

## Chapter 1

# Promoting effective monetary policy and financial stability

*Like other small, open economies with independent currencies, Iceland has long struggled with balancing its policy objectives within the context of the “impossible trinity” – exchange rate stability, monetary independence and capital mobility. Even after the move to inflation targeting, monetary policy failed to stave off the overheating economy in the run-up to the 2008 crisis, and weak financial regulation enabled the destabilising expansion of the banking system. The subsequent fall in the exchange rate caused great pain for Icelandic households and businesses, but also has paved the way for Iceland to work its way out of the recession. The restrictions on capital outflows helped Iceland to regain exchange-rate stability during the crisis, but they risk causing distortions, and ensuring their orderly removal will be Iceland’s key policy challenge in the years ahead. When capital mobility is restored, sound monetary policy and prudential supervision and regulation will be essential. Policies to reduce exchange rate volatility may help anchor inflation expectations, but their scope is limited. Strong prudential supervision and regulation are instrumental for enhancing financial stability and, by discouraging the build-up of financial imbalances, macro-prudential policies hold some promise of augmenting the effectiveness of traditional monetary and fiscal policies.*

## Iceland's immediate policy challenge is removing the capital controls

At the onset of the global financial crisis as the value of the Icelandic króna plummeted, the Icelandic government imposed limitations on foreign-exchange transactions to help avoid destabilising outflows of currency and further depreciation of the already-weak exchange rate. Then in November 2008, after the country's three largest banks failed, the government enacted formal capital controls to replace the *de facto* limitations. The new rules: i) restricted the conversion of funds owned by residents and non-residents into foreign currencies; ii) banned the conversion of króna-denominated bonds and other similar instruments to foreign currency upon maturity; and iii) required that residents repatriate all foreign currency that they acquire. Businesses must repatriate foreign earnings, although certain companies, including major exporters and firms with large international operations, have been given full or partial exemption from the rules after fulfilment of certain criteria. Since late 2009, all payments linked to the distribution of goods or services and to new inward foreign direct investment (FDI) have been exempt from the rules. The rules were tightened in early 2012 to eliminate loopholes, remove exemptions on some bond payments and to regulate payments made by the estates of the old banks. And in early 2013, further amendments were enacted that removed any specific expiration date for the controls, expanded authorisation requirements for smaller transactions, tightened supervision of foreign-exchange transactions and imposed heavier penalties for violations.

Although the capital controls went against Iceland's existing agreement to abide by the OECD Codes of Liberalisation (Box 1.1), given circumstances at the time the OECD Council and the domestic authorities agreed that the measures were justified and necessary for stabilising the króna, and the OECD Council approved Iceland's request to temporarily derogate from its obligations under the Codes of Liberalisation. At the time, a further deterioration in the value of the króna would have been highly destructive for government finances and for domestic balance sheets, especially in light of the high exchange-rate pass through to inflation and the widespread inflation-indexation of home mortgage loans in Iceland. Following the imposition of the controls, the exchange rate stabilised fairly quickly, and since then it has remained relatively steady. Consumer price inflation has dropped well below the highs of almost 20% recorded at the height of the crisis.

The maintenance of capital controls also has been a central element supporting the economic recovery. Early in the recovery as the exchange rate stabilised, the controls provided room for monetary policy to be eased to support domestic activity. For several years, low real interest rates have facilitated debt reduction in both the private and public sectors and have supported the profitability of the Icelandic banks, which have been partly insulated from funding risk since depositors and other creditors cannot transfer their funds abroad. Although monetary policy has been tightened in preparation for the eventual removal of the controls, borrowing costs remain much lower than would otherwise be necessary to make Iceland's domestic assets attractive to hold. In addition,

**Box 1.1. Capital controls and Iceland's international obligations**

Iceland requested a derogation from its obligations under the OECD Codes of Liberalisation to cover the exceptional measures taken for reasons of serious economic and financial disturbance (OECD, 2011). The derogation procedures have provided ample flexibility for Iceland in responding to the crisis and its dialogue process has enabled Iceland's authorities to keep Code adherents informed about the measures taken and to obtain international support for the course of action they have adopted. Following an Investment Committee examination, the OECD Council endorsed the conclusion that Iceland was justified in adopting the capital controls, while encouraging Iceland to remove restrictions that have been introduced as soon as made possible by progress in strengthening the financial system. In April 2013, the Advisory Task Force on the OECD Codes of Liberalisation (ATFC) conducted a review of Iceland's derogation and concluded that the prior Council recommendation is still valid. Iceland is requested to provide periodic notifications to the OECD regarding progress toward eventual lifting of the derogation under the OECD Codes, and the ATFC will review this issue again in no later than 18 months.

Similarly, Iceland's capital controls go against the rules for free movement of capital stipulated in the EEA agreement. However, the EFTA court concluded that Iceland met the necessary conditions for derogating from these commitments. Restrictions on capital movement also are not in line with the EU's principle of free movement of capital and thus will impede Iceland's accession to the EU. In light of these challenges, the Icelandic authorities and the European Commission Services have established an ad hoc working group that also includes representatives from the IMF and the ECB in order to assess the state of play and prospects for lifting of the controls in the context of the government's liberalisation strategy and assist in forming a common understanding of the challenges in the process.

the risk of the CBI depleting its foreign-exchange reserves in an effort to defend the exchange rate has been reduced, albeit temporarily.

Looking back on these developments, most observers agree that the imposition of capital controls allowed Iceland to avoid a much deeper economic contraction than otherwise would have occurred. At the same time, however, there have been a variety of negative consequences. While not directly observable, the greatest economic damage caused by the controls likely is embodied in the investments and economic growth that never came to fruition. Restrictions on the flow of capital prevent economic resources from being directed toward projects with the highest marginal value, which in turn implies a reduction in investment and permanent income (e.g. Lucas, 1990). And indeed, there is evidence that such economic distortions are already occurring in Iceland. For example, given the very low yields on government bonds and a lack of diversified domestic investment options, households are investing a disproportionate share of their savings in domestic real estate. Similarly, Iceland's pension funds have been constrained to poorly diversified portfolios. This issue in particular is worrisome because Icelandic households rely mainly on privately-funded pension funds for their retirement income.

Iceland is highly reliant on investment from abroad as a source of growth, especially in the energy-intensive sectors, yet foreign direct investment (FDI) has been subdued even since the restrictions on new capital inflows were lifted. Investment is held back by the harmful effects of the controls on investor confidence, which is not limited to those foreign investors that have had their holdings of deposits and securities locked in Iceland. Although

the CBI has given non-resident holders of ISK assets the opportunity to convert their holding into foreign currency, the take-up has been low given the highly unfavourable exchange rates that were offered. These attempts to reduce the overhang of foreign deposits have contributed to weak investor confidence by raising the possibility that additional changes to rules and regulations might, *ex post*, devalue their asset holdings in Iceland. The uncertainty about the eventual removal of the controls has undermined the credibility of the Icelandic government, and this again contributes negatively to investors' perceptions. Evidence of this can be seen in the results of the World Economic Forum (WEF)'s latest survey on global competitiveness, in which Iceland scored poorly against other countries with regard to the protection of property rights (World Economic Forum, 2012).

In addition to limiting access to global finance, the capital controls have made it more difficult and costly for Icelandic businesses and households to conduct cross-border activities. The significance of these difficulties is highlighted in WEF survey, in which Icelandic businesses identified foreign-currency regulations as by far the most problematic factor for doing business (*ibid.*, 2012). Icelandic firms wanting to invest abroad must seek permission from the CBI, and these requests are usually granted if it is estimated that the investments will generate foreign-exchange revenues. In addition, multinational businesses and those with sizable exports will tend to make adjustments to their own internal product and capital markets to maximise avoidance of the capital controls, and these adjustments give rise to various distortions and reduced local profitability. The longer the controls are in place, the more costly these adjustments will be to unwind. Over the medium-term, capital controls can have significant distributional consequences as well, since these internal markets are not available to all firms.

Although there is no clear consensus on the issue, empirical studies have found evidence that unrestricted capital flows offer substantial economic benefits for many countries. For example, Quinn and Toyoda (2008) presented evidence of a positive relationship between financial openness and growth. Another study by Desai, Foley and Hines Jr. (2005) found that countries' property, plant and equipment grew at significantly faster rates following capital account liberalisations. That said, the events of recent years have led many economists to re-evaluate the importance of the associated trade-offs, especially those related to financial risks. A commonly-cited argument is that unrestricted capital flows can increase vulnerability to domestic credit booms, asset price bubbles, excessive foreign currency lending to un-hedged borrowers, and a more vulnerable external liability structure (e.g. Reinhart and Reinhart, 2008; Barajas et al., 2007). Recent theoretical work has made the case for capital controls by essentially transposing to international capital flows the closed-economy analysis of the macroprudential policies that aim to dampen the boom-bust cycle in credit and asset prices. Korinek (2011), for example, finds that prudential controls on capital flows to emerging economies may be desirable from a welfare theoretic perspective because they reduce the incidence and severity of financial crises, which in turn reduces the pecuniary externalities that arise during such crises. Empirical support for these ideas, however, is still quite thin.

