



ICELAND

SELECTED ISSUES

March 2015

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ICELAND

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February 20, 2015

Approved By
**The European
Department**

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FULL CAPITAL ACCOUNT LIBERALIZATION: READY OR NOT?¹

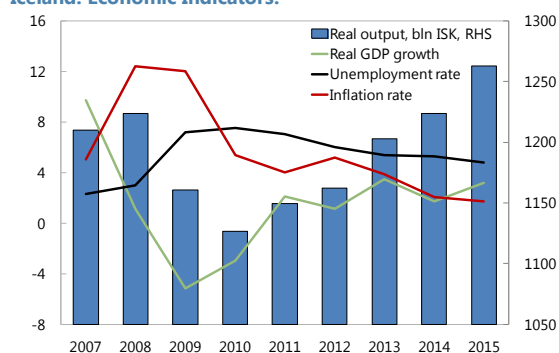
Capital controls were critical in 2008 to avoid a more severe collapse of the Icelandic economy. Six years later, capital inflows have been liberalized, but most outflows remain restricted. Iceland has used the breathing room to reduce flow and stock vulnerabilities, strengthen institutions, and prepare for the lifting of capital controls. Growth is strong, double-digit fiscal and headline current account deficits have shifted into surplus, financial sector buffers are high, and institutions have been strengthened.² But stock vulnerabilities remain significant relative to Iceland's past, to peer countries, and to common vulnerability metrics. Simulations using the central bank's Quarterly Macroeconomic Model (QMM) suggest that, compared to the 2008 crisis episode, the economy can better withstand the impact of an abrupt removal of capital controls. However, the outcome would be dependent on a number of factors, including resident depositor behavior.

A. The Economy is Growing, but the Standard of Living Has Not Fully Recovered

1. Iceland's robust economic growth will push economic activity past its pre-crisis peak this year.

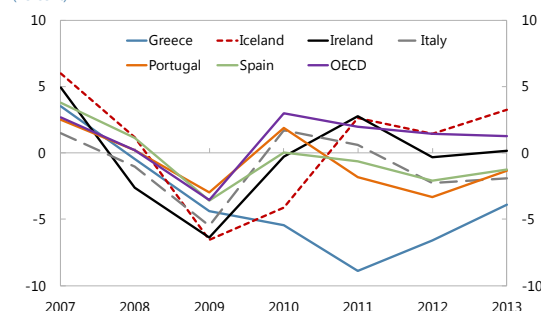
The economy grew by 2¼ percent on average in the past 3 years—a turnaround from negative growth in 2009–10—exceeding growth among the euro area crisis economies and the OECD average. Economic activity is expected to surpass pre-crisis levels this year. Inflation has fallen in range with the CBI target, helped by an appreciating króna, after peaking at 18½ percent at end-2008 and early 2009. Iceland remains a wealthy country with low unemployment.

Iceland: Economic Indicators.



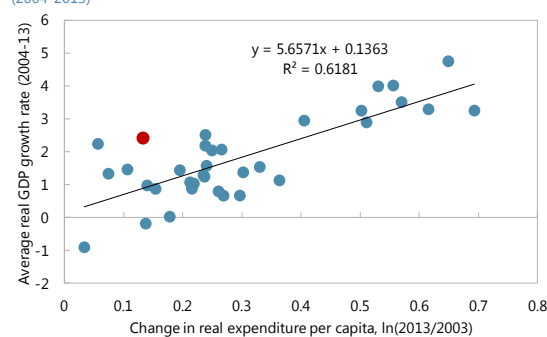
Sources: Statistics Iceland; IMF staff projections.

Real GDP Growth (Percent)



Sources: IMF WEO, and OECD.

Change in Consumption vs. Real GDP Growth, 2004-2013 (2004-2013)



Sources: Eurostat; IMF WEO database; and IMF staff calculations.

¹ Prepared by Anna Bordon.

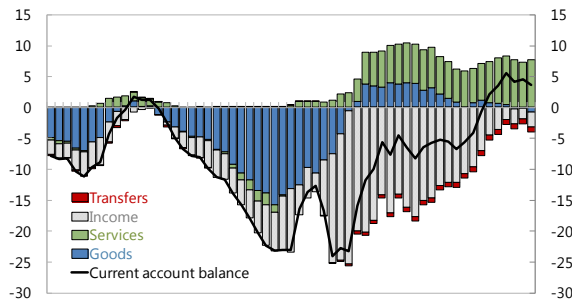
² Throughout the report the headline current account is used for historical data and the underlying current account for estimates and projections. The underlying current account excludes the income receipts and expenditures of DMBs in winding up proceedings and accrued interest payments on intra-company debt held by a large multinational, but is not used in the historical period due to data limitations.

2. The recovery has not been costless. Despite recent growth, private consumption remains subdued. Credit growth to businesses is weak and business investment has just started to show signs of revival. Public investment has suffered amid ongoing fiscal consolidation, and with debt reduction a medium-term objective, is unlikely to recover soon. All in all, domestic demand remains below its historical average.

B. External Vulnerabilities Have Declined, but Remain Elevated

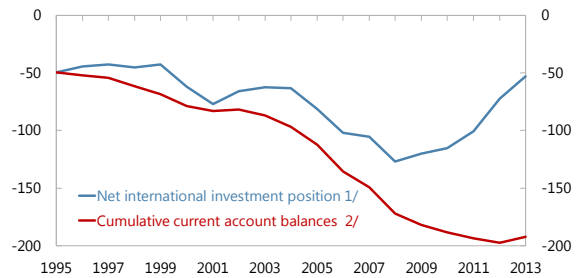
3. The current account has shifted into a surplus. The current account balance has been rising, turning positive in 2013—owing not only to cyclical factors (import compression, positive income balance from low aluminum prices) but also to an improvement in price competitiveness and a structural increase in tourism exports. Experiences in other countries suggest that this surplus could persist, even as the cycle turns. Cross-country analysis shows that price competitiveness gains tend to continue supporting the export sector post-crisis. In addition, tourism looks likely to remain a significant driver of exports growth.

Current Account Balance
(Percent of GDP, 4-quarter rolling sum)



Sources: Central Bank of Iceland; and Haver Analytics.

Net IIP vs. Cumulative Current Account
(Percent of GDP)



Sources: Central Bank of Iceland; Haver Analytics; and IMF staff calculations.

1/ NIIP with calculated settlement of old bank estates.

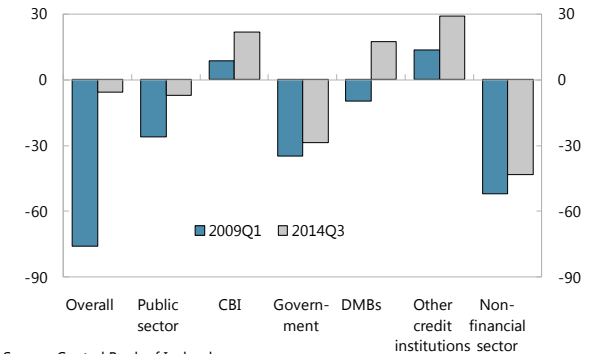
2/ Based on the headline current account balance. The cumulative underlying balance will be higher from 2009 to 2013 but still below the NIIP.

4. The crisis has also brought significant adjustments in external assets and liabilities not explained by the current account. This is likely due to valuation changes but also debt restructuring in the context of extensive bankruptcies. These have significantly improved the net IIP position more than the recently improving current account balance, as reflected by the divergence between the net NIIP and cumulative current account balance series.

5. As a result, Iceland's net external liabilities have declined.

- *Iceland's overall net international investment position (NIIP) has improved significantly.* By 2014 Q3, the NIIP had improved to -6 percent of GDP, excluding old banks' balance sheets, from -76 percent of GDP in 2009 Q1. Including the current 'estimated assets' of the old banks (assuming full payment of domestic assets) reduces Iceland's NIIP down to -46 percent of GDP, lower than its Nordic peers and most other OECD economies, but in line with some advanced economies such as the Czech Republic.

Iceland: Net IIP by Sector (excluding old banks)
(Percent of GDP)



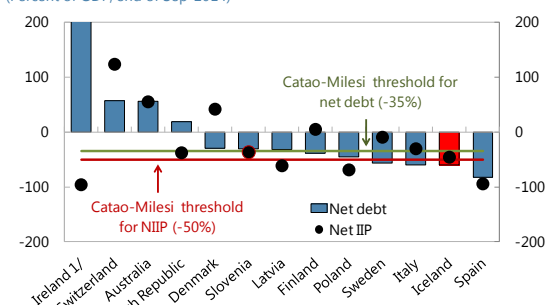
Source: Central Bank of Iceland.

- *The NIIP data show improvement in all sectors.* Deleveraging is ongoing across all sectors, and net positions are improving. Only the government and corporates maintain a negative NIIP—the former as a result of external debt issuances to build reserve buffers, and partially offset by FX deposits at the CBI. Banks' NIIPs have turned positive after the sector's external debt was stripped off in the post-crash restructuring. These banks have started to access international financing but issuances have remained small. The corporate sector remains highly leveraged.

6. Despite the decline, Iceland's external vulnerabilities remain significant and lean towards riskier components. External debt remains high compared to other Nordics. Iceland's NIIP—after accounting for the calculated settlement of the old banks—stood at -46 percent of GDP at 2014 Q3, which is just above the Catao-Milesi threshold of -50 percent of GDP. Catao and Milesi (2013) found that crisis risk increases sharply when the NIIP dips below -50 percent of GDP. Moreover, the composition of Iceland's external liabilities presents a potential crisis risk:

- *Large short-term component.* As discussed elsewhere, Iceland's BOP overhang is large, in the range of 70 percent of GDP. This includes a significant short-term component with the potential of flowing out immediately if capital controls are lifted with no speed limits on exit—and which, if not offset by inflows, could lead to a large króna depreciation. The liquid portion of domestic assets of the old banks is estimated to be around 15 percent of GDP, most of which is due to nonresidents. There is another 16 percent of GDP in liquid assets—bank deposits and short-term government bonds—owed to trapped non-resident liquid ISK. In addition, residents—especially pension funds—are eager to diversify their portfolios by shifting funds overseas.

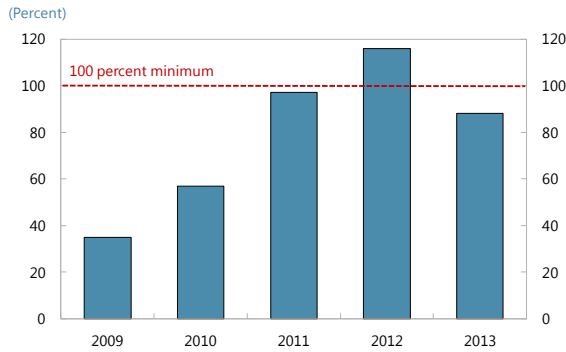
Net International Investment Position and Net Debt
(Percent of GDP, end of Sep-2014)



Sources: Central banks and national statistics offices; IMF staff calculations. 1/Net debt for Ireland is 440% of GDP.

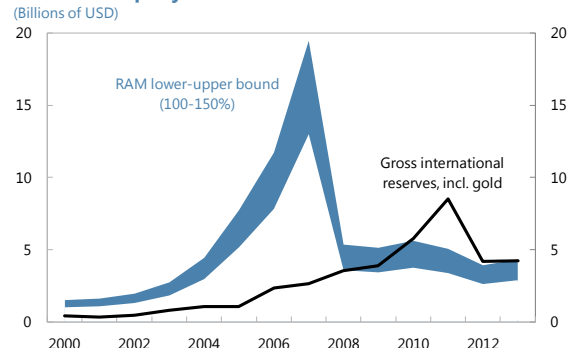
- *Iceland's net debt component of NIIP is higher than other comparable countries—even after adjusting for the calculated settlement of the old banks.* Catao and Milesi (2013) find that crisis risks rise as the composition of NIIP tilts towards debt liabilities. Iceland's net external debt liabilities ratio—at least 60 percent of GDP—is well above the tipping point of 35 percent. Also, Iceland's ratio is lower than many crisis countries, including Ireland and Italy, and Ireland has a more negative NIIP.

Reserves to Short-term Debt



Sources: Central Bank of Iceland; and IMF staff calculations.

Reserve Adequacy Level



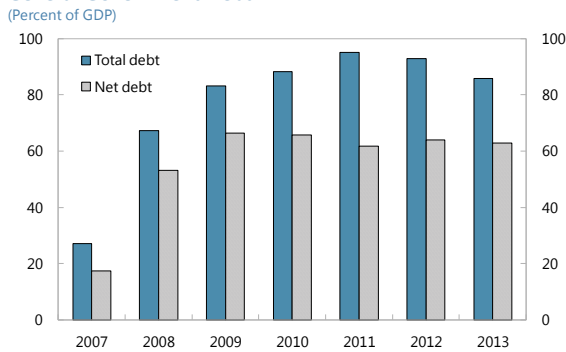
Sources: WEO; IFS; and IMF staff calculations.

7. External reserve buffers are low. Reserves could help manage the pressure from high short-term liabilities and pent-up demand for foreign asset build-up. Since 2009, the public sector has borrowed to increase buffers. Healthy export receipts have also allowed the central bank to resume regular foreign currency purchases and build non-borrowed reserves. Still, reserves do not fully cover total short-term debt, excluding the old banks, at end-2013. Reserves, excluding the old banks, are only slightly above the Fund’s reserve adequacy metric—which indicates Iceland’s adequate reserve position based on the level of exports, broad money, short-term debt, and other external liabilities. Catao and Milesi find that higher official reserves reduce crisis risk by more than other asset holdings in a country’s external balance sheet.

C. Fiscal Balances Are Near Zero, but Public Debt Remains High

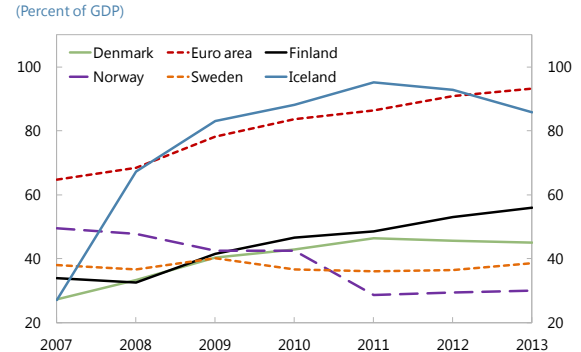
8. A rapid turnaround in fiscal balances has contributed to a reduction in public debt. The general government deficit has approached zero from a post-crisis high of about 10 percent of GDP. As a result, debt has come down to 86 percent of GDP at end-2013 from its peak of 95 percent of GDP. The composition of debt is relatively good: less than a third of total debt is denominated in foreign currency, less than 20 percent is linked to inflation, the average duration is over 4 years, and only 15 percent has floating interest rates. *Net* debt has fallen to around 63 percent of GDP by end-2013, the difference from gross debt largely reflecting borrowing for reserve purposes deposited at the central bank.

General Government Debt



Source: Ministry of Finance.

Gross Debt

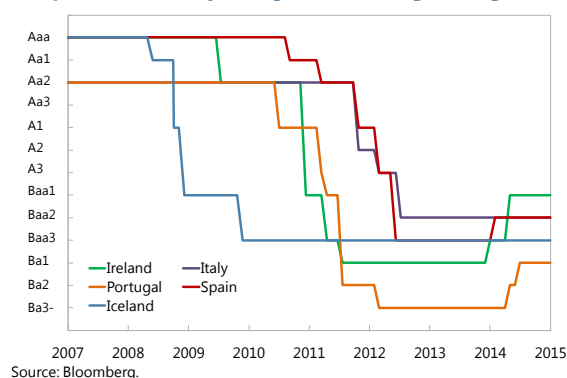


Source: IMF’s WEO database.

9. Yet, fiscal vulnerabilities remain elevated in comparison to Iceland’s recent past and to peers. The government is starting with less fiscal space than before the crisis—total debt stood at 27 percent of GDP in 2007 compared to 86 percent in 2013. General government debt remains high relative to its Nordic peers, though around the same level as the euro area average. There are additional downside (and some upside) risks discussed in staff’s public debt sustainability analysis relating to the government-owned Housing Financing Fund (see Country Report No. 14/194 for the Fourth PPM and the debt sustainability annex to the 2014 AIV and Fifth PPM Staff Report), and from implicit guarantees of depositors in the banking sector.

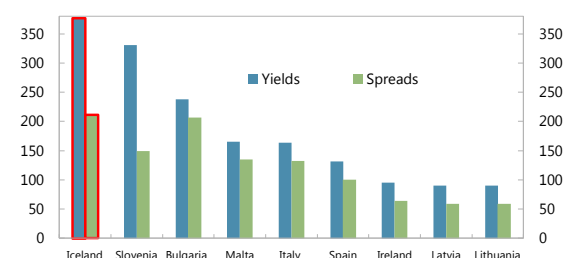
- *Financing needs will pick up in the medium term.* Gross financing needs will spike to 9½ percent of GDP in 2016 and again to 10 percent of GDP in 2018, owing to two large bonds coming due, which creates both rollover risks and vulnerabilities to an increase in the risk premium.

Comparison of Moody’s Long-term Sovereign Ratings



Government Bond Yields and Spreads 1/

(10-year maturities, unless otherwise specified; in basis points; as of 1/27/15)



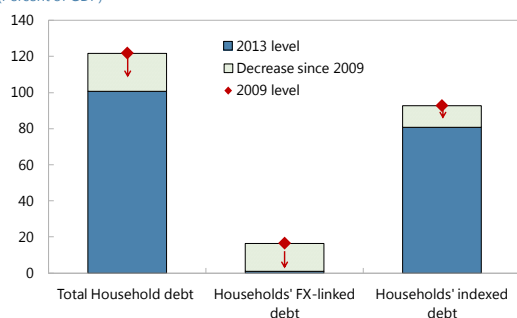
- *Iceland’s sovereign external borrowing costs remain high.* Despite having lower debt levels and better economic performance, Iceland’s credit ratings are mostly lower than euro zone economies experiencing pressures in recent years, and its borrowing costs are higher than other similarly rated economies.

D. Private Balance Sheets Have Strengthened, but Remain Vulnerable

10. Households and corporate balance sheets are strengthening, reflecting ongoing deleveraging. Household debt levels have declined to 101 percent of GDP at end-2013 from 122 percent of GDP at end-2009, helped by several rounds of debt restructuring. Currency mismatches have also gone down, with the end of foreign-currency linked loans. Corporate balance sheets have improved. Total debt dropped from 290 percent of GDP at end-2009 to 131 percent of GDP at end-2013. Both foreign currency-linked and indexed corporate loans have declined.

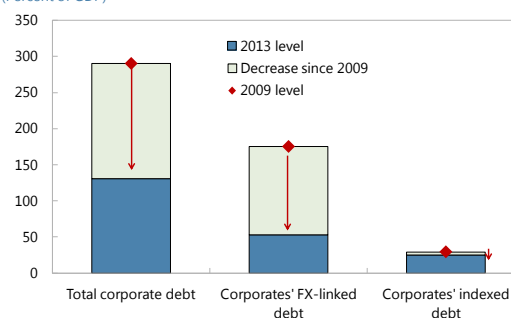
Household Debt, 2009 vs. 2013

(Percent of GDP)



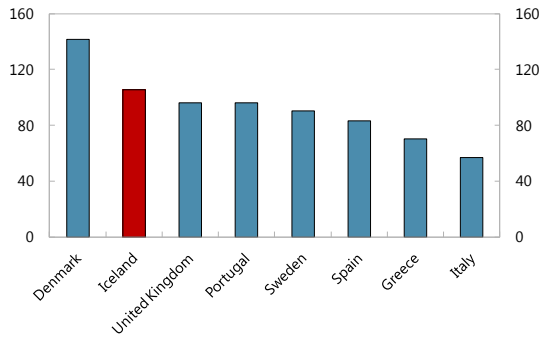
Corporate Debt, 2009 vs. 2013

(Percent of GDP)



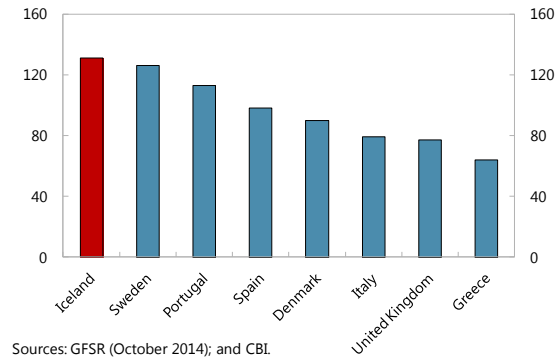
11. Yet, debt remains high, raising the potential impact of negative income and wealth shocks on domestic demand. Corporate and household debt levels are comparable to Nordic peers but remain high relative to other European economies, including the crisis countries.

Household Debt, 2013
(Percent of GDP)



Sources: GFSR (October 2014); Haver Analytics; and CBI.

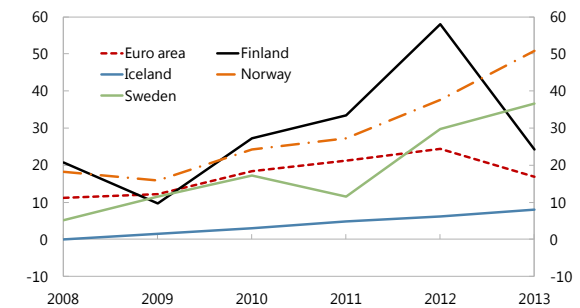
Corporate Debt, 2013
(Percent of GDP)



Sources: GFSR (October 2014); and CBI.

