

## Appendix 1 Iceland's national debt

Iceland is one of the most indebted nations in the world, in terms not only of private sector (corporate and household) debt but also of gross and net national debt. Public sector debt, on the other hand, is not particularly large. The following is an attempt to evaluate how much Iceland deviates from the norm and identify possible reasons for its high level of private sector debt. The conceivable impact of debt accumulation on economic growth over the years to come is also discussed.

Although Iceland has a high level of private sector debt, it is not unique among the advanced economies. International comparisons are complicated by the lack of comparable data. According to the IMF's International Financial Statistics, four advanced economies (Denmark, Germany, the Netherlands and the UK) exceed Iceland in terms of domestic credit to the private sector debt as a proportion of GDP. This comparison is flawed, however, because non-deposit institutions differ in importance within the respective credit systems. In Iceland, for example, the Housing Financing Fund performs a very large function. Foreign credit institutions can also be assumed to play a relatively large role in Iceland, because a small, open economy with high interest rates has more incentive to procure credit in foreign markets. Private sector debt to the credit system as a whole is more than double that with deposit money banks. This is much higher figure than in the USA and Sweden, the only countries besides Iceland that publish data for a broad measure of credit; no figures are available for the countries whose levels of domestic credit to the private sector exceed Iceland's.

Households in Iceland rank with the most indebted in the world. However, according to Eurostat, Danish and Dutch households have higher ratios of indebtedness to disposable income. On a cautionary note, however, statistics on household debt may be of rather poor quality, both in Iceland and internationally. The OECD points out that net assets of Icelandic households (excluding pension funds) are also on the low side, although not far below the few countries included in its comparison.

Icelandic corporate debt is similarly high compared with other countries for which data are available. At the end of 2002, debts of non-financial corporations were equivalent to almost 1½ GDP, the highest figure for nations with broadly comparable data.<sup>1</sup> Corporate debt is marginally lower in the Netherlands, but debt ratios in other countries are substantially lower.

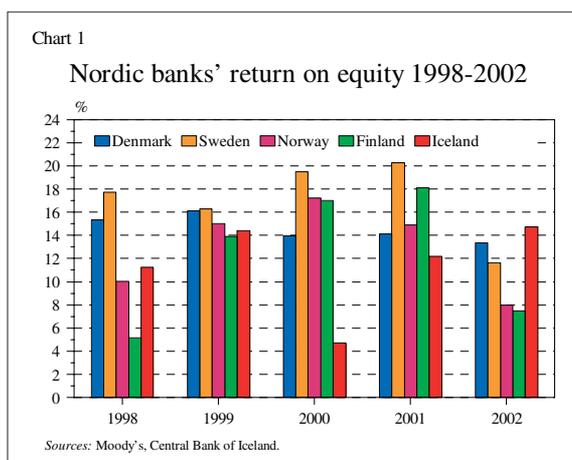
The debt-to-equity ratio of listed companies (excluding the financial and insurance sector) has fluctuated widely in recent years. The debt ratio was 1.97 in 1997, jumped to 2.32 in 2000, fell back to 1.72 at the end of last year and had climbed back to 2.09 in the middle of 2003. The debt-to-equity ratio for Icelandic businesses as a whole seems to follow roughly the same pattern according to data from Statistics Iceland, which extend only to 2001. By international standards Icelandic corporate debt appears to be on the high side and more volatile than in most other countries.

There is a direct correlation between Iceland's heavy corporate debt and its national debt, because over one-third of the former is denominated in foreign currencies, either as direct loans or intermediated through the credit system. Buoyant household demand for credit has presumably also contributed to high domestic interest rates, making foreign credit markets more attractive for businesses which are able to tap them (especially export revenue earners) and the public sector. The distinctive character of the Icelandic energy sector should be underlined here. Hydropower and geothermal facilities are capital-intensive to construct, their operating costs are low and they have a very long service life. The bulk of power generation is for industrial manufacturers, sold at rates denominated in foreign currencies and at least partially linked to export market prices. Naturally, the energy sector has a strong requirement for long-term credit which is largely denominated in foreign currency. As a supplier to the aluminium and ferrosilicon industries,

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1. Based on data from National Economic Institute reports until 1997, projected to 2002. According to the Central Bank's own data, debts with the credit system are somewhat lower.

