debt write-offs and rising asset values, also affect it. The exchange rate affects the NIIP in krónur terms, and GDP affects the measurement of the NIIP as a share of GDP.

It has been assumed (see Table 3) that the NIIP was -60% [of GDP] at year-end 2012, or -1,016 b.kr. Because the exchange rate of foreign currencies rose by 7.1% in 2012, the end-2012 NIIP was -949 b.kr. at the year-end 2011 exchange rate.⁶ The average exchange rate of foreign currencies in 2012 was 4.9% higher than at year-end 2011, which means that the current account surplus of 52 b.kr. in 2012 measured 50 b.kr. at the beginning of the year. At the end-2011 exchange rate, the underlying NIIP should therefore have been -998 b.kr., or -61% of year-2011 GDP.

If the exchange rate remains constant (which is assumed in the forecast), if it is possible to refinance the payments that cannot be made using the current account surplus, and if no assets or liabilities are written off and their value remains unchanged, the NIIP in year t ($NIIP_t$) will change in line with the current account balance for the year (CA_t), so that:

$$NIIP_t = NIIP_{t-1} + CA_t$$

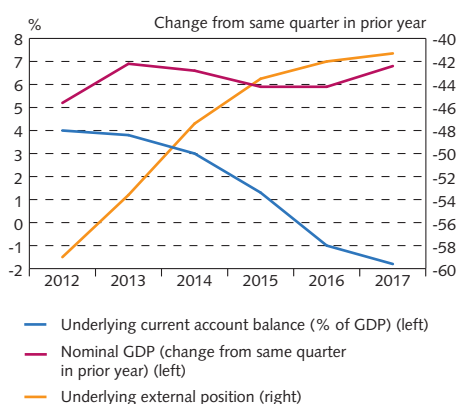
By dividing by GDP (GDP_t) and carrying out some simple calculations, it can be seen that this equation is equivalent to:

$$\frac{NIIP_t}{GDP_t} - \frac{NIIP_{t-1}}{GDP_{t-1}} = -\frac{NIIP_{t-1}}{GDP_{t-1}} \cdot \frac{gn_t}{1 + gn_t} + \frac{CA_t}{GDP_t}$$

where gn^t is growth in nominal GDP during time period t . On the left side of the equation is the change in the NIIP as a share of GDP, and on the right are two terms: The first term is positive if the NIIP is negative and nominal GDP is growing, but the sign of the latter term is determined by whether the current account balance is positive or negative. If the NIIP is close to being negative by half of GDP, it can be assumed, for simplification, that the first term is roughly $0.5 gn_t$;

6. For simplification, it is assumed here that all assets and liabilities are denominated in foreign currency, which is not entirely correct.

Chart 5
Underlying external position, current account balance, and GDP¹



1. Baseline forecast 2013-2015 from *Monetary Bulletin* 2013/1, extrapolated for 2016-2017.

Sources: Statistics Iceland, Central Bank of Iceland.

that is, half of growth in nominal GDP. In 2013-2017, it is estimated that nominal GDP will grow by an average of 6.4% per year, so that it follows that the contribution of the first term to the change in the ratio of NIIP to GDP will, on average, be just over 3% per year. If the current account balance is positive, the ratio of NIIP to GDP will increase more. Under the conditions assumed in this report, the rule of thumb applies that the current account balance must be negative by more than 3% of GDP in order for the NIIP to deteriorate relative to GDP. If the currency depreciates, however, the NIIP will improve less markedly relative to GDP.

Chart 5 shows that, based on the Central Bank's forecast and extrapolation of the current account balance, the underlying NIIP as a share of GDP will improve from -60% at year-end 2012 to -42% by end-2017; that is, by 18 percentage points. The nominal value of the NIIP in Icelandic krónur is projected to increase by 4% over these five years. At the same time, nominal GDP rises by 36%. In the last two years of the period, 2016 and 2017, it is assumed that there will be a modest trade surplus and a more sharply negative balance on income, owing to rising global interest rates.⁷ For these two years, the current account balance is expected to be negative, by 1% of GDP in 2016 and 1.8% of GDP in 2017. Even though this will lead, other things being equal, to foreign borrowing and a weaker external position, the NIIP will improve by 2.2 percentage points of GDP over these two years. These calculations are based on the assumption that it will be possible to refinance the payments that cannot be met with a current account surplus.