- *Households remain highly indebted.* High household debt increases the impact of any income or wealth shock on private consumption and investment. In addition, CPI-indexed loans remain high at 81 percent of GDP at end-2013, despite a decline from 93 percent at end-2009. A surge in inflation in the event of a large depreciation will weaken household balance sheets and, in the event that wages do not keep up with inflation, in turn weaken banks' balance sheets.

Interest Coverage Ratio 1/
(Percent)



Source: IMF's Corporate Vulnerability Utility.
1/ Ratio of earnings before interest and taxes to interest payments.

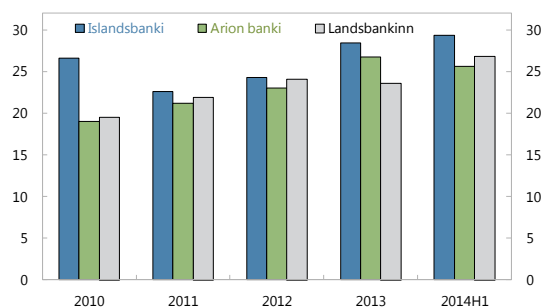
- *The corporate sector still suffers from low liquidity.* The sector is vulnerable to shocks to financing and cash flow—making firms more likely to become delinquent on loans. Interest coverage ratios—which compare profits with interest payments—have been inching up gradually since 2008 but they remain low compared to Iceland's Nordic peers and the euro zone.

E. Banks Have High Buffers, but Face High Risks

12. Banks' balance sheets are stronger. Capital adequacy and Tier 1 ratios have risen to 26 and 24 percent, respectively, at end-2013. In 2009, these ratios stood at 16 and 15 percent, respectively.

Asset quality has improved since 2009—loans in default over 90 days are down from 16 percent in end-2009 to 4½ percent in end-2013. Based on prudent cross-default exposure recognition, the non-performing loans ratio has declined from 42 percent at end-2009 to 12.5 percent at end-2013. Net foreign exchange positions have also closed while indexation imbalances are positive—implying a windfall should inflation surge. Finally, banks are meeting liquidity ratios: liquid assets are more than

Capital Adequacy Ratios of Commercial Banks
(Percent)



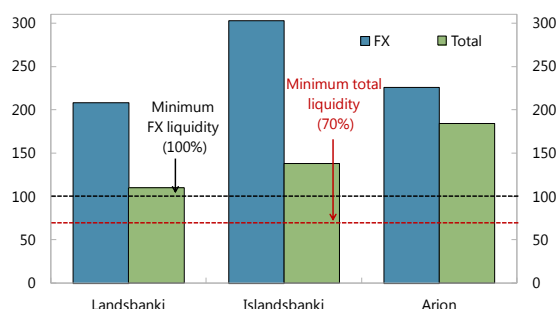
Source: Central Bank of Iceland.

80 percent of funding that can be withdrawn within a month and FX-denominated liquid assets cover 100 percent of short-term FX liabilities.

13. Yet, vulnerabilities to both sides of the balance sheet are high.

- **Assets.** Asset quality can deteriorate rapidly, in the event of a shock. A shock that increases unemployment and reduces household income, combined with a surge in inflation, can lead to mortgage payment delinquencies.

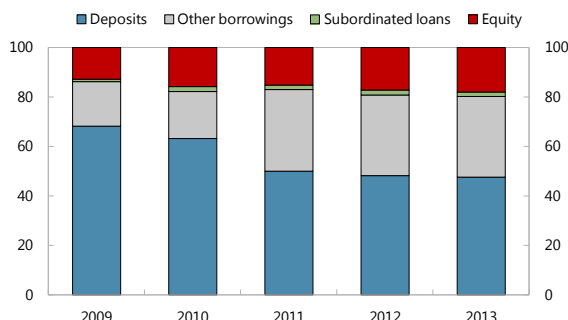
Liquidity Coverage Ratios, June 2014
(Percent)



Sources: Commercial banks' reports.

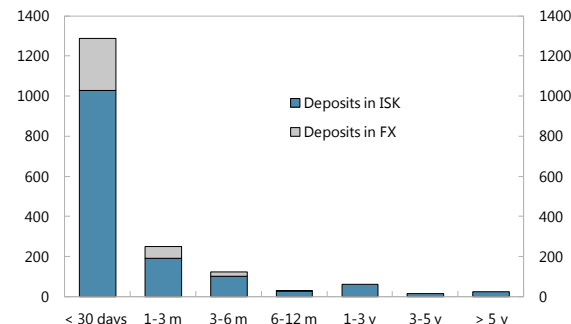
- **Liabilities.** Funding relies highly on short-term deposits. About 48 percent of total funding consists of deposits—slightly down from 68 percent in 2009—of which more than 70 percent can be withdrawn within a month. In a stress scenario where deposit flight ensues, the central bank's new liquidity rules may not be enough: coverage of total short-term funding is 80 percent and there is no general requirement for coverage of funding that could leave beyond 30 days, outside of entities in winding up. A more protracted crisis could strain banks' buffers.

Commercial Banks' Funding
(Percent of total)



Source: Central Bank of Iceland.

Deposits Breakdown by Currency and Maturity, Sep-2014
(Billions of ISK)

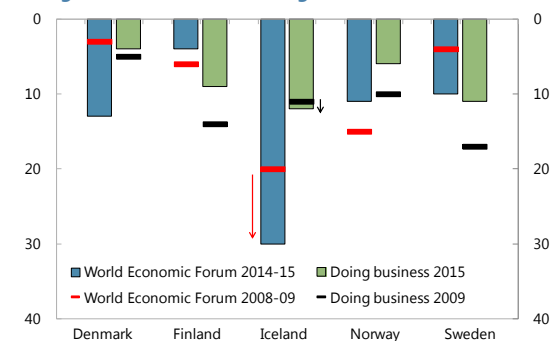


Source: Central Bank of Iceland.

F. Institutions Have Been Reinforced, but Work Needs To Be Completed

14. Fiscal institutions and financial stability coordination are being strengthened. The draft Organic Budget Law now before parliament would cement the government's commitment to fiscal prudence. The draft law provides a framework for government to reduce and maintain net debt at 45 percent of GDP, with room to undertake countercyclical policies, when needed. This would provide support for building higher fiscal buffers, critical in the event of another shock. In addition, the financial systemic risk committee, which works for the

Strength of Institutions Rankings



Sources: Global Competitiveness Report; and WB Doing Business Report.

Financial Stability Council, has also been established. The committee is tasked with assessing the current situation and outlook for the financial system, systemic risk, and financial stability in Iceland. Iceland is still ranked high in the Global Competitiveness and the World Bank's Doing Business Reports, despite slipping a few notches after the crisis and trailing its Nordic peers.

15. Banking regulation and supervision, and safety nets, remain weak spots. Effective regulation and supervision would ensure early detection of any risks building in the banking system and that preemptive measures are drawn up to address them. The recent Report of Observance of Standards and Codes in the area of bank supervision underlines that the FME's regulatory and corrective powers should be significantly strengthened, the supervisor's internal processes and industry rules for risk assessment enhanced, and the FME's funding secured. In addition, the Deposit Guarantee Fund, critical to supporting depositor confidence, lags behind international standards in some areas.

G. Abrupt Capital Account Liberalization Scenario

16. The impact of an abrupt capital account liberalization scenario on the real economy is estimated using QMM. The central bank's Quarterly Macroeconomic Model (QMM) is a medium-sized macroeconomic model used for forecasting and various policy simulations (Danielsson and others, 2011). The model has a high level of aggregation. On the one hand, the relative simplicity allows for a better specification of the interplay between demand, supply, inflation, and monetary policy. It then captures essential elements of the Icelandic economy—making it an ideal model to run an *illustrative* rapid capital account liberalization scenario. On the other hand, several elements are lost. In particular, QMM does not model household and firm behavior. It also does not have a financial sector and a capital account. The scenario therefore has to be generated by a shock that mimics the impact of lifting capital controls.

17. The abrupt capital account liberalization scenario is generated by an exchange rate shock. Weighing the strengths and limitations of QMM, an exchange rate depreciation is selected as the shock that can best depict the lifting of capital controls.

- *In a more fully-specified model, capital account liberalization could be represented, for example, by a reduction in a tax on outward investment and an increase in the risk premium.* Investment would decline as capital flows out. In addition, the krona depreciation would increase inflation and weaken household and firm balance sheets. The increase in risk premia would also reduce investment. Monetary policy would respond to rising inflation with an interest rate hike. Due to all these factors, domestic demand would decline. However, as the liberalization process plays out, the risk premium shock will reverse as the orderly process boosts confidence and removes the uncertainty related to capital controls.
- *The shock is a 30 percent ISK/euro nominal (25 percent real) depreciation in 2015.* The magnitude of any depreciation in the event of an actual full liberalization is highly uncertain and could be quite different. It would ultimately depend on the magnitude of the outflow from the balance of payments overhang trapped by capital controls, the response of the trade balance to the króna

depreciation, the policy response, and the effect on confidence. The simulation assumes that confidence in the banking sector is maintained. The purpose here is to examine the mechanisms and outcomes for the illustrative scenario and should not be interpreted as a projection of depreciation in an actual full liberalization scenario.

18. The króna depreciation weakens domestic demand in 2015-16.

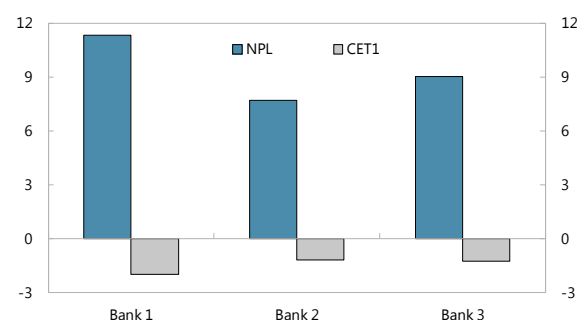
- *Households.* As in the 2008 crisis (when the nominal ISK/euro exchange rate depreciation was around 31 percent in 2008 and another 26 percent in 2009), the depreciation stresses household balance sheets, leading to a decline in private consumption growth by 6 percentage points. The impact on household balance sheets will be milder than in 2008, given significant progress in reducing FX-linked debt. Nonetheless, household debt will increase along with inflation, which rises by 6 percentage points relative to the baseline. The pass through is lower, given the improved credibility of monetary policy. With the slowdown in the economy, growth in disposable income will moderate and further reduce private consumption.
- *Firms.* The króna depreciation will create uncertainty and is assumed to reduce investment growth by 30 percentage points below the baseline. Lower domestic demand will also reduce corporate profits, and given the high level of corporate debt, will induce deleveraging. Unlike the 2008 crisis, however, there is less uncertainty from the external environment and the removal of capital controls could attract new investment, especially after the króna becomes less volatile. Investment will recover faster and growth will exceed the baseline in the outer years.

19. The króna depreciation improves the external position, partially offsetting the decline in domestic demand. The rise in competitiveness will increase exports and shrink imports. Demand compression will also contribute to lower imports. This boosts the trade balance by about 8 percentage points of GDP above the baseline. This channel yields a stronger impact on output compared to the 2008 crisis, given the more favorable external environment.

20. Growth declines but recovers quickly. Rising external demand will not offset the decline in domestic demand and growth falls by close to 3 percentage points from the baseline in 2015. Nonetheless, the decline in income coupled with the fall in purchasing power pulls down the standard of living.

21. Banks appear to have sufficient buffers to withstand the króna depreciation, assuming that depositor confidence is maintained. Simulations using QMM unfortunately cannot capture the impact on bank's balance sheets. A sensitivity test that assumes that the króna depreciation will impair 1/3 of the stock of CPI-indexed loans and require additional provisioning of 20 percent will only reduce capital buffers by 1 to 2 percent. Nonetheless, the exercise assumes that there is no change in resident depositor behavior. An adverse reaction among depositors could lead to a larger shock and a more negative impact on domestic demand and growth.

Change in NPL and Capital Ratios 1/

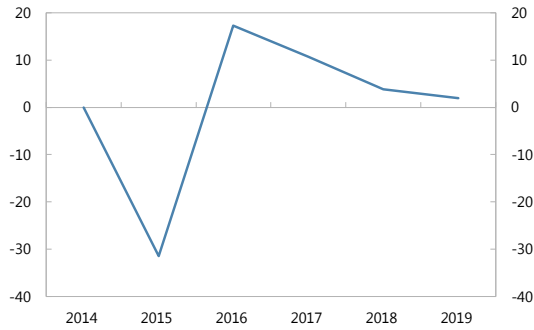


Source: IMF staff calculations.
1/Assumes 1/3 of CPI indexed loans are impaired and additional provisioning of 20 percent.

Figure 1. Abrupt Capital Account Liberalization Scenario

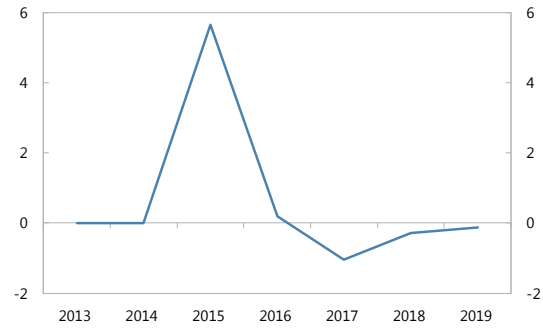
Nominal Exchange Rate

(Percent, deviation from baseline ISK/EUR change)



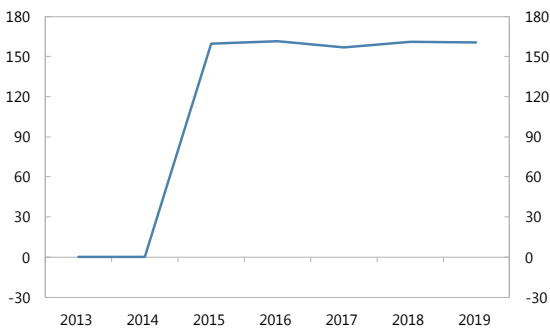
Inflation

(Percent, deviation from baseline)



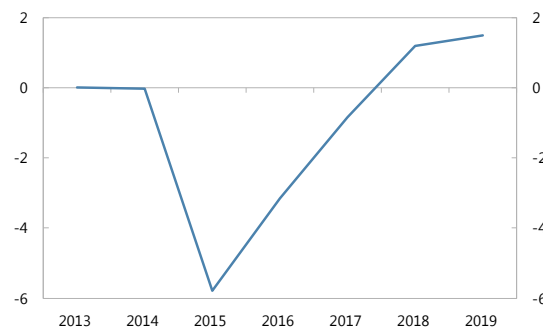
Household Debt

(Billions of ISK, deviation from baseline)



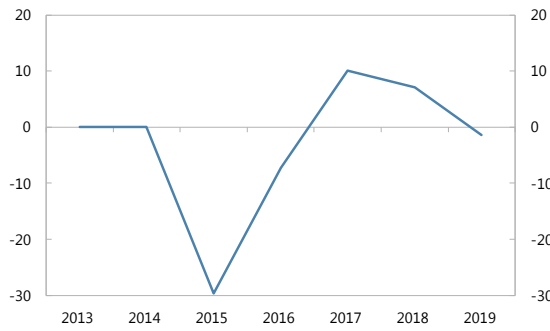
Private Consumption Growth

(Percent, deviation from baseline)



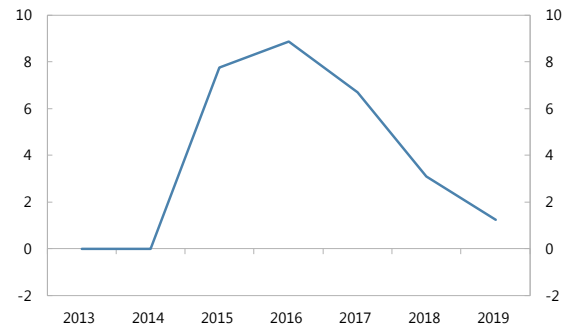
Investment Growth

(Percent, deviation from baseline)



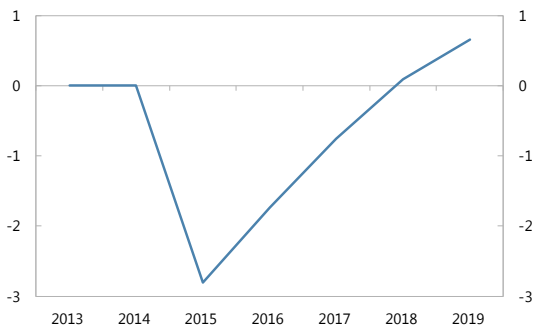
Trade Balance

(Percent of GDP, deviation from the baseline)



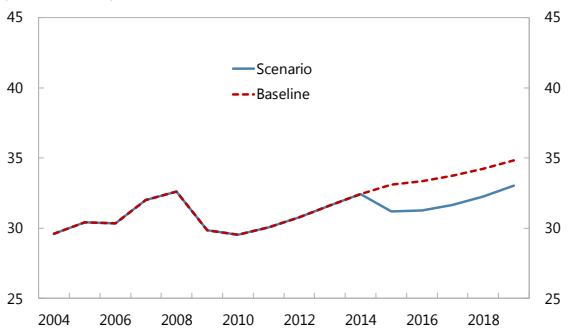
GDP Growth

(Percent, deviation from baseline)



GDP per Capita

(Thousands, PPP)



Source: Eurostat; and IMF staff Calculations.

H. Conclusion

22. Iceland has made significant progress in strengthening the economy.

- *Macroeconomic indicators reflect stability and the economy is rebalancing.* Growth exceeds European averages, inflation is below the target, and the current account has shifted to a surplus.
- *Balance sheets have shrunk.* Iceland's external debt has declined. Primary surpluses since 2012 have put the government debt ratio on a declining path. Ongoing deleveraging, helped by rounds of debt restructuring, has reduced household and corporate debt and removed foreign currency mismatches. And banks have built up capital and liquidity buffers.
- *Institutions are being reinforced.* New laws have been passed or drafted to further improve fiscal policy implementation and financial stability coordination.

23. Despite progress, vulnerabilities remain. External debt leans toward short-term liabilities at levels that, according to empirical evidence, increase crisis risks. Reserve buffers are adequate—if the metric is computed excluding the external liabilities of the old banks. Government debt remains high relative to peers and access to international markets is costlier than similarly-rated countries. The private sector continues to be highly leveraged, relative to some European countries. Banks are exposed to households' high indexation imbalance and funding is, for the most part, highly short-term.

24. Simulations nonetheless suggest that the negative impact of a 30 percent depreciation (in a context of a fully liberalized capital controls) on the economy would be more subdued than under the conditions present in 2008. Apart from having a more advantageous global environment, progress has been made to address vulnerabilities, with the economy under capital controls. These include gains in monetary policy credibility, the ongoing external rebalancing, reduction of FX-linked debt, and build-up of capital and liquidity buffers in the banking system. Nonetheless, a lifting of capital controls that is disorderly could negatively affect private sector confidence—including that of depositors (potentially leading to outflows) and external creditors (resulting in lower external debt rollover). This downside risk would be reflected in a larger nominal depreciation than 2008 (which was about 31 percent) and a more adverse impact on domestic demand.

25. A carefully crafted and credible plan to lift capital controls remains critical. Efforts to further reduce these vulnerabilities should continue but will take time—such as accumulating sufficient nonborrowed reserves, rebuilding fiscal buffers, and diversifying bank funding. Given that vulnerabilities cannot be removed immediately, the strategy to lift capital controls should remain conditions-based and be tailored to instill confidence in the process and minimize the impact on the balance of payments.

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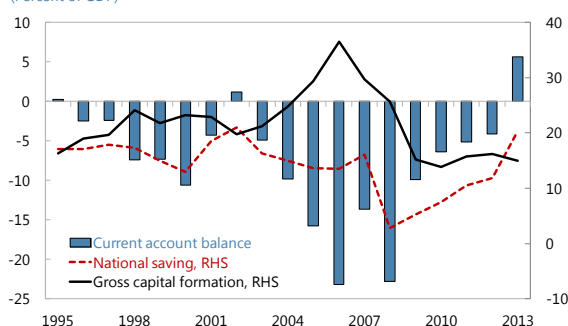
EXTERNAL REBALANCING: WILL IT LAST?¹

This paper analyzes the durability of the post-crisis adjustment of Iceland's external position. Several factors can explain Iceland's more favorable external position. Factors such as rising disposable income and ongoing deleveraging are cyclical and their influence will wane as soon as the economy recovers fully. However, evidence suggests that factors such as the post-crisis real exchange rate depreciation and the surge in tourism are structural and could persist. An analysis of the experience of post-crisis economies indicates that current account surpluses can persist a decade or more after the onset of crisis. Similarly, experiences from other countries show that the higher share of tourism in the economy following booms in this sector is rarely reversed. Nonetheless, supportive policies are critical to sustain the momentum.

A. Introduction

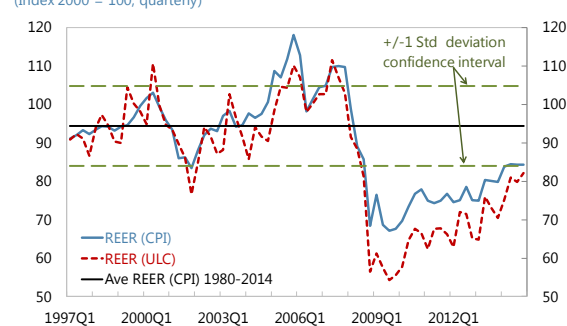
1. This paper explores prospects of Iceland's current account balance from a saving-investment perspective. Iceland's headline current account balance shifted from a large deficit in 2008 to a surplus in 2013, reaching 5.6 percent of GDP, reflecting the improvement in the saving-investment balance. Savings has recovered rapidly. The national saving rate dropped to its lowest point in 2008 but started rising the following year, reaching 20 percent of GDP in 2013, exceeding the historical average of 19 percent. Investment, in contrast, fell and has remained low. Investment collapsed to 14 percent of GDP in 2010 and is up only slightly since then, landing at 15 percent in 2013—still a far cry from the historical average of about 21 percent.

