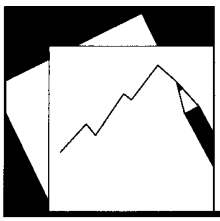
WP/07/235



IMF Working Paper

Toward a Robust Fiscal Framework for Iceland: Motivation and Practical Suggestions

Anthony Annett

INTERNATIONAL MONETARY FUND

 WP/07/235

IMF Working Paper

European Department

Toward a Robust Fiscal Framework for Iceland: Motivation and Practical Suggestions

Prepared by Anthony Annett[1]

Authorized for distribution by James Morsink

October 2007

Abstract

Expenditure in Iceland, especially related to the government wage bill, has tended to move in a procyclical manner, related to the fragmentation of political decision making. Iceland's elevated macroeconomic volatility reinforces these tendencies, as large booms unleash greater fiscal pressures as well as procyclical revenue elasticities that magnify these underlying strains. To improve its fiscal framework, Iceland could look to the experience of countries like Belgium and the Netherlands. In particular, it could adopt binding nominal expenditure rules, independent forecasts, and use representative committees to lay out medium-term targets across different levels of government.

JEL Classification Numbers: E62, H50, H60

Keywords: fiscal policy, procyclicality, political economy

Author's E-Mail Address: aannett@imf.org

[1] I would like to thank Benjamin Hunt, James Morsink, and the seminar participants at the Central Bank of Iceland, for helpful comments.

Contents Page

I. INTRODUCTION

In recent years, the record imbalances that accompanied Iceland's economic boom led to a policy rate of 14½ percent, prompting destabilizing capital inflows. While fiscal policy did tighten, some felt that it should have borne a greater portion of the cyclical stabilization burden. Against this backdrop, this paper argues that fiscal policy in Iceland has been subject to procyclical pressures, and that a modest reform of the fiscal framework would make it more countercyclical. Section II provides a brief overview of the literature on the political economy effects on fiscal policy, and discusses some of the institutional reforms undertaken by European countries over the past couple of decades to cope with these pressures. Section III begins by discussing broad tends in fiscal policy in Iceland, and uses econometric techniques to argue that—in line with the literature—certain items of expenditure have suffered from a procyclicality bias, induced by political economy factors, and exacerbated by volatility. Following this, Section IV considers some options for reform, focusing in particular on the experience of comparator countries. Section V concludes.

II. POLITICAL ECONOMY DISTORTIONS AND REFORM: A BRIEF LOOK AT THE LITERATURE

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

Over the past few decades, European countries have adopted a wide variety of institutional reforms geared toward suppressing the political economy biases suffusing fiscal policy. Indeed, a oft-touted argument for placing limits on the degree of fiscal policy discretion is that democratically elected governments seem to have a built-in bias towards profligate or procyclical fiscal policy. A core goal was to improve budgetary coordination, allowing the common pool externality to be internalized. There are many different ways to facilitate such coordination, and what is appropriate depends on the country's underlying institutions[2].

[2] See Hallerberg, Strauch and von Hagen (2001); Hallerberg, Strauch and von Hagen (2004); Hallerberg (2004).

Two broad approaches include delegation, whereby power is ceded to a strong minister of finance (suited to single-party governments), and commitment, whereby the different parties negotiate a "fiscal contract" involving strict budget targets (suited to coalitions, where the threat of breaking up the government serves as the enforcement mechanism).

Reforms proceeded apace over the 1990s, with most EU countries adopting or strengthening one of these core fiscal governance technologies. Delegation states focused on centralizing decision-making processes while commitment countries made fiscal rules more stringent (Hallerberg, Strauch, and von Hagen, 2004).[3] The latter—including Belgium, Finland, the Netherlands and, to a lesser degree, Ireland—were more inclined to use fiscal rules (including rules for dealing with unexpected shocks), especially at the central government level (European Commission, 2006a). Some of these countries, including Finland and Austria, also experimented with splitting ministries between different political parties to prevent capture by any one party.

Another common tactic, particularly among commitment countries, is the use of various councils and committees that can aid in fiscal policy formulation (see Box 1). These agencies can be used to supply forecasts, coordinate stakeholders, or assess fiscal policy. Although often pre-existing, many of these entities were strengthened further in recent years. "Inside committees" are institutional arrangements designed to overcome the common pool problem within governments, including between the center and the localities. "Outside committees" tend to be more independent and mostly offer normative assessments while at the same time possessing no formal fiscal policy powers.