If the NIIP proves weaker than is assumed above, the underlying current account balance will be poorer, owing to higher interest on a larger debt. If, for instance, the year-end 2012 NIIP is -80% of GDP and not -60%, the current account balance can be assumed to be about a percentage point weaker relative to GDP than it would be otherwise. In spite of this, the NIIP will improve by about 18 percentage points, to about -62% of GDP by end-2017. In addition to the uncertainty about the end-2012 NIIP, uncertainties in the macroeconomic forecast affect the outcomes.

Possible conclusions

Although the above-described assessment is still highly uncertain, a number of conclusions can be drawn from it. It is difficult to conclude otherwise than that the analysis bears out the Central Bank's previous assessment: that Iceland is facing a foreign-denominated balance of payments problem rather than a debt sustainability problem. It is appropriate to clarify the difference between the two. A *debt sustainability problem* occurs when the trade surplus is insufficient to cover interest, dividends, and salary payments that residents must pay to non-residents to such a degree that debt does not rise relative to GDP, based on realistic assumptions concerning interest, inflation, and output growth. The above analysis of the underlying current account

7. Interest could rise as well, even if the base interest rate remains low, if borrowers are forced to refinance at terms which include large risk premia for perceived risk.

balance indicates that the economy as a whole will generate sufficient foreign exchange revenues to cover factor expense in coming years without a drop in the exchange rate, and that there may even be some room for deleveraging. In that sense, Iceland's debt is sustainable, even though it represents a heavy burden for the nation.

However, even though its debt is sustainable according to the above criteria, a country can be faced with a serious *balance of payments problem*. This is the case for Iceland, and it is the reason capital controls were imposed after the banks failed. It can be said that a balance of payments problem exists if the current account balance – that is, the difference remaining when interest, dividends, and foreign salaries have been paid – is insufficient to cover foreseeable foreign loan payments and other outflows, after accounting for offsetting capital inflows. The answer to this question is much less certain than the answer to the first question. Individual parties may be facing a debt sustainability problem, however. It is known that important domestic firms have serious difficulty obtaining foreign credit at acceptable terms in order to refinance loans maturing in coming years. As a result, they have been forced to pay off foreign loans more rapidly than is desirable, and these accelerated loan repayments are a partial cause of the recent weakness of the króna. A number of uncertainties give rise to a variety of scenarios: the likelihood of refinancing abroad, for instance, and movements in domestic and foreign asset portfolios once the capital controls have been lifted. In order to withstand several years of heavy loan repayments without significant depreciation of the króna, even while capital controls are in effect, either a substantial portion of the debt must be refinanced abroad or offsetting net capital inflows must be forthcoming. Both of these factors are subject to considerable uncertainty. The analysis above shows that the stability of the króna could depend on the refinancing of at least part of the debt maturing in coming years or on offsetting capital inflows, even if it is assumed that there will be no outflows of “volatile” króna assets held by non-residents or of króna assets owned by the failed banks' estates. A balance of payments problem can develop, then, in spite of capital controls.