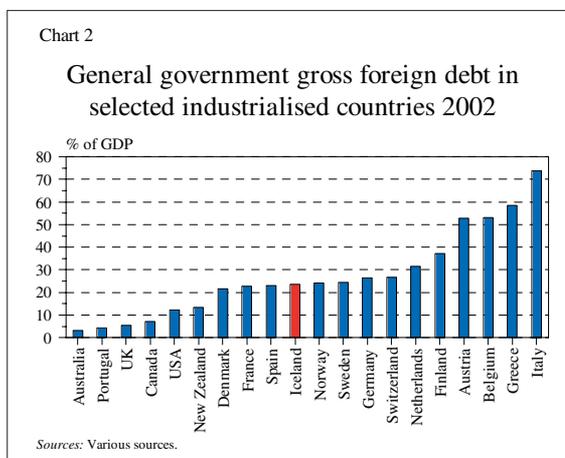
the energy sector plays a prominent role in the Icelandic economy, and the overwhelming importance of hydropower makes the sector highly capital-intensive. Debt of the energy sector amounts to 92.1 b.kr. – the equivalent of 9.1% of gross national debt – and is almost entirely foreign-denominated. Iceland's net debt position at the end of 2002 was equivalent to 100.0% of GDP and the net international investment position (i.e. including net venture capital) was -77.1%. Since then, debt has been alleviated somewhat by the appreciation of the króna. As Chart 1 shows, only two advanced economies equal or exceed Iceland's negative international investment position.



International rating agencies have noted Iceland's negative debt position, with a corresponding effect on its sovereign and financial institutions' ratings. Iceland tends to be compared with countries in a similar risk category. In the Standard & Poor's report from June 2003, for example, it is noted that Iceland's ratio of net debt to current account receipts is the highest among all the countries in that risk category. Only New Zealand is in a similar position. The rating report points out, however, that New Zealand is better placed insofar as its foreign debts are denominated in domestic currency. The same is true of Finland, which uses the euro.

Why does Iceland owe so much? The answer to this question might be important when assessing the probability of a reversal in the near future, either by a gradual process or a quick adjustment if the debt level becomes clearly unsustainable.

One explanation for the negative debt position of some countries can be ruled out from the start in Iceland's case. Its public sector debt is not very large by international standards, nor is the share of foreign debt in it. As a ratio of GDP, Iceland's general government gross foreign debt is similar to that of most European countries. But while other European countries have a higher share of foreign debt in their public sector debt than Iceland, much of this is denominated in the euro, which has become their "domestic" currency. A fairly large portion of other nations' foreign debt is probably denominated in domestic currency. Since no exchange rate risk is involved in such cases, the term "foreign debt" has limited economic significance.<sup>2</sup>



In some respects, the high level of debt may be easier to explain for households than for corporations. Various demographic and economic characteristics of Iceland are unquestionably conducive to debt accumulation. One feature is the age structure of Iceland's comparatively young population, which in its own right was estimated by the IMF this summer<sup>3</sup> to account for up to 60% of

2. It should not be taken for granted that the domicile of the creditor is irrelevant for domestic-denominated debt, however. In such cases the foreign exchange risk is transferred to the creditor, who may have only minor liabilities in the respective country or currency area. Creditors' sharp reactions to uncertainties can cause turbulence in foreign exchange markets, as has often been seen.

3. *Iceland – Staff Report for the 2003 Article IV Consultation*, July 31, 2003.

Iceland's higher external liabilities relative to other advanced countries.<sup>4</sup>

Another possible factor is the large proportion of private housing in Iceland, with its strong housing credit system which provides substantial support for homebuyers. The rental housing market is correspondingly thin and, from the viewpoint of tenants, insecure. According to available data, Iceland ranks second-lowest in terms of the size of the rental accommodation market, at roughly one-fifth. Only Spain has a greater share of owner-occupied housing, while it is similar in Greece and Ireland.<sup>5</sup> In Germany, on the other hand, some 60% of residential housing is rented.

The high ratio of owner-occupied housing in Iceland implies that housing accounts for a larger share of interest costs than in countries with a more extensive rental market. Housing accounts for an estimated 60% of total household debt; conversely, housing debt is equivalent to roughly 65% of total residential housing assets.<sup>6</sup> If half the current home owners rented their housing instead, household debt would be reduced by 250 b.kr. and its ratio to disposable income would decrease from 183% at the end of 2002 to 133%. However, a lower debt level would not necessarily entail an easier payment burden, because households would need to pay rent instead. This example highlights the importance of the scale of owner-occupancy when examining household debt.

A third factor is that student financing is mostly in the form of long-term loans bearing little or no interest, which represented around 7% of household debt at the end of 2002. While Iceland is not alone in having such a student finance arrangement, the proportion is exceptionally high.<sup>7</sup>

4. The methodology used in the Staff Report is based on Lane, Philip R. and Gian Maria Milesi-Ferreti, 2001, "Long-term Capital Movements", *IMF Working Paper* 01/107.

5. *Structural Factors in the EU Housing Markets*, ECB, March 2003.

6. Based on Land Registry valuations. The market value of properties is considerably higher.

7. Student finance in the other Nordic countries resembles the Icelandic arrangement in many ways, except that in addition to loans they also provide direct grants. Much more extensive grants are provided in a number of instances. In other respects, support is means-tested, i.e. based on household circumstances, parents' income, marital status, number of children supported by the student, etc. Loans may be converted into grants under certain circumstances. Although grants are much more widespread in the other Nordic countries than in Iceland, they do not replace loans entirely.