Institutional reforms tended to have a salutary effect on fiscal discipline. The various strategies chosen by commitment and delegation countries proved effective. Certainly, the rules-based fiscal framework in the EU underpinned by the Maastricht treaty and the Stability and Growth Pact proved more suited to commitment countries (Annett, 2006). But while fiscal policy became less procyclical under Maastricht, procyclical tendencies arose again after euro adoption as the corset loosened (Gali and Perotti, 2003; Annett, 2006). More broadly, the literature has shown that improving fiscal institutions in general benefits fiscal performance across a broad array of EU countries, including in new member states (Fabrizio and Mody, 2006). In terms of numerical fiscal rules, both their strength[4] and their coverage can aid fiscal discipline (European Commission, 2006a). There is evidence within the EU that independent forecasts can eliminate systematic forecast biases which could otherwise feed through to deficit biases (Jonung and Larch, 2004). At the same time, there is also some

[3] In this analysis, stringency of fiscal rules means more encompassing aggregates for which targets are set, longer forecast horizons, more elaborate forecasts, and higher political commitments. Budgetary centralization refers to budget formulation, approval, and implementation.

[4] Here, "strength" encompasses such factors as the statutory base of the rule, the nature of the bodies charged with monitoring and enforcing the rule, the enforcement mechanism, and media visibility of the rule.

evidence that independent agencies contribute to fiscal discipline in their role as independent arbiters of fiscal policy, especially when they were well-respected, highly credible, and visible in the public debate (European Commission, 2006a).

Box 1. Institutions for Fiscal Discipline

First, independent entities can provide independent macroeconomic forecasts to underpin the budget. This is done in Austria, Belgium (legally required), and the Netherlands, and is most useful to underpin a negotiated fiscal contract. In the Netherlands, the Central Planning Bureau (CPB) provides forecasts before elections that are used by political parties as the basis of platforms, and by coalition partners in the negotiation stage following the election. The United Kingdom subjects some assumptions to external audit.

Second, "inside committees" may be formed within government to help coordinate and centralize fiscal policy decisions among key stakeholders. These can come in various hues, including within cabinet, within parliament, and across political regions. In terms of the former, the United Kingdom has in the past used cabinet-level committees to arbitrate disputes between the finance minister and spending ministers, and to propose an aggregate spending target. Denmark and Sweden have institutionalized negotiations in parliament within a committee of select government and opposition representatives (given their penchant for minority governments). Spain's Consejo de Politica Fiscal y Financiera (CPPF) is made up of ministers from different levels of government, and the committee irons out subnational fiscal targets. More recently, France established the Conseil d'orientation des finances publiques (COFIPU) consisting of representatives of different levels of government (plus some independent experts) to coordinate medium-term objectives.

Third, "outside committees" can aid the formulation of fiscal policy by offering advice and recommendations, weighing on government decisions. They often feature some combination of civil servants, central bankers, academics, and representatives of the social partners. Some are short-lived and provisional, designed to achieve a specific purpose, while others have a long institutional history. The temporary commission route was adopted by Ireland and Portugal at various times to navigate their adjustment programs, and included key central bank officials. On the other hand, Belgium's High Council of Finance (HCF) and Denmark's Economic Council are more broad based in terms of composition, and have long institutional histories. In the most extreme case, these bodies can propose fiscal targets which are accepted by the government, as was often the case with the HCF. More often, they perform a more informal advisory or watchdog role, including the Economic Council in Denmark, the German Bundesbank in times past, or various auditing councils and research institutes in some countries. Like "inside committees", these entities can also coordinate fiscal policy across different levels of government, the major difference being in the degree of independence (again, the HCF performs this role).

III. The Fiscal Policy Experience in Iceland

A. Broad Trends in Fiscal Policy

Fiscal policy in Iceland has been marked by a secular increase in government expenditure. Since 1980, total expenditure as a percent of GDP has risen by around 10 percentage points,

approaching 45 percent, close to the EU average (Figure 1). The driving force behind the rise in expenditure was a secular increase in the government wage bill (Figure 2). Spending was first ratcheted up in the late 1980s, prompting a deterioration in the fiscal balance. In response, the government undertook a consolidation program. But expenditure started increasing again in the late 1990s, although this time, revenue rose apace, and the fiscal balance did not deteriorate accordingly. Indeed, the revenue ratio started climbing in the late 1990s, allowing Iceland to run fiscal surpluses for much of the later period. Spending pressures have been especially acute at the municipality level, reflecting the difficulty in holding the line against demands for higher pay and enhanced services in an era of increasing revenue. In recent years, rising surpluses at the central government level co-existed with local government deficits.