Certainly in Iceland's case, the financial crisis provided painful evidence of the consequences when these financial risks are realised, and from this perspective it is reasonable to consider whether at least limited usage of capital controls over the long-term would be beneficial. Restrictions on capital inflows may well have prevented the tremendous boom in domestic bank credit and subsequent bust that occurred over the past decade, but they would be ill-advised in the present situation. Moreover, for a small

country like Iceland with a specialised production base, capital-account restrictions entail offsetting financial risks. Without the opportunities for risk diversification provided by globalised capital markets, the country is likely to be more vulnerable to volatility in domestic activity. Such risks may be especially relevant for Iceland, where supply shocks have long been an important source of economic volatility.

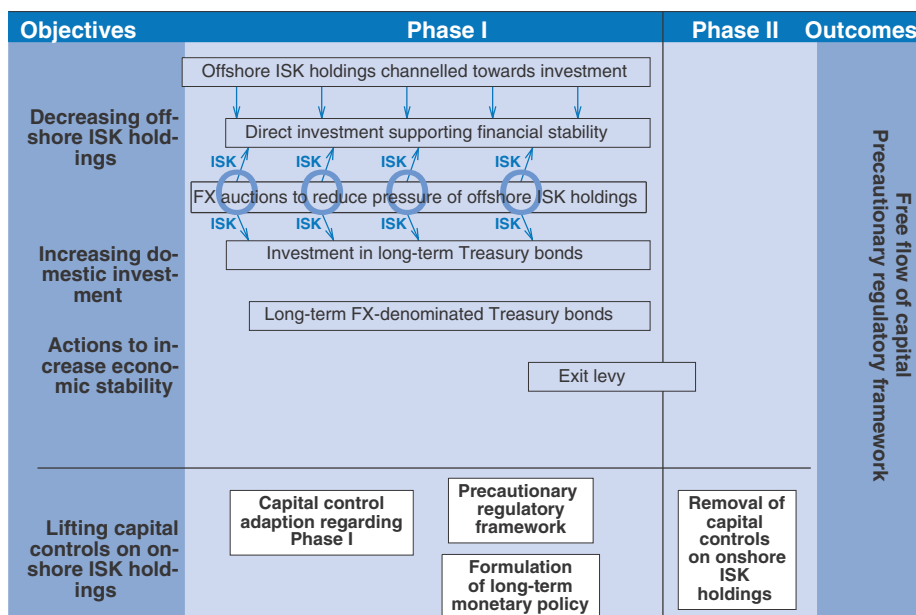
In November 2012, the IMF released a paper outlining its updated “institutional view” on capital account liberalisation and the management of capital flows. The new view was based on countries’ recent experience as well as myriad analyses included in previously-published IMF policy discussion notes (IMF, 2012a; Ostry et al., 2010 and 2011). The IMF recognised the important benefits of unrestricted capital flows but also emphasised the risks, including heightened macroeconomic volatility and vulnerability to crises. The IMF view is that risk arises because financial openness creates incentives for financial institutions to take excessive risks which, in the absence of adequate financial regulation and supervision, can lead to volatile flows that are prone to sudden reversal. After weighing the relevant factors, the IMF concluded that full liberalisation of the capital account may not be the right goal for all countries at all times. Along with this view came with several important caveats, perhaps most importantly, that capital flow management should not be used as a substitute for good macroeconomic and financial supervision policies. For Iceland’s case, the IMF concluded that, while capital controls were a judicious response to highly disruptive outflows, they should be lifted as soon as the country’s macroeconomic conditions allow (IMF, 2012b). In its October 2012 post-programme monitoring report, the IMF assumed that capital controls will remain in place through 2015.

The Icelandic authorities have maintained the view that it would be harmful for Iceland to maintain the capital controls indefinitely, and to that end, the government has approved a well-articulated programme for the removal of capital controls (Althingi, 2012a). The programme consists of two phases (Figure 1.1). The objective of the first phase is to reduce the remaining offshore ISK holdings via CBI-intermediated auctions and foreign investment programmes. Following these purchases, a temporary exit surcharge will be levied on capital transfers from Iceland. The second phase will entail lifting controls on resident outflows while encouraging direct investment and reducing the exit surcharge in stages until capital movements are fully liberalised.

The authorities’ plan does not include any commitment to a specific time frame, and legislation passed in early 2013 removed the expiration date that had been in place. The authorities have specified several conditions that must be met in order to remove the controls without causing financial disruption. Various factors such as the success of government programmes to release off-shore króna, the strength of the balance of payments outlook and reserve adequacy will determine the pace of progress toward liberalisation. Given the fact that Iceland’s financial risks will be particularly high during the transition period away from the capital controls, this cautious and conditional approach is well advised.

Rapid and substantial capital outflows could renew instabilities in the currency market, especially as non-residents still hold a sizable portion of króna-denominated assets that are locked in by the controls. Estimates of non-resident holdings have fallen from almost 50% of GDP in 2008 to approximately 23% of GDP in 2012; however, these figures understate the full scale of potential outflows because they do not take into account any anticipated outflows arising when overseas creditors eventually receive króna-

Figure 1.1. **The authorities have adopted an official programme for the removal of capital controls**



Source: Althingi (2012), *Future Structure of the Icelandic Financial System*, Report of the Minister of Economic Affairs to the Althingi, March 2012.

denominated assets as their share in the winding-up settlements of the failed banks. Although subject to great uncertainty, the current value of the failed estates has been estimated to be as much as 22% of GDP, with the bulk owned by overseas creditors. There is some possibility that domestic entities with foreign currency assets could acquire the assets and thus prevent currency outflow pressures. However, this outcome is far from certain, and it would leave the portfolios of these entities highly concentrated in domestic assets. Furthermore, although the real exchange rate is quite low relative to its historical average, there is still significant risk that, when given the opportunity, some of Iceland's residents may choose to reduce their exposure to the króna.

The authorities already have taken several steps to significantly reduce off-shore holdings of ISK. Since the middle of 2011, the CBI has organised several auctions to purchase domestic currency from non-residents and then in turn sell the currency to investors who are willing to buy long-term government bonds or other domestic assets and hold them for a minimum of five years. Thus far, these auctions have succeeded in reducing off-shore holdings by less than 10% of the initial estimated stock. At the end of 2011, the authorities also introduced a programme that enabled foreign investors to purchase through auctions half of the ISK required to perform their investment, and to finance the remainder on the Icelandic financial market (the so-called "50/50 option").

Progress toward the eventual removal of the controls has occurred in other areas as well. Monetary policy has been tightened, and restrictions on new capital inflows generally have been lifted. A sizable improvement in the government's fiscal position is helping to increase net saving and is helping to support confidence in Iceland's financial system. The authorities have accumulated large foreign exchange reserves, enabling them to intervene as necessary to counter moderate devaluation pressures. The favourable outcome in the

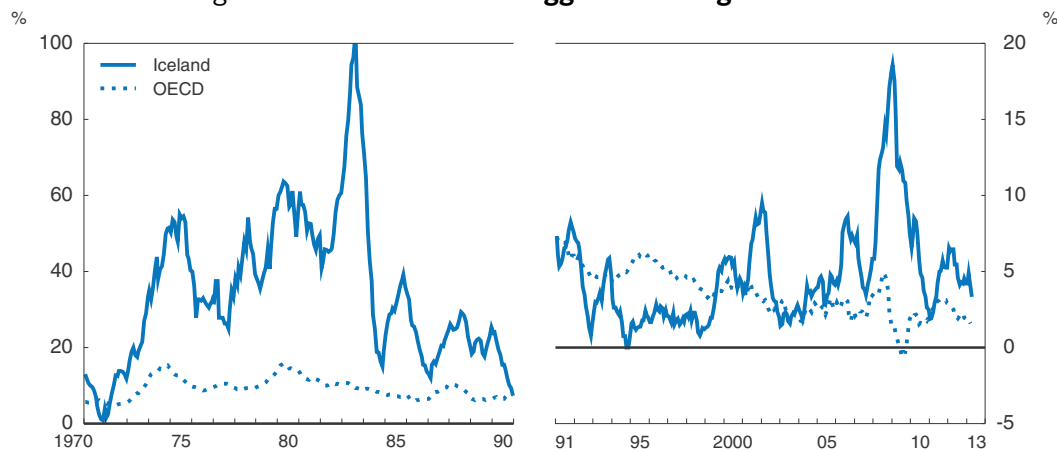
Icesave case reduced pressure on the Icelandic authorities and removed an important source of uncertainty, which also will improve investor confidence and make it easier to remove the controls. The domestic banks' financial strength has improved, and they appear better able to withstand competition from global capital markets than before.