National Saving, Investment and Current Account Balance
(Percent of GDP)



Sources: Statistics Iceland; Central Bank of Iceland; and IMF staff calculations.

Real Effective Exchange Rate
(Index 2000 = 100, quarterly)



Source: Central Bank of Iceland.

2. Several factors contributed to the rise in the current account balance. On the one hand, some elements of the improvement may be temporary such as the low levels of consumption and investment. Both have remained below historical levels. As deleveraging continues and the output gap closes, these will recover and the current account surplus will narrow. Factors connected to

¹ Prepared by Anna Bordon.

capital controls will also eventually disappear as the capital account is liberalized. On the other hand, some elements could persist. The Icelandic economy has shown persistent gains in competitiveness since the crisis. The króna depreciated by nearly 50 percent in nominal effective terms and has remained below pre-crisis levels. Productive resources have shifted from non-traded to traded sectors and real unit labor costs have declined. Tourism picked up in 2011 and, since then, tourist arrivals have been breaking records each year. The net international investment position—though still negative—has improved significantly, raising the income balance.

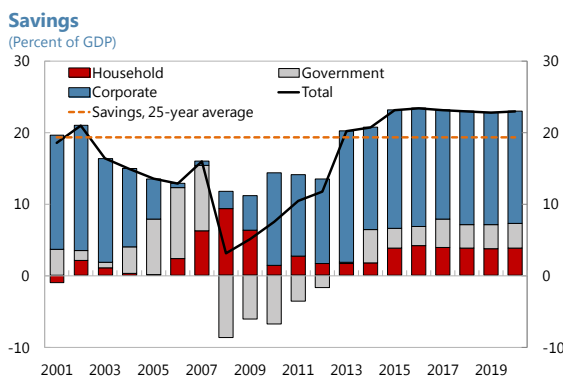
3. Understanding current account balance prospects will be useful towards calibrating policies on consumption and saving. Faced with a large balance of payments overhang, Iceland needs many years of current account surpluses to release the locked in króna and lift capital controls. Just maintaining the current levels implies a need for even higher saving ratios to finance critical investment to boost growth and competitiveness.

B. Saving-Investment Sectoral Breakdown

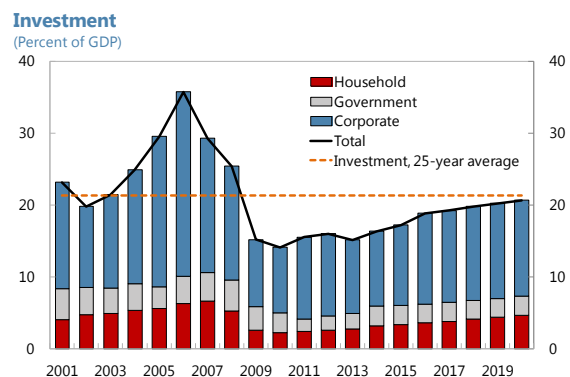
4. A sectoral breakdown of the saving-investment balance can shed light on the sources of any imbalances. The decomposition is based on the following identity:

$$S_h - I_h + S_c - I_c + S_g - I_g = \text{Current Account Balance}$$

S and *I* refer to saving and investment, respectively, and the subscripts are the 3 sectors: household (h), corporate (c), and the government (g). Household saving is computed as the difference between household disposable income and private consumption. Government saving is taken from the UN National Accounts series. Corporate sector saving is considered the residual. The analysis only begins in 2001, the start date of both household disposable income and UN National Accounts series. The sectoral breakdown of investment uses data from Statistics Iceland, which breaks down investment into business, residential, and government.



Sources: Statistics Iceland; UN National Accounts; and IMF staff calculations.



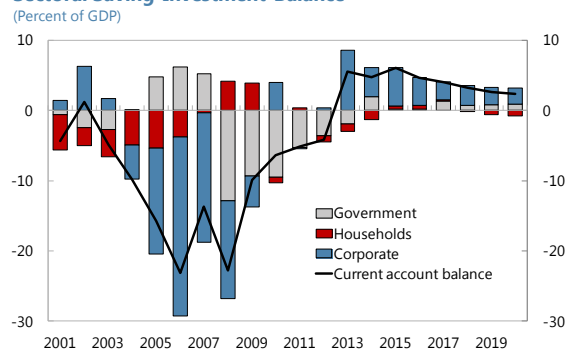
Sources: Statistics Iceland; UN National Accounts; and IMF staff calculations.

5. The private sector explained a good part of the current account deficit in the run-up to the crisis. The deficit was driven largely by the corporate sector, which ramped up investment and reduced savings just before the crisis. Households were running relatively smaller negative saving-

investment balances from 2001-2006. High private sector domestic demand boosted government revenues and contributed to positive saving-investment balances for the government.

6. When the crisis hit, the roles switched. The private sector started showing positive saving-investment balances as consumption and investment crashed, following the króna depreciation and the implementation of capital controls. Household sector deleveraging began and boosted savings in 2007-9, but savings declined as a range of measures to support private consumption, such as Pillar III early withdrawals, took effect. Meanwhile, government savings and investment balance became negative as public consumption rose in response to the crisis and public investment took a hit, and only gradually approached zero. The most recent improvement in the saving-investment balance has been driven largely by the corporate sector, whose saving is higher than pre-crisis levels while investment remains below (investment levels are low relative to historical levels for all sectors). Lower interest payments, as a result of deleveraging (including via debt write downs), and reduced dividend payments, especially in the banking sector, contributed to raising corporate savings. Strong performance in the marine products and tourism sector also helped increase retained earnings.

Sectoral Saving-Investment Balance



Sources: Statistics Iceland; UN National Accounts; and IMF staff calculations.

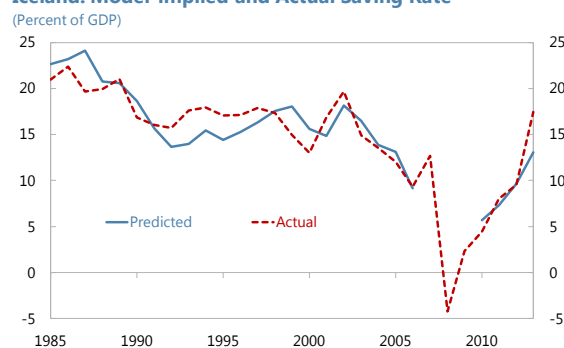
C. Determinants of Savings

7. A cross-country regression analysis that tests the significance of different factors that determine savings can be used to analyze developments. Using results from a large panel regression on private saving (Box), we quantify the deviations of observed saving from the model-predicted levels as well as identify the factors that are driving private saving in Iceland.

8. Iceland's private saving rate is explained well by the model, except in recent years.

Actual public saving rates are added to the model-predicted private saving rates to compute the gross national saving rate implied by the model. Note that the old ESA 1995 national accounts series for Iceland was used in the estimation. Gross national savings declined from 21 percent in 1985 to 13 percent in 2000, which the model predicts well. The crisis saw the saving rate reach a trough of around -4 percent before increasing to 17 percent in 2013. The model, however, predicts savings of only around 13 percent in 2013, about 4 percentage points lower than the actual rate.

Iceland: Model-implied and Actual Saving Rate



Sources: Grigoli, et al (2014); and IMF WEO database.

Box 1. Model-Based Analysis of Private Saving

Grigoli et al (2014) use a large panel database of 153 countries, including Iceland, from 1981 to 2012 to estimate the following private saving equation:

$$y_{i,t} = \gamma y_{i,t-1} + \beta X_{i,t} + \delta Z_{i,t} + c_i + \tau_t + u_{i,t}$$

where y represents the private saving-to-GDP ratio, X includes the endogenous variables, Z includes the strictly exogenous variables, c represents unobserved country-specific heterogeneity term, and τ stands for time fixed effects. Their preferred model is a two-step system GMM estimator, which increases efficiency by estimating a system of two simultaneous equations, one in levels (with lagged first differences as instruments) and the other in first differences (with lagged levels as instruments). They include several explanatory variables to proxy for the following determinants:

- *Income.* Income level and growth can increase or decrease saving. Income tend to decrease savings if the consumer is poor, credit constrained, or if income growth is permanent. Two variables, namely the level and growth of real per capita gross private domestic income (GPDI), proxy for income.
- *Interest rates.* The impact of this determinant on saving is also ambiguous. Interest rates increase saving if the consumer is a net debtor or, in the case when the consumer is a net creditor, if the substitution effect dominates the income effect. The real deposit rate proxies for interest rates.
- *Relative prices.* Inflation (first proxy) increases saving, not only because higher prices discourage consumption, but also because of macroeconomic uncertainty. Terms of trade (second proxy) improvement could increase saving if the income effect is positive and if imported goods account for a significant part of the consumption basket.
- *Financial depth.* The impact of financial depth on saving is ambiguous. Financial depth increases savings options, thus increasing overall saving. However, it could also capture the easing of borrowing constraints. Financial depth is proxied by the ratio of private sector credit flow to GPDI.
- *Demographics.* Different groups have varying propensities to save. Older individuals tend to save less. The urban population (vis-à-vis) could spend more but rural dwellers may be faced with more uncertainty. Demographics are captured by the old age dependency ratio and the share of urban population.
- *Fiscal policy.* Ricardian equivalence suggests that public saving is a substitute to private saving. The public saving to GPDI ratio proxies for public saving.

Results show how the explanatory variables affect saving (Table 1). Income level and growth are significant and positive. The rate of return on assets is positive but not significant. Both proxies of relative prices are positive and significant, suggesting that higher terms of trade and inflation increases saving. Higher flow of private sector credit decreases savings, suggesting that easing of borrowing constraint also increases dissaving. An increase in the old age dependency ratio reduces savings. More city dwellers also reduce private saving. Government saving decrease private saving.

Box 1. Model-Based Analysis of Private Saving (concluded)**Table 1. Determinants of Private Saving 1/**

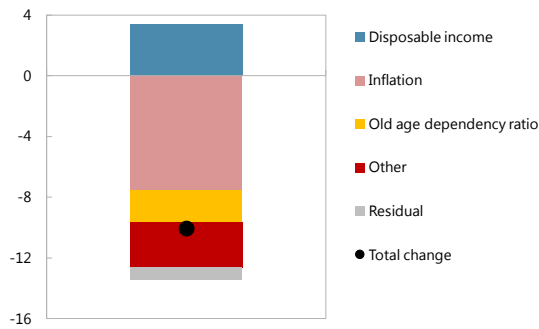
Explanatory Variable	Coefficient
Lag dependent variable	0.593*** (-0.066)
Ln real per capita GDP (PPP)	0.171*** (0.032)
Real growth rate of per capita GDP (PPP)	0.255*** (0.041)
Real deposit rate	0.141 (0.098)
Ln terms of trade	0.051*** (0.015)
Inflation	0.387*** (0.124)
Flow of private sector credit/GDP	-0.081*** (0.039)
Old age dependency ratio	-1.127*** (0.242)
Share of urban population	-0.391*** (0.099)
Public saving/GDP	-0.252*** (0.064)

Source: Grigoli, et. al. (2014)

1/ Standard errors in parenthesis where *** indicate statistical significance at 1 percent. Country and time fixed effects are not shown.

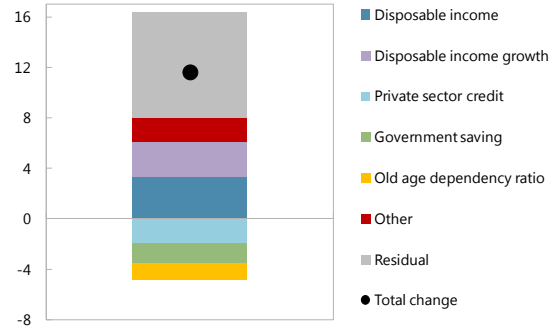
9. A decomposition of the change in the private saving rate sheds light on the relative importance of the determinants. From 1985 to 2000, the drop in private saving rates appear to be driven by declining inflation—which dropped from 32 percent in 1985 to 5 percent in 2000—and rising old age dependency ratios—which were gradually increasing from 16 to 18 percent. The level of disposable income partially offsets this decline. Meanwhile, the recent surge in savings from 2010 to 2013 appears to be driven by income variables and a large residual. The old age dependency ratio continues to drag savings. In addition, rising public savings appear to be reducing private savings.

Contribution to the Change in the Private Saving Rate, 1985-2000
(Percent of gross private domestic income)



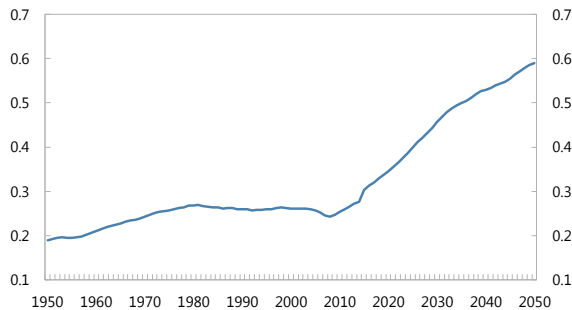
Sources: Grigoli, et al (2014); and IMF WEO database.

Contribution to the Change in the Private Saving Rate, 2010-2013
(Percent of gross private domestic income)



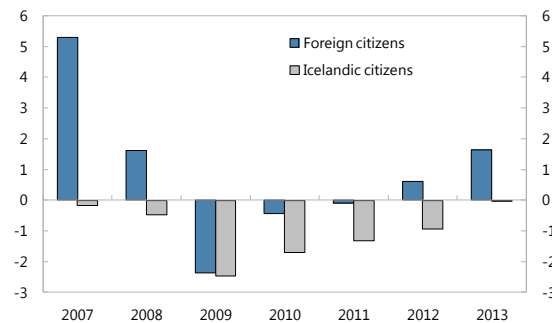
- *Old age dependency ratio and immigration.* Iceland’s old age dependency ratio is rising and is expected to grow rapidly in the medium term. The life-income hypothesis implies that, going forward, the savings rate will decline, as the population share of dependents rise. Offsetting this development is stronger-than-expected net migration which would add to the working age population. Iceland’s net migration rates have turned positive once more in 2013.

Iceland Dependency Ratio: 1950-2050 1/
(Calculated as $+65/(30-64)$)



Source: Statistics Iceland.
1/ Projections from 2014 onwards.

Net Migration
(Number of persons in thousands)



Source: Statistics Iceland.

- *Rising disposable income.* Consumption theory predicts that income growth—particularly the temporary component—will increase savings. In an extension of the model, Grigoli and others (2014) shows that even permanent components could increase savings. The resumption of GDP growth, as well as household disposable income, starting in 2011 has clearly supported an increase in the savings rate.
- *Fiscal consolidation.* Debt sustainability concerns induced the government to embark on a multi-year fiscal consolidation plan. The overall deficit improved by more than 10 percentage points of GDP from 2008 to 2013, taking the pressure off private saving.

10. Several temporary and more persistent factors not captured by the model can explain the large difference between the model-implied and actual saving rates in Iceland in recent years. The model does not take into consideration tourism as an emerging export sector. More importantly, the panel regressions do not capture the impact of the financial crisis on private sector saving behavior (see next section).

Temporary factors

- *Uncertainty.* Uncertainty has increased, owing not only to the crisis and the recovery but also to post-crisis legacy issues (i.e. recalculation of FX-linked loans, capital account liberalization strategy)—reflected in weak consumer confidence. This has likely induced greater precautionary savings in the private sector. Mirroring the increase in savings, private consumption declined in 2008-9 and remained flat in 2010—before growing by around 2 to 2 ½ percent in 2011-12—largely stimulated by one-off measures initiated by the government.
- *Deleveraging.* Lending to the private sector collapsed, as banks cleaned up their balance sheets and reduced credit to highly indebted households and corporates. With limited access to credit, the private sector increased savings and reduced investment.

Persistent factors

- *Tourism. (Annex)* The surge in tourism has increased national savings by increasing growth in current and expected income.
- *Real exchange rate depreciation.* The króna depreciation in 2008 has increased import prices and—given the high import content of consumption—has reduced consumption (increased savings). Exchange rate volatility has also contributed to increasing uncertainty.

D. Post-Financial Crisis Saving and Investment Patterns

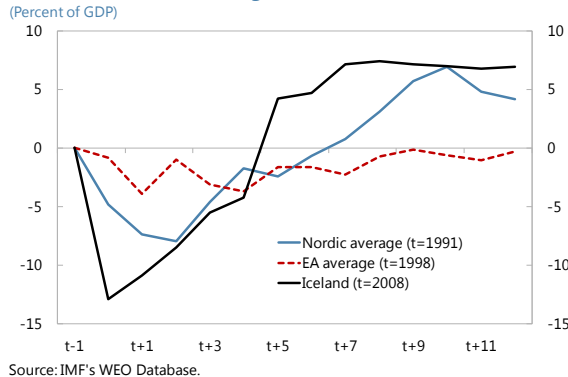
11. The impact of the financial crisis on Iceland’s saving and investment rates should be taken into consideration. The model above does not explicitly include the impact of financial crises. Thus, they may not be able to predict well the saving ratios during and after the crisis. To do this, we look at cross-country experiences by comparing Iceland’s saving rates with other economies that went through a financial crisis. We look at saving and investment up to 12 years after the crises, when the effects of temporary factors have waned relative to more persistent factors. The sample includes Finland and Sweden in 1991 and Indonesia, Korea, Malaysia, and Thailand in 1998. Like Iceland, these economies experienced negative growth during their financial crises, reducing private sector income and, potentially, savings. In addition, both Finland and Sweden experienced more than 1 year of negative growth, likely increasing uncertainty that would have raised precautionary savings and dampened investment in the following years after the crisis. In addition, their private sectors underwent a gradual deleveraging.

Saving Patterns

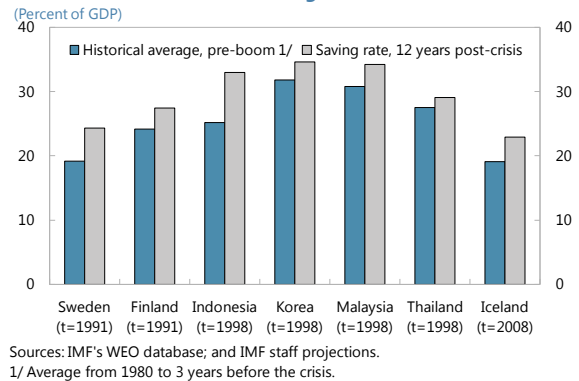
12. Results show the same decline and recovery of post-crisis saving rates as in Iceland. The Nordic crisis countries saw their saving rates decline by as much as 8 percentage points in a two-year horizon and climb to more 4 percentage points above the pre-crisis level 12 years after the crisis struck. The East Asian countries’ average saving rate deteriorated only by as much as 4 percentage points and recovered back to pre-crisis level. There is however heterogeneity within the group. Indonesia’s saving rate declined by 15 percentage points in a 1-year horizon but, 12 years later, reached 3 percentage points above the pre-crisis levels. Meanwhile, Malaysia and Thailand’s declined by around 5 percentage points in a 3-4 year horizon and never quite recovered. Iceland’s

saving rate declined more sharply but has also recovered more quickly than comparator countries. However, the saving rate just before the crisis hit may not be a good baseline given that they are often associated with unsustainably high consumption. Instead, we should compare post-crisis saving rates with pre-boom historical averages.

Post-Financial Crisis Saving Rates



Pre-boom and Post-crisis Saving Rates

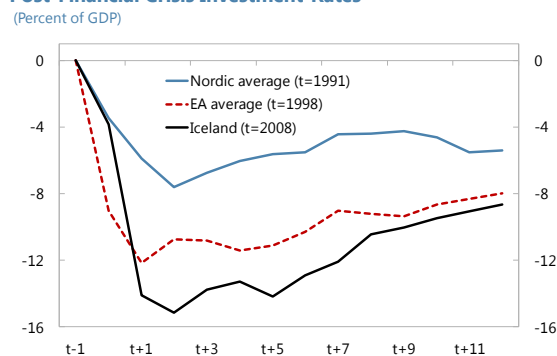


13. Iceland’s projected saving rate recovery vis-à-vis historical averages is comparable to the recovery of other countries hit by a financial crisis. We define the post-crisis saving rate as the saving rate 12 years after the crisis. The pre-boom saving rate is defined as the average from 1980 to 3 years before the country’s crisis to remove saving behavior during boom episodes. Twelve years after the crisis, crisis-hit countries saw their saving rates increase by an average of 4 percentage points compared to pre-crisis historical averages. This implies that underlying persistent factors are driving high post-crisis saving rates. This is comparable to staff’s projections of Iceland’s saving rate recovery. Staff projects Iceland’s saving rate to increase from the pre-crisis historical average of 19 percent to 23 percent in 2020 or around 4 percentage points.

