

Iceland: Selected Issues

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ICELAND

Selected Issues

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Approved by the European Department

July 26, 2007

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I. ESTIMATING ICELAND'S REAL EQUILIBRIUM EXCHANGE RATE¹

A. Background

1. **Sharp widening of the current account deficit and rising external debt have raised concerns about the sustainability of Iceland's external position.** These developments reflect the macroeconomic boom driven by investments into aluminum-smelting facilities and soaring private consumption demand. Investments coincided with a series of tax cuts and structural changes in the mortgage market that further stimulated consumption. As the Central Bank of Iceland (CBI) pushed up interest rates to cool the economy, the nominal exchange rate appreciated, boosting consumer confidence even further. Meanwhile, commercial banks, by purchasing businesses abroad, diversified their portfolios greatly increasing external indebtedness.

2. **This paper estimates the gap between the real effective exchange rate (REER) and its equilibrium (medium-term) value.** Looked at in several ways, the Icelandic króna is above its historical averages when measured in real terms. The degree of overvaluation varies depending on the particular measure used and period to which it is compared. The IMF and the BIS produce a CPI-linked measure of the REER, while the CBI produces two measures – one, linked to changes in CPI, and the other, linked to changes in unit labor costs (ULC). The following table compares the latest available values (2006Q4 for the IMF estimate and 2007Q1 for the rest) with the historical averages over four periods.² CPI-linked measures suggest overvaluation by 7–16 percent, while the ULC-linked measure suggests much higher degree of 18–25 percent. The next section addresses the question of how much REER adjustment will be required to restore balance by using methodologies developed by the IMF Research Department for evaluating exchange rate disequilibria.

	1980Q1-2007Q1	1990Q1-2003Q4	1998Q1-2002Q4 (previous cycle)	2001Q2-2007Q1 (inflation targeting)
REER measured by IMF (CPI)	8.3	11.9	14.0	7.4
REER measured by BIS (CPI)	...	16.3	14.8	8.0
REER measured by CBI (CPI)	7.4	11.0	12.3	6.9
REER measured by CBI (ULC)	18.1	25.3	24.9	20.2

¹ Prepared by Robert Tchaidze. A more detailed version of this paper is forthcoming as an IMF Working Paper.

² The IMF's REER series starts in 1984Q1, as prior to that values are too high, distorting the picture. The BIS' REER series are available only since 1994Q1.

B. CGER Methodologies and Results³

3. **The CGER methodologies used in this section reflect a decade of work undertaken by Fund economists.** They are summarized in IMF (2006), while further details can be found in Isard et al (2001) and Isard and Faruquee (1998). The first approach—the macroeconomic balance approach (MB)—constructs a current account norm based on an empirical relationship between the current account and a set of fundamentals. The necessary adjustment in the REER is calculated given the elasticity of the current account with respect to the REER. The second approach—the equilibrium real exchange rate approach (ERER)—is more direct, based on an empirical relationship between REER itself and a set of fundamentals. Finally, the third approach—the external sustainability approach (ES)—evaluates the current account that would stabilize the level of net foreign assets. While the details of each of the approaches are explained further in the text, the differences are summarized in the table below.

	Macroeconomic Balance	Equilibrium Real Exchange Rate	External Sustainability
Variable	Current Account	Real Exchange Rate	Trade Balance
Equation	A cross-country equilibrium empirical relationship between the current account and a set of fundamentals.	A cross-country equilibrium empirical relationship between the REER and a set of fundamentals.	A theoretical equation that determines the trade balance that would stabilize external assets and liabilities.
Fundamentals	Population growth, old-age dependency, fiscal stance (all relative to trading partners), oil trade balance, relative income, NFA.	NFA, productivity relative to trading partners, terms of trade, government consumption.	Stocks of external assets and liabilities, rates of return, the Iceland GDP growth rate, the World GDP growth rate, the U.S. inflation.

4. **Under the macroeconomic balance approach (MB), the current account is linked to a set of macroeconomic fundamentals.** In particular, the set includes: the deviation of the ratio of the general government budget balance to GDP from the average budget balance of trading partners; an old-age dependency ratio (ratio of population above 65 to the population aged 30–64) and the population growth rate (both in deviation from trading-partners averages); the oil trade balance as a ratio to GDP; the ratio of PPP-based per-capita income to

³ Most of the series are from the IMF databases. In particular, the REER data are constructed using the methodology in Bayoumi et al (2006), and the NFA data are constructed using the methodology in Lane and Milesi-Ferretti (2006). While there are small differences between the CBI and IMF series on CPI-based REER, there are substantial discrepancies between the IMF's NFA series and the CBI's international investment position series, which reach 25 percent of GDP in 2004. When applicable, both series are used during calculations.

the U.S. level, referred to as relative income; and the ratio of net foreign assets (NFA) to GDP. Pooled estimation, done for a large set of countries, suggests a following relationship:⁴

$$\begin{aligned} \text{Current Account} = & 0.19*** \text{ Fiscal balance} - 0.14** \text{ Old-age dependency} \\ & - 1.22*** \text{ Population Growth} + 0.23*** \text{ Oil Trade Balance} \\ & + 0.02* \text{ Relative Income} + 0.02*** \text{ NFA}. \end{aligned}$$

5. **This relationship is used to construct a current account norm, based on WEO projections for 2012.**⁵ The difference between the current account norm and the projected current account determines the necessary adjustment. For Iceland, the current account deficit is projected to be 5.6 percent of GDP in 2012. Depending on the number of trading partners chosen,⁶ and the estimate of NFA, the estimated current account norm is a deficit of 1.0-2.2 percent of GDP, which translates into a depreciation of 17–23 percent in the real effective exchange rate. If estimates are constructed using the 2006 stock of NFA, then the current account deficit norm is estimated to be 0.7–2.0 percent of GDP with the depreciation in the range of 18–25 percent.

6. **Under the equilibrium real exchange rate approach (ERER), the REER itself is linked to a set of fundamentals.** These include a productivity differential, defined as the difference between output per worker in tradables and non-tradables (each of them measured relative to trading partners and assumed to remain constant over the medium term); a terms of trade variable defined as a ratio of the weighted averages of the main commodity export prices to import prices;⁷ government consumption measured as a ratio of public expenditures to GDP; and the NFA position measured as the stock of net foreign assets scaled by trade (average of exports and imports). The estimated relationship is:

$$\begin{aligned} \ln(\text{REER}) = & \text{constant} + 0.04*** \text{ NFA} \\ & + 0.15** [\ln(\text{Relative Productivity in Tradables}) \\ & - \ln(\text{Relative Productivity in Non-Tradables})] \\ & + 0.46*** \ln(\text{Terms of Trade}) + 2.64*** \text{ Government Consumption}. \end{aligned}$$

7. **Comparison of the current REER and REER using the medium-term projections along with the above equation produces an estimate of the misalignment.**

⁴ The symbols *, **, and *** indicate significance at the 10, 5, 1 percent level, based on standard errors robust to serial correlation. The original specification also included dummy variables for banking crisis, Asian crisis, and financial center. Iceland is not included in the set of countries used for estimation.

⁵ WEO data as of May 2007.

⁶ The estimates are constructed based on two sets of trading partners. One set includes the Euro zone, the United States and the United Kingdom. The second adds Norway and Denmark.

⁷ Terms of trade reflect the prices of sea food, non-ferrous metals, and petroleum.

Plugging in the projections from the WEO database for 2012 produces an equilibrium value of 95–98, while the 2006 value is 106.7, which implies a depreciation of 8–11 percent.⁸ Comparing the 2006 value of REER against the 2006 fundamentals implies a smaller depreciation of 6–9 percent, as projected fundamentals are expected to cause a depreciation in the equilibrium real exchange rate between 2006 and 2012. First, the NFA position is projected to worsen. Second, terms of trade are expected to deteriorate as the prices for metals are expected to fall.

8. ***The external sustainability approach (ES) estimates a trade balance norm and then translates it into the required REER adjustment based on import and export elasticities.*** This time, however, the norm is linked to the levels of foreign assets and liabilities. These are split into equity instruments (direct investment and portfolio equity investment) and debt instruments (portfolio debt investment, other investment, and international reserves in the case of assets). Assuming zero capital gains, the following relationship is derived:

$$TB = -\frac{i^{E,A} - n}{1+n} EqAsst - \frac{i^{D,A} - n}{1+n} DAsst + \frac{i^{E,L} - n}{1+n} EqLbtl + \frac{i^{D,L} - n}{1+n} DLbtl,$$

where the trade balance TB is linked to the stocks of assets and liabilities, respective rates of return, and nominal GDP growth n .

9. ***The logic behind the equation is straightforward.*** As long as rates of return on assets are higher than the growth rate of nominal GDP, a country can afford to run a trade deficit. If rates of return on liabilities are higher than the growth rate of nominal GDP, a country has to run trade surplus to cover the difference. The rate of return on equity assets is given by projected World real GDP growth in 2012, plus projected U.S. inflation, plus 100 basis points, which translates into 8.2 percent. The rate of return on equity liabilities is given by Iceland's projected real growth rate in 2012, plus projected U.S. inflation, plus 100 basis points, which translates into 6.9 percent. The rate of return on debt instruments is assumed to be 6 percent.

10. ***Three norms are constructed given the stocks of assets and liabilities in 2004–06.*** Given 2004 values, when NFA (excluding the CBI's reserves) stood at -93 percent of GDP (according to the CBI estimates), the trade balance norm is calculated to be -0.8 percent of GDP. As the level of NFA decreased to -109 percent of GDP in 2005, and then to -144 in 2006, the trade balance norm decreases to -1.6 and -2.1 percent of GDP. The trade balance projection is -4.3 percent of GDP, and hence, as the necessary trade balance adjustment changes from 3.4 percent of GDP to 2.6 and to 2.2, the estimate of the REER adjustment changes from 18 percent to 14 to 11.

⁸ Again, estimates are constructed for two sets of trading partners and for two NFA series.

11. **This is counterintuitive, as in general, an increase in liabilities would require a country to run a bigger trade surplus.** But this result is driven by the differences in the rates of return. The difference between the rate of return on debt instruments (both assets and liabilities) and the nominal GDP growth is assumed to be 0.6 percent, on equity liabilities 1.5 percent, and on equity assets 2.8 percent. Hence, a sharp increase in the stock of liabilities has less of an impact on the trade balance norm than an increase in the stock of assets.

C. Limitations and Caveats

12. **The three CGER approaches** under plausible assumptions, suggest a depreciation of about 10–20 percent.

	Averages	Macroeconomic Balance	Equilibrium Real Exchange Rate	External Sustainability
Adjustment	12–14 percent (compared to 1988–2002 period)	17–23 percent	13–16 percent (constant chosen over 1988–2002 period)	11–18 percent

However, the overvaluation estimates are based on the 2006 level of the real exchange rate. In the first half of 2007, the króna has appreciated further. Given the level of nominal appreciation and inflation developments in Iceland and its trading partners, the real appreciation is likely to be around 5 percent, and hence the adjustment falls in the range of 15–25 percent.

13. **These results, however, should be treated with caution.** One reason is imprecision of data, whether it is national accounts data, or financial flows data. Another reason is that results depend on medium-term projections for several countries that are highly uncertain. The empirical relationships, on which the MB and ERER approaches are based, are estimated for a large pool of countries. Large differences between the countries imply that there may be significant differences between a resulting ‘average’ country and Iceland. Also, these equations reflect equilibrium relationships rather than causal ones.

14. **Both the MB and ES approaches assume that correction occurs via the trade balance.** However, in the last year, the income balance deficit constituted about a third of the current account deficit, and while it is rather difficult to predict its evolution, its improvement could mean a smaller REER adjustment needed to restore external balance.