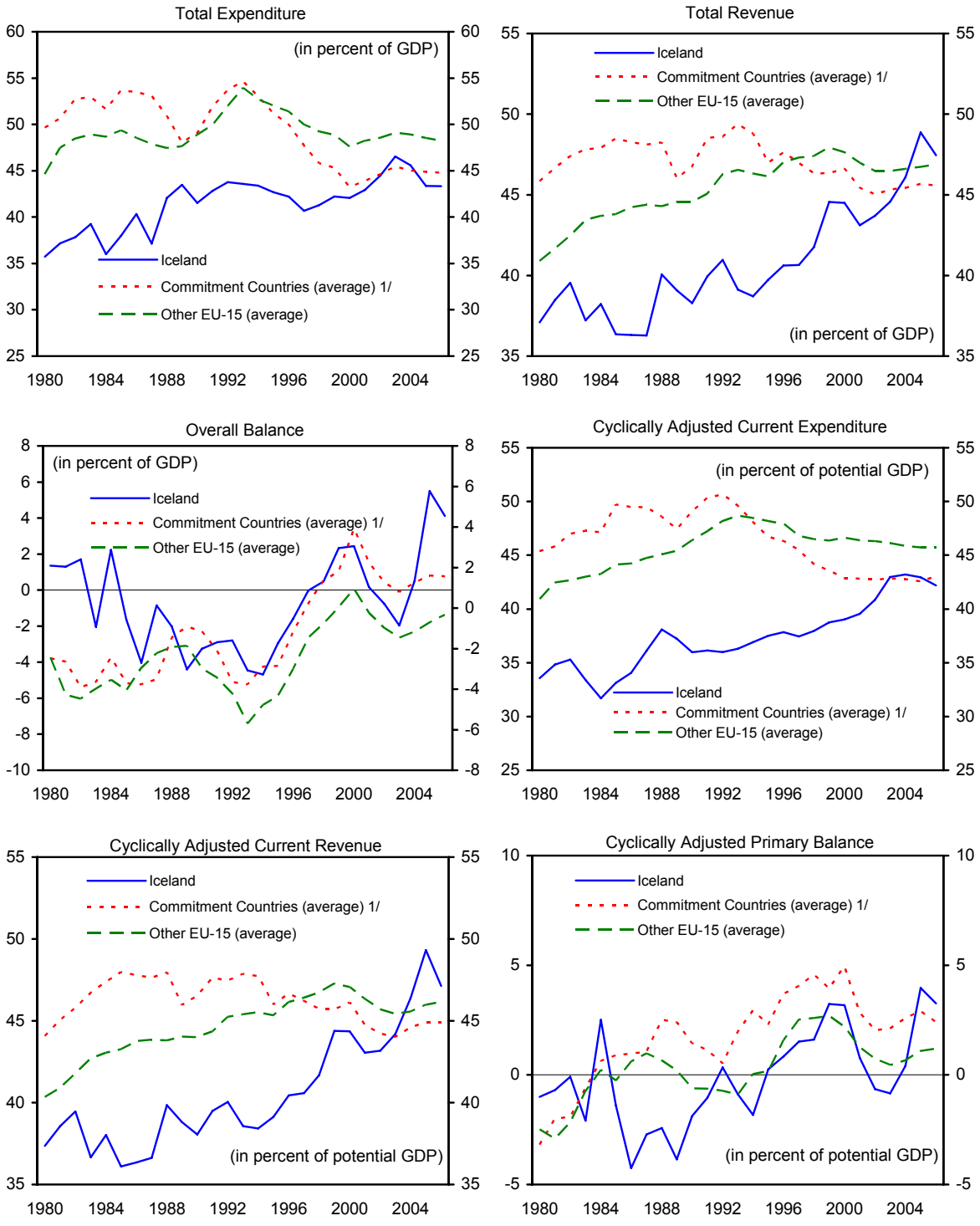
From an international perspective, Iceland's expenditure experience goes against the grain, especially considering the experience of commitment countries with whom Iceland shares some key characteristics, including a penchant for multi-party coalition governments (Belgium, Finland, Ireland, and the Netherlands). In part arising to institutional reforms, these countries witnessed a large decline in expenditure over the 1990s, focused on government wages and transfers, and consolidation exceeded the EU average. Indeed, Iceland was the only country experiencing a trend increase in public consumption over two decades (Suppanz, 2003). By 2005, the government wage bill as a share of GDP was higher than all EU countries bar Denmark and Sweden, while twenty-five years earlier, it had ranked close to the bottom.

B. Revenue Booms and Revenue Elasticity

Before addressing the growth in the expenditure ratio, it is worth honing in on the recent revenue spurt. In particular, it is worth noting that the cyclical response of revenue to real activity can be exacerbated during boom-bust cycles, turning revenue elasticities sharply procyclical. In such an environment, underlying balances can appear healthier than is actually the case during booms, increasing the risk that revenue windfalls are spent in a procyclical fashion. Under these circumstances, both revenue and expenditure ratios tend to be ratcheted up in tandem, as indeed happened in Iceland.