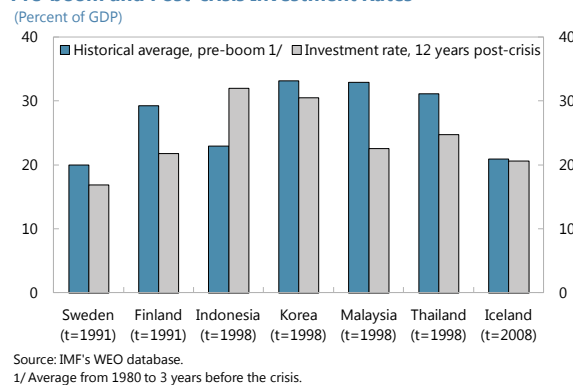
Investment Patterns

14. The investment rate of countries hit by financial crises declined and did not recover to pre-crisis levels over the timeframes examined. Sweden and Finland’s investment rate declined by an average of 7½ percentage points and, after 12 years, only partially recovered to 5 percentage points below the pre-crisis level. Korea, Malaysia, Indonesia and Thailand’s investment rate declined even further—dropping by an average of 12 percentage points. The East Asian countries’ average saving rate remained 8 percentage points below the pre-crisis level. Iceland’s 14 percentage point drop is relatively large but could be explained by large investments in the run-up to the crises. However, the pattern of a gradual and incomplete recovery is consistent across all countries.

Post-Financial Crisis Investment Rates



Pre-boom and Post-crisis Investment Rates



15. For investment, using historical *pre-boom* averages as the baseline do not change the result of a lower post-crisis investment rate. Sweden and Finland's investment gap (difference between post-crisis investment rate with the pre-boom historical average), 12 years after the crisis, is 6 percentage points. The East Asian countries all have gaps of more than 2 percentage points, with the exception of Indonesia whose investment rate surged by more than 9 percentage points. In contrast, staff projects Iceland's investment to go back to the historical average of 21 percent—but this is explained by large anticipated investment in the energy-intensive sector.

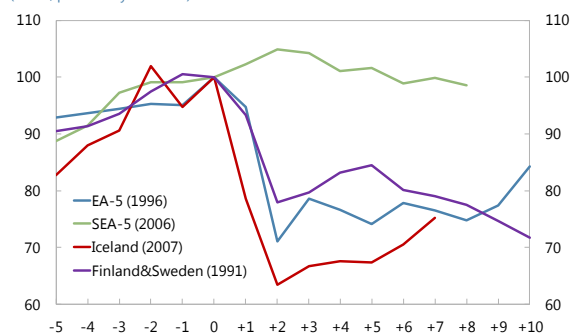
E. Iceland's Current Account Prospects

16. Cross-country evidence suggests that saving-investment balances have often risen after a crisis. The experiences of Sweden and Finland after 1991 and the East Asian countries after 1998 suggest that savings rise above and investment decline below pre-crisis averages. In addition, WEO (2014) analysis also finds that a strong savings recovery coupled with weak investment is typical after a crisis. This is true even 10 years after the crises—when the output gap has closed and the economy has recovered and normalized—implying that the crises have deeply changed the economy.

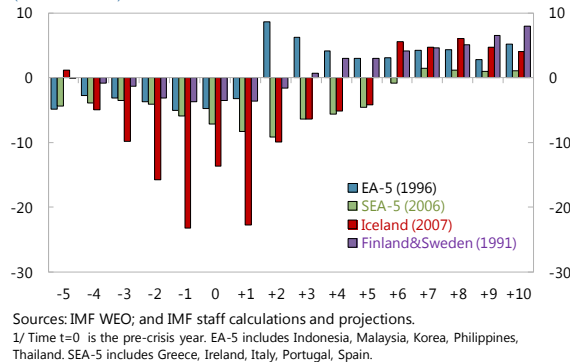
17. In addition, the fall of the real effective exchange rate in crisis economies appears to be highly persistent. The real exchange rate of Finland and Sweden in early 90s and the East Asian economies in late 90s depreciated during their respective financial crisis and remained low even 10 years after. This change in relative prices between exports and imports has led to intratemporal substitution effects—reducing consumption and increasing savings—given that imports have large weights in the consumption baskets. Improved competitiveness has also increased private sector profits and income and boosted private saving rates.

Real Effective Exchange Rate

(Index, pre-crisis year =100)

**Current Account Balance 1/**

(Percent of GDP)

**F. Conclusion**

18. Iceland's saving-investment balance has so far followed similar patterns as other countries recovering from a financial crisis. If this pattern continues, then Iceland's medium-term saving rate should be higher and its investment rate lower not only compared to their pre-crisis levels but also their historical levels. Staff projects that the saving rate will increase to 23 percent in 2020, from 20 percent in 2013. The investment rate will increase to 21 percent in 2020 from 15 percent in 2013, owing to planned investment in the energy-intensive industry. As a result, the current account balance will remain in surplus throughout the medium term, although declining from 5.5 percent in 2013 to 2.4 percent of GDP in 2020.

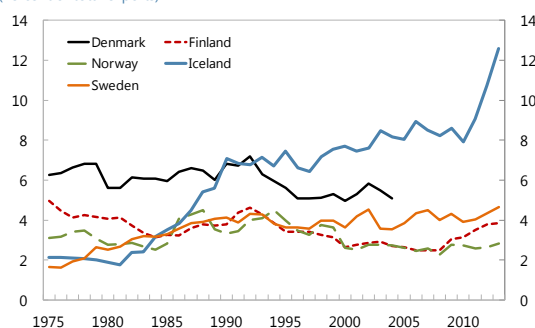
19. Forces that have been sustaining private sector savings in Iceland are expected to continue. Some factors that explain the strong outturn in 2013 will fade away as the economy normalizes: uncertainty will disappear with a credible plan to lift capital controls, deleveraging will end, and public investment should resume. Nonetheless, some factors will remain. Based on the experience of other countries, under the right policies, tourism will maintain its share of the economy. Household disposable income is projected to grow further in the medium term. The economy is very competitive in the marine products and aluminum sectors and export prices are expected to increase as the global economy recovers (while oil prices are expected to remain at low levels). In addition, following the experiences in other crisis-hit countries, the real exchange rate will remain low relative to pre-crisis levels.

20. Nonetheless, supportive policies remain critical. Strong macroeconomic performance is required to ensure that private sector income continues to rise. Savings can also be sustained by raising competitiveness, achieved in various ways—keeping wage growth in line with productivity growth, and tackling difficult structural reforms to increase efficiency and boost exports. Some specific measures can also be introduced such as permanently closing the window on early withdrawals of Pillar III pensions (the 2015 budget has closed this window for the coming year) and raising consumption taxes (with offsetting fiscal measures).

Annex. Tourism in Iceland

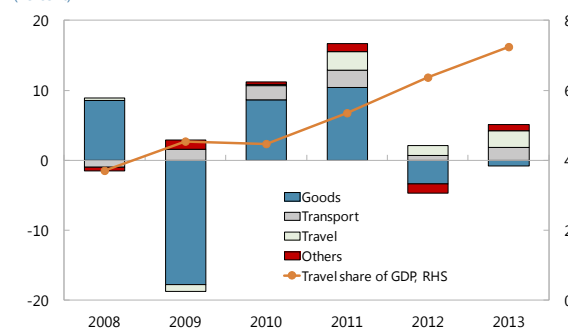
1. Tourism in Iceland has risen in importance. Travel exports began rising in 2006 from an average of less than 3 percent of GDP in 2000-5 and have surged since 2008, reaching 7 percent of GDP in 2013. Tourism is establishing itself as the third pillar of the economy, after marine and energy-intensive products, with travel exports increasing to 12 ½ percent of total exports in 2013 from around 8 percent in 2008 (Statistics Iceland reports the share of tourism in exports at 27 percent of GDP in 2013, using a broader definition). Tourism has played a key role in strengthening the trade balance, contributing to half of export growth in 2013.

Share of Travel
(Percent of total exports)



Source: IMF's Balance of Payments database.

Iceland: Contributions to Exports Growth
(Percent)



Source: IMF's Balance of Payments database.

2. Demand-side determinants of tourism can help explain some but not all of the surge.

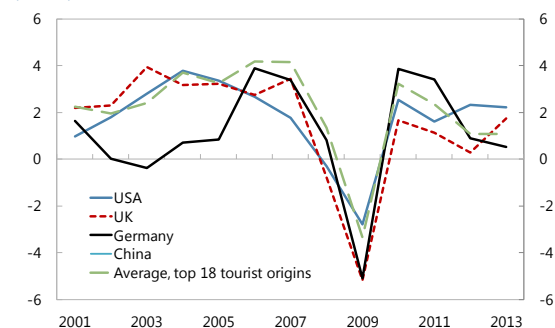
Standard factors that affect tourism, such as economic growth in tourist origins, offer a mixed picture. The average growth in Iceland's top tourist origins (the top 3 are USA, UK, and Germany) slowed just when tourism picked up in 2011. However, the fastest growing tourist origins from 2008 to 2013 are the US and China, two countries with relatively healthy growth rates.

3. Supply-side factors also contributed to the surge.

Iceland's unique landscape of glaciers and volcanoes has landed it on Adventure

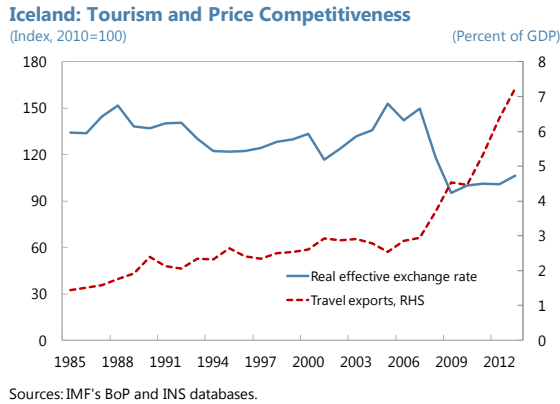
Tourism Development Index's top ten list of adventure tourism destinations. The volcanic eruption of Eyjafjallajökull in 2010 is often credited for creating buzz and interest among adventure travelers. The Icelandic economy also started showing positive growth in 2011, creating room to spend on infrastructure and coordinated tourism campaigns, such as the successful "Inspired by Iceland" promotion after the eruption. For island destinations like Iceland, studies show that increasing flight connections can also give tourism a big boost (Culiuc, 2014). Icelandair has expanded flight routes since 2009—especially to and from the US and Canada, developing a market for European and North American travelers who stop over Iceland for a night or two at no additional cost.

Growth of Origin Economies
(Percent)



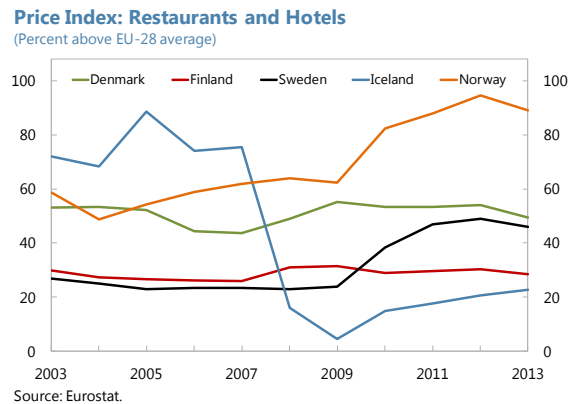
Source: IMF's WEO database.

4. Previous cross-country studies have shown that real exchange rate depreciation can be an important factor. The real exchange rate depreciated sharply during the crisis, improving Iceland’s price competitiveness. As a result, travel rose from 3 percent of GDP in 2007 to 4½ percent of GDP in 2009. However, the real exchange rate was flat during the subsequent surge in 2010.



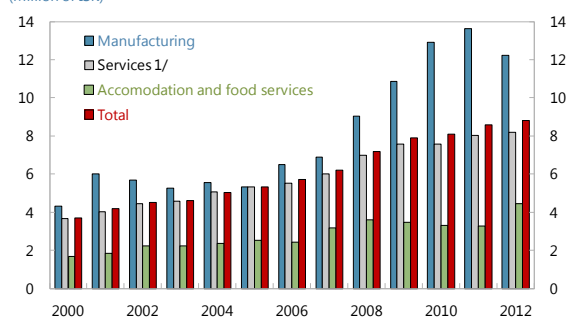
5. Iceland is broadly competitive in tourism—but there is room for improvement.

- Iceland is ranked 9th among European countries and 16th overall (out of 140 countries) in the 2013 World Economic Forum’s (WEF) Travel and Tourism Competitiveness Index. It ranks near the top in regulatory frameworks (3rd overall) and top 30 percent in human, cultural and natural resources (36th overall). It ranks low (121) in the price competitiveness pillar.
- *Analysis (Ringbeck and Pietsch, 2013) of which factors (among the WEF’s pillars of tourism competitiveness) contribute the most to high growth and low volatility of tourism performance suggest that the top three are affinity to travel and tourism, price competitiveness, and policy rules and regulations. Iceland scored high in affinity to travel and tourism (which measures the extent to which a country and society are open to tourism and foreign visitors) but poorly in the other two pillars. Indeed, while post-crisis price levels of hotels and restaurants are low relative to its Nordic peers, they remain about 23 percent above the EU average. In addition, productivity in the services sector, including those that cater to tourists lags behind that of the manufacturing sector and compares weakly against Nordic peers.*



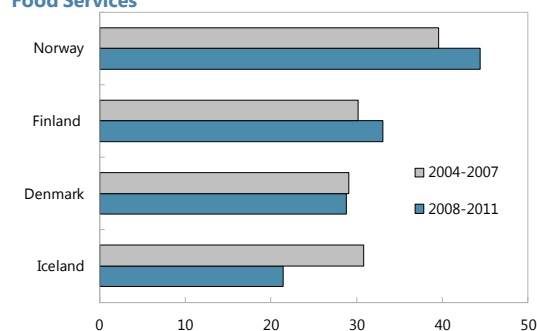
Gross Value Added per Worker

(Million of ISK)



Source: Statistics Iceland.
1/ Excluding accommodation and food.

Gross Value Added per 1000 Workers: Accommodation and Food Services

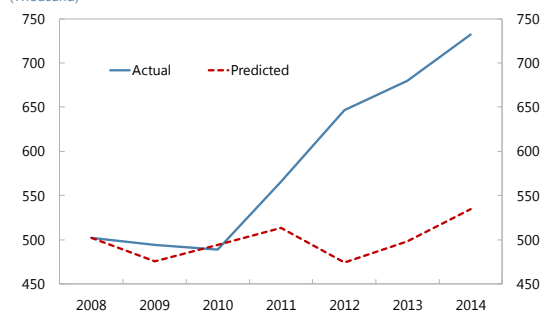


Source: Eurostat

6. Available literature on determinants of tourism cannot fully explain Iceland’s surge. A standard gravity model (Culiuc, 2014) that include origin and destination income and the bilateral real exchange rate to estimate tourist arrivals significantly underpredicts Iceland’s tourist arrivals during the surge episode in 2011–13, suggesting that other factors not captured by the model are also at play.

Iceland: Total Tourist Arrivals

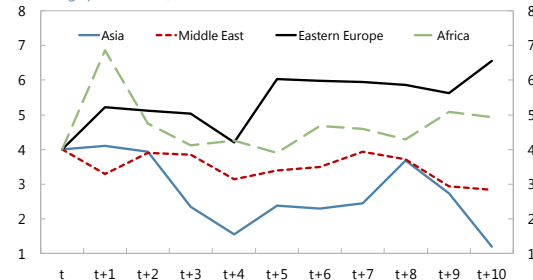
(Thousand)



Sources: UNWTO; Culiuc (2014); and IMF staff calculations.

Post-surge Travel to GDP Ratio 1/

(Percentage point of GDP)

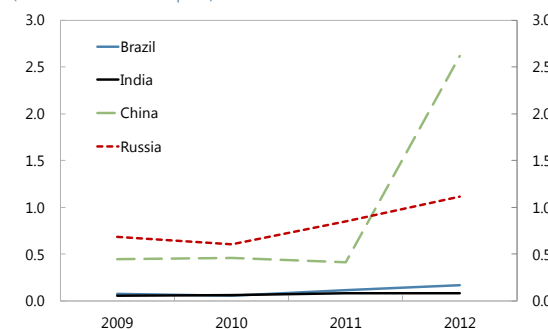


Sources: BOPS; and IMF’s WEO database.
1/ Includes countries where travel to GDP increased by at least 4 pp in 10 years. Ratio is rescaled to 4.

7. Evidence from other countries that have experienced surges in tourism suggests that such increases are quite durable. Nearly all countries whose travel exports to GDP ratio increased by at least 4 percentage points in a span of 10 years—similar to Iceland’s episode from 2003 to 2013—saw the ratio remain above its pre-surge levels. Where declines in tourism occurred, they were associated with political turmoil, crumbling infrastructure, overcrowding in tourist sites and environment degradation, or loss in price competitiveness.

Iceland: Travel Exports to BRICS

(Percent of total travel exports)



Source: OECD Statistics on International Trade in Services.

8. Iceland’s demand-side prospects for tourism are good. Tourism in Iceland surged when the world economy was in a period of slow growth, increasing the upside risks as partner countries recover. In addition, travel exports to the fastest growing economies such as the BRICS remain a small part of total travel exports of Iceland—suggesting that there is room to grow.

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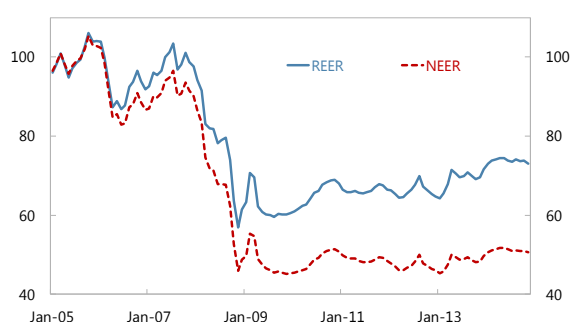
EXTERNAL SECTOR ASSESSMENT¹

A. Background

1. Iceland's external sector has undergone significant adjustments since the aftermath of the crisis. During the crisis, the nominal exchange rate lost almost half of its value against the dollar and real unit labor costs started to decline. Evidence also shows that there was degradation in the traded sector during the boom which partially recovered post-crisis. The large post-crisis depreciation and reduced cost of production have increased Iceland's export competitiveness. In addition, tourist arrivals picked up, owing to a combination of a more competitive króna, additional flight connections, and publicity generated by the 2008 crisis and the 2010 volcanic eruption. These led to a surge in export shares, especially in Europe. Deleveraging in the economy along with write-downs reduced debt stocks across all sectors of the economy and improved the net international investment position (NIIP), resulting in a rising income balance. For the first time since 2002, the headline current account moved into surplus in 2013, reaching a record level of 5 ½ percent of GDP.

Exchange Rates

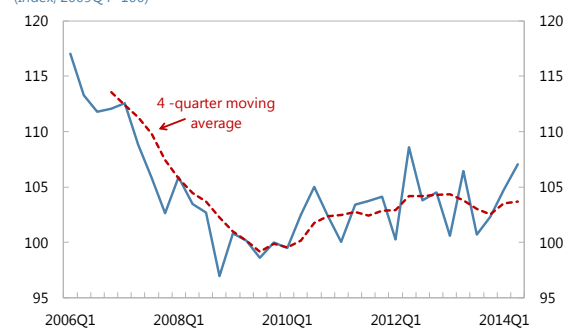
(Index, 2010=100)



Sources: INS database; and IMF staff calculations.

Real Unit Labor Cost (Wage-based)

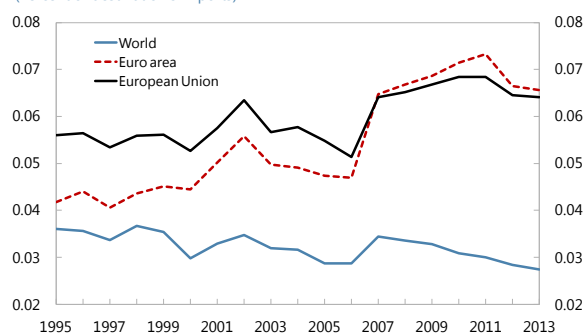
(Index, 2009Q4=100)



Source: Statistics Iceland; and IMF staff calculations.

Iceland's Export Shares (Goods)

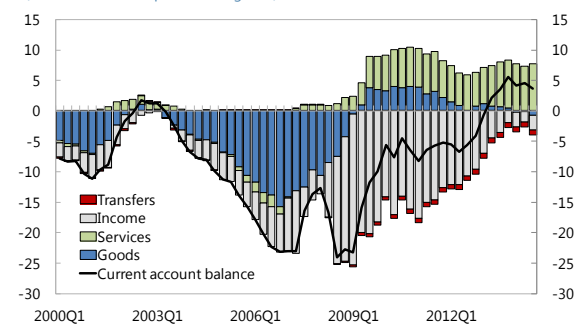
(Percent of destination's imports)



Source: IMF's DTTS.

Current Account Balance

(Percent of GDP, 4-quarter rolling sum)



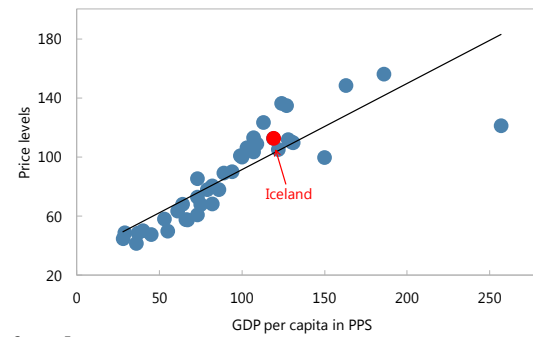
Sources: Central Bank of Iceland; and Haver Analytics.

¹ Prepared by Serpil Bouza and Mitali Das.