15. **Neither of these approaches imply anything about manner or timing of the adjustment.** Theoretically it could occur via lower inflation or depreciation of the nominal exchange rate. Given that over the short term inflation in Iceland is likely to remain above that of its trading partners, one would expect greater adjustment in the nominal exchange rate than that predicted for REER by the CGER methodologies. How long would such an adjustment last or what exactly would trigger it is beyond this analysis, however. But

nevertheless, it is worth noting that many analytical pieces published in Iceland (both by private sector and public institutions) assume a slowdown in inflation and nominal depreciation taking place in 2007-8 that imply a smaller adjustment than that estimated in this paper.

D. Conclusion

16. **This paper considers estimates of REER disequilibrium in Iceland.** The three-pronged CGER approach suggests that the adjustment needed to bring the real exchange rate in line with fundamentals is in the range of 15–25 percent, although timing and manner of this adjustment is unclear. This is broadly in line with estimates based on long-term trends as well.

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II. TOWARD A ROBUST FISCAL FRAMEWORK FOR ICELAND: MOTIVATION AND PRACTICAL SUGGESTIONS⁹

A. Introduction

17. **This chapter makes the case for refinements to Iceland’s fiscal framework.** In this regard, it explores certain features of fiscal policy in Iceland, and illuminates various aspects of fiscal frameworks in other European countries that are possibly worthy of emulation. The chapter proceeds as follows: Section B provides a detailed summary of the key issues affecting fiscal policy in Iceland. It argues that political economy factors lead to procyclical fiscal trends, and this is exacerbated by macroeconomic volatility. Following this, Section C begins with a brief account of the current fiscal framework in Iceland, springboarding to a discussion of the experience of countries similar to Iceland in terms of underlying political institutions, especially Belgium and the Netherlands. Some recommendations for reform in the context of Iceland are then offered. Section D concludes.

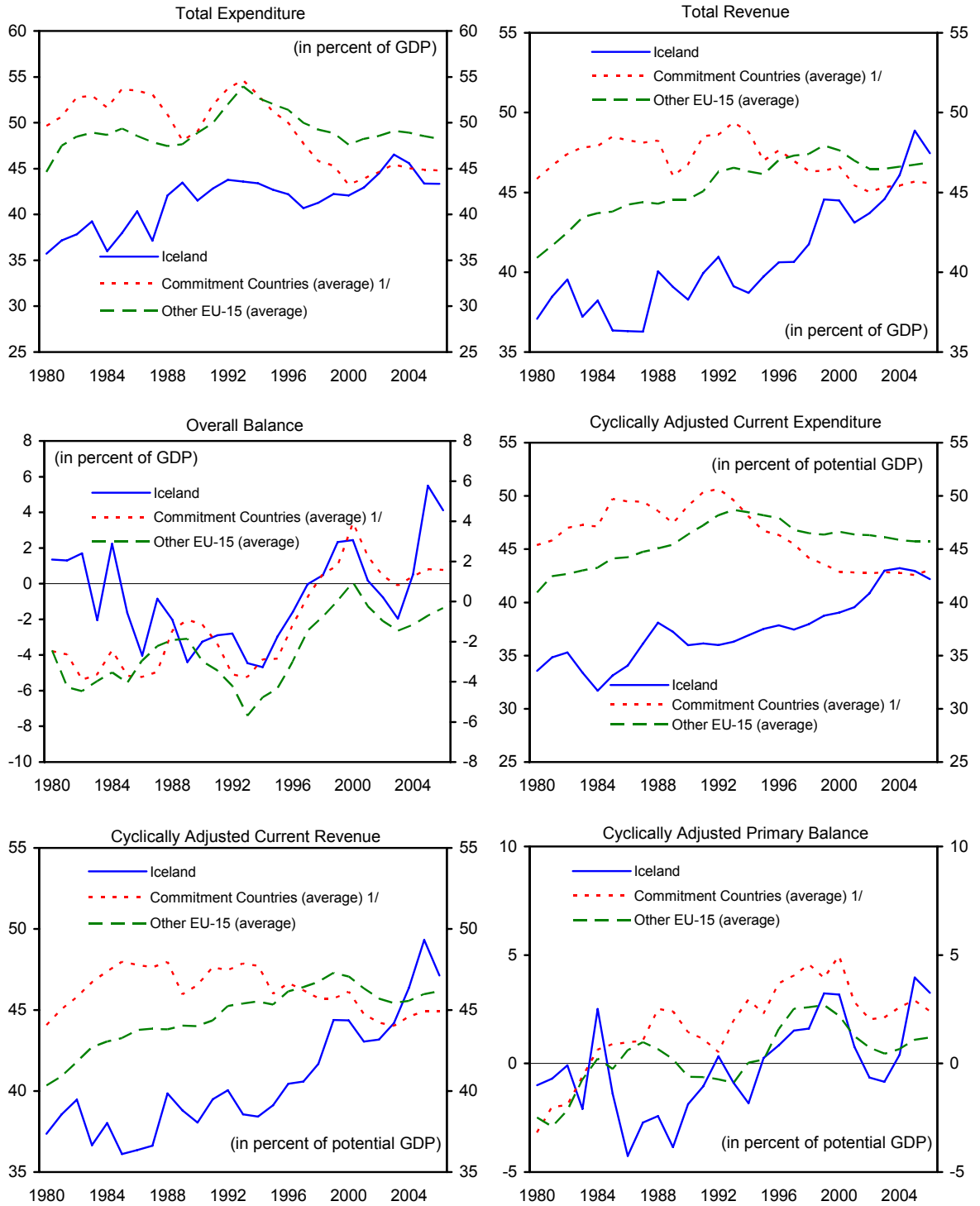
B. Fiscal Policy in Iceland: Political Economy, Procyclicality, and Volatility

18. **Political economy factors are frequently cited to explain procyclical fiscal policy.** By the common pool model, politicians who represent different groups and vested interests have no incentive to constrain their spending demands given that the costs are shared by the population as a whole. The literature shows that a plethora of inter-related factors—large and disparate coalitions, a high number of spending ministers, proportional electoral systems, electoral uncertainty, and short government duration—can all act to feed deficit or expenditure biases and procyclical fiscal policy (Alesina and Perotti, 1995, Annett, 2002). The bias toward procyclicality can be especially pronounced during good times (Jaeger, 2001, Balassone and Francese, 2004), as revenue windfalls are seen as common property that, absent coordination, feed through to higher spending or tax cuts. Some have also argued that output volatility matters, in the sense that higher booms unleash greater political distortions and more procyclical behavior (Talvi and Vegh, 2000; Lane, 2003).

19. **Fiscal policy in Iceland has been marked by a secular increase in government expenditure.** Since 1980, total expenditure as a percent of GDP has risen by around 10 percentage points, approaching 45 percent, close to the EU average (Figure 1). The driving force behind the rise in expenditure was a secular increase in the government wage bill (Figure 2). Spending was first ratcheted up in the late 1980s, prompting a deterioration in the fiscal balance. But expenditure started increasing again in the late 1990s, although this time, revenue rose apace, and the fiscal balance did not deteriorate accordingly. From an international perspective, Iceland’s expenditure experience goes against the grain, especially when compared with those European countries sharing similar political structures, including

⁹ Prepared by Tony Annett. A more detailed version of this chapter is forthcoming as an IMF Working Paper.

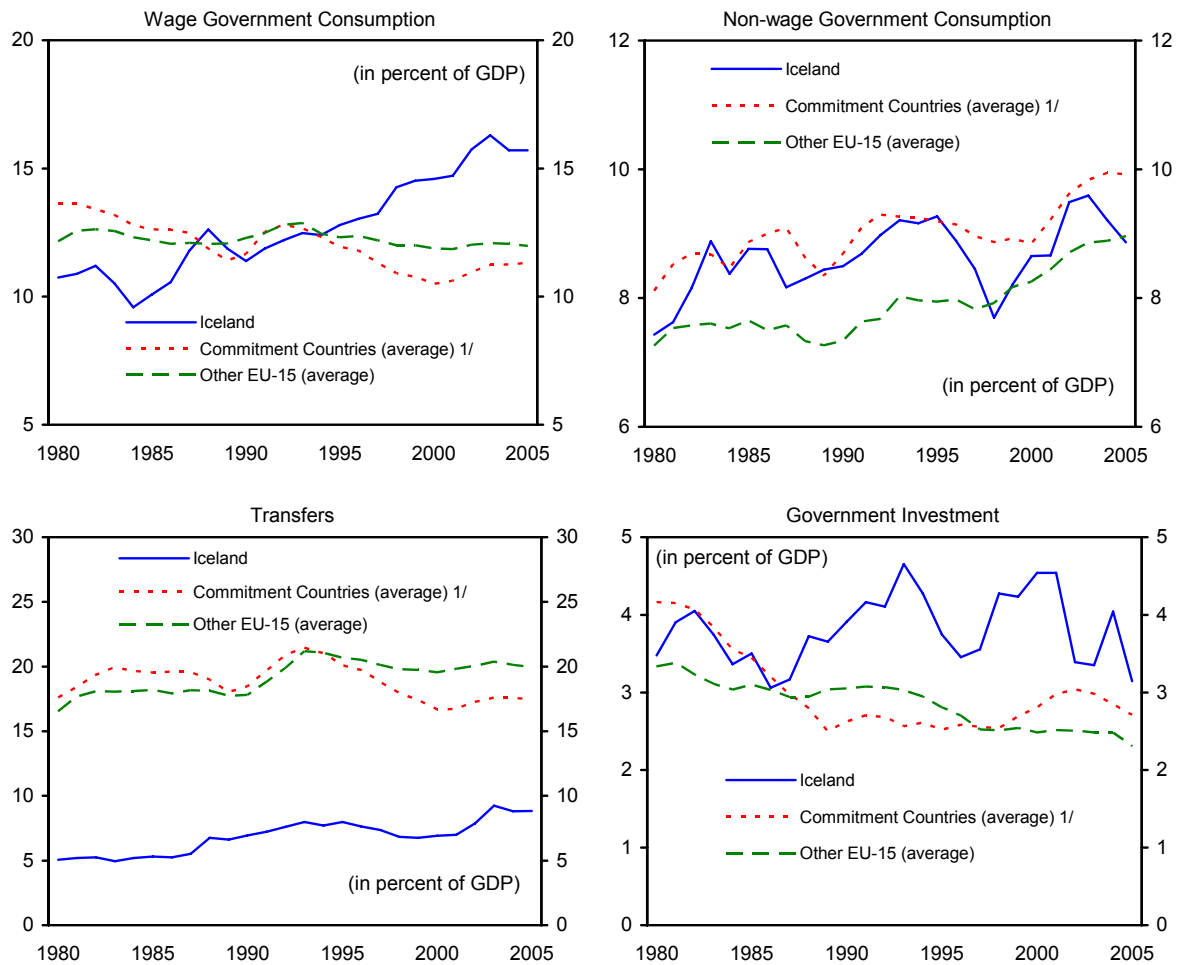
Figure 1. International Comparisons of Fiscal Policy I



1/ Belgium, Finland, Ireland, and the Netherlands.
Source: OECD

penchant for multi-party coalition governments (Belgium, Finland, Ireland, and the Netherlands). These countries witnessed a large decline in expenditure over the 1990s, focused on government wages and transfers, and consolidation exceeded the EU average.

Figure 2. International Comparisons of Fiscal Policy II



1/ Belgium, Finland, Ireland, and the Netherlands.

Source: OECD

20. **Part of Iceland's recent spurt in revenue may reflect predominantly cyclical factors.** The cyclical response of revenue to real activity can be exacerbated during boom-bust cycles, turning revenue elasticities sharply procyclical. In such an environment, underlying balances can appear healthier than is actually the case during booms, increasing the risk that revenue windfalls are spent in a procyclical fashion. Some point the finger at asset price booms; indeed, one estimate is that the cyclical responsiveness of the fiscal balance more than doubles during EU asset price-driven cycles, leading to an over-estimation of the underlying balance with standard cyclical-adjustment methodologies (Jaeger and

Schuknecht, 2004). There also seems to be a clear relationship between revenue elasticities and the extent of real appreciation across European countries over the past decade, reflecting tax-rich consumption booms in these countries (see also European Commission, 2006). In Iceland, cyclically-adjusted revenue seems to track movements in the private consumption-potential output ratio over time (Figure 3). Iceland also stands apart as the country with the highest average elasticity, and the largest real appreciation among this sample.