Nevertheless, some important conditions have yet to be satisfied. While by no means easy, completing the economic re-balancing and strengthening the current account balance will go far in helping Iceland to meet the requirements of its programme for removal of the controls. Additional progress is also needed in making króna assets more attractive to hold. This will entail not only tightening monetary policy further and continuing fiscal consolidation but also building credibility around the government's intent to maintain capital mobility over the long term. In addition, the authorities need to further strengthen prudential supervision and regulation and develop a sound monetary strategy that encourages exchange rate stability. This approach will help fortify financial stability and mitigate the heightened risks of unstable capital flows when the capital controls are ultimately removed.

### Monetary policy after the removal of capital controls


Iceland has had long-standing difficulties in balancing its policy objectives within the context of the “impossible trinity” – exchange rate stability, monetary independence and capital mobility. Inflation performance has been uneven throughout a varied history of fixed and floating exchange-rate regimes (Figure 1.2), in large part reflecting a strong pass-through of exchange-rate movements to domestic price inflation. It is evident that monetary policy lacks credibility and inflation expectations, while fairly accurate in tracking actual inflation, are not well anchored. This will present significant challenges for monetary policy after the restrictions on capital flows have been removed.

Figure 1.2. **Iceland has struggled with high inflation**<sup>1</sup>



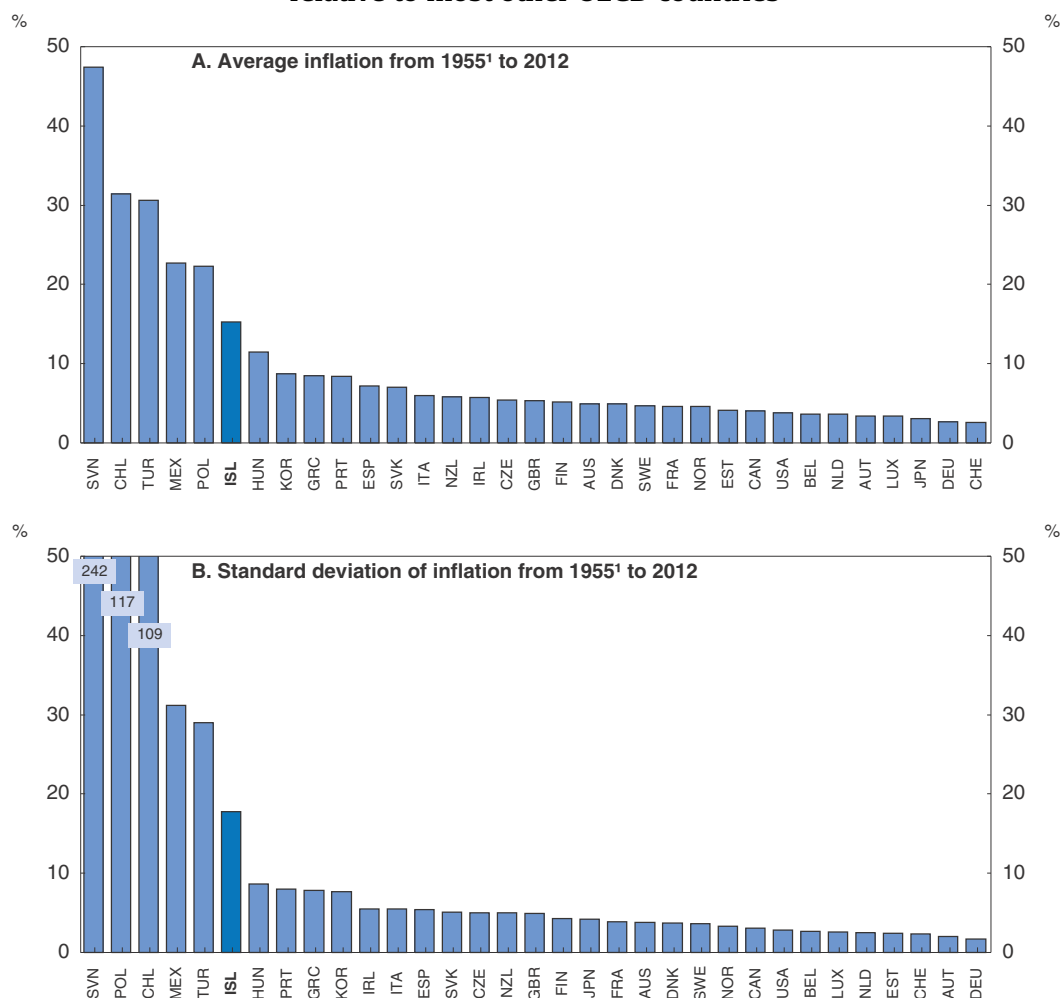
1. Consumer price index, all products.

Source: OECD, *Main Economic Indicators*.

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Average inflation over the post-war period (as measured by the average annual rate of increase in the harmonised consumer price index) compares poorly with most other OECD countries (Figure 1.3). Iceland's inflation volatility also ranks at the upper end of the range of OECD countries. While studies have shown that inflation tends to be more volatile in

Figure 1.3. **Iceland's inflation is high and volatile relative to most other OECD countries**



1. First year available in the database.

Source: OECD, Analytical Database.

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small open economies, volatility in Iceland also has been high relative to these small countries. Volatile inflation can be harmful because it distorts price signals and can reduce the productivity of the investment that is undertaken (Al-Marhubi, 1998).

### **An evolving framework for monetary policy**

Iceland's lacklustre inflation performance has occurred against a backdrop of various fixed and floating exchange-rate regimes. In the 1970s and early 1980s, Iceland had no formally defined monetary policy framework, and various forms of managed floating exchange-rate policies were used. Problems began to emerge after a series of policy actions revealed a significant devaluation bias and a generally accommodating monetary stance, and Iceland's monetary authorities seemingly maintained an exclusive focus on full employment. The real side of the economy adjusted well to external shocks and unemployment was kept low, but inflation moved up and then stayed extremely high, an average of almost 50% annually over the ten years ending in 1983.



Beginning in 1983, the Icelandic authorities increased the emphasis on exchange-rate stability and implemented a broad array of policy measures, including several devaluations of the króna, to reduce inflation and the external imbalance. Iceland's monetary policy orientation explicitly shifted towards using an exchange-rate target as the nominal anchor, with the króna pegged to a trade-weighted basket of 17 currencies. Inflation quickly stabilised under this regime, and for some time after its adoption, the authorities successfully kept the exchange rate within a narrow range of 2½ per cent around the target.

In the 1990s, however, financial market liberalisation and innovation led to rapid growth in the Iceland's financial market, a widening current-account deficit and increases in capital inflows, all of which necessitated a progressive widening of the range around the exchange-rate target. In 1995, it was widened to 6 per cent, and in early 2000 it was widened again, to 9 per cent. By the late 1990s, the over-heating economy and the large current-account deficit made it clear that maintenance of the exchange-rate target was incompatible with internal balance.

In 2001, following a particularly sharp depreciation of the króna, the CBI announced that it would move to an inflation-targeting (IT) monetary policy regime and allow the nominal exchange rate to float freely. Under the new framework, interest-rate policy was to be the main policy tool for maintaining inflation at the target inflation rate of 2½ per cent, as measured by the twelve-month change in the consumer price index (CPI). The CBI also defined a "tolerance limit" as the point at which CBI must submit a special report to Icelandic authorities explaining the reasons for deviations from the target. After an initial adjustment period, the tolerance limit was set at 1½ percentage points on either side of the target. Other changes were implemented subsequently in an effort to improve central-bank transparency and independence and to strengthen the policy framework.