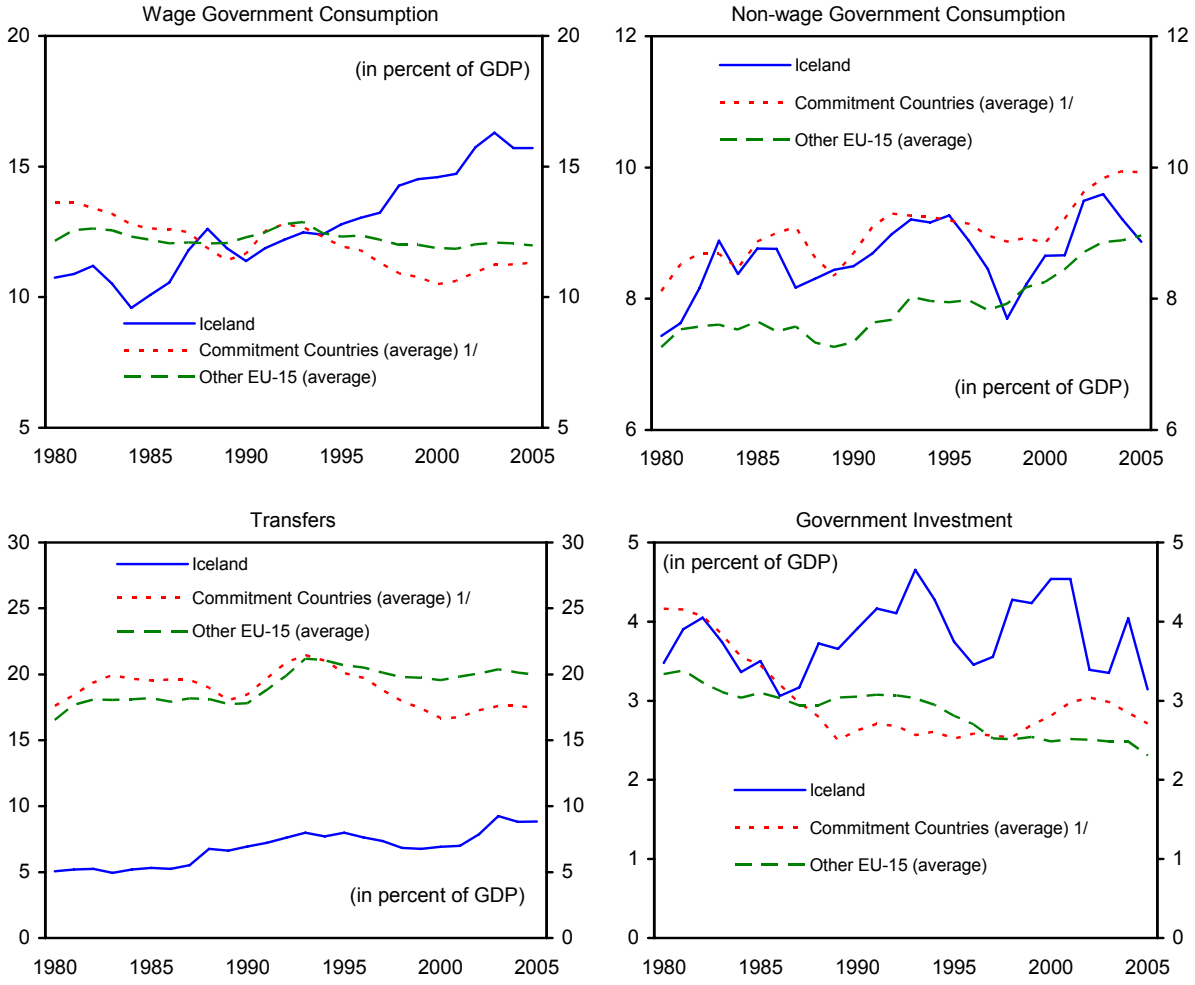
In analyzing these trends, researchers have pointed to asset price and consumption booms. One estimate in the European context is that the cyclical responsiveness of the fiscal balance to growth more than doubles during asset price-driven boom-bust cycles (Jaeger and Schuknecht, 2004). Morris and Schuknecht (2007) find strong asset price effects on revenue elasticities in Europe, arguing that a 10 percent increase in asset prices adds half a percent of GDP to revenues, substantially affecting the fiscal stance. There also seems to be a clear relationship between revenue elasticities and the extent of real appreciation across European countries over the past decade, reflecting tax-rich consumption booms in these countries (European Commission, 2006b).

Figure 1. International Comparisons of Fiscal Policy I



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

Figure 2. International Comparisons of Fiscal Policy II



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

Can these atypical cyclical factors explain the rapid increase in Iceland's revenue ratio? For a start, it is worth noting that Iceland's macroeconomic volatility—defined in terms of growth and private consumption—is extremely high by international standards (Table 1). Also in Iceland, revenue elasticities seem to track consumption booms and movements in the real exchange rate. Cyclically-adjusted revenue in Iceland follows movements in the private consumption-potential output ratio closely (Figure 3). At the same time, looking across an international sample of countries, there seems to be a clear relationship between the change in the private consumption ratio and the average current revenue point elasticity over the past decade. A similar relationship holds between the elasticity and the cumulative change in the real effective exchange rate. Iceland stands apart as the country with the highest average elasticity, and the largest real appreciation among this sample.