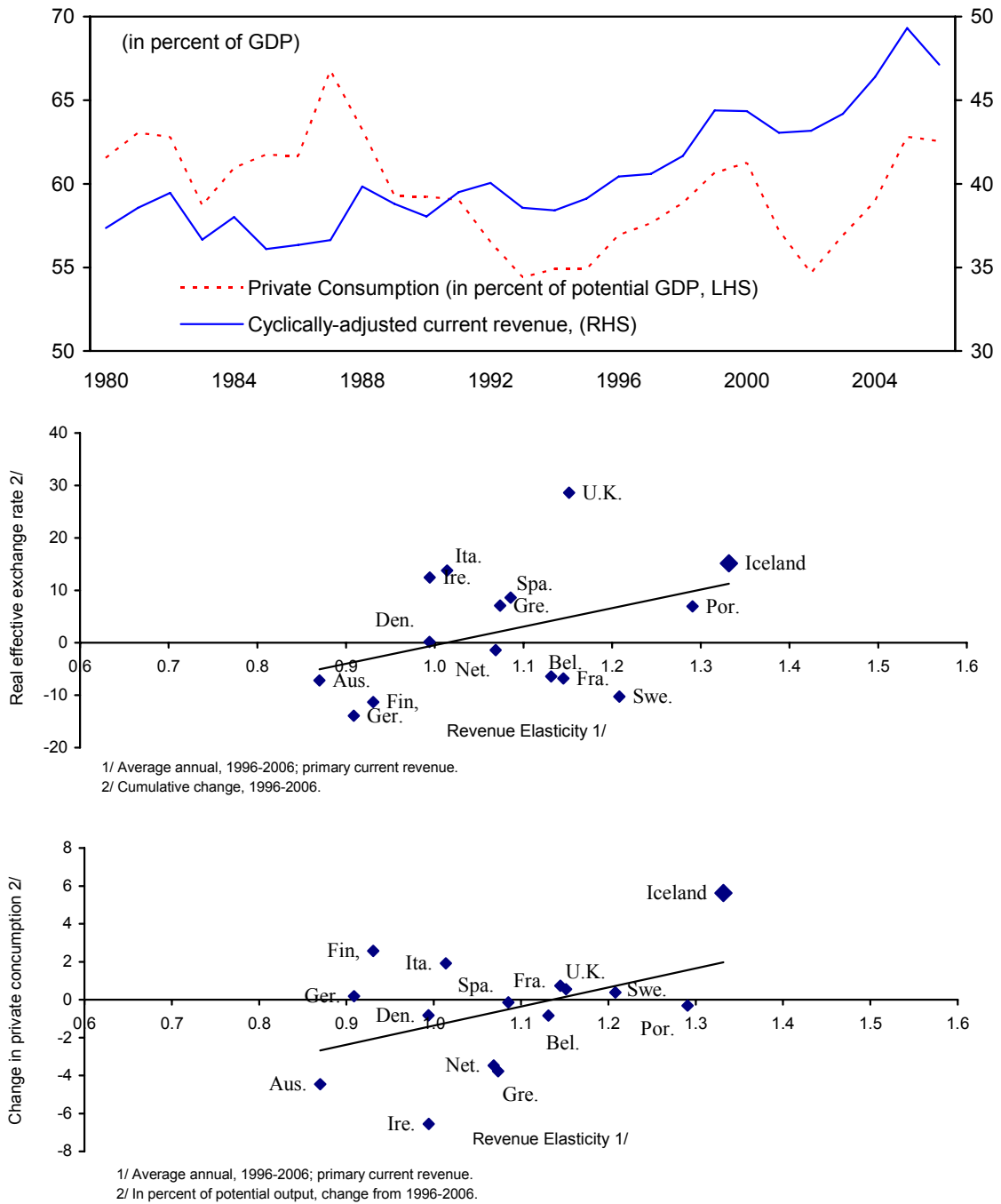
21. On the expenditure side, there is some evidence of procyclical policy inspired by the common pool problem. Empirical evidence suggests the following results:

- Based on cross-country evidence, there is a positive association between the procyclicality of wage government consumption and macroeconomic volatility (Figure 4). Countries with the highest degree of procyclicality (Iceland, Greece, and Portugal) are those very countries with the most volatile output. Iceland stands apart, both in terms of its volatility and in the fact that its expenditure is considerably more procyclical than the international norm (this is especially true of wage government consumption).
- Estimating a basic fiscal reaction function for Iceland shows that while total expenditure and current expenditure display countercyclical responses, the effect of wage government consumption is procyclical, implying that an improvement in the output gap leads to an increase in ratio of the government wage bill to GDP). Cyclically-adjusted current expenditure also displays a procyclical effect.
- Interacting the output gap with some measure of political fragmentation¹⁰ suggests that the translation of positive output shocks to higher government spending is greater in the presence of more pronounced divisions within government. Specifically, the coefficients on the interactive terms for four key variables—current expenditure, cyclically-adjusted current expenditure, wage government consumption, and government transfers—display positive and significant signs, signaling a larger procyclical effect in the presence of higher government fragmentation. The same result emerges using consumption booms rather than output gaps.

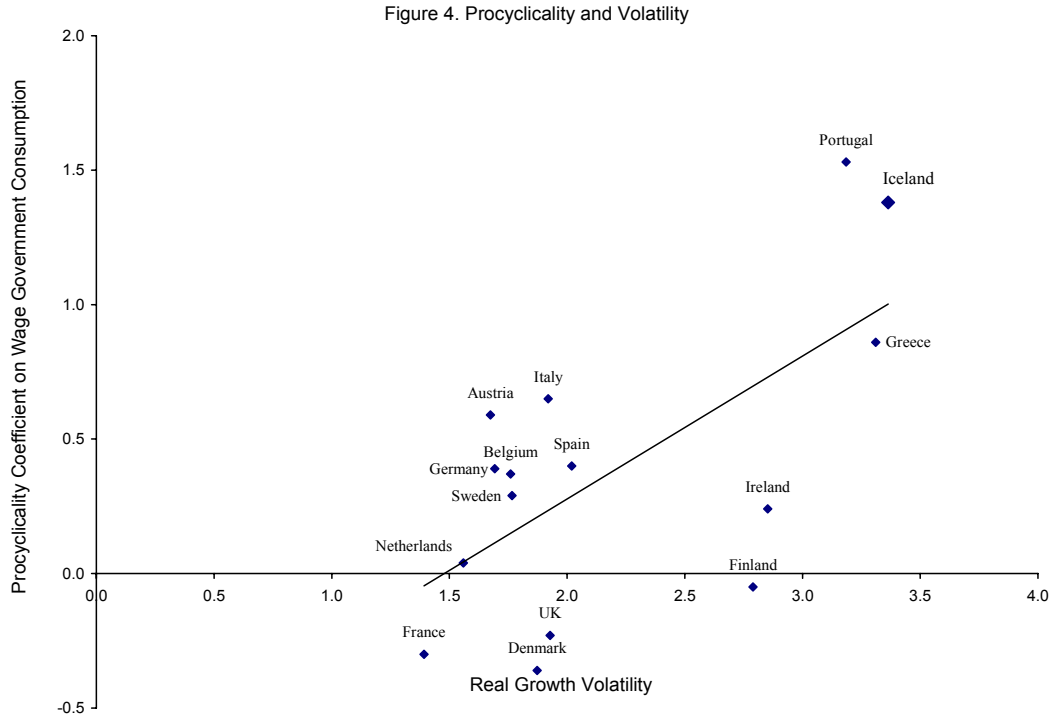
22. In sum, the unusual macroeconomic volatility in Iceland calls for a particularly robust fiscal framework. As its fiscal balances are subject to larger swings, Iceland needs an anchor to curb excess volatility. In the European context, it was precisely the more volatile countries that latched onto the Stability and Growth Pact, the EU's rules-based fiscal

¹⁰ Government (legislative) fractionalization is defined as the probability that any two individuals picked at random from the governing coalition (parliament) will be from different parties. The data derive from the World Bank's *Database of Political Institutions*.

Figure 3. Iceland: Cyclicity and Revenue Elasticities



Source: OECD.



framework (Annett, 2006). The prevalence of boom-bust cycles creates uncertainty about the output gap and elasticities, justifying rules pertaining to expenditure growth and a suitably conservative target for the fiscal balance over the cycle (Jaeger and Schuknecht, 2004). And, as noted, macroeconomic volatility is associated with procyclical tendencies. And finally, of specific relevance in Iceland, fiscal policy needs to assume a far greater countercyclical bent to relieve the pressure on monetary policy. The next section explores some options for improving Iceland’s fiscal framework to cope with these pressures.

C. Institutional Fiscal Reform and Lessons for Iceland

23. **Iceland began reforming its budgetary institutions in 1992.** It did so by adopting “frame budgeting”, a top-down approach whereby ministry-level expenditure ceilings are set at a relatively early stage in the process, forcing the ministries to prioritize different expenditure items and projects. At the outset, the minister of finance prepares the macroeconomic framework and brings proposals to the cabinet-level *Committee on Public Finances*—comprising the prime minister, the minister of finance, two other ministers, and the chairman and vice-chairman of the coalition parties—which decides on the aggregate expenditure envelope. Following negotiations, the cabinet then approves the individual frames. The budget is passed later in the year after a further review of the macroeconomic framework. It then goes to parliament, where amendments are permitted.

24. **To bolster this framework, the government adopted fiscal rules pertaining to the growth of real expenditure from 2004.** The real annual increase in public consumption is limited to 2 percent, while the growth in transfer payments is restricted to 2½ percent a year.

Real targets are translated into nominal terms using ministry of finance forecasts of CPI inflation. The targets are defined on average over a number of years, however, meaning that temporary deviations are allowed. Also, there are no mechanisms in place for ensuring targets are met.

25. **This framework has not acted as a sufficient bulwark against overspending.** The expenditure ceilings have not been respected, either at the central or local government level. The legislature is prone to altering budget targets during the parliamentary phase of the budget, and deviations between the budget and outturns reflect the entrenched use of supplementaries (Suppanz, 2003; OECD, 2006). Ministries and agencies frequently overspend their budgets with few consequences, despite existing regulations. The medium-term framework is also weak, as targets are largely illustrative.

26. **Before contemplating how Iceland can reform its institutions, it is useful to reflect upon developments elsewhere in Europe.** Over the past few decades, European countries have adopted a wide variety of institutional reforms geared toward suppressing the political economy biases suffusing fiscal policy. Two broad approaches include delegation, whereby power is ceded to a strong minister of finance (suited to single-party governments), and commitment, whereby the different parties negotiate a “fiscal contract” involving strict budget targets (suited to coalitions)¹¹. Reforms proceeded apace over the 1990s, with most EU countries adopting or strengthening one of these core fiscal governance technologies. Commitment countries—including Belgium, Finland, Ireland, and the Netherlands—were more inclined to use fiscal rules and rely on independent committees and councils to aid in fiscal policy coordination. Institutional reforms tended to have a salutary effect on fiscal discipline, and stringent targets proved key to fiscal discipline in commitment countries. Independent forecasts can also help as can independent arbiters of fiscal policy.

27. **Iceland is clearly a commitment country, and should look to other commitment countries for emulation.** In terms of the breadth of their institutional reforms, Belgium and the Netherlands represent the most appropriate role models for Iceland. Both countries have strengthened their commitment technologies through complementary combinations of institutional reforms, fiscal rules, and recourse to independent agencies. They are two of the three EU countries to use independent forecasts and are the only two countries to have adopted formal rules dealing with positive revenue windfalls. In Belgium, an independent entity (the *High Council of Finance*) set fiscal targets for each level of government, for the short, medium, and long term, which the coalition government agreed to adopt. The Netherlands introduced expenditure ceilings, and let the independent *Central Planning Bureau* provide forecasts for the parties to use before elections, during coalition formation, and to underpin the annual budget process.