Only a part of the balance of payments problem has been analysed in this report. In addition to the fact that debt refinancing is stalled in some instances, there are three types of balance of payments problem that are not discussed here. First of all, there is a problem related to the króna-denominated assets of the failed DMBs. The payments related to these assets are subject to the capital controls, which will not be lifted until a satisfactory solution has been found.⁸ Second, the stock of non-residents' volatile króna assets in the banking system is still sizeable, although it has been reduced markedly through auctions and the remaining balances could disappear in 1-2 years. The third problem not addressed here is the possibility of asset transfers by resident investors such as pension funds, which are also subject to the

8. The Central Bank can set conditions for the conferral of an exemption which is the premise of composition agreements entailing a solution to the balance of payments problem. This could be done, for instance, with the following: i) a very slow rate of disbursement; ii) a low price for assets bought by residents for foreign currency; or iii) a low exchange rate on krónur exchanged for foreign currency.

capital controls. In their case, it is assumed that prudential rules will restrict these parties' latitude to increase the weight of foreign assets in their portfolios just after the capital controls are lifted.

Finally, it is appropriate to mention two important points that will affect possible solutions to Iceland's current balance of payments problem. The first is the global economic and financial situation. Although base interest rates are very low, risk premia are often extremely high. Trustworthy borrowers can often obtain capital on very economical terms while weaker borrowers may be shut out entirely or be forced to accept unfavourable terms. The second is the credibility of the Icelandic economy and the country's ability to pay its foreign debt. This factor will be a major determinant of the interest rates and refinancing options offered to Icelandic institutions and firms in coming years.

Appendix I

Table 8 Estimated foreign loan repayments

<i>B.kr. at 4 Mar 2013 exchange rate</i>	2013	2014	2015	2016	2017	2018	2019
Central Bank of Iceland	0	0	64	32	0	0	11
Treasury	0	25	2	130	2	0	31
Municipalities	9	3	3	0	0	0	0
Misc. credit institutions	9	9	9	9	2	1	1
Government-guaranteed firms	12	16	31	24	31	25	23
Municipality-owned firms	25	16	19	14	14	14	13
Firms exempted per Art. 13(n), Para. 6 of Act no. 87/1992	10	5	3	3	2	0	0
Firms that can refinance their debt abroad	1	1	3	1	1	1	0
Firms w/o access to foreign refinancing	11	7	0	0	0	0	0
Total	77	83	134	213	53	41	78
Total, excl. Treasury and Central Bank	77	58	68	51	51	41	37

Source: Central Bank of Iceland.

Table 9 Estimated repayments of foreign-denominated debt to DMBs in winding-up proceedings

<i>B.kr. at 4 Mar 2013 exchange rate</i>	2013	2014	2015	2016	2017	2018	2019
Treasury	4	4	4	4	4	4	4
Firms that can refinance their debt abroad	5	7	0	0	0	8	0
Firms w/o access to foreign refinancing	8	5	0	0	0	0	0
Landsbankinn	0	17	60	74	74	74	0
Total	17	34	64	78	78	86	4
Total excl. Treasury	13	30	60	74	74	82	0

Source: Central Bank of Iceland.

Appendix II

Reasons for changes from previous estimates

On several occasions in recent years, the Central Bank has published estimates of Iceland's net external position (net international investment position, or NIIP) and forecasts of its future path. The first such estimate, prepared after the collapse of the banks in autumn 2008, was presented to the Parliamentary Budget Committee in a memorandum published on 15 July 2009; the second was in a 14 November 2009 memorandum to the Budget Committee and the Economics and Tax Committee; and the third was in a 10 January 2011 memorandum to the Budget Committee on the Icesave Agreement. In February 2011, the Bank published the report *What Does Iceland Owe?* On 21 May 2012, a Box on the NIIP and the balance of payments appeared in *Monetary Bulletin* 2012/2, and on 4 October 2012, an estimate of the net external position was published in *Economy of Iceland*. In addition, the International Monetary Fund (IMF) has published such estimates since autumn 2008.

The first estimates were very rough ones, as there was considerable uncertainty about the settlement of a number of insolvent companies. It was not possible to estimate the outcome of the settlement of the failed banks because of inadequate information and significant uncertainty about the outcome of court cases. The figures originally available on the value of the estates' assets were relatively low in comparison with those that emerged later. For example, in mid-2009, asset recovery from the estate of LBI (the former Landsbanki Íslands) was estimated at 80% of priority claims related to deposits, and in the 15 July 2009 memorandum to the Budget Committee, the baseline scenario assumed 75% recovery, while the alternative scenarios assumed a much lower recovery ratio. It is common that asset values are underestimated in the immediate aftermath of a financial crisis, as demand for large assets is limited and considerable caution is often exercised in value assessment.