Simple econometric evidence paints a similar picture. Looking over the past 25 years, there is a positive and robust relationship between the change in the cyclically-adjusted revenue ratio and the revenue elasticity (Table 2). This holds true based on simple OLS estimation regressing revenue on the elasticity, as well as TSLS estimation that recognizes the endogeneity of the revenue elasticity, using a consumption boom variable[5] as an instrument. More directly, there is also a clear and statistically significant relationship between cyclically-adjusted revenue ratio and the consumption boom variable, as well as the change in the real effective exchange rate. Interestingly, there is no statistically significant relationship between cyclically-adjusted revenue and the change in the output gap, suggesting that the consumption boom variable is picking up cyclical factors going beyond the standard factors.

Table 1. Volatility: International Comparisons

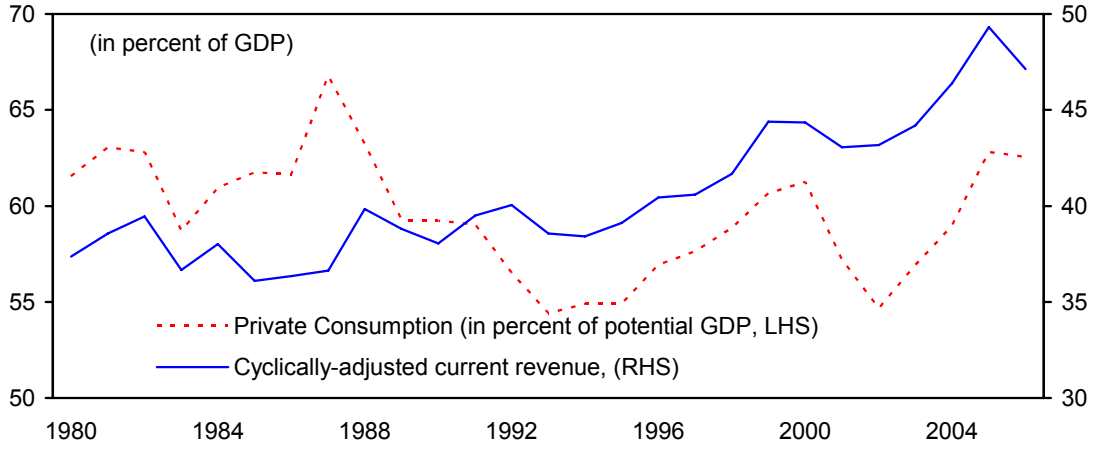
	Real GDP growth 1/	Private Consumption 2/
Iceland	**3.36**	**2.67**
Austria	1.67	1.45
Belgium	1.76	1.26
Denmark	1.87	1.45
Finland	2.79	1.27
France	1.39	1.18
Germany	1.69	0.98
Greece	3.31	2.08
Ireland	2.85	4.95
Italy	1.92	1.47
Netherlands	1.56	1.62
Portugal	3.18	1.10
Spain	2.02	1.66
Sweden	1.77	0.86
United Kingdom	1.93	1.51
EU average	2.12	1.63

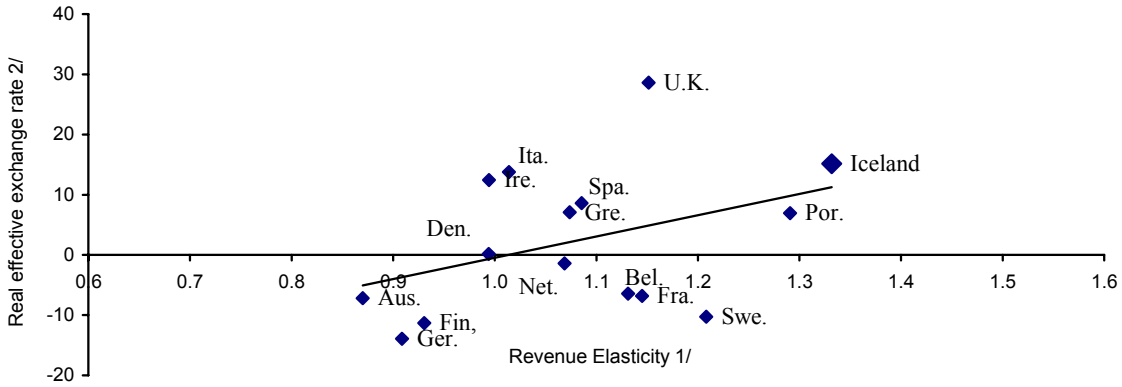
Source: OECD.

1/ Standard deviation, 1980-2006.
2/ Standard deviation of ratio of private consumption to potential output, 1990-2006.