¹¹ See Hallerberg, Strauch, and von Hagen (2001); Hallerberg, Strauch, and von Hagen (2004); Hallerberg (2004).

28. **As it stands, Iceland has a quasi-commitment systems that has evolved alongside the introduction of frame budgeting.** There is a firm attempt to internalize spending pressures through a top-down approach to budgeting combined with greater oversight by the *Committee on Public Finances*, incorporating representatives of the coalition parties. Over the past few years, there has also been a tendency to move away from regular meetings between the minister of finance and spending ministers. But there are still some key weaknesses that could be addressed by the adoption of Belgian or Dutch-style reforms.

29. **To help Iceland overcome tendencies toward expenditure drift and procyclical spending pressures, the following possibilities may be useful:**

- ***Strengthen the expenditure rules.*** Ideally, the expenditure rule would be couched in terms of explicit multi-year expenditure ceilings that are binding on ministries, unlike the current illustrative rules that are seldom met. In practical terms, the government could set rolling 3–4 year nominal expenditure ceilings for each frame, adding up to an overall target. The ceilings should be binding on ministries, and the current practices of using supplementaries and altering the frames at the legislative stage should be eschewed. Each new budget would add the ceiling for one additional year and the scope for revising already-agreed targets would be limited. Realistic contingency funds could be included in the budget for emergencies, including unanticipated cyclical factors and forecast uncertainties. There could also be a contingent rule, ensuring that positive shocks to revenue did not lead to overspending.
- ***Switch to nominal, rather than real, ceilings.*** Nominal ceilings ensure that changes in inflation do not lead to revisions in targets. For a start, nominal ceilings have the advantage of transparency, which aids enforceability. Nominal rules are most beneficial when cyclical stabilization is a goal since the higher inflation leads directly to lower real expenditure in a countercyclical manner. This is especially important in Iceland, given the side effects of high interest rates and the concomitant need to relieve pressure on monetary policy. Ideally, for countercyclical purposes, the nominal ceilings could be set based on the central bank's target for CPI inflation.
- ***Use a stakeholder committee to suggest targets for the different levels of government.*** Such a committee could involve officials from the ministry of finance, the local governments, and the central bank. It would serve as a coordinating device across different levels of government, while also offering recommendations on the overall stance of fiscal policy, especially over the medium term.
- ***Lay out detailed expenditure targets predicated on a path for the overall fiscal balance over the life of the government.*** If a coordinating fiscal policy committee as suggested above exists, its targets could be adopted, or at least form the basis of discussions, and these targets could be incorporated into coalition agreements. Presently, coalition agreements contain only vague references to fiscal policy. Greater political ownership would

also shield against expenditure pressures at the parliamentary level, following the introduction of the government's budget. Such an approach would also segue naturally into the medium-term framework underpinned by expenditure ceilings.

- ***Adopt independent macroeconomic forecasts, preferably from a domestic, well-respected, entity.*** If this is not an option in the short term, the government could follow the Canadian example of using an array of cautious assumptions from the private sector. And once the budget is set based on these assumptions, there should be few further modifications.

30. **Such a fiscal framework would engender the necessary degree of countercyclical momentum in fiscal policy.** Expenditure rules are especially suited to Iceland, given that they allow free play of automatic stabilizers on the revenue side and guard against expenditure drift and the translation of high revenues to expenditure growth. Concomitantly, nominal targets can complement this tendency by delivering countercyclical action on the expenditure side, letting real expenditure fluctuates with inflation. The automatic nature of such a rules-based framework bypasses some of the timing and implementation issues associated with discretionary countercyclical fiscal policy, and resorting to supplementaries weakens the credibility of framework. But the current practice of manipulating the timing of government investment for countercyclical purposes could be retained, by excluding capital expenditure from the coverage of the expenditure rule.

D. Conclusion

31. **Iceland's experience with volatility and procyclicality suggests the need for an improvement in its fiscal framework.** Expenditure, especially the government wage bill, has risen precipitously, and often in a procyclical manner related to the fragmentation of political decision-making in Iceland. Iceland's high degree of macroeconomic volatility reinforces these tendencies. Large boom-bust cycles can lead to procyclical revenue elasticities, making underlying fiscal policy appear healthier than is actually the case, further contributing to latent spending pressures. At the same time, there is a clear need for fiscal policy to shoulder more of the cyclical stabilization burden. Based on the experiences of countries like Belgium and the Netherlands, Iceland could consider reforms such as (i) establishing binding nominal expenditure rules; (ii) using a representative fiscal policy committee to negotiate medium-term fiscal targets across different levels of government; (iii) embedding medium-term fiscal targets in coalition agreements; and (iv) using independent fiscal forecasts. These policies have proved a recipe for success elsewhere, and Iceland can benefit from these experiences.

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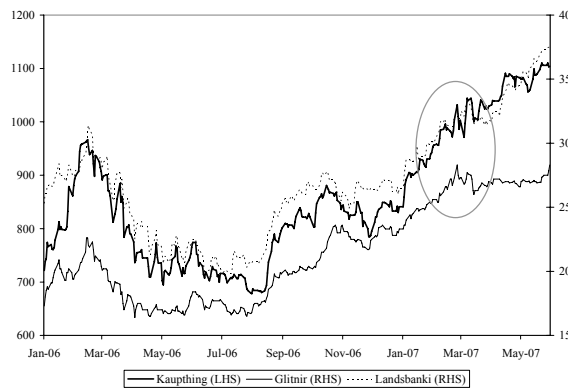
III. ICELAND: FINANCIAL SECTOR DEVELOPMENTS AND RISKS TO THE OUTLOOK¹²

A. Introduction

32. **Iceland's banking sector posted record profits in 2006, having withstood significant macroeconomic and financial market turbulence in H1 2006.** Indeed, the banking sector remained resilient against the stress experienced in international financial markets in February and March this year (Figures 1 and 2). Further, market reaction had been relatively muted following the sovereign downgrades by rating agencies since December 2006, compared to the sharp declines experienced in H1 2006, when the rating outlook was changed by Fitch Ratings.

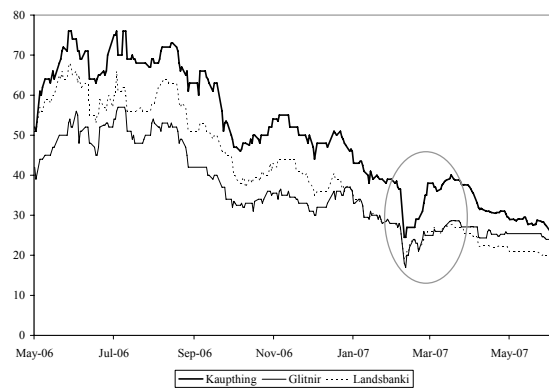
33. **Last year, Icelandic banks gradually overcame investor concerns, raised by the events during the first-half of the year, by taking concrete actions, and learning to better manage perceptions.** Key actions taken by banks include: (i) reducing their holdings in equities; (ii) divesting cross-shareholdings and clarifying custody services versus actual shareholding in related companies; (iii) refinancing earlier than scheduled, and paying a higher spread; (iv) diversifying funding sources and improving their short-term liquidity management; and (v) improving the dissemination of information to the market about the measures taken and explaining the unique macroeconomic situation in Iceland.¹³

Figure 1. Iceland: Stock Prices of Major Banks
(In króna)



Source: Bloomberg LP.

Figure 2. Iceland: CDS Spreads of Major Banks
(In basis points)



Source: Bloomberg LP.

34. **Notwithstanding the positive outcome for the banking sector from last year's turbulence, risks need to continue to be monitored closely.** The relative size of the banking sector within the Icelandic financial system means that any severe shock could have

¹² Prepared by Li Lian Ong, with contributions from Alicia Novoa and Mark Walsh (all MCM).

¹³ See Fridriksson (2007a) for a discussion on the authorities' response to reassure investors during the market turbulence in 2006.

potentially significant implications for the economy.¹⁴ As at end-2006, the combined assets of Iceland's credit institutions amounted to more than eight times GDP, while the domestic credit-to-GDP ratio was above 280 percent.

35. **This report is structured as follows.** Section B focuses on the all-important banking sector. Specifically, the section provides an overview of the structure of the sector, provides an assessment of its risks and vulnerabilities, and broadly discusses issues relating to regulation, supervision and crisis prevention and management. Developmental issues relating to Iceland's capital markets are presented in Section C. Section D concludes with recommendations to further strengthen financial stability.

B. The Banking Sector

Structure of the Banking Sector

36. **The three large commercial banks—Kaupthing, Glitnir and Landsbanki—dominate activity in the Icelandic banking sector.** The total assets of these banks account for 88 percent of the total assets of Iceland's credit institutions, that is, more than seven times GDP (Table 1). The investment bank, Straumur-Burdaras, is the next single largest domestic bank.

Table 1. Iceland: Size of Credit Institutions by Category, as at end-2006
(In billions of euro)

Category	Total Assets	Percent of Total
3 major commercial banks	90.0 (Parent 60.0)	88.1
1 savings banks' bank	0.9	0.9
21 savings banks	4.6	4.5
11 "other credit undertakings"		
Straumur-Burdaras Investment Bank	4.4	4.3
Others	2.3	2.3
Total	102.2	100.0

Source: Financial Supervisory Authority.

37. **Among the "big three" banks, Kaupthing is by far the largest.** It has 48 percent of the total assets of the three, followed by Glitnir with almost 27 percent and Landsbanki with 25 percent of the assets. These three institutions represent almost 50 percent of Iceland's total stock market capitalization, with Kaupthing alone making up about a quarter of market capitalization.

¹⁴ As a comparison, the total group assets of Icelandic banks as at end-2005 amounted to around 5.5 trillion króna; pension funds' net assets were 1.2 trillion króna, while the total assets of Icelandic insurance intermediaries were 188 billion króna.

38. **The expansion of Icelandic banks overseas began in earnest in 2004.** Acquisitions of FIH Erhvervsbank AS in Denmark by Kaupthing in 2004, BNbank in Norway by Glitnir in 2005, and Singer and Friedlander in the United Kingdom by Kaupthing in 2005, resulted in a sharp rise in Iceland's banking group assets. These purchases were financed by foreign market borrowing and equity issuances. To date, Icelandic banks have largely expanded to advanced European countries (Table 2). The latest acquisition has been that of Bridgewell, a U.K. brokerage and investment bank, by Landsbanki in H1 2007, while Straumur-Burdaras announced the purchase of a 50 percent share in Wood and Company in the Czech Republic in June 2007. Meanwhile, Glitnir has announced plans to purchase Tamm & Partners Fondkommision, a Swedish securities firm, having recently completed the acquisition of Finnish asset management company, FIM.

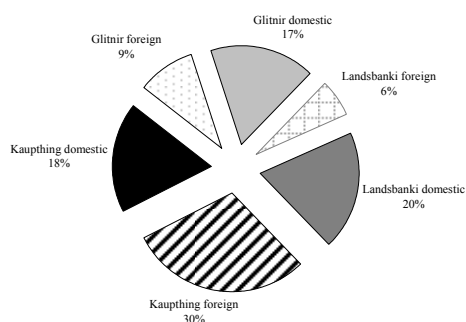
Table 2. Iceland: Overseas Operations of Local Banks
(Number of entities)

Category	December 31, 2005	May 1, 2007	In process
Subsidiaries	21	27	1
Branches	4	15	7
Representative offices	1	4	0
Foreign countries	12	19	1

Source: Financial Supervisory Authority.