Under the conditions reigning in the wake of the old banks' collapse, it was considered imprudent to rely on the Central Bank's figures on foreign assets and liabilities. The 15 July 2009 memorandum was based on information published by the Central Bank on the foreign liabilities of entities other than the failed financial institutions and large holding companies. Furthermore, domestic subsidiaries' debts to foreign parent companies were omitted. Foreign assets according to Central Bank figures were omitted, but they indicated that foreign assets and liabilities were roughly equal. Instead, attention was directed to foreign assets that were known quantities, such as the pension funds' foreign assets and the Central Bank's foreign exchange reserves. The outcome of the calculation was that, as of end-2009, foreign liabilities exceeded foreign assets by 71% of GDP, excluding the obligations according to the then-current Icesave agreement.

As time passed from the collapse of the banks and large holding companies, there was reason to assume that the Central Bank's figures on foreign assets and liabilities were more reliable than before.

Table 10 Net international investment position (NIIP)

% of GDP	2010	2011	2012	2013
<i>What Does Iceland Owe?</i>		<i>Forec.</i>	<i>Forec.</i>	<i>Forec.</i>
NIIP (official figures)	-594	-584	-540	-507
- Excluding DMBs in winding-up proceedings	-28	-25	-20	-17
- Underlying, based on calculated settlement of DMBs in winding-up proceedings	-72	-66	-59	-54
- Underlying, based on calculated settlement of DMBs in winding-up proceedings and excl. Actavis	-23	-18	-14	-12
<i>Monetary Bulletin 2012/2</i>		<i>Forec.</i>	<i>Forec.</i>	<i>Forec.</i>
NIIP (official figures)	-633	-566	-551	-526
- Excluding DMBs in winding-up proceedings	-63	-53	-46	-53
- Underlying, based on calculated settlement of DMBs in winding-up proceedings	-119	-111	-100	-89
- Underlying, based on calculated settlement of DMBs in winding-up proceedings and excl. Actavis	-60	-47	-37	-30
- " - , corrected ¹	-78	-66	-55	-47
<i>Difference</i>				
NIIP (official figures)	-39	18	-11	-19
- Excluding DMBs in winding-up proceedings	-35	-28	-26	-36
- Underlying, based on calculated settlement of DMBs in winding-up proceedings	-47	-45	-41	-35
- Underlying, based on calculated settlement of DMBs in winding-up proceedings and excl. Actavis	-37	-29	-23	-18
- " - , corrected ¹	-55	-48	-41	-35

1. There was an error in the calculation of Actavis' share in the figures published in *Monetary Bulletin 2012/2*. This line shows the outcome if the calculation is correct.

Sources: *What Does Iceland Owe?*, *Monetary Bulletin 2012/2*.

The estimates in *What Does Iceland Owe?*, which appeared in early 2011, the Box in *Monetary Bulletin 2012/2*, issued in May 2012, and *Economy of Iceland*, published in October 2012, were based directly on Central Bank figures on the NIIP, excluding Actavis and the assets and liabilities of the DMBs in winding-up proceedings, and on the estimated settlement of failed banks' estates. Table 10 shows the Bank's estimates of the NIIP in these publications.

As can be seen in Table 10, the main reason for the weaker position in *Monetary Bulletin 2012/2* than in *What Does Iceland Owe?* is the deterioration of the NIIP excluding the DMBs in winding-up proceedings, by 35% of GDP. The major revision of the NIIP excluding the DMBs in winding-up proceedings occurred because, in the beginning of 2011, the managers of the estates released the first figures on the estates' foreign assets, thus enabling the Central Bank to separate these assets from others. The emergence of this information resulted in a thorough revision of the NIIP excluding the failed DMBs, first in the numbers published in June 2011, a scant half-year after *What Does Iceland Owe?* was published.