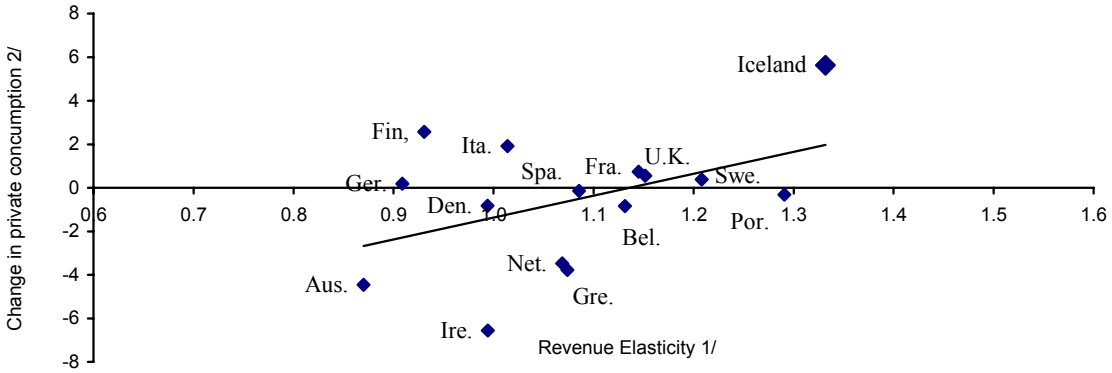
[5] This is defined as the change in the deviation of the ratio of private consumption to potential output from its 25-year average.

Figure 3. Iceland: Cyclicality and Revenue Elasticities





1/ Average annual, 1996-2006; primary current revenue.
2/ Cumulative change, 1996-2006.



1/ Average annual, 1996-2006; primary current revenue.
2/ In percent of potential output, change from 1996-2006.

Source: OECD.

Table 2. Iceland: Cyclicality of Revenue, 1980–2005

Dependent Variable: Change in Cyclically-Adjusted Current Revenue					
	OLS	TSLS	OLS	OLS	OLS
Revenue elasticity [1/ 2/]	2.00* **	3.35* *			
	(0.53)	(1.31)			
Change in private consumption ratio [3/]			0.28* *		
			(0.14)		
Change in real effective exchange rate				0.09* **	
				(0.01)	
Change in output gap					0.17
					(0.14)
N	26.00	25.00	25.00	25.00	25.00
R2	0.42	0.27	0.22	0.44	0.08

Source: OECD.
***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively.
1/ Instrument in TSLS equation is change in private consumption variable.
2/ Regressions with elasticity also include a dummy for the year 1992, a huge outlier.
3/ Deviation of ratio of private consumption to potential output from average since 1980.

C. Procyclical Patterns of Fiscal Policy

Switching now to the expenditure side, this section will show—in line with the literature—that fiscal policy has been procyclical in Iceland, and that procyclicality relates directly to political economy factors. The first step is to estimate the cyclical response of government spending to output across countries. Table 3 lists the regression-based procyclicality coefficients for Iceland and the EU countries for a variety of expenditure categories. Following Lane (2003), the methodology centers on estimating country-by-country regressions of log differenced government expenditure on a constant and logged differenced real GDP. The expenditure variables are translated into constant prices using the GDP deflator, to pick up changes in the relative price of government outputs. The time period is 1980–2005[6], and estimation is by OLS. The degree of cyclicality is reflected in the coefficient on the GDP variable, coefficients reported in Table 3. A positive value signals procyclicality, while a value greater than unity reflects a more-than-proportionate response to output movements, a "voracity effect."

[6] Lane (2003) uses 1960–1998. However, as pointed out by Jaeger (2001), it can be imprudent to use data prior to 1978, given a regime change in many industrial countries around that time.

Table 3. Regression-based Cyclicality Coefficients: International Comparison

	Total expenditure	Primary current expenditure	Wage government consumption	Non-wage government consumption	Government transfers	Government investment
Iceland	**0.40**	**0.58**	**1.38**	**-0.31**	**0.60**	**1.51**
Austria	0.16	0.17	0.59	-0.02	-1.18	0.48
Belgium	-0.37	-0.13	0.37	-0.06	-0.22	1.28
Denmark	-0.60	-0.44	-0.36	-0.50	-0.53	1.04
Finland	-0.67	-0.55	-0.05	0.26	-1.39	1.06
France	-0.33	-0.63	-0.30	-0.72	-0.05	1.75
Germany	0.69	0.79	0.39	0.50	-0.52	2.00
Greece	-0.17	0.18	0.86	-0.90	0.16	1.47
Ireland	0.17	0.05	0.24	0.98	-2.53	2.41
Italy	0.32	0.25	0.65	0.41	-0.18	1.04
Netherlands	-0.20	-0.13	0.04	0.05	-0.21	0.75
Portugal	0.83	0.77	1.53	0.83	0.61	2.22
Spain	-0.48	0.08	0.40	0.08	-0.27	0.65
Sweden	-0.54	-0.08	0.29	-0.31	-0.59	1.37
UK	-0.70	-0.66	-0.23	0.06	-2.73	1.58
EU mean	-0.14	-0.02	0.32	0.05	-0.69	1.36
EU standard deviation	0.50	0.46	0.51	0.54	0.96	0.58