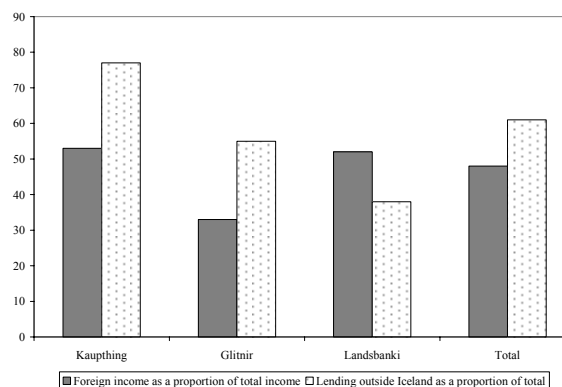
39. **Given the increasing move by Icelandic banks into offshore businesses, it is not surprising that their foreign subsidiaries account for a substantial proportion of their total assets and income** (Figures 3 and 4). Indeed, 62 percent of Kaupthing's assets are now offshore, while Glitnir's foreign assets make up 36 percent of its total assets. Both Kaupthing and Landsbanki earn more than 50 percent of their income overseas, and more than three-quarters of Kaupthing's lending is outside Iceland.

Figure 3. Iceland: Composition of Commercial Banks' Total Assets by Domicile, as at end-2006



Source: Financial Supervisory Authority.

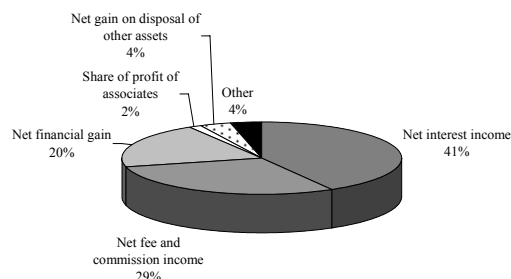
Figure 4. Iceland: Commercial Banks' Foreign Income and Lending Activity, as at end-2006
(In percent)



Source: Central Bank of Iceland.

40. **Net interest income represents the most important component of Icelandic banks' operating income** (Figure 5). However, net fee and commission income is becoming more important as banks diversify their earning sources. Net financial gain (e.g., gain from equity investments) has also been a key component of income. Arguably, the standard business model for Icelandic commercial banks tends to be more similar to that of typical investment banks, due to the importance of their trading portfolios in their asset composition.

Figure 5. Iceland: Composition of Banks' Operating Income, 2006 Average



Source: Financial Supervisory Authority.

Risk Assessment

41. **Liquidity risk continues to be an important consideration for Icelandic banks.** The deposit base is relatively narrow, providing funding for 31 percent of total assets as at the end of Q2 2007. As a result, banks have been very reliant on wholesale funding in international markets to fund their operations and overseas expansions. The popularity of the króna-denominated eurobond (“glacier bond”) carry trade in international financial markets remains an important source of funding for Icelandic banks.¹⁵ These banks are expected to continue to participate in international debt markets to bridge the funding gap as they further expand their businesses, which means that they will be exposed to market shocks as a matter of course.

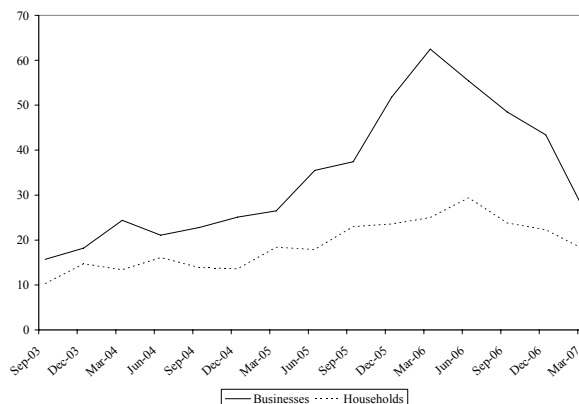
42. **Focus has shifted from the short-term risk on the liabilities side of the balance sheet back to the more natural issue of longer-term asset quality.**¹⁶ Credit to both domestic businesses and households have continued to grow strongly in Q1 2007, at 27 percent and 18 percent year-on-year respectively, albeit having slowed sharply over the course of 2006 (Figure 6). Importantly, there may be signs of an easing in lending standards by banks. For instance, the proportion of mortgage loans with loan-to-value ratios (LTVs) of

¹⁵ See Appendix I for a discussion on glacier bonds carry trade activity.

¹⁶ See also Mitra (2006).

more than 90 percent has increased, and currently, some 16 percent of mortgage loans by commercial banks fall into this category.¹⁷

Figure 6. Iceland: Credit Growth
(In percent year-on-year)



Source: Central Bank of Iceland.

43. **Overall, debt levels are high and rising.** Household debt stood at 216 percent of disposable income as at end-2006 (compared to 165 percent in 2000), and at 116 percent of GDP (compared to 90 percent previously). In the corporate sector, very high levels of indebtedness have increased banks' credit risk from this segment of the market. Total corporate debt amounted to 275 percent of GDP as at end-2006, having increased by 61 percent in 2006. The bulk of commercial bank lending in Iceland is to the domestic corporate sector, where foreign currency loans continue to grow in importance (Table 3).

Table 3. Iceland: Composition of Commercial Bank Lending
(In billions of króna)

Category	All		Foreign Currency		Foreign Currency Loans as a Percentage of All Loans	
	End-2005	End-2006	End-2005	End-2006	End-2005	End-2006
Domestic lending	1,490	2,120	634	1,018	43	48
Corporates	1,042	1,522	597	936	57	61
Households	420	538	25	60	6	11
Foreign lending	491	804	474	771	97	96
Total	1,981	2,924	1,108	1,789	56	61

Source: Central Bank of Iceland.

44. **Although asset quality remained high as at end-2006, this tends to be a lagging indicator.** Indeed, there are some recent signs of an uptick in the average corporate default

¹⁷ This amount is equivalent to less than 10 percent of the own funds of the three major banks.

ratio in Q1 2007, to almost one percent, from 0.5 percent as at end-2006. The default ratio for households has remained relative stable at just below one percent.

45. **Another potential concern is that risk may be underpriced in the lending market.** Banks are competing aggressively for mortgage market share with the Housing Financing Fund (HFF), which has 44 percent of the mortgage market, that is, equal to the banking sector; the balance is held by pension funds. The HFF issues state-guaranteed, long-term inflation-linked bonds and prices its mortgage loans accordingly. This suggests that banks may not be pricing credit risk appropriately, in order to compete against the state-owned body.

46. **Icelandic banks' assets are also susceptible to market risk, notably, equity market risk, exchange rate risk and interest rate risk.**

- Icelandic banks hold a high proportion of equities on their balance sheet, compared to more traditional banks. Specifically, loans with equities as collateral are vulnerable to stock market volatility; 29 percent of the market capitalization of listed equities on OMX in Iceland is held as such collateral. Additionally, banks have also extended credit to companies in which they hold sizeable stakes, as well as to the owners of the latter.
- Foreign currency borrowing has been growing strongly (up by 61 percent in 2006), and this could potentially become an important *indirect* credit risk for banks. Corporate foreign currency-denominated debt has increased sharply. As at end-2006, the outstanding amount with credit institutions was equivalent to 85 percent of GDP, compared to 68 percent as at end-2005. A key concern is that the share of foreign currency-denominated debt in the corporate sector has grown substantially in the services, retail and construction sectors, where income sources are likely to be domestic.
- Foreign currency borrowing has become an increasingly attractive avenue of financing for households, which are largely unhedged. It is cheaper relative to borrowing in króna, and some banks are reportedly marketing foreign currency loans aggressively to their customers. This shift by households may be predicated on an implicit belief that the Central Bank of Iceland (CBI) will continue to support the króna indirectly by maintaining a tight monetary policy.
- Banks' mortgage loans are CPI-indexed, with fixed real interest rates and maturities of up to 40 years.¹⁸ Since only part of banks' mortgage lending is matched with funding of similar profile, banks are exposed to interest rate risk. Indeed, sensitivity analysis by the Financial Supervisory Authority (FME) indicates that the biggest commercial banks would

¹⁸ Some banks have the option of resetting interest rates after five years.

have lost some 33 billion króna (\$465 million) from a two percentage point rise in market interest rates as at end-2006, given this mismatch.

47. **Banks' business risk profiles are changing.** Some institutions are increasingly expanding in the areas of corporate and investment banking and capital markets activity, through either organic growth or acquisitions. This has changed their risk profile from the more traditional retail and corporate business mix. Further, with rapid expansions into other countries and businesses, banks are also having to ensure that their risk management systems and expertise keep up with the greater complexity of operations.

Capacity to Absorb and Manage Risks

48. **The performances of the major Icelandic banks have been characterized by high profitability and strong capitalization in 2006.**¹⁹ The Tier 1 capital ratios of the major commercial banks are healthy, each in excess of 10 percent as at end-2006. That said, mortgage lending is currently not profitable for banks. Due to the high interest rates and the distortions caused by the HFF, banks are unable to fund themselves in the market *and* issue mortgages at a rate that would yield appropriate risk-adjusted rates of return. Instead, banks are bundling other services (such as insurance) with mortgage loans, in order to generate profits from other products. Over the longer-term, such strategies are likely to be unsustainable and could potentially weaken bank soundness.

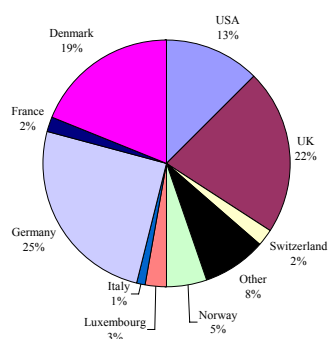
49. **Banks have acted to reduce their liquidity risk and improve their liquidity coverage over the past year.** As a result of the closure of access to European markets last year, banks have diversified their sources of wholesale funding across more countries, for example, to the United States and Asia (Figure 7). Banks have also been able to extend the maturity of their financing, to an average of 4–5 years, which compares quite well against their Nordic neighbors (Figure 8). Encouragingly, the big three banks have secured sufficient funding at longer-term maturities to meet their 2007 obligations, albeit at higher cost. These banks have also set up contingent liquidity facilities, which would employ a myriad of instruments such as covered bonds, repos and securitization. These measures are intended to be both precautionary and preemptive, with banks now able to cover *existing* business obligations for 12–18 months, without needing market access.

50. **Meanwhile, the sustainability of the glacier bond carry trade activity as an important avenue of króna financing for banks may be tenuous.** Ultimately, the demand for these eurobonds will depend on the attractiveness of króna yields, and the continuing interest and confidence of international investors in holding Icelandic assets. Market participants note that Iceland is largely seen as an opportunistic investment rather than a

¹⁹ See financial soundness indicators for Iceland, Table 3 in the Staff Report.

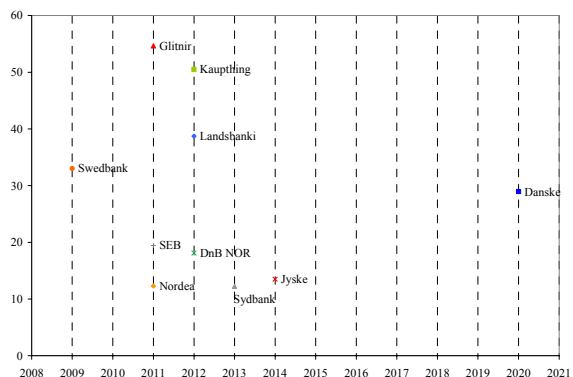
“must hold”, and could therefore be relatively more vulnerable to a sell-off. In turn, this could have some repercussions for banks’ foreign exchange exposures (see below).²⁰

Figure 7. Iceland: Sources of Foreign Funding for Banks, as at end-2006



Source: Financial Supervisory Authority.

Figure 8. Nordic Banks’ Funding and Maturity



Source: Central Bank of Iceland.