2. However, there are risks that competitiveness gains will be eroded. During 2014, the króna appreciated by an average of 4.6 percent against the euro and the real exchange rate appreciated by an average of around 7 percent although the latter remains well below pre-crisis highs. Productivity has trended down recently which could dampen gains in international export markets. The large króna depreciation during the crisis reduced price levels of hotels and restaurants in Iceland, relative to its Nordic peers but these services still remain about 23 percent above the EUR average (and the VAT hike in 2015 for hotel services will raise this further). These factors suggest that competitiveness and the current account surplus could deteriorate somewhat without offsetting policies.

Price Level vs. GDP per Capita

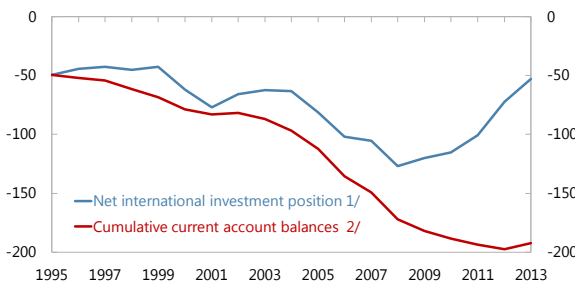
(Index, EU-28=100)



Source: Eurostat.

Net IIP vs. Cumulative Current Account

(Percent of GDP)

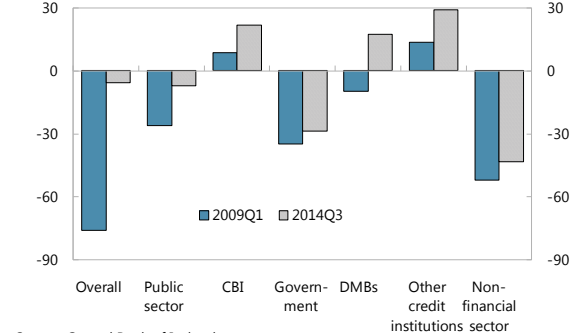


Sources: Central Bank of Iceland; Haver Analytics; and IMF staff calculations.

1/ NIIP with calculated settlement of old bank estates.
2/ Based on the headline current account balance. The cumulative underlying balance will be higher from 2009 to 2013 but still below the NIIP.

Iceland: Net IIP by Sector (excluding old banks)

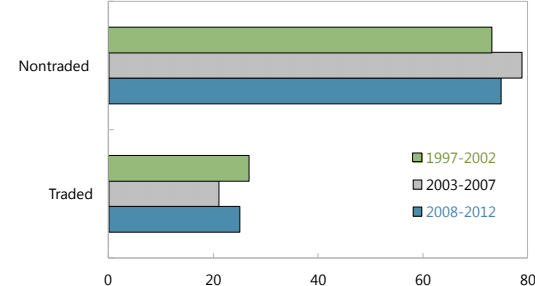
(Percent of GDP)



Source: Central Bank of Iceland.

Sector Share of Gross Value Added 1/

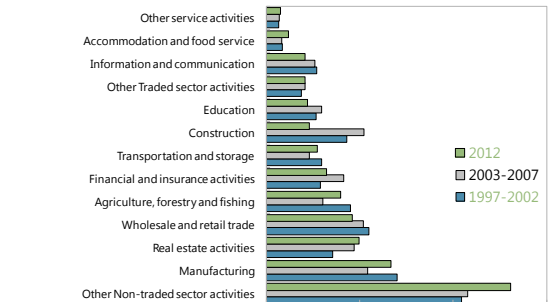
(Percent)



Source: Statistics Iceland.

1/ Preliminary data for 2012. Traded sector consists of agriculture, forestry and fishing; manufacturing and mining; and other professional and scientific activities.

Sector Share of Gross Value Added 1/



Source: Statistics Iceland.

1/ Sectors are ranked by the largest contributor to GDP in 2012. Preliminary data for 2012.

B. External Balance Assessment (EBA)

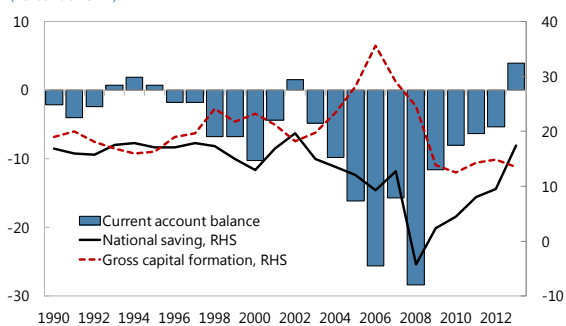
3. The IMF's EBA methodology and its extension, the EBA-lite, give mixed results as to whether the current real exchange rate is consistent with where economic policies and

fundamentals suggest it should be.² The macroeconomic balance (MB) approach estimates that the recorded 5½ percent of GDP current account in 2013 exceeds the level consistent with economic fundamentals and desirable policy settings by about 8 percentage points of GDP implying an undervalued exchange rate by about 23 percent using an elasticity of the current account to the real effective exchange of about 0.36. However, this model provides a poor fit for Iceland with an unexplained residual of about 9 percent of GDP.³ On the other hand, the real effective exchange (REER) approach suggests an overvaluation of 5 percent.⁴ The rule of thumb purchasing power parity measure indicates that Iceland's price level is slightly above countries with similar income levels. However, care should be exercised when interpreting results from such standard exercises as they are unable to capture key characteristics of Iceland's post-crisis economy.

4. Staff also believes that Iceland's CA surplus reflects a number of factors that are not captured well by the EBA methodology. These include ongoing repair of domestic balance sheets following the asset price collapse in 2008, which have raised domestic saving rates and a highly uncertain business climate which has lowered domestic investment rates.

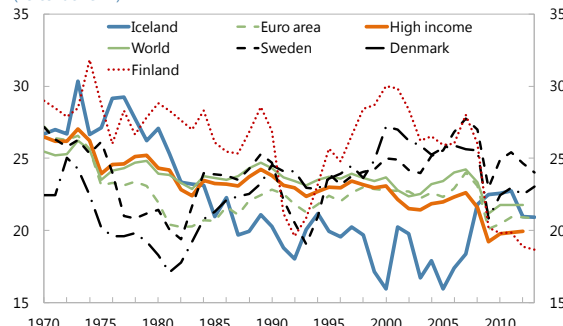
- **The structural break in tourism (boom) described above.**
- **Impact of post-crisis deleveraging on savings.** The improvement in Iceland's current account reflects in part ongoing deleveraging and debt restructuring/write downs. National savings has recovered from about 3 percent of GDP during the crisis year (when purchasing power was hit sharply due to the large exchange rate depreciation) to 20 percent of GDP in 2013 --- debt/leveraging remains at elevated levels relative to pre-boom levels suggesting higher savings may continue.

National Saving, Investment and Current Account Balance
(Percent of GDP)



Sources: IMF WEO and staff calculations.

Gross Domestic Savings
(Percent of GDP)



Source: World Bank (WDI).

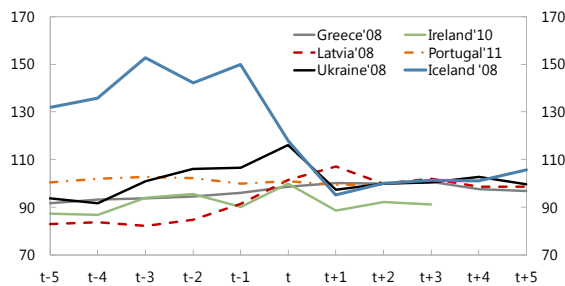
² For the MB approach, the EBA-lite methodology, an extension of EBA was used. For the REER approach, EBA was used. Iceland is not in the usual EBA REER sample though, and the estimates are obtained from an auxiliary regression that depends, among other things, on a series for financial home bias.

³ The unexplained residual is the difference between the actual current account balance and the fitted value of the current account suggested by the model.

⁴ The unexplained residual using the REER approach is less than -0.5 percent.

- Impact of post-crisis uncertainty on investment.** Investment has dropped down from about 26 percent in 2008 to about 15 percent of GDP in 2013. A lower investment rate is not unusual for a country recovering from a crisis in this scale. However, the heightened uncertainty around the timing and strategy of lifting the capital controls may be further weighing on investment incentives. Theoretical and empirical studies have found evidence that policy uncertainty affects investment. Rodrik (1991) finds that uncertainty related to the success or performance of a policy reform leads private agents to withhold investment until this policy uncertainty is eliminated. Aizenman and Marion (1993) confirm with cross-section regressions that policy uncertainty is negatively correlated with investment.

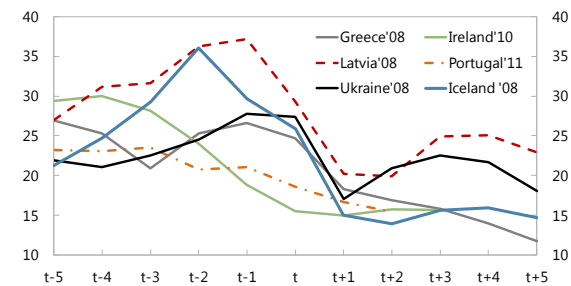
European Crisis: REER 1/
(Index, 2010=100)



Source: IMF's INS database.

1/ Time t is the year in which a systemic banking crisis was observed for each country using Laeven and Valencia (2012) database.

European Crisis: Investment Ratio 1/
(Percent of GDP)



Source: IMF's WEO database.

1/ Time t is the year in which a systemic banking crisis was observed for each country using Laeven and Valencia (2012) database.

- Composition of the NIIP.** Iceland's NIIP in 2014 Q3 was -46 percent of GDP (adjusted for the settlement of failed banks). While this number may seem comparable to some other European countries, taking a closer look at the composition of Iceland's NIIP reveals additional vulnerabilities. An estimated minimum of 60 percent of GDP of Iceland's net external liabilities are net external debt liabilities. Catao and Milesi-Ferretti (2013) find not only that the ratio of net foreign liabilities to GDP that exceeds a threshold of 50 percent in absolute terms is a significant crisis predictor but also that such a tipping point is typically associated with net external debt liabilities above 35 percent of GDP. This composition adds to the uncertain economic environment, which in turn suppresses investment incentives. While the MB approach of the extended EBA exercise takes into account how NIIP positions affect the current account, it does not capture (i) the threshold beyond which the NIIP may lead to sustainability concerns and (ii) the composition of the NIIP (i.e. high debt liabilities vs. non-debt liabilities such as FDI).
- The onshore exchange rate may be at more depreciated levels because of uncertainty about orderly capital account liberalization.** Since the crisis the króna has been supported by capital controls that have now been in place for six years. The capital controls have locked in a large amount of short-term króna debt (the total overhang is estimated at close to 70 percent of GDP and could be higher).

5. To generate FX inflows needed to clear the BOP overhang and lift controls, an even more depreciated exchange rate is arguably needed. A rough sense of the uncertainty emanating from the overhang can be illustrated by looking at a simple calculation of the level of current account surpluses that would be needed to clear the overhang over five years and the additional

depreciation that would achieve this. To completely eliminate the overhang by 2019, additional FX inflows (current account surpluses) of 9 percent of GDP annually would need to be created during 2015–19, which can be achieved through a 24 percent depreciation. It is important to note that a liberalization strategy centered on stability should manage risks and would not rely on significant depreciation but rather would focus on addressing structural impediments to external competitiveness (and even where a strategy relies more heavily on depreciation, there could be appreciation at a later stage, if supported by fundamentals). Although completely eliminating the overhang is not necessarily the aim (e.g., these funds may instead find an attractive longer term investment option in Iceland), this exercise illustrates that a long period of current account surpluses is needed to materially lower the NIIP to help reduce perceptions of risk.

BOP Overhang Analysis

(in percent of GDP unless otherwise indicated)

BOP Overhang	Adjusted Overhang 1/	Baseline CAB 2/	CAB to Reduce Overhang 2/	Required CAB adjustment 3/	Elasticity	Exchange Rate Gap ('+'=depreciation)
68	52	4.1	4.1	0.0	-0.4	0.0
	42	4.1	6.1	-2.0	-0.4	5.3
	32	4.1	8.1	-4.0	-0.4	10.7
	22	4.1	10.1	-6.0	-0.4	16.0
	12	4.1	12.1	-8.0	-0.4	21.3
	7	4.1	13.1	-9.0	-0.4	24.0

Source: IMF staff calculations.

1/ Adjusted down by projected reduction in BOP overhang over 2015-19 in the baseline BOP.

2/ Annual average for 2015-2019.

3/ Difference between baseline CAB and CAB needed to reduce the króna debt overhang.

6. Bringing Iceland's net international investment position to a less risky composition and level will require an extended period of current account surpluses, possibly complemented by a shift to a more favorable composition of liabilities. While the EBA-lite results suggest that the 2013 current account balance is some 8 percentage points of GDP above the level consistent with fundamentals and desirable policies, the staff's assessment is guided by the dominating concern to improve the large negative NIIP. In particular, staff assesses that large current account surpluses will have to be sustained well beyond the medium-term to strengthen the NIIP. The challenge will be to achieve this in an environment where competitive gains appear to be eroding, productivity declining and (goods) export market shares stagnating.

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FINANCIAL CONDITIONS: ARE WE THERE YET?¹

This paper develops a Financial Conditions Index (FCI) for Iceland. An FCI is an aggregate measure of financial and macro-financial variables that is widely used as a financial surveillance tool and can be employed to improve forecasts for credit and growth. An FCI can be helpful in providing a snapshot of financial and credit conditions in a country such as Iceland that is recovering from a financial crisis and has a large financial sector. The FCI constructed for Iceland is based on measures of asset prices, interest rates, exchange rates, and private sector balance sheets. It paints a picture of a gradual improvement in financial conditions after the recent crisis, though conditions still remain well below the pre-crisis average. This highlights the importance of maintaining financial stability as underlying conditions recover. As a leading indicator, the FCI suggests that the recovery in credit is set to continue, led by improved private sector balance sheets and reduced interest rate risk premia, but also rising asset prices and possibly some real appreciation.

A. Introduction

1. The extent of the recovery in financial conditions in Iceland after the recent financial crisis is yet to be assessed. Iceland's financial conditions were severely affected by the recent global financial crisis and the domestic banking crisis in 2007-10: equity prices collapsed by over 90 percent, money market rates spiked to 18 percent, and the króna fell by about 40 percent in real terms. Private sector leverage increased due to lower asset prices, higher inflation, and a weakened currency (affecting mostly corporations) leading to higher NPLs at banks. To contain the financial and economic crisis, the major banks were nationalized and restructured, capital controls were put in place, and a combined international financial aid package was activated. Since 2010, financial indicators have improved notably across the board. However, domestic interest rates remain high relative to comparator countries, asset prices have recovered only partially, the króna is weak by historical standards, and private sector leverage is still elevated. An assessment of current aggregate financial conditions, relative to the pre-crisis historical averages and crisis levels, is attempted in this paper by developing an FCI.

2. A financial conditions index (FCI) is a useful financial surveillance and forecasting tool. A financial conditions index is often used as a financial surveillance tool, as it conveniently summarizes the bulk of the informational content of an array of financial and economic indicators. In addition, an FCI can be used to improve the explanatory power of econometric models for both credit and GDP.

¹ Prepared by Sergei Antoshin and Vizhdan Boranova.

B. Methodology

3. Both judgment and parametric estimation can be used to construct an FCI. Judgment is widely used by investment bank and other private sector analysts to select the components of an FCI and assign their relative weights, if the FCI is predominately used as a monitoring tool. A principal component analysis (PCA) and a regression approach are the two methods commonly used in the literature on FCIs.

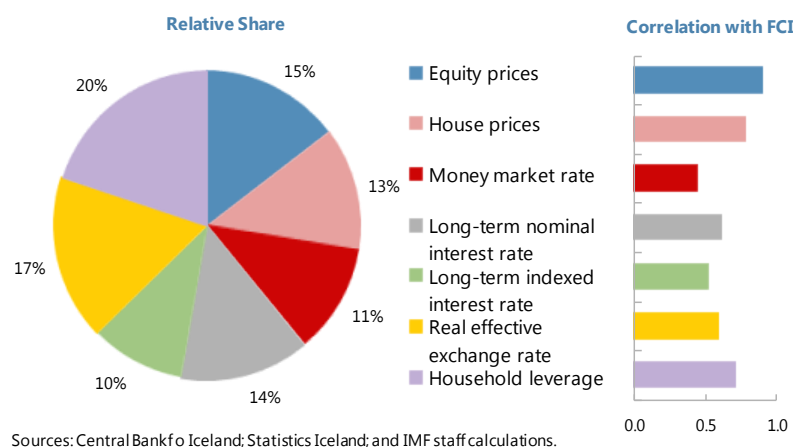
4. A PCA method can be used for a large set of financial indicators, but has limitations. A principle component **analysis** method constructs a set of orthogonal vectors that summarize the variance of the data.² A one-dimensional FCI is then defined as the first principle component which is the linear combination of the indicators with the greatest variance. The advantage of this method is its practicality, as it allows one to quickly collapse a large set of financial variables into a single indicator. However, as a purely statistical tool, a PCA has a major disadvantage because it assumes that the indicators with the greatest variability have the biggest economic significance. In addition, a PCA method may yield results such that some indicators enter the FCI with a “wrong” sign, and thus, are not economically meaningful and have to be dropped.

5. A regression-based method relies on the explanatory power of financial indicators in a pre-defined model. If the main purpose of an FCI is to explain credit growth, a regression model can be used to derive the relative weights of pre-selected financial indicators. There is no theoretical guidance on what model specification should be used and how to measure the explanatory power of the financial variables. One common approach is to run a vector-autoregression model (VAR) with credit and GDP growth and to measure the increase in the R-squared when one of the financial variables is added to the model.³ Thus, while promising more economic meaningfulness than a PCA, a regression-based method still involves a high level of discretion.

C. Constructing an FCI for Iceland

6. A PCA-based FCI for Iceland is constructed based on asset prices, interest rates, exchange rates, and balance sheet indicators. We began with a fairly large data set that included various measures of consumer and asset prices, interest rates, exchange rates, risk premia, banking sector indicators, balance sheet indicators, and external sector indicators. We reduced

Figure 1. Iceland: Principal Component Analysis: Composition of the FCI



² Recent papers include: Angelopoulou et al. (2013), Manning et al. (2014).

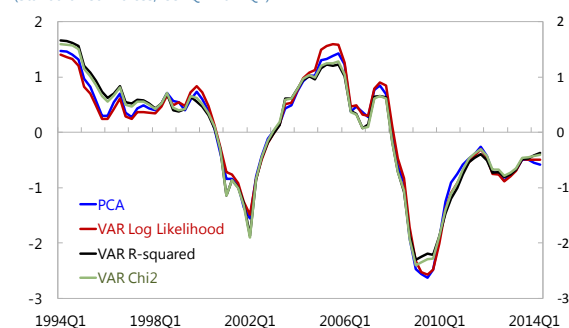
³ Recent papers include: Swiston, A. (2008), Hatzius et al. (2010), Hofman D. (2011), Ho et al (2013).

the original set of quarterly indicators using the following criteria: (1) the time span should cover at least the last 20 years to capture the last two episodes of financial stress; (2) the sign corresponding to an indicator entering the first principle component has to be economically meaningful; (3) the relative weight of a standardized component in the FCI has to be greater than five percent. As a result, the final set of FCI components includes seven variables: equity prices, house prices, the interbank rate, the long-term nominal interest rate, the long-term indexed interest rate, the real effective exchange rate, and household leverage.⁴ All of the indicators have a meaningful relative weight (of at least 10 percent), and are moderately to highly correlated with the FCI (figure).

7. A regression-based FCI is built using a VAR model and turns out to be very similar to the PCA-based FCI.

We used a VAR model for credit and GDP to measure the increase in the explanatory power when one of the components from the PCA-based FCI is added. Three measures of the explanatory power were used: the log likelihood, the R-squared, and the Chi-squared. The increases in the explanatory power corresponding to each indicator were normalized and used as weights in the regression-based FCIs (figure). In what follows, we use the PCA-based FCI as the only measure of financial conditions to simplify the presentation.

FCIs Based on Various Methods
(Standardized indices, 1994Q1-2014Q2)

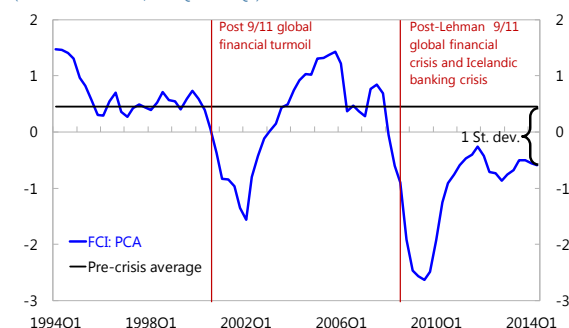


Sources: Central Bank of Iceland; Statistics Iceland; and IMF Staff calculations.

D. Interpreting the FCI for Iceland

8. The 2008-10 financial crisis had by far the most pronounced impact on financial conditions in Iceland's recent history. The post-Lehman global financial crisis and the Icelandic banking crisis resulted in a sharp deterioration of domestic financial conditions, with the FCI falling three standard deviations below the pre-crisis average (figure). All the FCI components—collapsing equity prices, rising household leverage, currency depreciation, and spiking interest rates—contributed to the overall decline (figure).