Fourthly, it has been argued that Iceland's system of accumulated, protected pension rights encourages debt accumulation. Countries with a similar level of household debt to Iceland, or higher, also have strong pension systems. Pension savings are compulsory savings. If households are forced to save more of their annual income and spend less than they would otherwise do on their own initiative, they are likely to respond by accumulating debt in order to realise consumption sooner.<sup>8</sup> A strong pension system may also provide a sense of security about future income for meeting obligations, which can fuel both supply of credit and demand for it.

A fifth factor that may be crucial is Iceland's extensive price indexation. This enables borrowers to procure much longer-term credit and results in lower rates of interest than if loans were non-indexed; furthermore, rebates on mortgage interest significantly reduce interest costs for a large group of borrowers.<sup>9</sup>

Table 1 Debt of households and non-financial corporations

	<i>Companies, % of GDP</i>	<i>Households, % of disposable income</i>	<i>Figures for year:</i>
Denmark .....	71.9	201.9	2000
Finland .....	72.8	69.7	2001
France .....	82.1	73.2	2000
Germany .....	88.3	112.7	2001
Iceland .....	147.1	169.3	2001
Netherlands.....	140.8	191.4	2001
New Zealand.....	.	120 <sup>1</sup>	2000
Norway .....	91.7	141.8	2001
UK .....	105.9	120.4	2001
USA .....	93.7	92.9	2001

1. Household debt in New Zealand has been growing rapidly in recent years, according to Dr. Alan Bollard, Governor of the New Zealand Reserve Bank, in a speech on October 14, 2003. The ratio had risen to 130% by 2002.

Sources: Eurostat for continental Europe, National Statistics for UK, Federal Reserve Flow of Funds Releases for USA. Figures for Iceland are based on data from the National Economic Institute until 1998, with Central Bank projections until 2001.

8. A counterargument is that widespread participation in supplementary pension schemes in Iceland shows that pension saving is not particularly burdensome. However, considerable tax concessions are involved which complicate the picture.

9. Most other countries which grant discounts on interest costs through the tax system seem to be in the process of abandoning this practice, see Appendix 2 on Public sector support for homebuyers.

The annuity format of housing loans creates a more back-loaded payment burden which is likely to leave households with relatively high indebtedness for longer than would otherwise be the case.

All the above points attempt to explain why Iceland has such a high level of debt by international comparison. A related question is why debt has risen so fast. Although the young population can explain high indebtedness relative to other countries, it hardly provides a convincing explanation for steady growth of debt over two decades, because the average age of population has not been decreasing over this period – on the contrary. A more natural explanation for this trend would seem to be the effects of deregulated borrowing, more open access to foreign credit, the introduction of indexation and changes in the housing loan system. When real interest rates were negative, credit was rationed and the real value of loans was quickly wiped out by inflation. Financial market deregulation reversed this trend. Financial institutions increased their credit supply, indexation enabled borrowers to take much longer loans than before without overstressing their ability to repay, and the annuity format of housing loans led to very slow amortisation of mortgage debt, as pointed out above. When indexation was introduced, a generation of homebuyers had acquired housing which was funded with negative real interest rates. Debts had thereby become abnormally low relative to assets. These homeowners had a high mortgage value at their disposal, which presumably encouraged debt accumulation. In some cases this perhaps did not happen until later generations took over the properties. Such an adjustment may therefore take a long time, even decades.

A similar explanation can probably be given for rising corporate debt. The argument about the low

average age of population is less relevant as an explanation of current high levels of indebtedness, however. There may be many reasons for the apparently high and volatile level of corporate debt in Iceland compared with other countries. Fisheries companies, which play a prominent role in the Icelandic economy, are conceivably more capital-intensive than most other countries' industries, which may lead to a relatively high level of debt in this sector. However, research on this point is lacking. Many fisheries companies have also invested in fishing quotas in recent years, generally financing these investments with credit, as pointed out earlier.

A major part of corporate long-term debt is denominated in foreign currencies. Exchange rate fluctuations therefore exert a strong impact on the nominal króna value of debt, and play a large part in the volatility of the ratio of debt to assets, which are valued in króna.

It is also likely that, for Icelandic businesses, the accounting value of assets is significantly lower than their real market value. This applies in particular to fisheries companies, due to their hidden assets in the form of fishing quotas. The resulting distortion of the real relationship between assets and liabilities serves to reduce the book value of equity.

Finally, the organised equity market in Iceland is relatively young and largely comprised of fairly small companies. Only a small part of corporate finance has been raised through public share offerings. Businesses have relied heavily on the banking system for their finance, which may have led to higher indebtedness than is the norm in advanced economies. Restrictions on external investment in the Icelandic fisheries sector contributes even further to financing through the credit system.