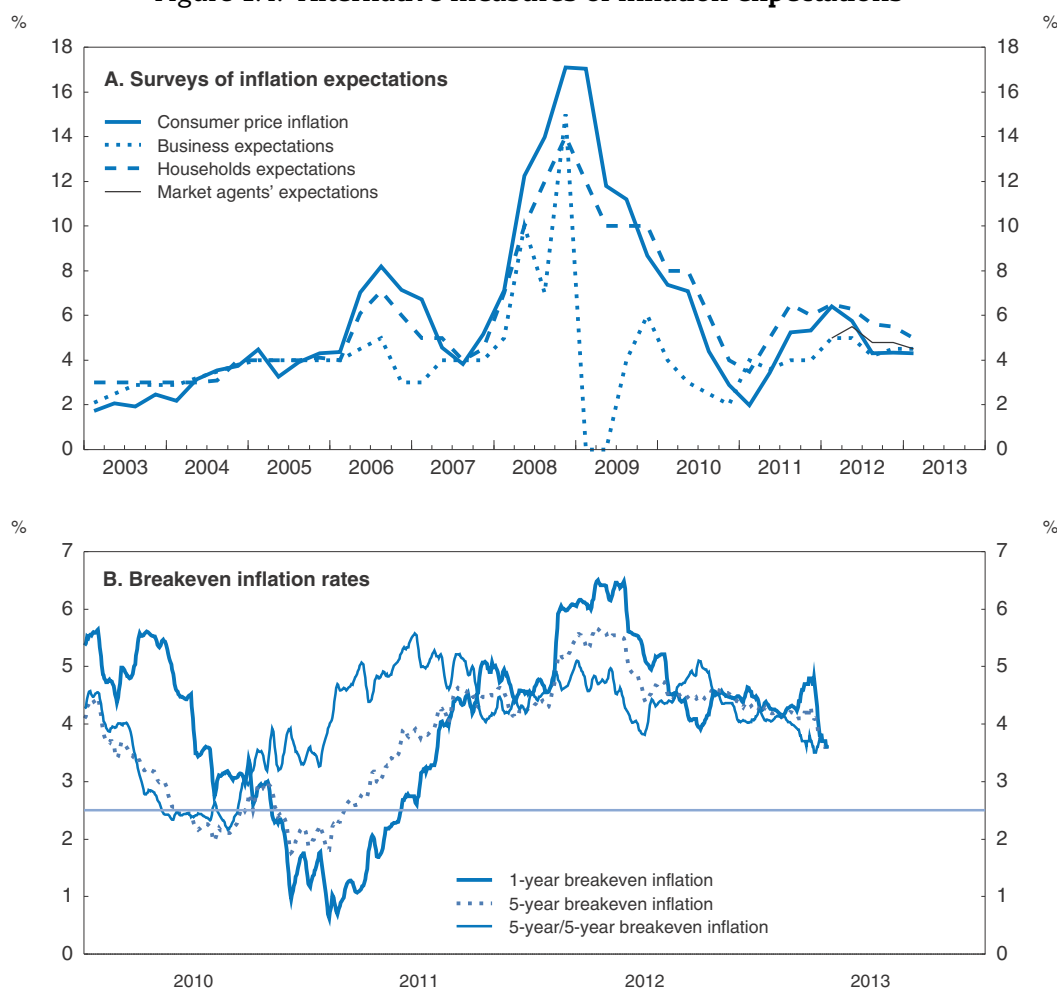
After adopting the IT policy framework in 2001, Iceland was able to bring inflation down to the CBI target remarkably quickly. But toward the end of 2004, as the economy began to seriously overheat, inflation moved up above the target and remained there until the financial crisis. Inflation targeting was officially suspended in 2008 after the exchange rate plunged and Iceland's financial markets imploded, and the domestic authorities agreed with the IMF that stabilising the value of the króna should be a fundamental element of the programme for economic recovery.

### ***A strong pass-through of exchange rate movements to inflation***

Much of Iceland's poor inflation performance likely reflects the very strong pass-through of exchange rate movements to both headline and core inflation. Evidence of this is demonstrated in a recent paper (IMF, 2012) that used a flexible vector-autoregression (VAR) model to estimate the impulse-response of domestic and imported prices to a nominal effective exchange rate shock. The empirical results showed large and statistically significant effects over the three quarters following a shock to the nominal effective exchange rate. The results indicated that that imported and domestic components of the CPI appear to react almost identically and simultaneously to large exchange rate shocks. The cumulative responses also showed evidence of overshooting in the domestic and imported components of prices following exchange rate shocks; after three quarters, the cumulative response of domestic price to a 10% exchange rate depreciation was close to 15% for imported prices and 17% for domestic prices.

There are various measures that suggest Iceland's inflation expectations are poorly anchored. The CBI regularly publishes two different estimates of inflation expectations, one based on a survey of households, and another based on a survey of Iceland's 400 largest businesses. Both surveys are carried out by Capacent Gallup and the CBI. Participants are asked about their inflation expectations one and two years ahead. Although the two survey-based measures can vary somewhat, they show a strong correlation with actual inflation developments, and they exhibit pronounced volatility (Figure 1.4). Moreover, their measures of expected inflation have been persistently above the target rate of 2½ per cent. Indeed, the readings from surveys conducted in May 2013 indicate that survey respondents expect inflation to be 5% (based on households' responses) or 4½ per cent (based on businesses' responses) in two years, which, given the standard error bands around these estimates (and an assumption that survey responses are normally distributed), implies a very low probability that expectations will drop to the target within the next two years.

Figure 1.4. **Alternative measures of inflation expectations**<sup>1</sup>



1. Breakeven inflation expectations are calculated from yield spreads between nominal and index-linked Government and Government-backed bonds (5-day moving averages). Daily data. Latest: 26 Feb.

Source: Central Bank of Iceland, *Economic Indicators*.

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The Icelandic authorities also have begun conducting quarterly surveys of market agents' expectations, which includes questions on projections for a variety of economic variables, including inflation, output, interest rates and other variables (Central Bank of Iceland, 2012b). Various bond-market participants, including banks, pension funds, mutual and investment funds, securities brokers, and licensed asset management firms, are included in the sample of this new survey. The survey also includes questions about projected nominal and real interest rates, making it possible to calculate inflation expectations indirectly based on the so-called breakeven inflation rate, which equates nominal interest rates to real rates plus inflation expectations (Fisher, 1930). The May 2013 responses to this survey indicated annual inflation will be 4% both one and two years ahead. Further ahead, they expect inflation to average 4.2% over the next five years and 4% over the next 10 years. These levels are all well above the central bank's long-run target rate of 2½ per cent. It should be noted that the new survey is a welcome addition to the current body of expectation measurements, and should prove useful to the CBI in future assessments of monetary policy.

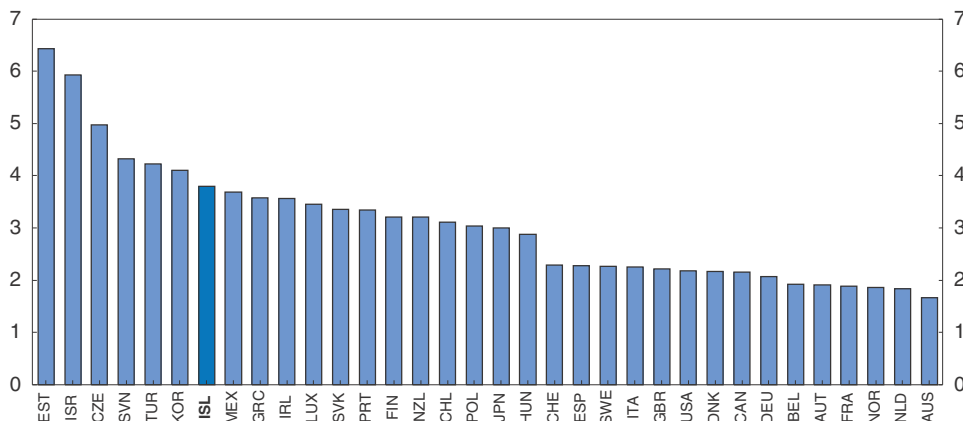
Other studies that analyse indirect measures of inflation expectations using yield curves also find evidence that Iceland's expectations are not well anchored. For example, a 2012 study by the IMF applied the methodology laid out in previous work by Rudebusch and Wu (2003) to Iceland and found that inflation surprises significantly raise the level of long-term nominal and break-even yields in the short run, although there was little evidence of significant effects over a longer time period. Without well anchored inflation expectations, temporary shocks to exchange rates and other prices feed more readily into market participants' expectations, and hence, into realised inflation outcomes. The lack of confidence in the stability of prices also results in higher inflation-risk premia on interest rates, which in turn pushes down investment and productivity.

### ***Features of Iceland's economy make independent monetary policy challenging***

Iceland has long had high volatility in economic activity relative to most other OECD countries (Figure 1.5). Much of this volatility can be attributed to the country's small size and to its economic structure, in particular its heavy reliance on natural resources as the main source of exports. Stiglitz (2001) has referred to Iceland the most extreme case of a small open economy: with just over 320 000 inhabitants, Iceland's population is smaller than that of a typical European city. Iceland's GDP was valued at only 8½ billion USD in 2012, and its stock market capitalisation was only one-tenth the market capitalisation of a moderately-sized US company. Iceland's exports are especially vulnerable to supply shocks originating from natural fluctuations in fish stocks, as well as to shocks in the terms of trade. Iceland's production base is quite specialised, and the volatile, commodity-based exports represent a larger share of overall GDP than they do for other OECD commodity exporters.