FCI Based on PCA
(Standardized index, 1994Q1-2014Q2)



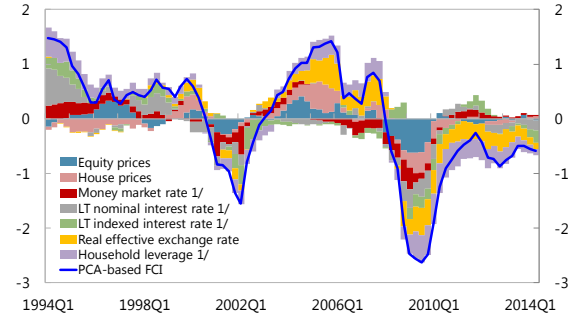
Sources: Central Bank of Iceland; Statistics Iceland; and IMF Staff calculations.

⁴ All the interest rates are measured against the global short term rate.

9. The recovery in financial conditions was impressive in 2010-11 but has stalled since then. A rebound in asset prices, a gradual private-sector deleveraging, a reduction in interest rates, and some currency appreciation lifted the FCI in 2010-11. However, since then, the recovery in financial conditions has stalled, and the FCI remained hovering about 1 standard deviation below the pre-crisis average. Notably, the elevated and even rising interest rate risk premia—in contrast to the other indicators—has continued to halt further improvement in the FCI. Going forward, a reduction in the interest rate risk premia, continued household deleveraging, and some real appreciation (which should be taken in a broader economic context) may contribute to a further recovery in financial conditions.

Contributions to FCI

(Standardized index, 1994Q1-2014Q2)



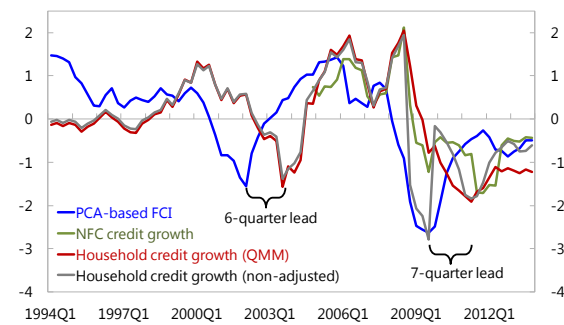
Sources: Central Bank of Iceland; Statistics Iceland; and IMF Staff calculations. 1/ Inverted scale.

E. Forecasting Properties of the FCI

10. The FCI is correlated with credit and GDP and leads credit growth. The FCI is highly correlated with credit growth over the entire 20 year period and leads by up to 6-7 quarters, based on various measures of credit (figure). The FCI is only weakly correlated with GDP growth during the pre-boom period but correlation becomes very high starting with the boom period (figure). High correlation between the FCI and GDP growth in 2006-14 can be explained by the increased size of the financial sector (over 10 times GDP) over the boom period and the large impact of the recent financial crisis on the economy.

FCI and Household Credit

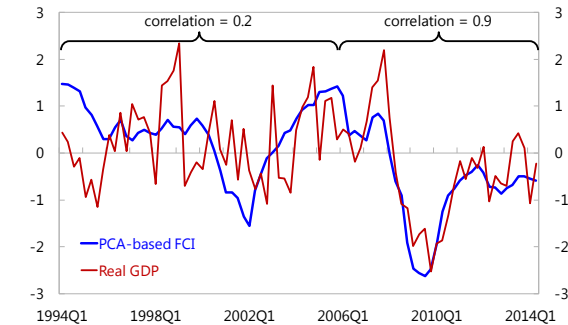
(Standardized indices, 1994Q1-2014Q2)



Sources: Central Bank of Iceland; Statistics Iceland; and IMF Staff calculations.

FCI and Real GDP

(Standardized indices, 1994Q1-2014Q2)

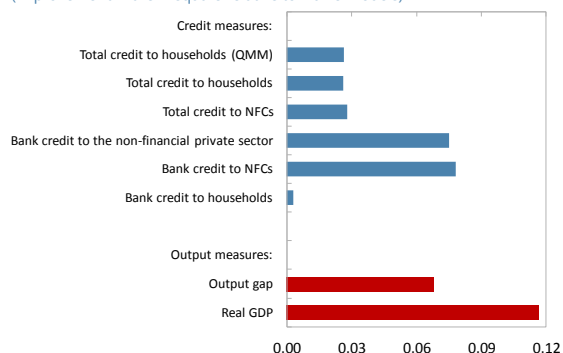


Sources: Central Bank of Iceland; Statistics Iceland; and IMF Staff calculations.

11. The FCI notably improves the explanatory power of econometric models for credit and GDP growth. To assess the FCI’s predictive power for credit and GDP, we measure the increase in the R-squared relative to naïve (autoregressive) models for various measures of credit and output. When the FCI is added, the R-squared increases by 3 percentage points in the models for total credit, by 0.3-8 percentage points for bank credit, and by 7–12 percentage points for output. Thus, forecasting models for credit and GDP can benefit from the use of the FCI.

FCI’s Predictive Power

(Improvement in the R-square relative to Naive Models)



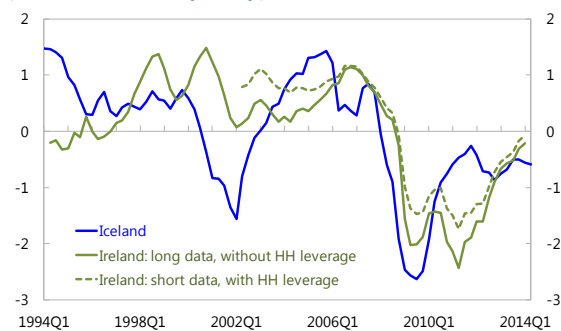
Source: IMF Staff calculations.

F. An International Comparison

12. A comparison of Iceland’s FCI with a similarly constructed FCI for Ireland reveals the importance of country-specific and credit supply-side factors. Based on the same PCA method, Ireland’s FCI paints a picture of faster recovery in financial conditions, relative to Iceland (figure). Indeed, the interest rate risk premia declined further in Ireland on the back of the post-OMT rally, while the recovery in Iceland has been limited, likely due to the risk perception associated with the capital controls. On the other hand, credit growth has recovered relatively faster in Iceland, as the banks have undergone major restructuring, have reduced their NPLs, and are ready to support the economic recovery. In Ireland, NPLs remain relatively high and banks are still under restructuring and deleveraging, and may be in a weaker position to support the recovery. This argues for the importance of having credit supply-side indicators in an FCI, such as NPL or capital ratios.⁵

Iceland and Ireland FCIs Compared

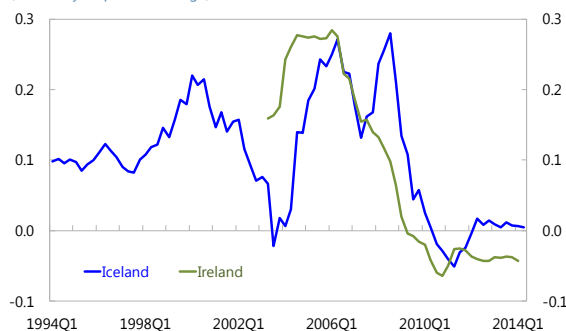
(Standardized indices, 1994Q1-2014Q2)



Sources: Central Bank of Iceland; Statistics Iceland; and IMF Staff calculations.

Credit Growth in Iceland and Ireland

(Year-on-year percent change)



Sources: Central Bank of Iceland; and Central Bank of Ireland.

⁵ In the case of Iceland, the data spans for the NPL and capital ratios are too short.

G. Concluding Remarks

13. The developed FCI highlights a stalled recovery in Iceland’s financial conditions after 2011. Following the bank restructuring and the introduction of capital controls, financial conditions recovered remarkably in 2010-11 but the recovery has since paused, as the interest risk premia have failed to contract further, with the unresolved BOP overhang locked in by capital controls and still-high government debt.⁶ Policies that ensure a reduction in the interest rate risk premia, such as a successful capital account liberalization strategy, and help maintain public and private-sector deleveraging will support a further recovery in financial conditions. Some real appreciation would technically help boost the FCI but should be taken in a broader economic context, as a non-appreciating exchange rate supports a healthy current account and helps speed up the resolution of the BOP overhang in the medium term, which, in turn, positively affects the interest rate premia and other economic and financial variables.

14. Credit growth remains anemic and the FCI may help predict a credit recovery. Despite the currently strong economic performance and the solid financial position of the major domestic banks, credit growth remains weak. The developed FCI is shown to be a useful leading indicator for credit, can improve the forecasting power of credit models, and predict a credit recovery over the medium term. Future research will focus on forecasting credit using the developed FCI.

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⁶ These two issues were also noted by ratings agencies.

ASSET PRICE BUBBLES: EVIDENCE OR SUPERSTITION?¹

One of the potential costs of prolonged capital controls is the formation of asset price bubbles. House prices in Iceland have been rising rapidly in the recent period, prompting concerns about possible overvaluation. Based on a cross-country comparison, time-series analysis, and correlation analysis, house prices in Iceland do not stand out as particularly misaligned. To formally test whether the housing market is overvalued, we employ the Igan and Loungani (2012) model based on housing affordability, per capita income, population, stock prices, credit, and interest rates. We find that there are currently no misalignments between house prices and the fundamentals, which is consistent with the recent analysis conducted by the CBI. However, housing supply-side constraints remain significant, with new starts well below the historic norm. These, together with the ongoing recovery in mortgage lending, the wealth and income effects of household debt relief and Pillar III withdrawals to fund debt relief (and, until discontinued in 2015 budget, for general consumption), increasing demand for vacation properties, and potentially large wage hikes in the near-term, may lead to an overshooting of house prices. Policies that could be explored (while keeping an eye on broader macroeconomic considerations) to help minimize the risks of asset price bubbles in the housing sector include steps to: (i) support measured increases in housing supply; (ii) maintain non-inflationary growth in wages; (iii) prevent excessive leveraging; and (iv) increase household savings.

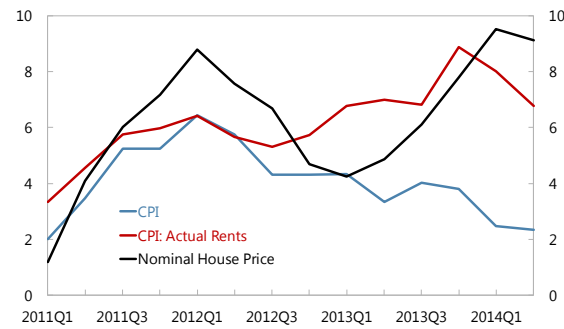
A. Introduction

1. Potential costs of prolonged capital controls include asset price bubbles. The capital controls introduced in Iceland to contain the spreading of the financial crisis have potential costs if they are left in place for a prolonged time, including:

- Underinvestment abroad, foregone business opportunities, and a limited capacity to expand, leading to lower returns for corporates and lower growth
- A constrained and suboptimal financial portfolio allocation, leading to unhedged risks and lower returns
- Limited business and financial investment opportunities may result in **asset price bubbles**
- Negative perceptions of legacy problems and uncertainty in Iceland by the global business and investment community may entail low inward FDI and higher external borrowing costs for the government and private sector

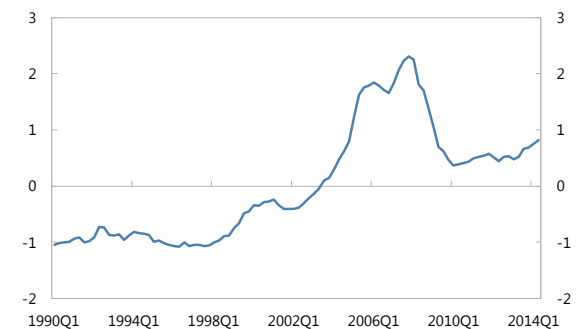
¹ Prepared by Sergei Antoshin and Christina Cheptea.

Inflation, Rent and Housing Prices
(Year-on-year percent change)



Source: Statistics of Iceland.

Real Housing Prices
(Level, in standard deviations)



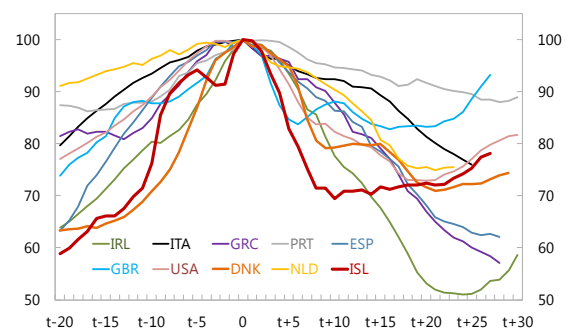
Source: Statistics of Iceland.

2. House and rental prices have been rising well ahead of headline inflation, raising concerns over a potential overvaluation in the housing market (figure). CPI inflation has been trending down since 2012, while rental prices have been rising steadily. Nominal house prices started to diverge significantly from CPI inflation in 2013. Nominal house prices rose over 9 percent y-o-y in 2014H1 and rental prices 7-8 percent, well above the CPI inflation rates of 2.3-2.5 percent during this period.

B. House Prices: An Initial Diagnostic

3. However, the recovery in levels of house prices since the crisis has been limited (figure). Real house prices rose three standard deviations during the liberalization of the housing and mortgage markets and credit boom years (2002-07) and subsequently fell two standard deviations during the crisis period (2008-09).² House prices have recovered by one-half standard deviation since 2010, that is, recouped one fourth of the losses incurred during the crisis period.

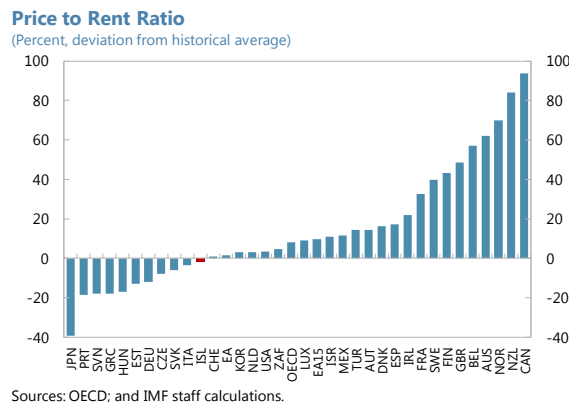
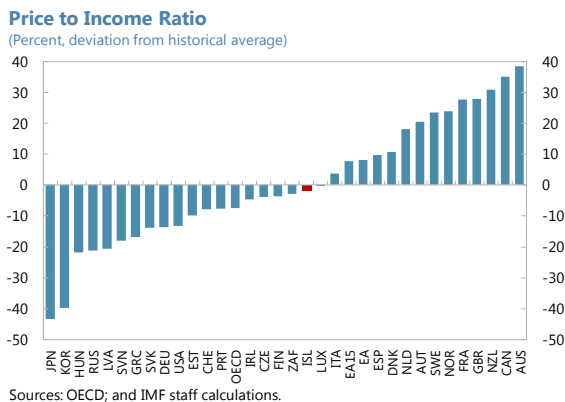
Real House Prices
(Index, 100=peak)



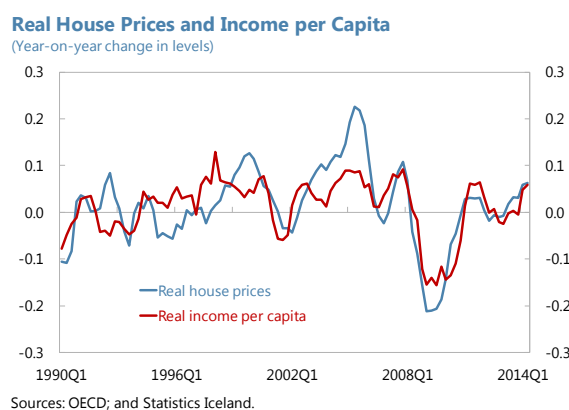
Source: OECD.

4. Relative to other countries, the recovery in house prices in Iceland has progressed well (figure). A comparison of Iceland with other countries that experienced a housing boom-bust cycle recently reveals that Iceland's recovery has proceeded relatively well. The housing market in Iceland has fared better than that in Greece, Spain, and Italy, where house prices are still falling. Iceland's recovery has also been more vigorous than in Ireland and Denmark and has closely followed the upturn in the US. However, the rebound in the UK has been stronger and house prices in Portugal have been more resilient.

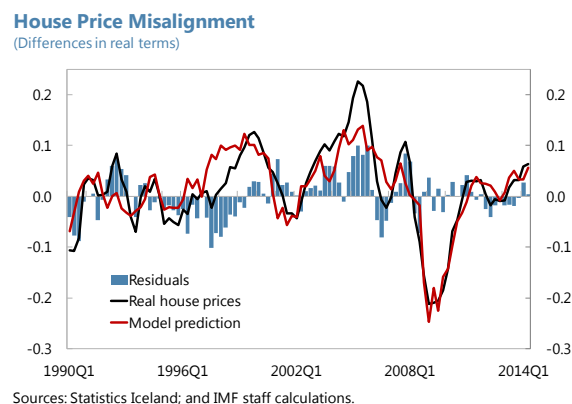
² For a discussion on mortgage market restructuring in Iceland, see Eliasson, L. and Petursson, T. G. (2009).



5. An international comparison of standard housing valuation metrics demonstrates Iceland is in the middle of the pack. When compared to other OECD countries, using the price-to-income ratio, Iceland does not stand out as a relatively overpriced market, and, in fact, is close to the middle of the distribution (figure). Similarly, based on the price-to-rent ratio, Iceland’s housing market does not appear to be relatively overpriced, though rents have gone up substantially as well, which may mask the house price dynamics (figure).



6. Iceland’s house prices are moderately to strongly correlated with fundamentals, especially in the recent period (figure). Correlations between house prices and fundamentals, such as income per capita and working age population range between 0.4 to 0.9. With the exception of household debt, the relations between housing prices and the fundamentals have strengthened in the period starting with the boom years (after 2007). Notably, house prices track income per capita very closely, even during the recent period when house prices started to accelerate, from 2013 (figure).



C. House Prices: A Parametric Estimation

7. A standard parametric model adapted for Iceland shows no overvaluation in house prices. To econometrically test whether house prices deviate substantially from fundamentals, we employ a time series version of the Igan and Loungani (2012) model.³ According to the model, house prices depend on housing affordability, income per capita, working age population, equity prices, credit, and interest rates. The original model specification yields a good R-squared of 68 percent and shows that the residuals do not increase in the recent period (figure). This implies that there is no misalignment of house prices relative to the fundamentals.

Results for Regressions Based on Igan and Loungani (2012)
Model's Specifications for House Prices

	original	without affordability	without equity prices	without credit	w/o equity and credit	in real terms	with error correction
Affordability	+		+	+	+	+	+
Income per capita	+	+	+	+	+	+	+
WAP	+	+	+	+	+	+	+
Equity prices	+	+		+		real	real
Credit	+	+	+			real	real
Interest rates	+	+	+	+	+	+	+
Error correction							+
Adj. R ²	0.68	0.63	0.67	0.67	0.65	0.72	0.75

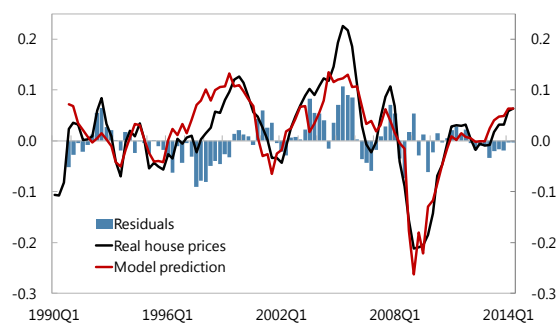
Source: IMF staff calculations.

8. Various model specifications and an advanced model confirm the initial finding. In order to rule out that some of the fundamentals in the original model may be growing beyond their equilibrium levels in the recent period and thus may be contributing to the initial finding, we dropped each of the explanatory variables one by one and re-ran the model. The results from the reduced models are very similar to the original finding, with the R-squared ranging from 63-67 percent and well-behaved residuals in the recent period. We also ran a vector-error correction version of the model which yielded the highest R-squared among all of the specifications and confirmed the no overvaluation result (figure). The findings are consistent with the results in Eliasson, L (2014).

³ Other recent papers include: Hilbers P. and Tchaidze, R. (2005) and Buiton, C. O. and Denis. S. (2014).

House Price Misalignment

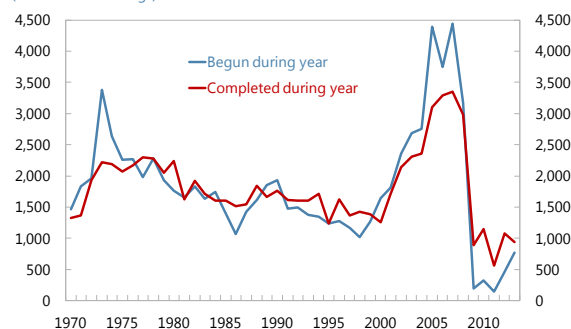
(Differences with error-correction terms)



Sources: Statistics Iceland; and IMF staff calculations.

Residential Construction

(Number of dwellings)



Source: Statistics Iceland.

D. House Price Dynamic Going Forward

9. The supply side of the housing sector is bound to improve. After the boom years of 2002-07, housing starts and completions dropped sharply and remained well below the historical norm in 2011-13 (figure). Given the time required to clear the surplus supply of houses built during the boom years, housing starts are likely to pick up notably in late 2015-2016. There is already growth in the hotel segment, which could ease supply by drawing apartments currently used for short-term rentals back into serving as housing for permanent population. In addition, in contrast to some other corporate sectors, bank credit to the construction sector has revived and grew close to 15 percent y-o-y in late 2014 (figure).

10. The demand side can contribute to further growth in house prices. As household leverage declined, wages rebounded, and unemployment fell, the household sector is now in a better position to borrow and purchase houses. The two legs of the recent household debt relief program will (1) reduce household leverage further, and (2) divert private savings into house values. Iceland's domestic banks are currently strong (with low NPLs and high capital ratios) and can support the recovery in household credit. Increased competition in the industry, reduced risk premia, and stable inflation may lead to a reduction in bank lending rates.