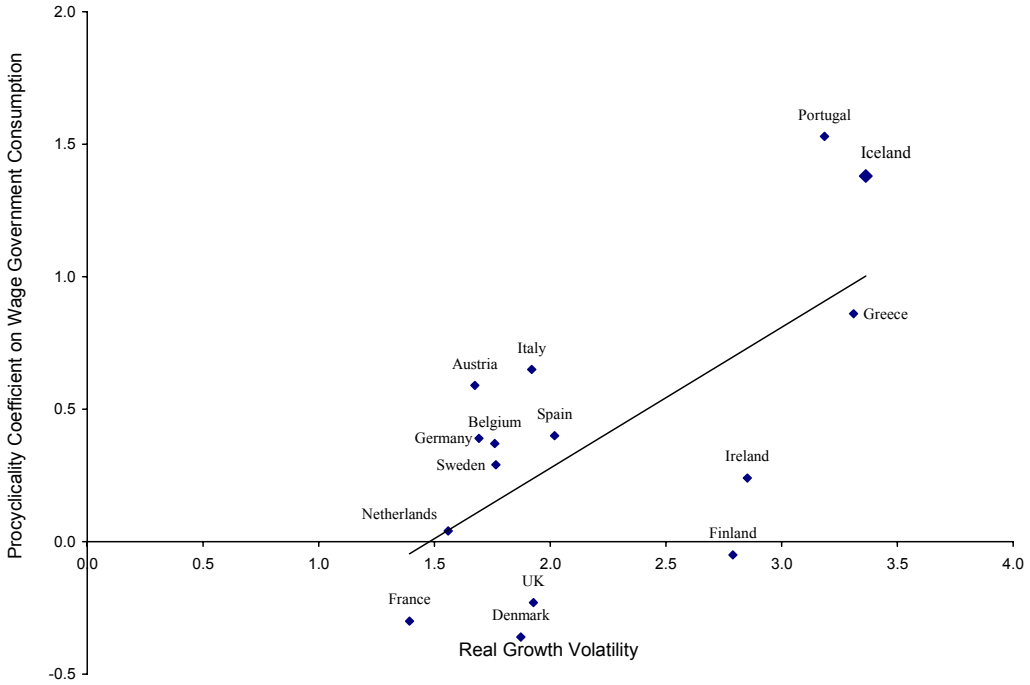
Source: Author's calculations based on OECD.

The international results are broadly in accord with previous studies finding patterns of procyclicality in expenditure among advanced economies. Looking at the EU average, while total expenditure is mildly countercyclical, primary current expenditure is pretty acyclical, and wage government consumption is firmly procyclical. Indeed, the government wage bill appears to be a crucial channel through which the forces affecting procyclicality operate (see Lane 2003). The overall countercyclical effect derives principally from government transfers, which is wholly intuitive. Also, non-wage government consumption is acyclical, while government investment is the most procyclical component of all (this is also in accord with Lane, 2003). At the same time, these results mask substantial variation across countries. While seven countries display countercyclical behavior for primary current spending, this falls to four countries when it comes to the government wage bill (Denmark, Finland, France, and the United Kingdom).

But Iceland stands out, insofar as its expenditure is considerably more procyclical than the international norm. Most categories of government spending are more procyclical than the EU average. This is especially true of wage government consumption. Here, Iceland is second only to Portugal, and these two countries stand alone in having cyclicality coefficients exceeding unity. Also, and unusually, government transfers are actually procyclical in Iceland—this is the case in only two other countries (Greece and Portugal). Overall, it is the government wage bill component of consumption that seems to be driving the procyclicality in Iceland, a result compatible with the continuous ratcheting up of that category of spending.

Procyclicality is related to volatility. Cross-country evidence suggests a clear relationship between the procyclicality of wage government consumption and macroeconomic volatility (Figure 4). Countries with the highest degree of procyclicality (Iceland, Greece, and Portugal) are those very countries with the most volatile output—this is in accord with Talvi and Vegh (2000) and Lane (2003) where the link arises because political distortions are larger in the presence of large booms. This generates more pronounced spending pressures during boom-bust cycles, pressures that may be enhanced by procyclical revenue elasticities.

Figure 4. Procyclicality and Volatility



The next step is to investigate the various political economy channels affecting procyclical fiscal policy in Iceland. To this end, the following variables measuring government fragmentation, proxying the intensity of common pool pressures, are defined[7]:

- **Government fractionalization.** This is defined as the probability that any two members of parliament picked at random from among the governing coalition will be from different parties. It is a measure of the divisions within the government, weighted by the relative strength of the parties.

[7] The data source and variable definitions derive from the World Bank's *Database of Political Institutions*.

- **Legislative fractionalization.** This is defined as the probability that any two members of parliament picked at random from the legislature will be from different parties. This is a measure of the division within parliament, rather than the government. It measures a different dimension of the common pool problem because parliament often has substantial influence over the budget.

- **Government majority.** This is defined as margin of the government majority, or the fraction of seats held in parliament by the government.