Economists have argued that Iceland's small size and specialised production structure present the country with significant policy challenges. Honjo and Hunt (2006), for example, constructed empirical estimates of the efficient monetary policy frontier (first described by Taylor [1979]) for Iceland) (Figure 1.6 below). The efficient monetary policy frontier traces out the locus of the lowest combinations of inflation and output variability that are achievable under a range of alternative rules for operating monetary policy when the economy is subjected repeatedly to economic disturbances. Using simple inflation-forecast-based monetary policy rules for Canada, New Zealand, the United Kingdom and

Figure 1.5. **Iceland's economic structure implies greater vulnerability to economic shocks<sup>1</sup>**

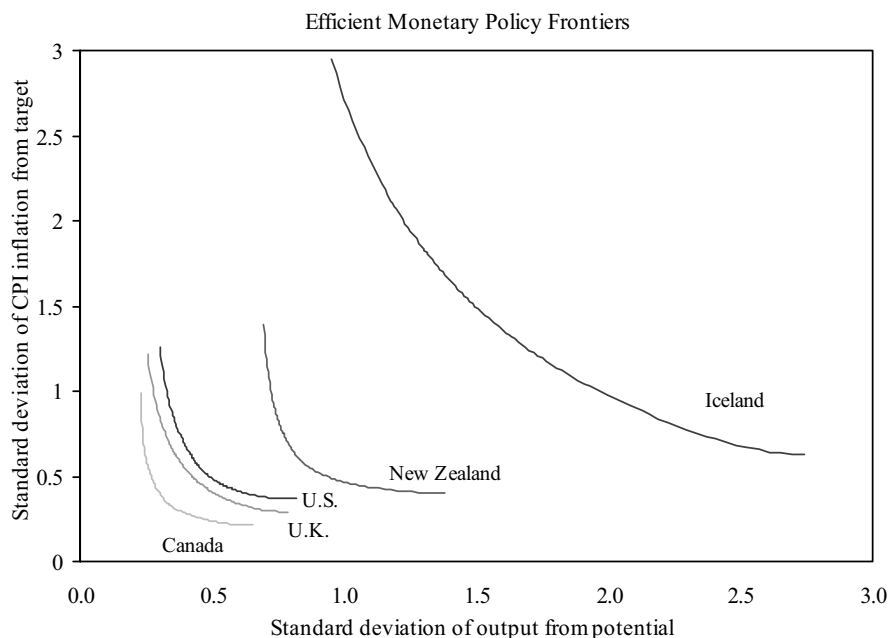


1. Real GDP volatility measured as the standard deviation of GDP growth from 1970 to 2011, Korea as from 1971, Chile as from 1987, Czech Republic, Poland and Slovenia as from 1991, Hungary as from 1992, Greece as from 1993, Slovak Republic as from 1994 and Estonia as from 1996.

Source: OECD, National Accounts Database.

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Figure 1.6. **The trade-off of inflation-output variability is less favourable for Iceland**



Source: Honjo and Hunt (2006).

the United States, the authors showed that the inflation-output variability trade-off faced is considerably less favourable for Iceland than it is for other countries. This suggests that inflation in Iceland is more likely to be outside the tolerance range than in other inflation-targeting countries.

Breedon et al. (2012) conducted an empirical analysis of the economic performance of 37 small, high-income countries with their own currencies under three different nominal

exchange-rate regimes – fixed, intermediate, and floating (the classification scheme was originally developed by Levy-Yeyati and Sturzenegger [2003]). They found that countries that float their currency tend to have systematically higher exchange rate volatility, but only barely distinguishable differences in both average economic growth and growth volatility, relative to countries with other exchange-rate regimes. Their conclusion was that while floating exchange rates imply higher exchange-rate volatility, there is no observable benefit in terms of reduced fundamental macroeconomic volatility.

Nevertheless, drawing comparisons of Iceland's experience with that of similar countries is quite difficult, given the fact the Iceland is one of only a very few very small countries that maintains its own independent currency and a floating exchange rate. Among the 37 countries and territories in the Breedon et al. (2012) study, only five were classified as maintaining something other than a fixed exchange-rate regime. From a theoretical perspective, the dearth of small countries with floating exchange rate regimes should not be surprising. Arguments tend to favour fixed exchange-rate regimes for small countries, based mainly on the idea that there are fixed costs associated with running a monetary authority, and it is more difficult for small countries to absorb these costs. Smaller countries also trade more than larger ones and may also reap larger trade benefits from lower exchange rate volatility, especially in the face of imperfect financial markets which raise the cost of hedging foreign-exchange risk.

On the other hand, many countries, even large ones, have experienced painful failures in their attempts to peg the exchange rate. Most often, the reason for the collapse of the fixed exchange-rate regime was that the economy was developing differently from the country to which it fixed its exchange rate. The breakdown of the regime often entails very large, abrupt movements in the exchange rate and damaging consequences for the involved countries. Recent examples are the Southeast Asian countries in the late 1990s and Argentina in the early 2000s. Both episodes saw the breakdowns of the countries' fixed exchange rate policies and were followed in both cases by severe recessions. On balance, given the limited evidence, the appropriate exchange-rate regime for Iceland in the long term is still subject to debate.

### ***Adjustments to the inflation-targeting policy framework***

Iceland had only seven years of experience with the inflation targeting (IT) framework for monetary policy before the financial crisis erupted, and as such it would be premature to call the approach a failure. Indeed, other inflation-targeting countries appear to have fared better than Iceland during the crisis (Box 1.2). As was emphasised in previous *Economic Surveys* and as acknowledged by the Icelandic authorities themselves, suboptimal monetary policy was partly to blame for the over-heating economy in the 2000s, as interest rates were raised too little and too late to contain the imbalances (Central Bank of Iceland, 2012). Moreover, as also mentioned in previous *Surveys*, the effectiveness of monetary policy was weakened by its lack of credibility, political interference in central bank decisions, impaired transmission mechanisms, and large-scale exogenous shocks. There was also a lack of co-ordination between fiscal and monetary policy and insufficient prudential regulation and supervision, which resulted in the massive boom in credit markets that ultimately led to the collapse.

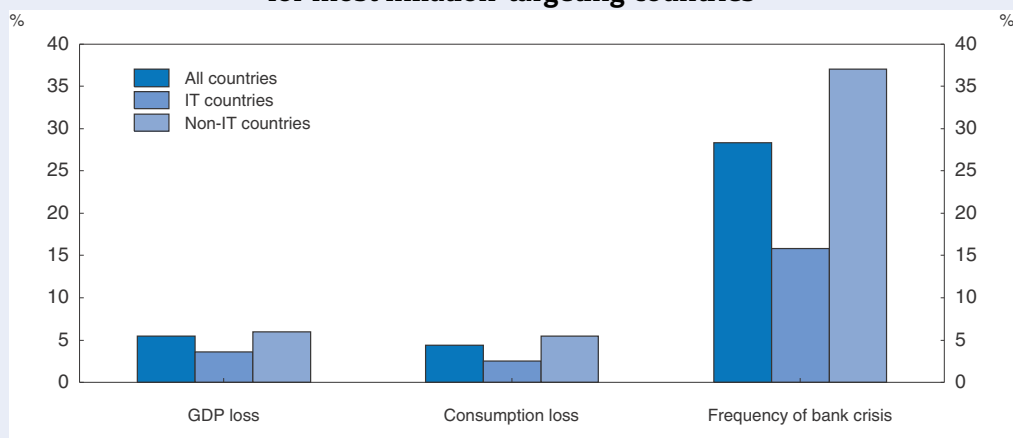
Drawing on these lessons, several steps have been taken in past years to strengthen central bank independence, improve co-ordination with fiscal policy and revamp bank supervision. The CBI has also proposed a modified inflation-targeting approach that it has

### Box 1.2. The experience of other inflation-targeting countries


Interest in the inflation-targeting policy framework has risen in recent years, especially since many of the countries that moved to this regime appear to have improved their economic performance. New Zealand, in particular, was the first to formally adopt an inflation-targeting framework in 1990, and its inflation performance has gone from being among the worst among advanced countries to being near the middle of the range. After many years in which New Zealand's inflation rate was markedly higher than that in Australia, in the 22 years since New Zealand adopted inflation targeting, its inflation rate has been slightly lower than Australia's (2.6% vs. 2.8%). Since the move to inflation targeting by New Zealand, more than 20 countries have formally adopted similar policy regimes. A number of empirical studies have been published showing that the adoption of an inflation target has been followed by reductions in both the level and variability of inflation in the adopting countries, even after controlling for movements in other economic variables (e.g. Pétursson [2004]; Vega and Winkelried [2005], and Mishkin and Schmidt-Hebbel [2007]). Corbo et al. (2001) found that the adoption of an inflation target has tended to make inflation more predictable and reduced its persistence, and Pétursson (2009) found that the exchange rate pass-through in many countries became smaller in size after the adoption of inflation targeting.