Bank Credit to the Construction Sector

(Year-on-year percent change)



Source: Central Bank of Iceland.

11. The strengthening of the demand side should be consistent with the macroeconomic and financial stability goals. Several demand side factors may pose risks that need to be addressed:

- **Wage growth** beyond productivity gains should be contained to maintain price stability

- **Credit developments** should be carefully monitored, especially in the second lien and second home mortgage segments, and the CBI/FME should stand ready to rein in excessive leveraging to prevent the vicious circle of house price and credit growth
- **Household savings** should be stimulated to strengthen current account prospects and the Pillar III pension scheme should be preserved for its original purposes

E. Concluding Remarks

12. House prices do not appear to be overvalued or misaligned from fundamentals, based on various approaches. A time series analysis, cross-country comparison, and parametric estimation all suggest there is no overvaluation in the housing market.

13. The demand-side factors may lead to further increases in house prices, and should be closely monitored to maintain macroeconomic and financial stability. Excessive wage growth, leveraging, and reduced household savings can lead to further increases in house prices and can also undermine broader macroeconomic and financial stability, and thus have to be contained.

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FISCAL POLICY REFORM OPTIONS TO BOOST POTENTIAL GROWTH AND STRENGTHEN THE EXTERNAL POSITION¹

This chapter focuses on how fiscal policy reforms could boost the long term growth rate while maintaining continued debt reduction and supporting the external position. A Global Integrated Monetary and Fiscal Model (GIMF) is calibrated on Icelandic data and used to consider the following budget neutral scenarios: a) boosting public investment which has borne the brunt of the fiscal adjustment with off-setting savings in current expenditures; b) shifting the tax burden from direct to indirect taxes; c) improving the incentives for private sector investment by reducing corporate income tax to its pre-crisis levels with offsetting changes in indirect taxes, and d) reducing the size of the government by reducing both direct taxation and government consumption. The paper finds that a comprehensive package of fiscal reforms could boost GDP over the medium term by 2 to 2.5 percent of GDP, increasing the annual growth rate by 0.5 percent, while strengthening, to varying degrees, the external position.

A. Introduction

1. The last seven years have been a difficult time for fiscal policy management in Iceland.

The global financial crisis in late 2008 exposed serious vulnerabilities, leading to a disintegration of the domestic banking system and a deep recession. The domestic currency depreciated sharply and inflation increased. The crisis had a profound impact on Iceland's fiscal position. Between 2008 and 2013, tax revenues fell by 4.2 percentage points of GDP as domestic demand, output and imports all collapsed. A combination of financial sector clean up costs, central bank losses and higher crisis-related social expenditures pushed the public expenditures above 50 percent of GDP. The general government deficit reached double digits in terms of GDP. Public investment bore the brunt of the post-crisis adjustment. In real terms, public investment fell by 40 percent. Allowing for capital depreciation, public investment has been close to zero in net terms since 2010.

2. Nevertheless, the post-crisis consolidation efforts, which began in 2009, yielded important results.

The general government deficit was reduced from almost 11 percent of GDP to a projected surplus of almost 2 percent in 2014, while the primary balance has been in surplus since 2012. Public debt peaked in 2011 at 95 percent of GDP and has fallen over 12 percentage points since then. The revenue decline has been reversed, with the revenue-to-GDP ratio increasing by 3.2 percentage points since 2009. Expenditure restraint has yielded a 5 percentage point improvement in the total expenditures to GDP ratio between 2009 and 2013.

¹ Prepared by Jimmy McHugh.

3. With the post-crisis fiscal legacies contained, there is now an opportunity to reconsider the fiscal reform strategy. Looking beyond the crisis, Iceland faces serious fiscal challenges, which need to be addressed. The tax regime – particularly VAT and personal income tax – suffer from serious structural weaknesses. Unfavorable demographic trends will lead to growing pension and health expenditures. Social sector expenditures are significantly higher than they were prior to the crisis. Fiscal space needs to increase in order to provide resources for higher public investment, particularly in the health sector, which needs urgent infrastructure-related expenditures.

4. Iceland’s Economic Program – published in February 2014 – was an important step towards the normalization of fiscal policy. It outlined an economic strategy that aimed to “increase the economy’s growth potential” through increased investment and higher exports. The main pillars of the reform strategy were the removal of capital controls, household deleveraging, prudent budgetary policies that both reduced public sector indebtedness while boosting investment and productivity.

5. The program includes a number of broad fiscal policy objectives and proposals.

- **On the revenue side, the government would like to establish “a simple and efficient tax system which encourages investment and increases household disposable incomes”** (Ministry of Economic and Financial Affairs, 2014). To prepare the groundwork for meeting this objective, government is committed to a review of tax policy.
- **The government reaffirmed Iceland’s medium term objective of reducing the ratio of public expenditure to GDP.** The main instruments for achieving this goal will be continued restraint on current expenditures and debt service savings as a result of prudent debt management practices and ongoing debt reduction.
- **The program also argues in favor of higher public investment, which was curtailed severely during the crisis.** This implies a significant reordering of expenditure priorities given the commitment to simultaneously reduce the tax-to-GDP ratio and maintain a downward path of the debt-to-GDP ratio.

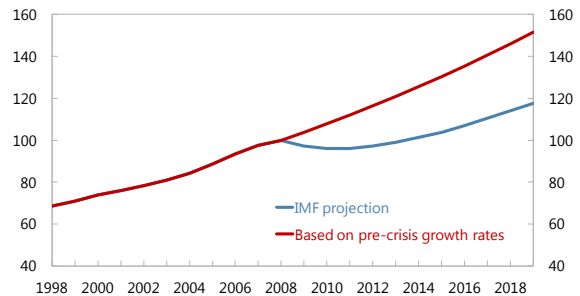
6. This paper seeks to complement the objectives of the Economic Program by quantifying fiscal reforms within a macroeconomic model. It will identify package of measures consistent with the Program that could play a decisive role in promoting strong, sustainable and equitable growth in Iceland during the next five years. To achieve this objective, we use the Global Integrated Monetary and Fiscal Framework – calibrated on Icelandic data - to model tax and expenditure reforms that could be implemented in the near term and which could both have a permanent positive impact on Icelandic potential growth without jeopardizing ongoing efforts to reestablish fiscal sustainability.

B. Fiscal Policy, Growth and the External Position

7. The need for a more effective growth strategy has been a long standing and recurring feature of the policy debate in Iceland. This debate is now more pressing since the crisis has resulted in a sizeable and permanent loss in potential GDP (see text chart).

8. The Icelandic economy faces the challenges in identifying new sources of growth. This task is made difficult by the unique structure of the Icelandic economy. It has a narrow structure of exports, dominated by fisheries, tourism, and aluminum. The low population places limits on the creation of new industries catering for domestic demand. The supply side of the economy, particularly the labor market, is comparatively rigid by international standards, making it vulnerable to global shocks. Furthermore, Iceland's growth strategy will need to be placed in the context of its most pressing policy challenge; the need to exit from its current regime of capital controls.

Real Medium-term Potential Growth 1/
(Index, 2008=100)



Sources: Ministry of Finance ; and IMF staff projections.
1/ Data before 2008 is based on actual returns.

9. A well-designed package of tax and expenditure policies can strengthen both potential growth and the external position by improving allocative efficiency and building human and physical capital. Some taxes are more distortionary than others and therefore shifting the revenue mix to less distortionary taxes will reduce the deadweight loss of taxes and increase potential output (Mendoza et al, 1997). The empirical literature indicates that corporate taxes are the most distortionary, followed by labor taxes, while consumption and property taxes are regarded as being comparatively less distortionary (Fiscal Monitor, 2013; Norregaard, 2013). Limiting distortionary tax expenditures and preferential rates can create a “level playing field” for consumers and producers. The public expenditure mix can also have a powerful impact – both positive and negative – on potential output. Public investments in human and physical capital will also enhance potential growth, while abolishing untargeted subsidies, and restraining public sector wages can also improve allocative efficiency.

C. The Current Fiscal Policy Mix

10. Fiscal policy since 2008 has largely been driven by the need to contain debt accumulation in the context of a financial crisis and a large output shock. This has often involved taking short-term and politically viable measures that have addressed government financing need. Understandably, in the context the crisis, the long term growth consequences of the fiscal policy mix have been of secondary importance. For example, reductions in public investment between 2008 and 2010 contributed to a 1.3 percentage point reduction in the overall deficit. However, this measure cumulatively reduced gross public sector capital accumulation by almost ISK40 billion or about 2.4 percent of GDP.

11. Notwithstanding the impact of the crisis, the structure of revenue mobilization and expenditures have a number of important structural weaknesses which should now be addressed:

Public investment ratios are low relative to historical trends and to other OECD countries.

12. Capital expenditure contracted sharply during the crisis. Prior to the crisis, public investment as a ratio of GDP, averaged around 4 percent a year. Since, 2010, the ratio has averaged just over 2 percent a year. As such, the gross investment rate has barely kept pace with the rate of capital depreciation. While there may be a case that there was an element of over-investment during the pre-crisis period, this stock of over-investment has now almost certainly evaporated. Within Iceland, there is growing concern about a lack of investment in key social sectors such as health as well as a deteriorating quality of the road network.

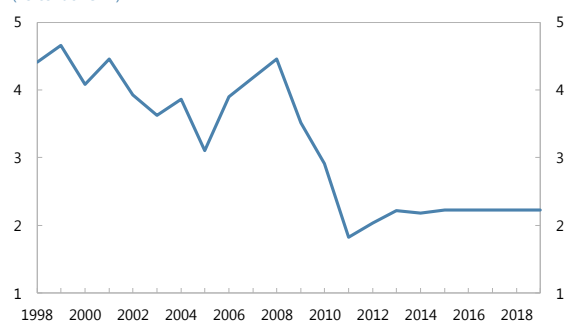
13. International comparisons of investment rates suggest that Iceland has, in recent years, underinvested in the public capital stock. In terms of gross public capital formation, Iceland sits towards the lower end of the range for OECD countries. Moreover, it has the lowest rate of capital formation among its key comparator group—the Nordic Countries.

The composition of expenditure is unbalanced

14. The composition of expenditures is heavily geared towards current rather than capital expenditures (see text chart). Public investment only accounts for 5 percent of total investment, while a third of expenditures are devoted to public sector wages. Expenditures on subsidies are almost as large as those on public investment.

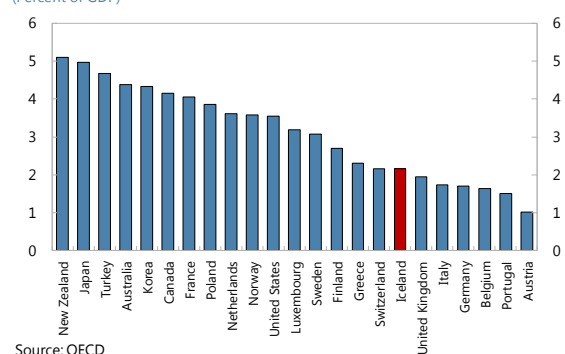
15. The crisis resulted in a sharp increase in social benefits expenditures, which have not yet been unwound. Reflecting the social consequences of the crisis, expenditures on social security benefits increased by 1.7 percentage points of GDP between 2007 and 2011. Over the same period, other transfers increased by almost one percentage point. As the crisis has subsided, social benefits

Gross Public Investment
(Percent of GDP)



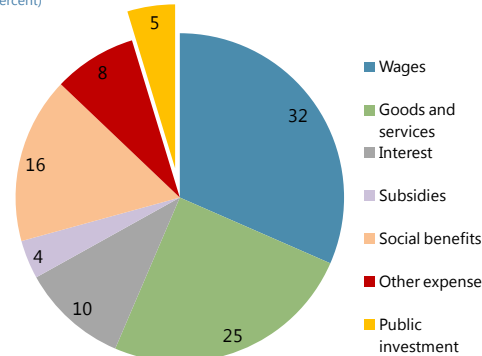
Sources: Statistics Office of Iceland; and IMF staff projections.

Gross Public Fixed Capital Formation
(Percent of GDP)



Source: OECD

Iceland - Composition of Expenditures 2013
(Percent)



Source: Ministry of Finance.

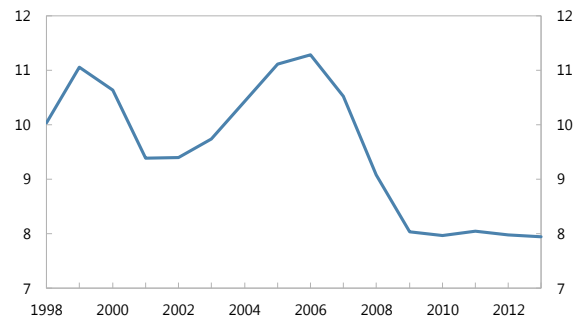
expenditure has declined somewhat. Nevertheless, social benefits expenditures in 2014 were almost 2 percentage points higher than in 2007.

The current VAT system suffers from serious weaknesses

16. Iceland's VAT system combines an extremely high standard rate, a very low reduced rate for socially sensitive products and large number of exemptions (Matheson and Swistak, 2014).

The current VAT system was reformed as part of the 2015 budget. Nevertheless, the main VAT rate – which is now 24 percent – is well above European and OECD averages and even above that of other Scandinavian countries. The lower rate, which is charged on essential products such as food was raised from 7 to 11 percent. Notwithstanding this important reform, the rate is comparatively low by OECD stands. Furthermore, there continue to be a significant number of exemptions that undermine the revenue base and distort competition.

VAT revenues
(Percent of GDP)

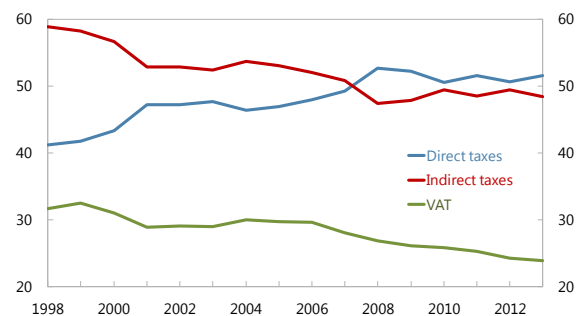


Sources: Ministry of Finance, and Statistics Iceland..

17. As a consequence of these longstanding design weaknesses, the share of VAT in both total revenues and as a percent of GDP has been declining in recent years. Prior to the crisis, VAT revenues amounted to 11.3 percent of GDP, although this figure was boosted by cyclical factors. Just prior to the crisis, the VAT rate on socially sensitive items was cut from 12 to 7 percent. Since the crisis, VAT revenues have settled at an average of around 8 percent of GDP. Despite the high standard rate, Iceland's VAT revenue performance compares unfavorably with its Nordic peer group. In 2013, the VAT collections were considerably lower than Sweden, Finland and Denmark (see text chart).

18. Iceland has traditionally supplemented its indirect tax system with a wide range of ad valorem commodity taxes.² In addition to the revenue objective, these taxes had the goal of making the tax system more progressive since the incidence falls heavily on luxury goods. However, this type of tax was not effective means of achieving this type of policy objective. Often, wealthier individuals could acquire these items overseas while on vacation. These excises often fell on business inputs which distorted production as

Tax Burden
(Percent of total revenues)



Sources: Ministry of Finance; and Statistics Iceland.

² For example, there is a 15 percent duty on various building materials and automotive spare parts; a 20 percent duty on various large household appliances and a 25 percent excise on various electronic goods.

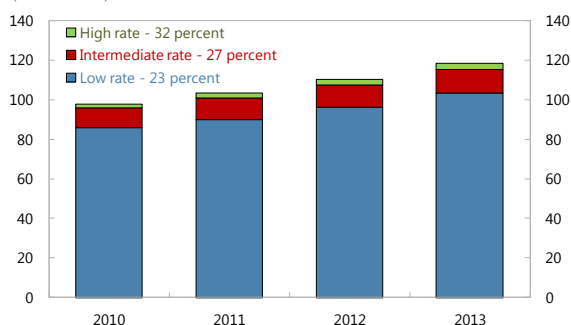
well as consumption decisions. Moreover, businesses did not receive credit for excises paid on their inputs, in contrast to taxes paid on VAT. These taxes were significantly reformed as part of the 2015 budget.

The burden of taxation has shifted from indirect to direct taxes

19. Since the late 1990s, the burden of taxes has shifted decisively towards direct taxation.

In 1998, indirect taxation accounted for 60 percent of the revenue base. Since then this figure has declined steadily. As of 2013, indirect taxes account for just under half of all revenues. This decline has been mirrored by a fall in VAT revenues as a proportion of total revenues.

Personal Income Tax Revenues by Tax Bracket
(Billions of ISK)



Source: Ministry of Finance

The labor tax regime has serious design weaknesses

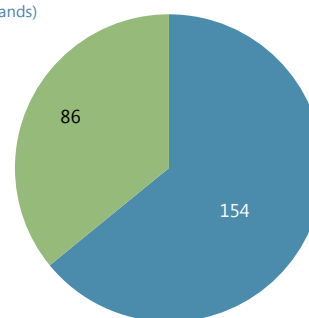
20. By OECD standard's Iceland's personal income tax system is comparatively complex.

The personal income allowance is high, which means that over a third of wage earners do not pay directly any personal income tax³. However, the entry personal income tax rate is 23 percent - one of the highest in the OECD, while the highest tax rate is comparatively low – at 32 percent. Moreover, the upper level PIT tax rates generate only minimal levels of additional revenue.

21. The personal income tax regime is further weakened by the comparatively large number of closely held businesses, where owners contribute both capital and labor. The advantageous tax regime for corporate profits and partnership income relative to labor income has resulted in increase in the number of incorporated small businesses, which has weakened the personal income tax regime (Escolano et al, 2010).

22. The government's economic program has an objective of simplifying the regime. Specifically, the government has stated its long term objective of reducing the current three rate regime and move to a two rate regime.

Number of Personal Income Tax Payers
(Thousands)



■ Wage earners paying PIT
■ Wage earners below the lower threshold

Source: Ministry of Finance.

³ All taxpayers are required to pay municipal income tax, which is formally levied on all income. However, individuals with income less than the lowest personal income tax threshold receive a full tax credit from the central government for municipal taxes.

D. Estimating the Potential Gains from Growth-Friendly Fiscal Policy

23. The Global Integrated Macroeconomic Model (GIMF) provides a useful framework for quantifying the potential gains from a package of growth-enhancing tax and expenditure policies, as well as their impact on Iceland's external position (Anderson et al 2013, . GIMF has the ability to analyze a wide range of fiscal issues. It includes seven fiscal policy instruments – government consumption and investment, lump-sum transfers to all households or targeted transfers to liquidity-constrained households, taxes on labor and corporate income, and consumption taxes – which impact macroeconomic variables through a number of transmission channels:

- **Productivity.** Firms utilize the public sector capital stock as an input. Therefore, higher public investment increases private sector productivity.
- **Finite planning horizons.** GIMF assumes OLG households with age-specific productivity. A tax-financed fiscal stimulus pushes the profile of consumption towards current periods and therefore increases aggregate demand.
- **Liquidity constraints.** A fraction of households consume their entire current income in each time period so that government transfers imply high fiscal multipliers;
- **Tax policy.** The growth effect of lower consumption and labor income taxes transmits most strongly via liquidity-constrained households while a cut in corporate taxes increases the return to capital, induces higher investment and stimulates labor demand; and
- **Risk premium.** The economy-wide risk premium increases with public debt, raising the real interest rate and reducing private investment and output.

24. These channels imply that fiscal policy can stimulate growth – potentially with significant persistence – but sustained fiscal deficits and higher debt will crowd out private investment. GIMF also enables a steady state where countries can be long-run debtors or creditors. In this way, fiscal policy and private savings play a key role in macroeconomic dynamics.

25. This paper considers four reform scenarios. These scenarios are broadly consistent with the policy objectives outlined in the government's economic program. Furthermore, each scenario is constructed in a budget neutral manner. Changes in revenues and expenditures are matched by other fiscal measures that leave the overall balance unchanged.

Scenario One: Lower current expenditure, higher public investment

26. This scenario models a reform strategy where current expenditures are reduced to provide fiscal space for an increase in public expenditures (See Figure 1). The objective would be to restore capital expenditures to their pre-crisis level as a percent of GDP. This would require raising the ratio from its current level of about 2 percent of GDP to something in the range of 3.5 to 4 percent of GDP. In terms of current expenditure measures, the scenario assumes:

- **Wage restraint.** The objective would be to reduce expenditures by around 0.2 percent of GDP relative to the 2014 baseline.
- **Subsidies reform.** For the last ten years, subsidies expenditures have remained remarkably stable at 1.8 percent of GDP despite the financial crisis and efforts to contain expenditures. The scenario would assume that these expenditures were permanently reduced to 1 percent of GDP.
- **More effective targeting of social benefits.** The objective would be to identify permanent savings of around 0.5 percentage point of GDP per year. This would bring expenditures closer to its pre-crisis level.

27. Switching the composition of expenditure from current to capital expenditure generates a sizable growth impact, as well as a more uncertain impact on the external position. Over the medium term, the level of real GDP is higher by around one percentage point, adding about 0.2 percent a year. In the short run, the trade balance deteriorates, as higher public investments leads to an increase in imports. The exchange rate also depreciates gradually and over the medium term, adds about 0.2 percent inflation. This prompts an increase in the policy rate, based on the model assumptions regarding the central bank response function. Over time, imports decline as investment demand subsides and exports start to adjust to the lower exchange rate. Eventually, the trade balance returns to balance.