51. The extent of banks vulnerability to market risk is mixed:

- The major banks have tried to reduce their equity market risk through 2006. This was achieved partly through the divestment of cross-shareholdings (Kaupthing’s sale of Exista shares) and the reduction of related-party exposures (Landsbanki’s sale of its stake in Straumur-Burdaras).
- Foreign exchange risk appears to be largely hedged. The bulk of foreign currency-denominated lending by parent banks is made to borrowers with substantial foreign currency incomes. Residents account for 61 percent of total foreign currency lending by parent banks, with resident businesses representing 92 percent of this amount. Around 7 percent of foreign currency lending to residents is made to those who do not have any foreign currency income.
- Foreign currency lending to households, which are largely unhedged, still only represents a relatively small proportion of the total, albeit having grown sharply. Presently, total foreign currency loans to households represent 11 percent of total household loans. The household sector only accounts for 6 percent of foreign currency-denominated lending to residents. However, this segment of lending expanded strongly in 2006, growing by 140 percent over the previous year, and could eventually become a problem if the pace of growth continues and the króna exchange rate weakens significantly.²¹

²⁰ Fitch Ratings (2006) notes that the impact of any sharp reversal in carry trade activity continues to hang over the sovereign rating.

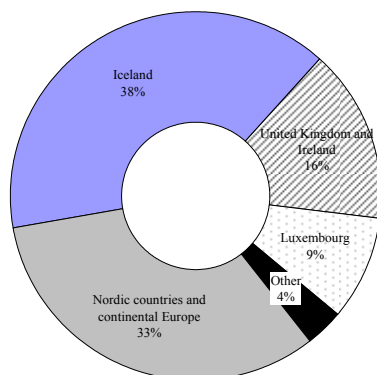
²¹ The FME’s Pillar II risk assessment under the Basel II framework requires financial institutions to cover all risks that they are exposed to, including unhedged foreign currency loans, beyond the risk components covered

(continued)

- Banks appear to have increased their buffer against interest rate exposures over the past year. FME estimates suggest that banks' fixed interest rate exposures (based on a one percentage point rise in market interest rates) amounted to 3.6 percent of Own Funds in 2006, slightly down from 5 percent as at end-2005.

52. **For the medium term, the focus is on banks' credit risk.** The positive aspects are that loan portfolios have become more diversified, by geographic location and by sector (Figure 9). In terms of asset quality, the general consensus is that there is still further upside for prices in the housing market as a result of rising demand and the availability of liquidity, while corporates continue to be profitable. The very low unemployment rate in Iceland (1.1 percent in May 2007) also provides strong support for households' ability to service debt. On the other hand, household debt has risen to very high levels, notwithstanding the strong employment environment in Iceland.

Figure 9. Iceland: Geographic Composition of Commercial Banks' Loans, as at end-2006



Source: Financial Supervisory Authority.

53. **FME stress tests to date suggest that all banks are sufficiently capitalized to withstand a combination of extreme credit and market shocks.**²² However, the stress testing models used by the FME and the CBI require further improvement. The current FME stress tests only take into account the impact from an initial shock, and thus underestimate the impact on bank soundness from second-round shocks. The CBI's stress test uses a simple regression model with macro variables; it does not integrate

under the Pillar I minimum regulatory capital requirements. The supervisor will assess if such additional risk components are reflected in the financial institutions' overall level of capital, and this may result in a requirement for additional regulatory capital to be set aside. The FME is currently developing a framework for how additional risks under Pillar II will be measured and translated into regulatory capital amounts, which is expected to be in place in late-2007. At that time, the three largest financial institutions will conduct such Pillar II risk assessments; it will then become mandatory for all financial institutions in 2008.

²² The results of FME's stress tests are published on its website, <http://www.fme.is>.

macroeconomic with financial sector developments. The authorities concur that continuing improvements in stress testing models are necessary.

Regulation, Supervision and Crisis Management

54. **Basel I and Basel II reporting will be conducted throughout 2007.** Two banks have applied to the FME to use the Internal Ratings Based (IRB) approach. The banks and the FME are currently working with external experts to objectively validate the banks' models.

55. **In the area of financial reporting, the FME notes that the issue of reporting in foreign currencies by the banks needs to be comprehensively examined, but it does not take a particular stance on the issue.** Presently, at least 70 percent of banks' assets and about 80 percent of liabilities are denominated in foreign currencies, while half of banks' total income is earned abroad.²³ If banks prepare their financial reports in foreign currency, they would not need to build up as large a positive net foreign currency position to mitigate the impact of króna fluctuations on their capital adequacy ratios (CARs).²⁴ A concern raised by the authorities is that any concentrated move by financial institutions to change their accounting currency could potentially lead to some volatility in the króna as banks rebalance their foreign currency positions.²⁵

56. **Supervisors need to ensure that any change in financial reporting to a foreign currency is effected with due care to safeguard financial sector stability.** In this context, the FME notes that its responsibility is to ensure that financial institutions comply with the relevant laws and regulations; it does not expect financial reporting in foreign currencies by Icelandic companies to pose significant supervisory difficulties.

57. **The CBI's reasons for being cautious about banks adopting foreign currency accounting are twofold.**

- The first is a technical issue, in that the definition of "functional currency" under International Financial Reporting Standards (IFRS) and its application to Icelandic banks remains unclear (Box 1). Given that Icelandic banks have expanded into several European countries, not all of which are in the eurozone area, the choice of an appropriate functional currency may be less than clear-cut in some instances.

²³ It should be noted that the ratios do not include off-balance sheet items.

²⁴ See Appendix II for a detailed discussion.

²⁵ To date, none of the commercial banks have applied to adopt foreign currency accounting; only the investment bank, Straumur-Burdaras has done so.

- The second concern is that if the major banks shift to foreign currency accounting, the volume of króna debt instruments and króna currency markets could decline. Since there are currently three króna market-makers in Iceland—that is, the major commercial banks—any shift to foreign currency accounting might make it less attractive for these banks to continue their króna market-making activity. Given the relatively small size of the market, this could have a severe impact on liquidity.

Box 1: IFRS and Financial Accounting in Foreign Currencies

Under IFRS, when an entity prepares its financial statements it must use its *functional currency* and measure its financial position and results in that currency. The functional currency is the currency of the primary economic environment in which the entity operates, namely, the currency in which funds are generated and spent; the currency that influences the sales prices for the entity's services, etc. Therefore, if a bank has transactions in foreign currencies or has foreign operations, it must translate both into its functional currency following the translation method prescribed by IFRS and subject to specific rules for disclosures and comparative data.

An entity may also prepare its financial statements in a currency other than the functional currency. For example, when a group comprises entities with different functional currencies, the financial position and results of each entity must be expressed in a “common” currency so that consolidated financial statements may be presented. If such is the case, IFRS allow that financial statements be prepared using a *presentation currency*, again, subject to specific rules for disclosures, comparative data, and additionally, explaining the use of a currency other than the functional currency.

It should be noted that IFRS put the emphasis on preparing financial statements using the currency of the economy that determines the price of transactions rather than the currency in which transactions are just denominated.

58. **Contingency exercises and plans for crisis management have taken place between the FME and CBI.**²⁶ Further, the authorities anticipate eventually moving towards a model similar to the U.K. Cross-Market Business Continuity Group (CMBCG) collaboration between the authorities and the private sector in the future. Currently, crisis management preparedness also includes on-site visits of financial institutions by the FME.

²⁶ In February 2006, a Memorandum of Understanding was signed between the Office of the Prime Minister, Ministry of Finance, Ministry of Commerce, FME and CBI, on consultation relating to financial stability and contingency plans. The CBI and FME have held joint contingency exercises in January 2004 and January 2006, covering financial markets as a whole. Another exercise was held in January 2007 to test responses to shocks to the payment and settlements systems. CBI (2007) provides an overview of the central bank's role during the 2006 market turbulence.

The supervisors recently concluded its visit to Icelandic bank branches in the United Kingdom, in May 2007.

59. **There exists long-standing cooperation and collaboration between Iceland and other Nordic supervisors.** Nordic central banks have been focused on cross-border issues for quite some time; the concern started with the expansion of Nordea Bank in the region, but has since developed to encompass banking activity across these countries. The Nordic central banks and financial supervisors had held joint exercises previously.

60. **The joint Nordic financial system contingency exercise scheduled for September 2007 will also involve the finance ministries of the respective countries, while the Baltic countries will attend as observers.** The exercise will examine intra- and inter-country communications, the sharing of information among authorities, contingencies, and stress testing, among other issues. Upon completion of the exercise, a report will be issued and an abridged version will be sent to the EU. It is unlikely that a burden-sharing model will be agreed upon during the exercise, given the difficulty in designing models for the myriad of crisis situations that could occur.

C. Capital Market Development

61. **The Iceland Stock Exchange (ICEX) lists both equities and bonds.** The equity market is by far the largest in terms of capitalization, and equities are the most actively traded. The OMX Iceland 15 is the benchmark stock index.²⁷ In the bond market, HFF bonds have the biggest share and are the most actively traded. Icelandic securities are largely domestically owned. Foreign investors currently hold an estimated 25–30 percent of the fixed income market, while foreign ownership is lower in the equity market, estimated at around 10–15 percent.

62. **The OMX purchased the ISEX in December 2006, and membership of the OMX is seen to provide credibility to the Icelandic market.** There is a single trading system and the same trading rules apply to all. Further, the regulatory environment and disclosure requirements across the Nordic countries are very similar. Meanwhile, NASDAQ has expressed interest in acquiring the OMX. If a deal does go ahead, it is anticipated that the OMX in general—and Iceland in particular—would become a more attractive proposition for international investors.

63. **There are two factors that are considered key barriers to market development.** While all the exchanges in the Nordic area use the same trading system, the use of different clearing and settlement (C&S) systems by different Central Securities Depositories (CSDs) in each country, each requiring separate arrangements, is seen as an important technical

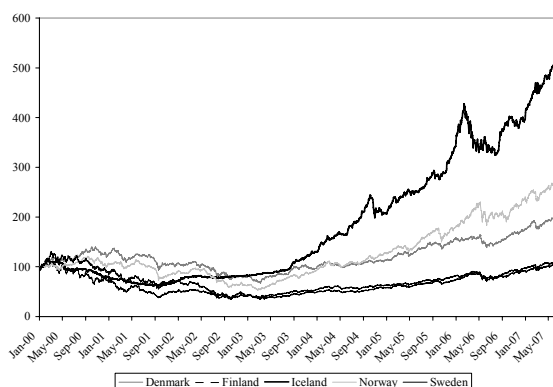
²⁷ The OMX Iceland 15 replaced the ISEX-15 from April 2, 2007.

barrier. The use of the króna as the quotation and trading currency is perceived by market participants as another barrier. Foreign investors are reportedly reluctant to take risks on both, the underlying asset *and* the króna. One solution suggested by market participants is that listed Icelandic companies register their share capital in euro, and that stocks be quoted and traded in euro to remove some of the short-term volatility associated with the króna.

64. **Financial assets in Iceland are not seen as being overpriced currently.** Although some market participants note that good investment opportunities are becoming more difficult to find, others feel that the sharp rise in the ICEX-15 in recent years has been justified on the back of the strong performance of Iceland's multi-nationals (Figures 10 and 11). Banks have also been more profitable than anticipated. However, given the high capitalization of banks in the stock market, the strength of the stock market is closely tied to the health of the banks. Conversely, banks derive a substantial portion of their income from equity trading gains, and have loan exposures to listed corporates.

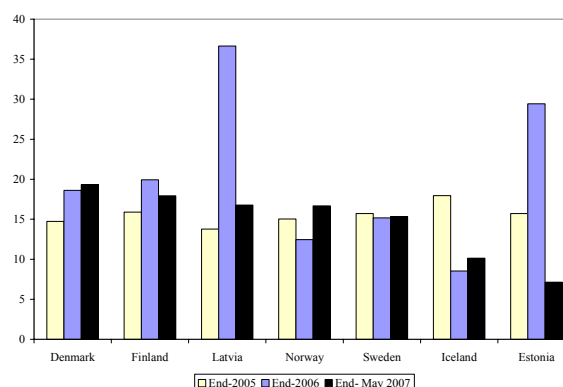
65. **Private equity activity is said to be growing in Iceland, although little data exist to provide a clearer picture at this stage.** Some market participants argue that private equity deals are a negative development for the ICEX as they shrink the already-small stock market; that said, some new listings are anticipated. There is reportedly little hedge fund activity in Iceland at present.