Table 11 shows the year-end 2010 NIIP as it was estimated in *What Does Iceland Owe?*, *Monetary Bulletin 2012/2*, and *Economy of Iceland 2012*.

According to Table 11, the underlying NIIP – that is, the net external position excluding Actavis and the banks in winding-up proceedings, but including the calculated settlement of the DMBs in winding-up proceedings – deteriorated by about 55% of GDP,

Table 11 Net international investment position at year-end 2010

B.kr.	What Does Iceland Owe 2012	MB 2012/2	MB 2012/2 corret. ¹	Econ. of Icel. 2012	Differ- ence
NIIP excluding DMBs in winding-up proc.	-438	-967	-967	-1,074	-636
NIIP based on calculated settlement of DMBs in winding-up proceedings	-1,126	-1,826	-1,826	-1,933	-808
NIIP based on calculated settlement of DMBs in winding-up proceedings and excl. Actavis	-360	-921	-1,194	-1,304	-945
<i>% of GDP</i>					
NIIP excl. DMBs in winding-up winding-up proc.	-28	-63	-63	-70	-42
NIIP based on calculated settlement of DMBs in winding-up proceedings	-72	-119	-119	-126	-54
NIIP based on calculated settlement of DMBs in winding-up proceedings and excl. Actavis	-23	-60	-78	-85	-62
<i>NIIP excluding DMBs in winding-up proceedings and Actavis (outcome from DMBs in winding-up proceedings not included)</i>					
B.kr.	-328		-335	-445	-773
% of GDP	-21		-22	-29	-50

1. There was an error in the calculation of Actavis' share in the figures published in *Monetary Bulletin* 2012/2. This column shows the outcome if the calculation is correct.

Sources: *Economy of Iceland* 2012, *What Does Iceland Owe?*, *Monetary Bulletin* 2012/2.

according to the estimate in *Monetary Bulletin* 2012/2, after adjusting for Actavis, and by 62% of GDP, according to the estimate in *Economy of Iceland* 2012. The effects of the calculated settlement of the DMBs in winding-up proceedings deteriorate from -44% of GDP in *What Does Iceland Owe?* to -56% of GDP in *Monetary Bulletin* 2012/2 and *Economy of Iceland* 2012. This means that the effects of the settlement were considered poorer than before by 12% of GDP. Compared with the current assessment of the effects of the winding-up of the defunct DMBs, it should be borne in mind that, since that time, significant amounts have been paid to creditors from the estates, and at year-end 2010, the estates had foreign-denominated deposits in the Central Bank of Iceland amounting to 17% of GDP, which made the impact of their winding-up commensurably more negative. Today the estates' deposits with the Central Bank are negligible.

Of the reduction in the underlying NIIP by 62% of GDP between the estimates in *What Does Iceland Owe?* and *Economy of Iceland* 2012, 50% of GDP is due to a revaluation of the assets and liabilities of companies other than Actavis and DMBs in winding-up proceedings, and the other 12% is due to a change in the estimate of the effects of the calculated settlement of the DMBs in winding-up proceedings.

The analysis in *What Does Iceland Owe?* assumed that domestic creditors owned 15% of claims. In *Monetary Bulletin* 2012/2, however, it was assumed that they owned 13% of claims. Based on the assumptions concerning the foreign and domestic assets of the DMBs in winding-up proceedings in *What Does Iceland Owe?*, this change in domestic creditors' share erodes the underlying NIIP by 53 b.kr., or 3.5% of GDP for that year. The rest of the reduction totalling 12% of GDP was due to changed assumptions concerning the domestic and foreign assets of the DMBs in winding-up proceedings.