Scenario Two: A shift away from personal income tax to indirect taxation

28. This scenario examines the implications of changing the relative weights of direct and indirect taxes in total taxes (see Figure 2). Specifically, the model looks at a reduction of personal income tax revenues by one percentage points of GDP and an equal compensating increase of VAT revenues. On the revenue side, personal income tax rates are assumed to be harmonized with the lower rate being reduced to enhance labor force participation. On the VAT side, the scenario seeks to approximate a reform where the two VAT rates are harmonized, while exemptions are eliminated. In principle this would raise revenues, alleviate economic distortions, and simplify administration.

29. Under this scenario, the level of real GDP increases by almost 0.5 percentage points relative to the baseline over the medium term; just slightly less than 0.1 percent per annum, while the external position improves. On a net basis, private consumption declines slightly over the short term, as the impact of the higher VAT rate on consumption is greater than the higher post-tax real wage. Subsequently, consumption returns to the baseline over the medium term. This results in a reduction of imports. Exports increase as both the real and nominal exchange rate depreciates. As a result, the trade balance improves relative to the baseline. The model projects a minimal impact on inflation over the medium term.

Scenario three: Reducing corporate income tax by increasing VAT

30. This scenario examines the implications of returning to the pre-crisis corporate tax regime. In 2011, Iceland corporate income tax rates were increased from 18 to 20 percent as part of

the ongoing effort to reducing the crisis-related fiscal financing gap. As a consequence, the tax burden on the corporate sector has increased by around 0.5 percentage points of GDP.

31. Under this scenario, the shortfall in revenues, which would result a reduction in corporate income tax, will be made up by a modest increase in VAT taxes (see Figure 3). This latter assumption can be thought of as a more limited reform of the VAT system, whereby the lower tax rate is increased, but where the lower and higher VAT rates are not harmonized. Therefore, the indirect revenue improvement would broadly match the reduced revenues from lower corporate tax rates.

32. The scenario suggests that there is a medium term improvement in the level of GDP of around 0.4 percent, while the external position deteriorates in the short-run. As one would expect, there is a sizable increase in private sector investment. Interestingly, consumption remains broadly unchanged. The downward pressure on consumption of higher VAT is compensated by higher consumption due to increased GDP. The exchange rate appreciates in the short run, pushing downward pressure on exports and leading to a deteriorating trade balance. Over time, the exchange rate adjusts downward, creating recovery in exports, reducing imports, leading to medium term improvement in the trade balance over the medium term.

Scenario four: Lowering the tax and expenditure to GDP ratios

33. The final scenario examines the growth impact of a combined package of measures aimed at reducing both the revenue and expenditure to GDP ratios (see Figure 4). The 2014 economic program has outlined a long term goal of reducing the relative size of the government. To approximate this policy objective, the scenario examines the implications of reducing direct income tax revenues by one percent and matching this reduction by a one percent of GDP reduction in public sector wages and expenditures on goods and services.

34. Under this scenario, real GDP is higher and the external position improves. There is a strong labor supply response as the reduction in personal income tax acts as a positive real wage shock. In contrast to scenario two, there is no countervailing increase in indirect taxes to suppress consumption. Over the medium term, the level of GDP is about around 0.4 percent higher relative to the baseline. The positive real wage shock also generates a real exchange rate depreciation. In turn, exports increase.

E. Concluding Remarks

35. The fiscal policy challenges in Iceland are rapidly evolving. The crisis related issues - in particular, the imperative to bridge the fiscal financing gap - have now subsided. The fiscal position has moved decisively into balance and the public debt ratio is now firmly on a downward trajectory.

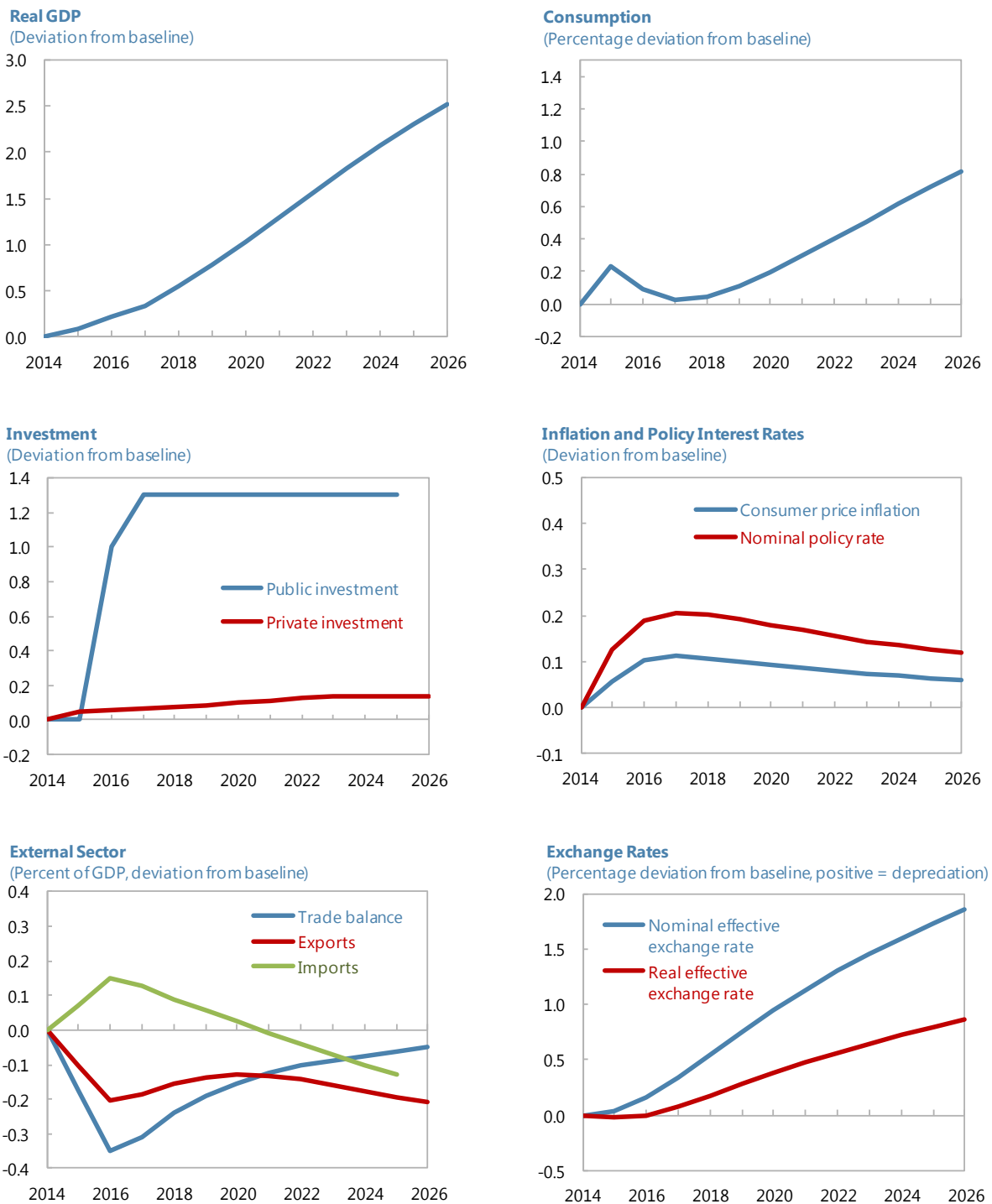
36. However, deep structural fiscal issues, which often pre-date the crisis, are now returning into focus. The VAT system is comparatively inefficient in terms of raising revenues, despite very high tax rates. The personal income tax is complicated, and in some key respects, lacks

progressivity. On the expenditure side, there are also important crisis legacy issues. Public investment is at historically low levels, while social sector expenditures need to return to their pre-crisis levels. Indeed, many key elements of this post crisis reform agenda are articulated in the government's February 2014 Economic Program.

37. This chapter has sought to identify the magnitude of the “growth premium” that could be gained by addressing Iceland’s key fiscal policy challenges. In this respect, it is important to distinguish between the growth impact resulting from fiscal consolidation with those from reforms aimed at boosting growth from changing the revenue and expenditure mix. The overall conclusion is that addressing Iceland’s structural fiscal problems, while maintaining the current fiscal stance of broadly balanced budgets, could offer an increase in the level of GDP in the range of 2 to 2.5 percent of GDP over the medium term, boosting the growth rate by around 0.4-0.5 percent of GDP.

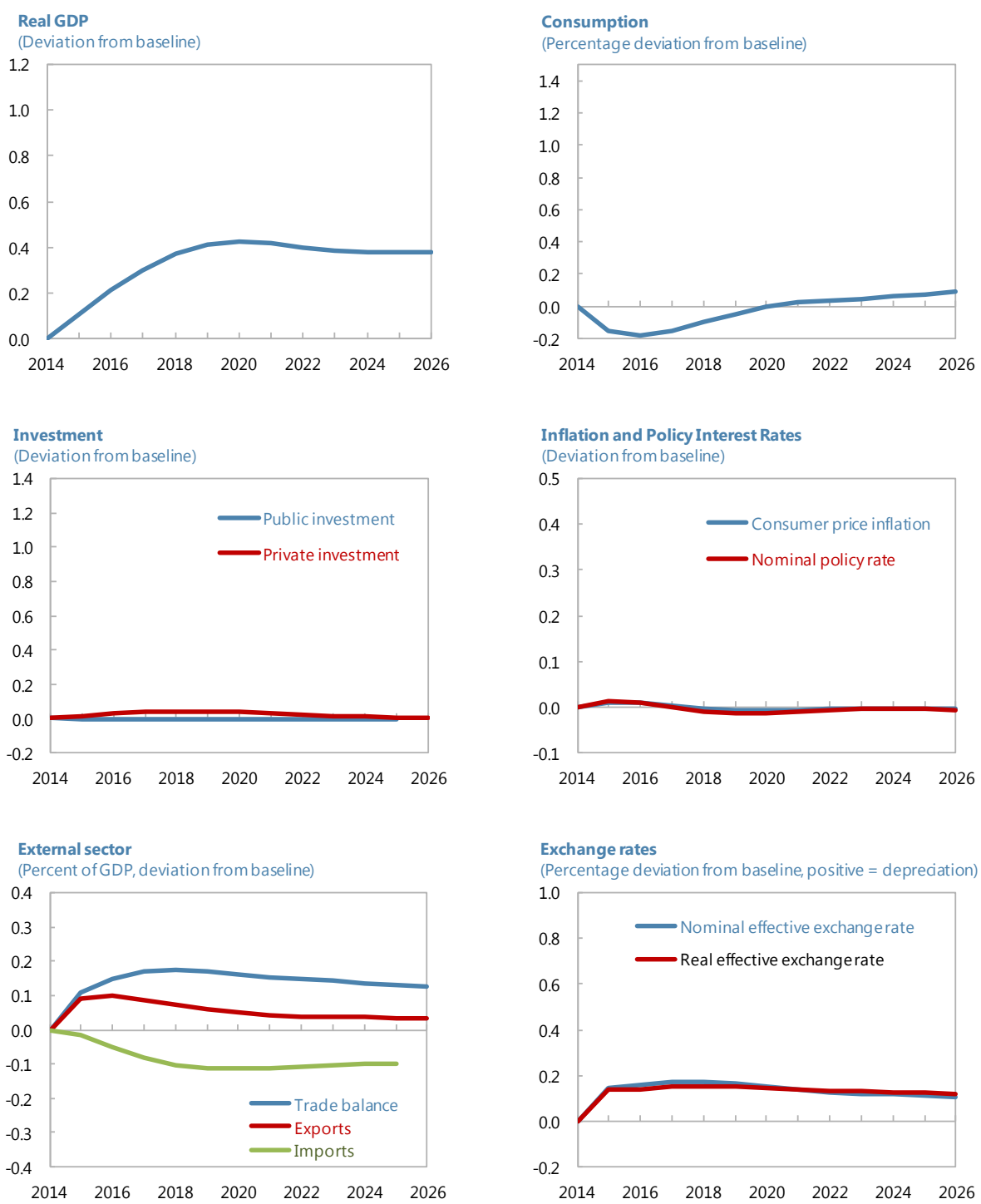
38. Any fiscal reform package must take place against the backdrop of capital account liberalization. Liberalization can only take place when the risks to the external sector are sufficiently mitigated. Each fiscal reform strategy has different implications for the current account, particularly in the short run. Reforms that aim to increase the proportion of indirect taxes support external balance both in the short and medium term, largely through constraining consumption expenditures. Other reforms, particularly those that aim to boost public investment, may result in a short-term deterioration in the external accounts. Therefore, the sequencing of these fiscal reforms, particularly in the context of their impact on the external position and capital account liberalization, must be carefully considered. Nevertheless, over longer time horizons, the fiscal reforms highlighted in this chapter will serve to increase potential GDP, and through the interest rate-growth differential, reduce public indebtedness and contribute to the resolution of Iceland’s remaining crisis legacy issues.

Figure 1. Iceland: Scenario One
Increased public investment, lower current expenditures



Source: IMF staff projections.

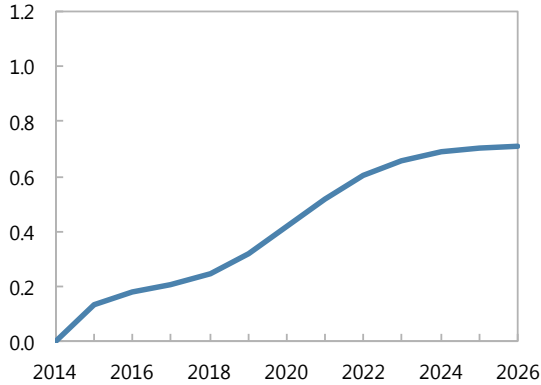
Figure 2. Iceland: Scenario Two
Lower personal income tax, higher indirect taxes



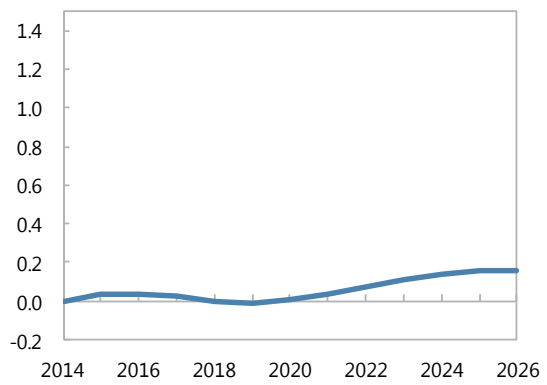
Source: IMF staff projections.

Figure 3. Iceland: Scenario Three
Lower corporate income tax, higher VAT

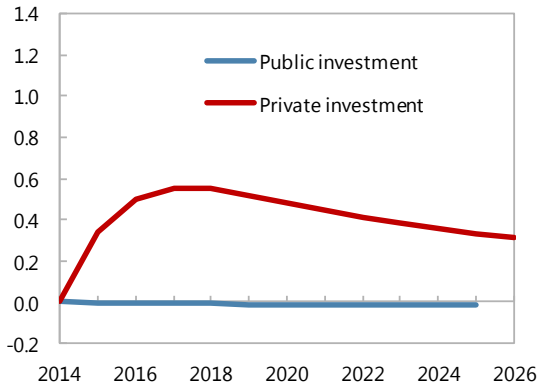
Real GDP
 (Deviation from baseline)



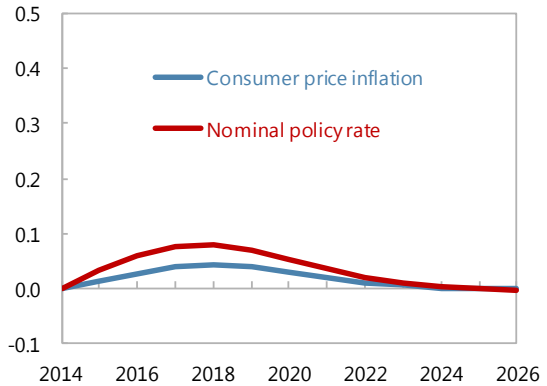
Consumption
 (Percentage deviation from baseline)



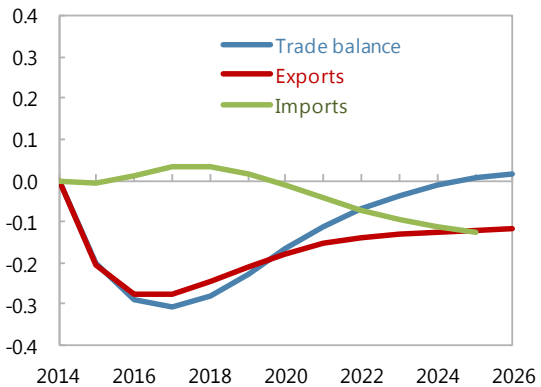
Investment
 (Deviation from baseline)



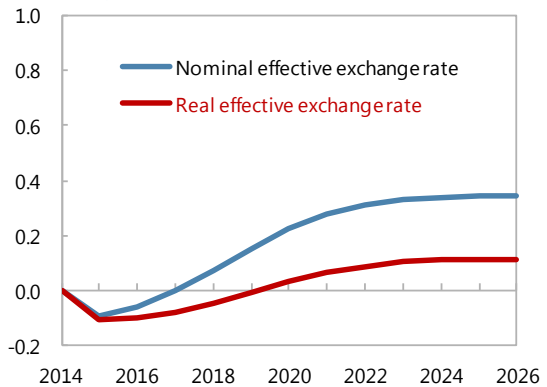
Inflation and Policy Interest Rates
 (Deviation from baseline)



External Sector
 (Percent of GDP, deviation from baseline)

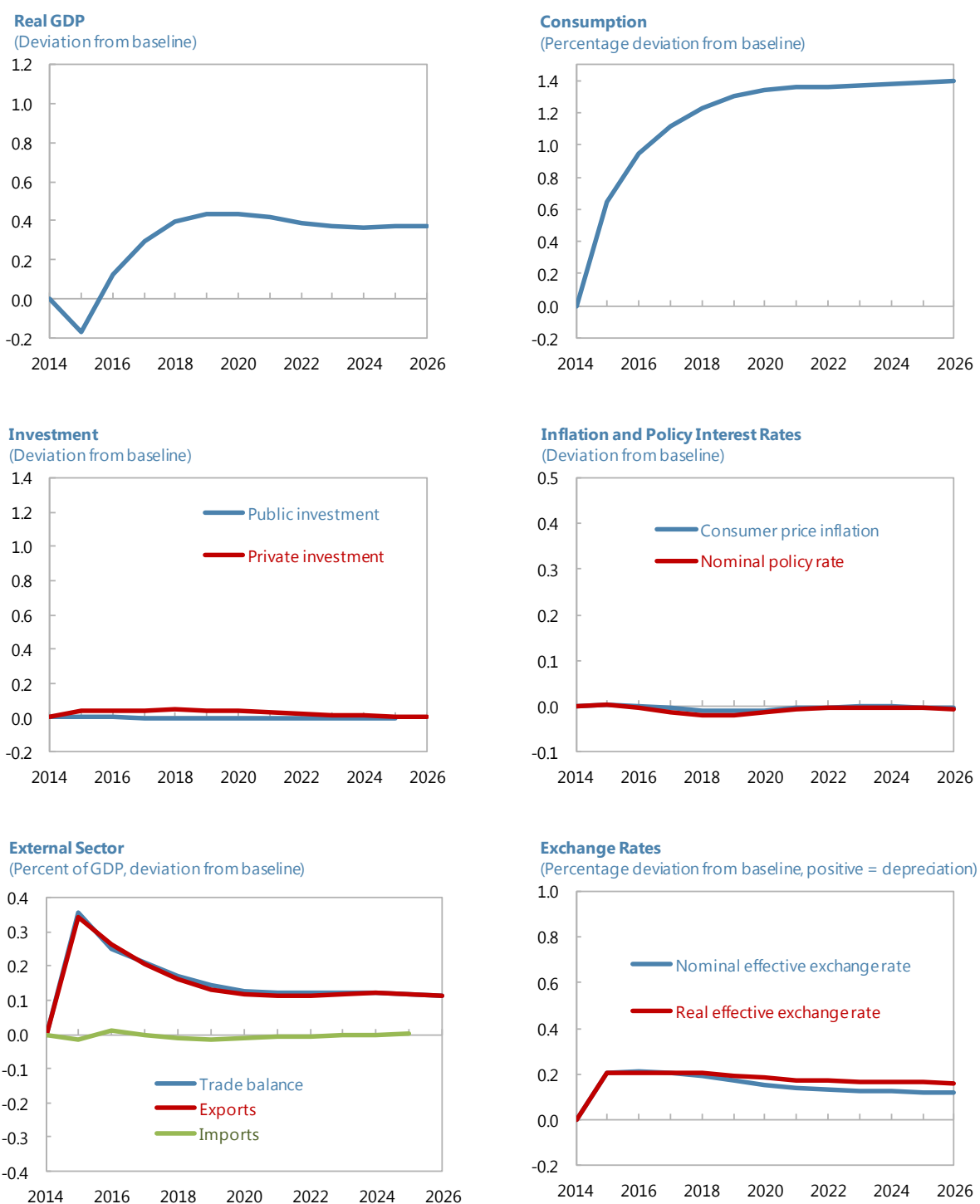


Exchange Rates
 (Percentage deviation from baseline, positive = depreciation)



Source: IMF staff projections.

Figure 4. Iceland: Scenario Four
Lower personal income tax, lower government consumption



Source: IMF staff projections.

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