Another notable characteristic of inflation-targeting countries is that they appear to have fared better, on average, during the global financial crisis than non-targeting countries. For instance, a recent cross-country analysis by Ólafsson and Pétursson (2010) found that, after adjusting for various pre-crisis variables and country characteristics, the contraction in output and consumption was smaller for the inflation-targeting countries (Figure 1.2). By contrast, however, the global financial crisis had a relatively large impact in Iceland: the contraction in economic activity was more severe than for most other countries, and the banking crisis was more pervasive than elsewhere.

Figure 1.7. The impact of the crisis was relatively muted for most inflation-targeting countries



Source: Ólafsson and Pétursson (2010).

StatLink  <http://dx.doi.org/10.1787/888932855601>

dubbed “IT-plus” (Central Bank of Iceland, 2010). Under the proposed framework, interest rates remain the main policy tool for achieving the inflation target, and the exchange rate is allowed to float, but the central bank conducts interventions in the currency market in order to cushion the impact of short-term capital flows on the exchange rate. The hope is

that, by damping swings in the exchange rate, the currency-market interventions will help to stabilise inflation expectations and contribute to financial stability.

The authorities have stated that during the on-going process of removing capital flow restrictions Iceland's monetary policy will keep a heightened focus on exchange-rate stability, and as such it has not yet fully adopted the "IT-plus" framework. Nevertheless, the CBI already has begun conducting active interventions in the foreign-exchange market. Following a pronounced depreciation in the króna in the latter half of 2012, the CBI suspended its programme of regular foreign currency purchases and began supporting the króna with sterilised interventions in the foreign exchange market. In announcing the policy in February, the Monetary Policy Committee highlighted the risk "that self-fulfilling expectations of a depreciation will further weaken the currency" (Central Bank of Iceland, 2013). Since that time, the value of the króna has more than reversed its decline over the preceding six months.

So long as the CBI avoids trying to defend a fixed level of the exchange rate, such a strategy of interventions could be beneficial, as it may help stabilise inflation expectations and thereby ease pressures on domestic prices arising from movements in the exchange rate. However, the approach should be undertaken with caution, since even limited interventions can expose taxpayers to risk of significant losses. Moreover, the Icelandic government's resources available for intervention will be limited in relation to those of parties on the opposite side of the market after the capital controls are lifted.

Bearing in mind these limitations, it may be necessary to make additional adjustments to the inflation-targeting framework. In particular, owing to its small size and narrow production base, Iceland will almost certainly continue to experience volatility in economic activity, terms of trade and the exchange rate. As a result, actual inflation is also likely to remain more volatile and therefore to fall outside the tolerance range in Iceland than in other inflation-targeting countries (Breedon et al., 2012). The CBI may therefore have to tolerate longer-lived deviations from the inflation target. Greater co-ordination between monetary and fiscal policy objectives would also improve the ability of government to promote price stability, although the currently high level of public debt will limit the scope for fiscal policy to be used to stabilise aggregate demand. Most importantly, the credibility of monetary policy must be strengthened, so as to increase its effectiveness, which requires strict respect of the central bank's independence, especially when interest rates have to be increased as inflationary pressures mount.

The implementation of inflation targeting in Iceland is unusual in that the headline CPI index, on which the target is based, includes the market price of residential housing, through the imputed rent subcomponent. This reflects the high proportion of home ownership in Iceland (over 80%) and the correspondingly small rental market with rental prices frequently subject to official intervention. The fact that the housing component of the price index reflects current house prices and mortgage rates has the undesirable effect that monetary tightening raises the targeted index. Adopting a rental equivalence approach for owner-occupied housing is difficult because the rental market in Iceland is very small, but New Zealand and other countries have overcome this issue by adopting measures based on the cost of capital for buildings and land development (OECD, 2009).

Even under the best policy framework, a micro-currency such as that of Iceland will always be difficult to manage in a world of large and volatile capital flows. Indeed, Iceland is by far the smallest jurisdiction in the world with its own floating currency. In the longer

term, outsourcing monetary policy to the European Central Bank by adopting the euro is an option. This would stabilise inflation and reduce the exchange-rate risk premium against the euro in domestic interest rates, fostering increased capital intensity and productivity, an area where Iceland has lagged behind the OECD average (OECD, *Going for Growth*, 2013). On the other hand, Iceland does not appear to be part of an optimal currency area for the euro, and it would lose the contribution of the exchange rate in absorbing shocks, a role that has been especially important during the post-crisis recovery. Moreover, euro adoption would require joining the EU, which will not be possible until – among other things – the capital controls are removed, and which poses challenges of its own unrelated to monetary policy.

### **Prudential tools as the third pillar of macroeconomic policy**

One of the central lessons arising out of the financial crisis is that traditional monetary policy may be insufficient to ensure both monetary and financial stability. The recent experience of many countries suggests that macro-prudential supervision and regulation can be essential in this regard. Macro-prudential policies focus on the stability of the financial system as a whole, rather than individual financial institutions. A central idea is that the various and complex inter-connections between individual entities within the financial system can give rise to endogenous risks for the system as a whole. The objective of macro-prudential policies is to limit these systemic risks and to minimise the adverse effects of financial shocks on real activity. By discouraging the build-up of financial imbalances, prudential policies also hold some promise of increasing the effectiveness of monetary and fiscal policies.

An area where macro-prudential instruments hold some promise is in pre-empting the build-up of credit bubbles. Credit markets are well developed in Iceland, and positive asset price cycles are often accompanied by rising credit and credit-driven spending growth, because in good times there is a tendency for agents to underestimate the possibility of a downturn and thereby distort the pricing of risks. The pattern of asset-price inflation fuelling credit expansion can become self-reinforcing and lead to an unsustainable credit boom, which ends when the asset price bubble eventually bursts. The result is that credit cycles have the tendency to magnify business cycles and cause significant damage and strain in the country's financial system.

Another area where macro-prudential policies could be beneficial for Iceland is in reducing the risks presented by volatile international capital flows. This is because macroeconomic and financial stability and real exchange rate developments are very closely intertwined. Unstable capital inflows may develop in good economic times and put upward pressure on asset prices and the exchange rate, thereby contributing to overheating in the economy and inflationary pressures. Conversely, capital outflows that result from sudden reversals in investors' expectations and appetite for risk will put downward pressure on the exchange rate that can amplify or even trigger a contraction in real activity. Given the important contribution in the past of speculative capital flows to the overheating economy and subsequent financial crisis, as Iceland relaxes its existing capital flow restrictions and once again becomes more financially integrated with other countries, it will be important to have in place policies that can help mitigate sudden surges of capital in either direction.

Some of the tools aimed at damping credit cycles and managing capital flows include caps on the loan-to-value ratio (LTV), caps on the debt-to-income ratio (DTI), cyclically varying loan-loss provisioning requirements, and ceilings on credit or credit growth (see Box 1.3). Although



### Box 1.3. Prudential policy instruments

**Micro-prudential policies** attempt to improve individual institutions' resilience to risks (including those arising from international capital flows), but they may also reduce systemic risk by mitigating externalities arising from individual institutions' behaviour. These include the following:

- Forward-looking provisioning of expected losses.
- Valuation reserves to cover the risk of mean reversal in prices of marked-to-market assets.
- Caps on LTVs/minimum collateral haircuts.
- Higher risk weights on specific types of exposures (such as real estate lending).
- Minimum capital requirements, including better quality of capital (as in Basel III).
- Leverage ratios.
- Capital conservation buffer (Basel III).
- Liquid assets buffer (Basel III).
- Limits on currency and maturity mismatches (Basel III NSFR).

**Macro-prudential policies** are aimed explicitly at systemic risk. Often, the macro-prudential toolkit will be based on existing micro-prudential tools, but with settings that are conditioned on macro-financial developments or indicators of systemic risk, either in a rule-based or a discretionary fashion. Some examples of such policies are:

- Cyclically varying provisioning requirements.
- Cyclically varying LTVs.
- Countercyclical capital buffer (Basel III).
- Capital/liquidity surcharge/levies on systemically important financial institutions.
- Tax on volatile funding.
- Caps on credit growth.
- Higher reserve requirements.

Source: Ostry et al. (2011).

credit-based rules have been used by Iceland and other countries in the past for micro-prudential reasons, they are being applied increasingly to reduce systemic risk, especially in real estate markets. Many countries, including Canada, China, Korea, Singapore, Malaysia, Thailand, and New Zealand have implemented these types of measures, and some have made discretionary adjustments in response to economic developments. Canada, for instance, has implemented macro-prudential measures to tighten regulations of government-backed mortgage insurance, including lowering the maximum LTV ratios needed to qualify for government guarantees, as well as reducing the maximum permissible amortisation period for new mortgages (OECD, 2012a). New Zealand is working to link financial institutions' capital adequacy requirements to maximum LTV ratios, so that a higher LTV ratio would be accompanied by a higher capital requirement, which would facilitate lending in downturns and tend to restrict credit growth in upswings. Spain has developed a formula for loan-loss provisioning requirements that factors in credit growth.