Revision of published Central Bank figures on the NIIP excluding DMBs in winding-up proceedings

Estimates of the NIIP generally include significant errors, particularly in first figures. It is possible to gain perspective on at least some of these errors by examining developments in revisions of published figures. Chart 6 shows developments in the NIIP excluding the DMBs in winding-up proceedings as a percentage of GDP at the end of Q3/2010. The first figures for that quarter were available when *What Does Iceland Owe?* was published, while the position at the end of Q4/2010 was estimated in that report. Also shown are developments in the estimate of the NIIP at year-end 2011, which was used in *Monetary Bulletin 2012/2*.

As is mentioned above, the largest revision in figures on the NIIP excluding the DMBs in winding-up proceedings was made in Q3 and Q4/2010, when figures on the position at the end of Q1/2011 were published on 1 June 2011. New information from the failed banks makes it possible to separate their foreign investment from that of other entities. As can be seen in Chart 6, this new information resulted in substantial changes. The figure for the position at the end of Q3/2010 declined by 39% of GDP, and the Q4/2010 figure declined by 26% of GDP. As the chart shows, the first figures for Q3/2010 were reduced by as much as 57% of GDP until Q4/2012, and the Q4/2010 figures were reduced by about 42 percentage points.

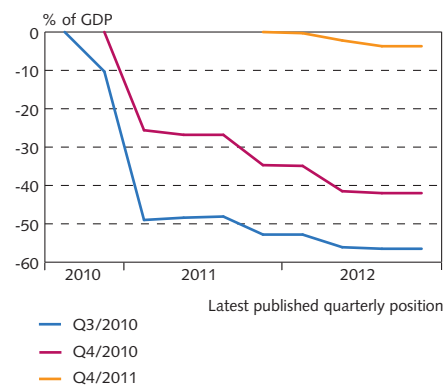
Another explanation of the considerable changes made upon revision of the figures in June 2011 is that, in the spring, figures become available about entities that submit reports annually, whereas figures on their foreign assets and liabilities are estimated at other times of the year. Although most new information is forthcoming in the first half of the year, data are received at other times of the year as well.

The accumulated revision from the first figures until those published in March 2013, with the first figures for Q4/2012, is shown in Chart 7. The chart shows that, in general, revision leads to substantial changes. In 2007, figures on the NIIP were revised upwards by 10-20% of GDP, but since the banks failed, the revision has generally been downwards. The only exception is that the first figures on the net external position of Icelandic residents excluding the DMBs in winding-up proceedings at end-Q2/2012 were adjusted upwards by 7.5% of GDP upon the second publication, when the first figures on the end-Q3/2012 position were published. This figure was then revised slightly once again on 4 March 2013, when the Q4/2012 figures were published, and it is now higher than the first figure by 7.7% of GDP. The revision of the figure for Q4/2012 is naturally zero (0) at the first publication.

As Chart 7 indicates, the largest revision of the first figures on the NIIP excluding the DMBs in winding-up proceedings took place at the end of Q3/2010; the first figures have been reduced by 57% of GDP. The second-largest reduction was in the Q4/2009 position, which was revised downwards by 46% of GDP, and the third-largest was the reduction of Q4/2010 figures by 42% of GDP. Since Q1/2011, the revisions have grown considerably smaller.

Chart 6

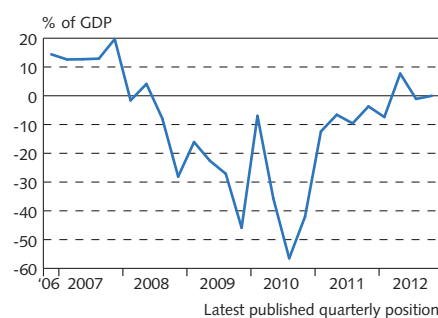
Revisions from first figures on external position excluding DMBs in winding-up proceedings to figures published 4 March 2013



Sources: Statistics Iceland, Central Bank of Iceland.

Chart 7

Change from first figures on external position excluding DMBs in winding-up proceedings through figures published 4 March 2013¹



1. Quarterly data.

Sources: Statistics Iceland, Central Bank of Iceland.

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