Figure 10. Nordic Stock Market Indices
(January 4, 2000 = 100, benchmark index)



Source: Bloomberg LP.

Figure 11. Valuation of Nordic-Baltic Stock Markets
(In price-to-earnings ratio, benchmark index)



Source: Bloomberg LP.

D. Summary and Recommendations

66. **Following the market turbulence in early-2006, banks have taken important steps over the past year to reduce vulnerabilities and increase their resilience.** Specifically, short-term liquidity management has been strengthened. Ownership structures have been made more transparent with the sell-down of some cross-shareholdings. Given the complexity of cross-shareholdings within the Icelandic corporate sector, transparency will continue to be key for maintaining investor confidence.

67. **Looking ahead, some new risks may be emerging.** Credit risk should be a key focus for banks and supervisors. Lending growth remains very strong, and while loan default rates remain low, they are lagging indicators. Lending standards and the quality of loan collateral need to be monitored closely. Further, banks' foreign-currency lending to households, which has increased sharply, could potentially become an important indirect credit risk as unhedged households may underestimate the impact of currency movements on their debt-service costs.

68. **Strong risk management and robust stress testing models are essential.** Stress tests conducted by the financial supervisor (FME) suggest that banks have adequate capital to withstand a combination of extreme credit and market shocks. However, these scenarios may underestimate the second-round effects of such shocks and therefore improvements in stress-testing techniques should continue. As banks continue to expand rapidly and the complexity of their operations increases, it is crucial that their risk management capabilities develop and improve commensurately.

69. **Appropriately, the authorities are placing great importance on regulation and supervision of the financial sector.** Given the rapid expansion of the financial sector, further strengthening of the FME's resources is envisaged. At the same time, the authorities' are emphasizing cross-border collaboration in supervision and crisis prevention and management, following the sharp growth in Icelandic banks' overseas interests.

70. **Reform of the publicly-owned HFF is crucial.** The competition for market share between the HFF and domestic banks is preventing the CBI's policy instrument from effectively reducing domestic demand pressures. Further, this competition appears to be distorting the pricing of risk in the lending market, which poses a concern for financial stability. As a first step in HFF reform, its lending limits and loan-to-value ratios should be reduced immediately to increase competition and pricing efficiency. This should be followed by a gradual and permanent removal of the distortions in the domestic financial market arising from the presence of the publicly-owned institution.

71. **The continued development of local capital markets is encouraging.** Deep, diversified capital markets would provide reliable, alternative sources of financing for Icelandic companies outside of the banking sector, while enabling banks to further diversify their equity holdings. Meanwhile, increased participation by international investors would broaden the investor base, and continue to promote transparency and enhance the pricing of risk in the market.

Appendix I. The Króna-Denominated Eurobond (“Glacier Bond”) Carry Trade

The first glacier bond was issued in August 2005. The combination of high domestic interest rates and an appreciating currency, against a background of generally low international interest rates, resulted in strong international demand for glacier bonds. Following a drop-off in 2006, issuances have since picked up, reaching a record high in January 2007. As at end-March 2007, glacier bond issuance had reached 418 billion króna (\$6.3 billion), equivalent to almost 37 percent of Iceland’s GDP. A positive consequence of the huge interest in glacier bonds is the improved liquidity in Iceland’s domestic financial markets, which has enhanced price formation and enabled smooth trading of large volumes.²⁸

Issuers of glacier bonds are typically highly-rated institutions, such as governments, international organizations or corporates, who want to minimize their borrowing costs. Issuing institutions generally have little or no desire to hold the króna. Rather, their interest is founded on the comparative advantage that AAA-rated international financial institutions and corporates have relative to Icelandic banks and other players in the domestic debt market.²⁹ These issuing institutions are able to place króna-denominated bonds with investors at lower interest rates than are available in the local bond market, but still higher than in most international markets. The issuer is thus able to obtain króna from investors in the glacier bond at a cheaper rate than participants in the domestic debt market. For these investors—the majority of whom are domiciled in Europe—the combination of a high-yielding currency together with the fillip of a AAA-rated issue is a very attractive proposition. By taking this circuitous route, issuers are thus able to achieve lower funding costs than would otherwise be available to them by issuing directly in either the dollar or euro currency market.

The individual parties to the transaction are then able to separately hedge out their respective exposures. Upon receiving the króna proceeds from investors, the issuer undertakes a currency swap with, usually, the bond originator, and normally for euro, removing all currency risk for the issuer. The originator may then choose to pass on some or all of this currency risk via a reverse swap in the local market, in this case, with Icelandic banks which need to fund their balance sheets. These banks would thus hold a local-currency denominated fixed-interest liability and a foreign currency-denominated claim at a variable interest rate plus a fixed margin. To minimize their currency risk, the domestic banks could seek to match their foreign currency asset with a suitable liability by borrowing foreign currency at a variable interest rate plus a fixed margin. To hedge their interest rate risk, these banks could purchase Treasury notes in the domestic market or on-lend the funds, on fixed interest rate terms, in the local market.

²⁸ See Fridriksson (2007b).

²⁹ See Olafsson (2005).

Appendix II. Icelandic Banks and the Issue of Financial Accounting in Foreign Currencies³⁰

In Iceland, banks and other companies which intend to prepare their accounts in foreign currency require a special authorization from “The Annual Accounts Registry.”

Authorization would only be granted if the applicants fulfill certain conditions regarding the degree of foreign operations and/or income in their activities. The provisions of the law regarding this issue were introduced in 2002. There were 130 companies that were authorized to draw up their annual accounts in a foreign currency as at end-August, 2006, with the majority choosing the U.S. dollar.³¹ Further, Iceland’s listed companies were required to draw up their consolidated annual accounts in conformity with International Financial Reporting Standards (IFRS) in 2005, and their individual accounts in 2007.³²

More than 70 percent of activity in the financial statements of Icelandic banks are in foreign currency. As a result, fluctuations in the króna exchange rate significantly affects the capital adequacy ratios (CARs) and returns on equity (ROEs) of the banks when their financial reports are prepared in króna. Specifically, the disparity between foreign items in banks’ Own Funds relative to their risk-weighted assets (RWA) leads to fluctuations in their CARs when the króna fluctuates against other currencies (Box A.1).

From the point of view of a bank which may be significantly affected by such fluctuations in CARs, changing to financial reporting in a foreign currency may be a logical move. A bank which prepares its accounts in króna may find it difficult to attain the corresponding ratio of foreign items in its Own Funds and RWA without building a positive net currency position. Estimates by the FME suggests that in order for the three largest commercial banks to achieve this balance as at end-2006, they would have had to increase their net foreign currency position by around 230 billion króna (\$3.2 billion). Meanwhile, any open currency position could induce fluctuations in income, since any profit or loss from foreign exchange translation would have to be put through the profit and loss statement. In contrast, exchange differences arising from the translation of net investment in foreign operations and of related hedges are transferred to the Translation Reserve in the balance sheet, and not put through the profit and loss statement.

³⁰ Based on excerpts from the FME’s report on financial accounting in foreign currencies.

³¹ As at this date, nine companies listed on the ICEX reported their annual accounts in a foreign currency, with five using the euro, two the U.S. dollar and two the pound sterling.

³² Iceland is a member of the European Economic Area (EEA). Consequently, Icelandic companies listed in a EU/EEA securities market prepared consolidated statements using IFRSs starting in 2005. Iceland required the application of IFRS for listed companies’ individual accounts beginning in 2007.

Box A.1. Example of Financial Accounting in Króna versus Foreign Currency

An Icelandic bank, which prepares its accounts in króna with equity denominated in króna, has the following position:

- Foreign items make up 75 percent of its RWA.
- Subordinated loans in foreign currency amount to 25 percent of Own Funds.
- A net foreign currency position of zero in the beginning.
- An initial CAR of 13.3 percent.

In the current position, the CAR would fall if the króna depreciates (Scenario 1 in Table A.1). However, the bank could mitigate the impact of such exchange rate movements on the CAR by building a net positive foreign currency position.

Table A.1. Króna Accounting: Impact of Changes in the Króna Exchange Rate on Bank Capital Adequacy Ratio and Return on Equity

Scenario	Foreign Currency Position Relative to Equity	Foreign Currency Position Relative to Own Funds	CAR Adjusted for Net FX Position	Following a 20 Percent Depreciation of the Krona		
				CAR	Change from Initial Position	Return on Equity from foreign exchange
	(1)	(2)	(3)	(4)	(5)	(6)
1	0.0	0.0	13.3	11.9	-1.40	0.0
2	33.3	25.0	12.9	12.2	-0.70	8.3
3	50.0	37.5	12.7	12.3	-0.36	12.5
4	66.7	50.0	12.5	12.4	-0.04	16.7
5	100.0	75.0	12.1	12.7	0.58	25.0

Source: IMF staff calculations.

Note: Net foreign currency positions exceeding 30 percent of Own Funds requires a special authorization from the Central Bank of Iceland.

Calculation: CAR = Own Funds/RWA; ROE = Income/Equity.

Subsequent calculations show that holding a positive net foreign currency position mitigates the fluctuations in the CAR when exchange rates change. In contrast, fluctuations in income, as measured here by ROE, increase as a result of the profit/loss from the foreign currency position. As noted above, the difference in their impact is due to the fact that exchange rate differences arising from the translation of net investment in foreign operations and of related hedges are transferred to the Translation Reserve in the balance sheet, but any profit/loss from foreign exchange translation would have to be put through the profit and loss statement.

Not surprisingly, the CAR is most stable when the ratio of foreign items in Own Funds is closest to the ratio of foreign items in RWA. In this case, it is when the net foreign currency position amounts to 50 percent of Own Funds (Scenario 4 in Table A.1, columns 2 and 5). This amount, added to the ratio of subordinated loans which are in foreign currency of 25 percent of Own Funds, produces the same weight in foreign currency items in Own Funds as that of the RWA, that is, 75 percent.

Box A.1. Example of Financial Accounting in Króna versus Foreign Currency (contd.)

Assume that the bank in question changes to reporting in foreign currency, with the following assumptions:

- Foreign currency items make up 75 percent of its RWA, the balance is in króna.
- The entire amount of Own Funds is in the accounting currency, i.e., the foreign currency.
- A net króna position of zero initially.
- An initial CAR of 13.3 percent (in foreign currency terms).

In this case, the króna would be the risky currency in which a net positive position must be built. Given the lesser importance of the króna in this instance, the change in the exchange rate should have less impact on the CAR than in the previous example (Table A.2).

Table A.2. Foreign Currency Accounting: Impact of Changes in the Króna Exchange Rate on Bank Capital Adequacy Ratio and Return on Equity

Scenario	Krona Position Relative to Equity	Krona Position Relative to Own Funds	CAR Adjusted for Net FX Position	Following a 20 Percent Depreciation of the Krona		
				CAR	Change from Initial Position	Return on Equity from foreign exchange
	(1)	(2)	(3)	(4)	(5)	(6)
1	0.0	0.0	13.3	14.0	0.70	0.0
2	33.3	25.0	12.9	12.9	0.07	-6.7
3	50.0	37.5	12.7	12.4	-0.24	-10.0
4	66.7	50.0	12.5	11.9	-0.54	-13.3
5	100.0	75.0	12.1	11.0	-1.12	-20.0

Source: IMF staff calculations.

The analysis shows that a smaller net króna position is sufficient to stabilize the CAR when the króna exchange rate changes (Scenario 2 in Table A.2, columns 2 and 5). As before, the CAR is most stable when the ratio of the risky currency (króna) in Own Funds is around the same ratio as that in RWA, in this case, around 25 percent. The changes in ROE are also of lesser magnitude, given the smaller impact of the exchange rate on the profit and loss statement.