Given countries' limited experience with these tools, it is somewhat difficult to gauge their overall effectiveness, but there is some encouraging evidence thus far. Unsal (2011) showed that the combination of macro-prudential measures used conjunction with monetary policy mitigated the risks associated with capital inflows better than when either

of these policies were used in isolation. Simulations carried out in Fátas et al. (2009), illustrate that such macro-prudential policy can be more effective in pre-empting credit bubbles than simply raising policy rates. Evaluation studies have shown that macro-prudential policies can be effective in damping cyclical forces and smoothing out the business cycle. For example, using cross-country data, Lim et al. (2011) found that the macro-prudential tools aimed specifically at preventing credit market overheating significantly reduced the correlation between the credit growth and GDP growth. Caps on the LTV ratio, for example, were shown to reduce the cyclicity of credit growth by 80 per cent.

In IMF surveys on the usage of macro-prudential policies, country authorities have cited many advantages of using these tools, including that macro-prudential instruments are less blunt than monetary tools and more flexible than most fiscal tools (IMF, 2011b). Respondents to the IMF surveys also have noted that many instruments can be tailored to risks of specific sectors or loan portfolios without causing a generalised reduction of economic activity, thus limiting the cost of policy intervention.

There are economic costs associated with the use of macro-prudential tools. Financial institutions are likely to pass on their higher funding costs in the form of higher interest rates, which will imply costs in terms of foregone investment and productivity. Design and calibration of the instruments is likely to be difficult, especially since for many macro-prudential tools there is limited international experience that can be drawn upon, and side effects are not well understood. If not handled carefully, overly restrictive policies could hamper growth or generate unintended distortions. Caution should be taken to ensure that the measures used do not incentivise agents to circumvent regulations by channelling financial services out of the regular banking system and into the shadow financial system. In addition, prudential policies are not one size fits all – countries need to assess for themselves which risks are most pertinent, and weigh the relative benefits of advantages of various policies in addressing those risks.

Several other guiding principles have been recommended for the implementation of macro-prudential tools (e.g. Lim et al. [2011]; Committee on the Global Financial System, [2010]). First, as has been emphasised by the FSB and others, the policy instruments should be simple to implement and straightforward to enforce. Ideally, the design and calibration of policy instruments should be guided by data rather than judgment. Policy instruments also should be specifically linked to, and where possible, adjust automatically in response to, developments in specific economic variables. Put another way, good policies are designed in such a way that they operate like “automatic stabilisers” in the fiscal policy sphere. It is also important that the effectiveness of the tools be symmetric in that they are helpful in counteracting both upturns and downturns.

### **Further strengthening micro-prudential regulation**

In the run-up to the financial crisis, the size and complexity of Iceland’s banking sector increased at a dangerously rapid pace. From 2003 to 2008, the ratio of Iceland’s banking system assets to its GDP rose from 200 per cent to nearly 1 000 per cent. This rapid expansion in bank balance sheets could be traced directly to inadequate restrictions on the Icelandic banks’ ability to use borrowed capital to invest in risky financial assets. The largest owners of all the big banks had abnormally easy access to credit at the banks they owned, apparently in their capacity as owners. The banks, in turn, had exposures to their owners, which along with connected parties and key management personnel amounted to 70% or more of each bank’s capital base. In addition, these borrowers had obtained large

loans from the other banks. The result was that the banks' equity positions were much weaker than they appeared on the surface.

In the years since the crisis, Iceland has addressed many of these shortcomings in micro-prudential regulation. Most notably, Iceland passed the Act on Financial Undertakings in 2010, which gave the FME much broader discretionary powers and put in place measures for improved risk management and governance of banks. The problem of excessive reliance on wholesale funding was solved with the creation of the new banks, which are almost entirely funded by deposits. Even so, the FME also has imposed strict standards for capital adequacy on the banks. The 16% minimum capital ratio that was imposed temporarily after the crisis has since been replaced based on the results of the ICAAP/SREP process for individual banks in accordance with Pillar 2 of the Basel II/CRD III rules. In its 2012 annual report, Iceland's largest bank reported that its current minimum capital ratio was 19.5%. New liquidity requirements are tighter than those based on the rules issued by the CBI before the banking crisis.

Experience with these emerging standards is very limited, and there is still significant debate over whether the international guidelines are well-calibrated, i.e., whether banks' failure to meet the minimum requirements are a reliable predictor of future insolvencies. Nevertheless, given the small size and high concentration of the Icelandic financial market, the authorities should continue to treat the Basel III requirements as a minimum standard. It is therefore recommended that Iceland retain its tighter capital requirements and work toward full compliance with other Basel III standards. In addition, measures related to capital adequacy and liquidity could be further strengthened by including counter-cyclical components in their design; for example, the size of banks' required capital buffers could be higher when the economy is strong but could be allowed to run down when the economy is weak. Such counter-cyclical characteristics would be useful in reducing systemic risks arising from the banking sector.

### **Strengthening the institutional framework for monetary and financial stability**

The incorporation of prudential policies into a broader framework for monetary and financial stability will present analytical and operational challenges. While Iceland has made good progress in implementing new regulatory procedures, the activities have involved a number of disparate authorities within the government, with little collaboration between entities. Going forward, it is important that the relationships between these entities be strengthened and formalised within an explicitly-defined, over-arching framework. Clear areas of responsibility for each authority need to be defined. To minimise the ability for politically-driven incentives to affect policy decisions, an explicit mandate for fostering financial stability should be established, and the authorities need to be furnished with the statutory authority and instruments necessary to carry out the mandate.

These requirements are fully consistent with the final recommendations of the so-called "G3 experts" (see Box 1.4), who advocated that financial stability should be considered a public good and an important "third pillar" of economic management alongside monetary and fiscal policy. In order to construct a solid institutional framework for this third pillar in Iceland, the G3 experts recommended several important steps, which include enacting legislation to codify the objectives of financial stability policy (dubbed the "Systemic Stability Act"), and creating a Financial Stability Council (FSC) with oversight responsibilities for all aspects of financial stability policy, including crisis prevention, management and resolution. The FSC would be designed to replace the present Committee on Financial Stability and would be comprised of the Minister responsible for the Treasury and fiscal policy, the

**Box 1.4. G3 experts' recommendations for financial stability in Iceland**

In the Fall of 2011, the Icelandic authorities commissioned three outside experts to prepare a comprehensive report on Iceland's present financial system and its future development, with the aim of initiating informed discussions among policy makers on ways to address deficiencies in the current regulatory framework. Following the publication of this report in March 2012, the government appointed a three-member panel of banking experts to examine the report and prepare proposals for a comprehensive legal and regulatory framework for Iceland's financial system (Althingi, 2012b).

Incorporating international experience and based on consultations with a broad set of stakeholders, the group made the following key recommendations:

- a) Establish an overarching statutory framework for the financial system by enacting financial stability framework legislation to enhance and preserve the stability of an efficient and effective financial system for Iceland as a public good.
- b) Create the necessary institutional framework for the "third pillar of macroeconomic policy" by establishing a Financial Stability Council (FSC) and providing a common platform for the operations of the central bank (CBI) and the financial supervisory authority (FME), with the aim of bringing them within three years under the roof of a single institution that will serve as Iceland's integrated monetary and financial stability authority.
- c) Bring all financial sector legislation as well as the CBI and the FME under a single ministry in order to strengthen governance of this important policy area and to clarify the lines of accountability and responsibility for financial stability.
- d) Address the structural problems of concentration, complexity, lax competition and distorted incentives in the Icelandic financial system by:
  - making all financial undertakings subject to a common core set of rules for comparable activities;
  - correcting distortions that lead to excessive leverage and divert the focus of financial institutions from intermediation of finance between ultimate borrowers and savers and provision of financial services to households and companies;
  - replacing the blanket state guarantee of deposits in Icelandic banks, in force since October 2008, with a deposit guarantee scheme in line with the EU/EEA directives and giving permanent priority to covered deposits in resolution;
  - requiring that all financial undertakings be structured and operated so that they can be wound down easily, quickly and without causing contagion or triggering a crisis;
  - making different critical functions such as investment banking and commercial banking separable in resolution, and consider requiring legal separation of certain particularly risky financial activities from deposit-taking operations of banks if such activities amount to a significant share of a bank's business;
  - using regulatory powers and control rights that arise from public ownership to address distorted incentives, for example, by requiring variable compensation of key staff and management to be paid in the form of nonvoting equity or nonnegotiable junior subordinated instruments;
  - placing the relevant parts of the temporary emergency legislation of 2008 on a permanent footing in a manner which gives the FME the power to resolve any financial undertaking in a manner that assures the continued performance of critical functions and the stability of the financial system;
  - encouraging foreign ownership/entry in the financial market, subject to conditions that underpin financial stability.