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IV. THE CHALLENGES OF GLOBALIZATION FOR SMALL OPEN ECONOMIES WITH INDEPENDENT CURRENCIES: SUMMARY OF CONFERENCE PROCEEDINGS³³

A. Introduction

72. **The Fund mission participated in a conference in advance of the Article IV Consultation discussions.** The conference was jointly hosted by the IMF and the Central Bank of Iceland, and dealt with the effects of globalization on small open economies with flexible exchange rates. The IMF (Benjamin Hunt) made a presentation, summarizing some of the Fund's previous analytical work in the area. Presenters included key Icelandic stakeholders, including representatives from the central bank (Arnor Sighvatsson, Thorarinn Petersson, and Thorvardur Olafsson), the ministry of finance (Thorsteinn Thorgeirsson), the labor confederation (Gylfi Arnbjörnsson), and the employers' organization (Vilhjalmur Egilsson). Also attending were representatives from Icelandic banks (Asgeir Jonsson), international markets (Beat Siegenthaler), and foreign academics (John Driffill, Mark Wynne, Stephen Cecchetti, and Torben Andersen). Foreign central banks were also well represented, and included the Bank of England (Alex Bowen), the Danish central bank (Anders Christensen), the Bank of Norway (Audun Gronn), the Bank of Finland (Harry Hasko). The presentations can be found at the following location: <http://www.sedlabanki.is/?PageID=730>.

B. Globalization: Its Characteristics and Implications

73. **As a prelude, some participants began by discussing the nature of globalization** (Bowen, Olafsson). There was general agreement that globalization referred broadly to the increased openness of labor, capital, and goods markets. Although not new, its pace has accelerated recently. In its trade dimension, globalization is aided by a dramatic reduction in natural (transport and information processing costs) and man-made barriers (tariffs). As a result, the share of emerging market exports in advanced countries has doubled since the early 1990s. On the labor market side, the global labor force has increased substantially with the entry of Chinese and Indian workers. Some emphasized the financial angle as globalization, fueled by privatization, drove market integration, growing cross-border assets and liabilities, and a massive expansion in global liquidity. Others noted that globalization encompassed swifter and smoother flows of information.

74. **Participants acknowledged the manifold benefits of globalization** (Wynne, Cecchetti, Bowen, Olafsson). They observed that globalization allowed countries to exploit the gains from trade and improve overall welfare. Globalization also imposes discipline on domestic policies, in the sense that the importance of domestic policies relative to others is mounting. There is some evidence that globalization nurtured greater macroeconomic

³³ Prepared by Tony Annett and Li Lian Ong.

stability. Openness to trade, capital and labor was associated with lower inflation. Evidence pertaining to improved fiscal policy seems more tangential. On the other hand, some argued it is difficult to connect the new low-inflation environment that took form over the past two decades directly to globalization, especially since trade grew faster in the high-inflation 1970s. On the financial side, globalization can foster a stronger financial infrastructure by increasing market turnover, the number of participants, and market sophistication, as well as by making the yield curve more reliable. Immigration flows are also likely to bring benefits to the real economy in terms of higher potential growth.

75. Still, the costs of globalization should not be downplayed by policymakers (Cecchetti, Bowen, Sighvatsson, Olafsson, Andersen). Increased integration into global capital markets increases the cost of being out of phase with the business cycle of trading partners, and imposes limitations on what an independent monetary policy can hope to achieve. Increasing openness can increase the effect of exchange rate movements on the economy in general and the monetary policy transmission mechanism in particular. Through their effect on the real exchange rate and asset (housing) prices, capital inflows can extend domestic booms, amplifying volatility, and complicating stabilization policy. Relatedly, countries become more exposed to external shocks, especially in an environment of increased specialization. Long-term interest rates tend to become more influenced by rates in other countries and the domestic relationship between short-term and long-term interest rates can be weakened. The exchange rate is likely to react to changes in financial conditions in other countries, reflecting risk assessment and inflation and interest rate expectations in these countries. There are other downsides, including a potential scaling back of social objectives achievable by fiscal policy because of an increasingly mobile tax base.

76. Indeed, these costs can often be exacerbated in small economies (Siegenthaler, Petursson, Bowen, Olafsson, Sighvatsson). Globalization tends to make small economies even smaller. These countries tend to be more open, associated with more volatile macroeconomic conditions, and faced with larger shocks.³⁴ Globalization exacerbates the exchange rate channel and further hinders the interest rate channel in smaller countries for a host of reasons, including: a higher pass-through to domestic prices; a diminution in the shock-absorber role of exchange rates in the presence of a narrow export sector; the presence of substantial foreign currency-denominated debt; and the tendency for domestic banks to conduct operations in foreign currency while their accounts are in domestic currency, allowing appreciation to improve their ability to lend, thus reinforcing the procyclical role of the exchange rate. And indeed, empirical evidence pinpoints the difficulty in effectively controlling inflation (reducing its volatility) in small economies, given that they have noisier exchange rates and higher pass-through.

³⁴ As an example of the scale in the case of Iceland, external debt instruments in the form of ISK eurobond issuance account for 32 percent of GDP, and one entity (Toronto Dominion) underwrites 60 percent of them.

C. Globalization and Iceland

77. **In Iceland, the interaction between globalization and policy shocks did indeed complicate the monetary policy framework** (Sighvatsson, Hunt, Olafsson). Since adopting the inflation target in 2001, inflation has been persistently above target and highly variable. Iceland was faced with sizeable shocks, especially from the aluminum and energy sector investment projects. But policies exacerbated this shocks in a procyclical fashion, including tax cuts and the reduction in lending restrictions at the state-owned Housing Finance Fund (HFF). Aided by ample global liquidity, the commercial banks tried to compete with the HFF, leading to easing household credit conditions at a time of monetary tightening.

78. **These pressures were exacerbated by investor interest in the króna eurobond (“glacier bond”) carry trade** (Olaffsson, Sighvatsson, Siegenthaler). Glacier bond issuance started in August 2005, when widening interest rate differentials caught the notice of foreign investors, who found the combination of a high-yielding currency together with the fillip of a AAA-rated issue to be very attractive. Ultimately, the domestic demand for credit drives the demand for króna by local credit institutions, which is supplied by these investors through the carry trade. These foreign capital inflows prompted real appreciation and extended the domestic consumption and housing price booms, all the while complicating the monetary policy transmission mechanism. As the interest rate channel faltered, the exchange rate channel rapidly became procyclical. Domestic medium and long-term bond yields followed foreign bond yields and conditions in these countries more closely than ever. From a stability perspective, Iceland is largely seen as an opportunistic investment rather than a “must hold”, and could therefore be relatively more vulnerable to a sell-off.

D. Policy Options

79. **There was little support for Iceland adopting the euro** (Hunt, Arnbjörnsson, Christensen, Wynne). It was noted that the switch to consistent fixed exchange rates was associated with increased fiscal policy discipline in some countries. Joining the euro could indeed yield benefits, including lower risk premia, enhanced trade flows, and greater levels of foreign direct investment. But, in the case of Iceland, it is not clear that these benefits would be notable since risk premia are already low, exports are increasingly geared toward global markets rather than the euro area, and foreign direct investment is not lacking. At the same time, the Icelandic economy is not well synchronized with continental Europe, and instead faces large idiosyncratic shocks, heightening the importance of an independent monetary policy and the shock-absorber function of the exchange rate. But the costs of not joining may also be small, given the dominance of long-term indexed mortgage contracts and the tendency of the exchange rate to amplify shocks. Some also noted that the high degree of labor market flexibility in Iceland reduced the need for independent monetary policy. Others pointed to the experience of Ireland, a country that never had an independent monetary policy, and yet managed to reap the rewards of globalization.

80. Participants voiced support for improving Iceland’s policy frameworks to mute the negative effects of globalization. Presenters raised the following ideas:

- *Increased openness and transparency in monetary policy* (Gronn, Hunt, Olafsson, Petursson). One presenter highlighted the experience of the Bank of Norway in improving its monetary policy framework by publishing its own interest rate forecast and disseminating its reaction function. This was deemed to be well understood by markets, and achieved better communication than verbal deliberations alone. Small open economies in particular would benefit from a more credible and transparent monetary policy, which would lessen pass-through from the exchange rate, help reduce volatility, and enhance predictability. In the case of Iceland, credible, systematic and predictable monetary policy can help restore the weakened interest rate channel and counter the monetary policy challenges wrought by the carry trade.
- *Reforming the HFF* (Hunt, Egilsson). Owing largely to the role of the HFF, monetary policy has a limited impact on households’ debt servicing costs. The HFF funds mortgage lending by issuing government-guaranteed long-term indexed bonds, which tend to shelter real mortgage rates from domestic monetary policy. Although private banks rely on more sensitive shorter-term borrowing, they must match HFF rates to stay competitive. Aside from dampening the effects of monetary policy, this also encourages banks to lend in foreign currency, allowing households to bear currency risk. A fully private mortgage market would allow for more innovation in mortgage products and lead to lower mortgage costs, while better aligning debt servicing costs with the policy rate. Accordingly, the government should remove the distortion in the domestic financial market arising from the presence of the HFF.
- *Paying more attention to asset prices in monetary policy* (Cecchetti, Hunt). Some noted while it did not make sense to target house prices directly, they are relevant monetary policy indicators since housing booms and busts can lead to both lower growth and higher inflation. Policymakers could include a housing price component in the targeted index, or they could include housing in interest rate reactions. In Iceland, moving to an index that was correlated with the CPI in the medium term, but less volatile in the short term could help anchor inflation expectations.
- *Fiscal policy could assume a greater stabilization role* (Andersen, Hunt, Thorgeirsson). Although the fiscal framework has been improved in recent years, there is still scope for making fiscal policy more countercyclical, allowing it to shoulder a greater share of the stabilization burden and releasing some of the pressure on monetary policy. A more robust rules-based fiscal framework combined with better investment-project planning would help. Such a framework would guard against pressure to loosen in the upswing, especially since procyclical tax elasticities associated with the recent boom make underlying fiscal balances appear deceptively healthy.

- *Enhancing structural reforms* (Thorgeirsson). As it stands, the Icelandic economy is pretty resilient, especially in contrast with mainland Europe. The labor market is relatively flexible, with a well trained, fully employed workforce, and no benefit dependency. Nonetheless, there is scope for improvement, including by making it easier for non-EU immigrants to enter the labor force.
- *Capital requirements should reflect currency composition for financial firms' balance sheets* (Jonsson). Currency risk already represents a significant systemic risk in a country like Iceland. Under Basel II, where capital charges for loans are derived from the risk characteristics of the loans (including foreign currency risk if such loans are made), credit and currency risk will become more integrated. An appreciating currency associated with tight monetary policy reduces the value of banks' foreign assets and liabilities. Consequently, banks' capital adequacy ratios would rise (the capital of banks are domestic currency-denominated and thus unaffected), allowing them to reduce their capital charges and expand lending in a procyclical manner. One proposal for making banks' capital charges more countercyclical is to ensure that such charges arising from foreign currency lending be made proportionately in the same currency. This would ensure that required capital is exchange rate-neutral, improve the effectiveness of monetary policy, and reduce the need for central bank sterilization of foreign currency inflows.
- *Improvements in international standards to measure external positions would provide better information* (Egilsson). The rapid changes taking place in Iceland's open financial sector may not be accurately captured by the existing methodology for calculating the current account statistics and external asset and liability positions. As it stands, the magnitude of the capital flows and resulting stocks of foreign assets and liabilities has highlighted measurement weaknesses in international data standards. Iceland's financial institutions have expanded rapidly overseas, and foreign holdings in Iceland's financial assets have also increased strongly. While Icelandic investments offshore are deemed to have been quite successful, and Icelandic assets held by foreign investors have posted sharp gains, these figures do not seem to be reflected in Iceland's current account numbers.³⁵ The existing methodology for calculating the current account statistics may be causing undue alarm about the external sector, when the economy is actually on a strong footing.

³⁵ The total financial income of Icelanders from foreign operations is estimated to exceed the financial income of foreigners from operations in Iceland by between +10 to +170 billion króna in 2006, compared to the -100 billion króna estimated by the current methodology. Similarly, the negative net international investment position is estimated to be around 300 billion króna better than the official figure.