Minister responsible for financial markets, the Governor of the CBI and the Director General of the FME. The FSC would organise co-ordination and co-operation among the various public authorities dealing with the financial sector and would take the lead as the national macro-prudential authority entrusted with responsibility for systemic stability policy.

The council setup to oversee macro-prudential policy is similar to that used in some other OECD countries, including Norway and the United States. In the United States, the Financial Stability Oversight Council (FSOC) is composed of officials from several financial regulatory agencies. Committee members vote on specific changes to macro-prudential policy, and member agencies of the FSOC are then tasked with implementing the group's desired policy changes. It is important to establish channels for all involved parties to co-operate, share information, and inform other authorities of developments or actions relevant for their particular sphere of responsibility. This will help ensure that action can be taken without delay when instabilities emerge.

As noted in earlier OECD surveys (OECD, 2009, 2011), the lack of information sharing among the authorities created problems in the run-up to the financial crisis in Iceland. Since then, significant improvements have been made. For example, oversight of individual financial institutions has improved with the creation by the FME of a statutory credit register for large borrowers. This register could also be useful for macro-prudential oversight, such as detecting whether the financial system as a whole is becoming overly reliant on the solvency of a handful of entities. However, the IT system for processing and analysing the information received from the supervised entities needs further enhancements, and it needs to be shared more widely among the relevant financial authorities. Close co-operation with the CBI is encouraged in the development of the IT system, and the resulting information resources need to be shared with all those authorities that have financial oversight responsibilities. The authorities also may want to consider whether it is enough that government agencies are utilising these information resources internally, or if there is a case for releasing more information about the distribution of debt to the public so that these issues can be discussed among a broader audience of stakeholders.

Finally, while there has been a sizable increase in recent years in the number of government employees dedicated to financial surveillance and regulation in Iceland, it would also be beneficial if employees at the FME and other authorities were provided with additional opportunities to obtain training and share experience with their peers in other countries. Given scarce resources, co-operative agreements between the Icelandic authorities and their counterparts in other countries could facilitate this process. Some such arrangements already have been made; for example, the FME has obtained assistance and funds via the Technical Assistance and Information Exchange (TAIEX), a service for partner countries and applicants to the EU that is managed by the Directorate-General Enlargement of the European Commission. The FME is also in the process of building a risk assessment system and have sought examples and knowledge of such system to the Irish Financial Supervisory Authority. Further development of these types of relationships is encouraged.

### ***Strengthening the resolution regime***

As was painfully evident during the financial crisis, many countries, including Iceland, needed a resolution authority with statutory powers to intervene in financial institutions' operations to reduce the risk of failure or to oversee the orderly liquidation of a failed institution. Such an authority can help ensure that the social costs of bankruptcy are minimised, and that emerging problems are resolved quickly, efficiently, and with minimum government intervention. The establishment of a strict resolution regime increases the

likelihood that institutions in distress can be wound down without the use of public money and without triggering contagion, thereby minimising disturbances to the whole economy. Having a credible resolution authority also reduces uncertainty and moral hazard, and thus would help limit fear-induced transfers abroad and a resulting instability in the exchange rate.

During the crisis, Iceland enacted emergency provisions that gave the financial supervisory authority important and useful powers for resolving financial institutions in distress, including the ability to take special measures to intervene in the affairs of a failing institution and put it into resolution. Importantly, the new provisions applied to all types of financial institutions and not just banks. Most of these emergency provisions were then transferred into the Act on Financial Undertakings in 2010, but on an interim basis only. Permanent legislation is currently being drafted by the financial authorities in Iceland, to be finalised in the third quarter of this year. In addition to establishing well-defined, permanent resolution arrangements, the authorities should work to ensure that failed institutions can be wound down easily and without causing disruption to the provision of essential financial services. To this end, the G3 experts recommended that all financial undertakings be structured and operated such that any critical functions, notably investment banking and commercial banking, are separable in resolution. Iceland's resolution regime should incorporate features outlined in previous proposals from the EC and the FSB (European Commission [2012]; Financial Stability Board [2011]).

### ***Establishing a sustainable deposit guarantee system***

During the financial crisis, the government announced a blanket guarantee of retail deposits when the new Icelandic banks were created to replace the ones that collapsed. This policy was enacted in an effort to head off a bank run, and it was successful in that regard. However, a blanket guarantee entails many distortions. First, competition between financial institutions is distorted if all institutions do not benefit from the guarantee. This situation may have contributed to the demise of non-bank financial institutions (finance companies) in Iceland. Second, savers generally do not discriminate between banks on the basis of their riskiness, and this has the effect of weakening incentives for banks to control their risks. To avoid the costs of these distortions to competition, the blanket guarantee that has been in force since October 2008 should be replaced by a deposit guarantee arrangement that is not subsidised and has limited coverage. Given Iceland's membership in the EEA, the system would have to conform to EU regulations, including the forthcoming EEA directive on deposit guarantees.

### ***Reforming the Housing Finance Fund***

The Housing Finance Fund (HFF) is an independent state-owned agency that is the dominant player in the residential mortgage market (it has about a 50% market share). During the financial crisis, the HFF incurred significant losses on its loan portfolio and had to be recapitalised by the government. Unfortunately, the current policies provide the HFF with advantages that undermine competition in the mortgage market and distort the allocation of resources between financial institutions. Further, as was made evident during the financial crisis, these policies also expose taxpayers to the risk of significant losses. The best way to address these problems would be for Iceland to develop a comprehensive housing policy from the ground up and then to re-evaluate the HFF's mandate and institutional setup within the context of this policy. For instance, the HFF's current public-policy objectives could be achieved instead by directly subsidising housing costs for

low-income households. Phasing out the HFF's policy-related competitive advantages would entail charging the HFF for the value of its loan guarantee on all new HFF bonds or eliminating the guarantee on new bonds, subjecting the HFF to ordinary bankruptcy laws and to corporate and property taxation, increasing the HFF's capital adequacy ratio to the levels applying to other financial institutions, and subjecting it to prudential regulation and supervision by the FME.

### **Raising financial literacy to improve financial decision-making**

Enhancing financial literacy in Iceland would mitigate the risk that individuals who cannot evaluate their financial operations find themselves in trouble. They might overestimate the borrowing they can afford, or misunderstand how exchange rate or interest rate movements will affect their balance sheets and household budgets. In December 2011, the Institute for Financial Literacy in Iceland (IIFL) surveyed adult financial literacy, incorporating many questions from a prior survey conducted by the OECD/INFE, and compared results with the 14 countries that piloted the initial OECD/INFE survey (Atkinson and Messy, 2012). The results of IIFL survey were somewhat encouraging in that 87% of the Icelandic respondents maintained that they kept a close watch on their financial affairs, which was the second highest proportion when compared with the countries surveyed previously by the OECD. However, relatively few of the Icelandic respondents appeared to have adequate basic knowledge of key financial concepts; for instance, only 40% of respondents knew how much money they would have if they earned 2% interest on 10 000 króna. Further, only a small percentage of respondents indicated that they create a household budget to manage their finances. Given these shortcomings, it is encouraging that Iceland's Institute for Financial Literacy has initiated research on this topic and is an active member of the OECD International Network on Financial Education (Grifoni and Messy, 2012). Further efforts to incorporate OECD recommendations regarding national strategies for financial education are encouraged (OECD, 2012b).

#### **Box 1.5. Recommendations for promoting financial stability and effective monetary policy**

##### **Key recommendations**

- Macro-prudential policies, such as maximum loan-to-value ratios or caps on foreign-currency lending, should be used to mitigate risks to financial stability, dampen credit cycles and complement monetary policy.
- Proceed with the established programme for removal of the capital controls at a pace that is conditioned upon economic developments.
- Once capital controls are lifted, maintain an inflation targeting framework for monetary policy with a floating exchange rate. A heightened emphasis on exchange rate stability is warranted, but limit the scope of currency market interventions to smoothing erratic fluctuations.
- Strengthen co-ordination and communication between financial sector authorities, and establish an explicit mandate for maintaining financial stability that clearly defines areas of responsibility and provides entities with the statutory authority and instruments to carry out their responsibilities.

### Box 1.5. Recommendations for promoting financial stability and effective monetary policy (cont.)

#### Other recommendations

- Establish a permanent resolution regime with well-defined procedures that conform with EU regulations.
- To reduce economic distortions, replace the existing blanket deposit guarantee with deposit insurance that is consistent with EU rules.
- Develop a comprehensive housing policy, and pursue public-policy objectives by directly subsidising housing costs for low-income households. Reform the HFF by phasing out its policy-related advantages.

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