Iceland's political fragmentation is high by international standards (Table 4). Reflecting the propensity for multi-party coalition governments, average government fragmentation in Iceland is elevated, and exceeded only by Belgium, Finland, and the Netherlands. The extent of legislative fractionalization is also above average, in the company of countries like Belgium, Denmark, Finland, and the Netherlands. Finally, the margin of government majority in Iceland is again on the high side, coming second only to Finland. This reflects a habit of putting together larger-than-necessary coalitions. Indridason (2005) argues that clientelism—defined as a focus on "the delivery of particularistic benefits rather than public policies"—plays a large role in Icelandic policies, more than in other Nordic countries that are more willing to tolerate minority governments. Therefore the value of becoming part of the governing coalition is high, boosting the potential for political economy distortions in fiscal policy.

A number of standard fiscal policy reaction functions are estimated to elucidate the effects of these political economy variables on the procyclicality of fiscal policy. A number of caveats should be set out in advance: first, the time series is short (1980–2005), and, second, there is little time variation in the political economy variables. With this in mind, a basic fiscal reaction function regresses the ratio of a particular fiscal policy variable as a percent of GDP on a lagged dependent variable, a time trend, lagged gross government debt, and the output gap—this set-up is standard in the literature. Estimation is by OLS. The inclusion of lagged debt reflects the possibility that policymakers respond to high public debt shocks by running a tighter fiscal policy.

The basic results, absent any political economy considerations, are shown in Table 5. While total expenditure and current expenditure display countercyclical responses, the effect of wage government consumption is procyclical, implying that an improvement in the output gap leads to an increase in ratio of the government wage bill to GDP (this is in accord with the "voracity effect" detected earlier). Cyclically-adjusted current expenditure also displays a procyclical effect. However, there is no significant effect of the output gap on the cyclically-adjusted government primary balance, the standard indicator of discretionary policy.

Table 4. Political Fragmentation: International Comparison[/1]

	Government fractionalization	Legislative fractionalization	Government majority
Iceland	**0.52**	**0.76**	**0.64**
Austria	0.32	0.63	0.63
Belgium	0.70	0.85	0.60
Denmark	0.39	0.80	0.41
Finland	0.66	0.80	0.65
France	0.35	0.69	0.60
Germany	0.39	0.68	0.54
Greece	0.00	0.54	0.56
Ireland	0.23	0.64	0.52
Italy	0.26	0.68	0.53
Netherlands	0.54	0.77	0.57
Portugal	0.06	0.63	0.52
Spain	0.04	0.63	0.51
Sweden	0.31	0.73	0.48
UK	0.00	0.54	0.57
EU average	0.30	0.69	0.55
EU standard deviation	0.23	0.09	0.06

1/ Average 1975-2004.

Source: World Bank.

Table 5. Iceland: Cyclicality of Fiscal Policy, 1980–2005

	Total expenditure	Current expenditure	Cyclically-adjusted current expenditure	Wage government consumption	Non-wage government consumption	Government transfers	Government investment	Overall balance	Cyclically-adjusted primary balance
Lagged dependent variable	0.19	0.35**	0.49***	0.43***	0.25	0.71***	0.44*	0.45***	0.43***
	(0.19)	(0.13)	(0.11)	(0.13)	(0.16)	(0.12)	(0.23)	(0.11)	-0.15
Time trend	0.30***	0.28***	0.22***'	0.14***	0.04***	0.07**	-0.01	0.09	0.09
	(0.08)	(0.07)	(0.06)	(0.04)	(0.01)	(0.03)	(0.02)	(0.07)	(0.07)
Lagged debt	-0.10***	-0.06**	-0.03	-0.01	-0.02**	-0.03**	0.01	0.02	0.02
	(0.03)	(0.03)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)	(0.05)	(0.04)
Output gap	-0.34***	-0.19***	0.13**	0.06*	-0.09***	-0.07***	-0.01	0.38***	0.10
	(0.09)	(0.06)	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)	(0.10)	(0.11)
N	25	25	25	25	25	25	25	25	25
R2	0.78	0.90	0.92	0.94	0.75	0.91	0.23	0.57	0.42

Source: OECD (economic data); World Bank (political data).

***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively.

- Table 6 reports results pertaining to **government fractionalization**, showing that, for some fiscal variables, the coefficient on the output gap turns negative and significant while the coefficient on the interactive term becomes positive and significant. This holds true for current expenditure, cyclically-adjusted current expenditure, wage government consumption, and government transfers—but not for total expenditure, non-wage government consumption or government investment. Overall, this result shows that the translation of positive output shocks to higher government spending is greater in the presence of more pronounced divisions within government.

Table 6. Iceland: Cyclicality of Fiscal Policy and Government Fractionalization, 1980–2005

	Total expenditure	Current expenditure	Cyclically-adjusted current expenditure	Wage government consumption	Non-wage government consumption	Government transfers	Government investment	Overall balance	Cyclically-adjusted primary balance
Lagged dependent variable	0.10	0.30**	0.54**	0.31*	0.21	0.69***	0.37	0.44***	0.43**
	(0.18)	(0.15)	(0.21)	(0.18)	(0.17)	(0.14)	(0.27)	(0.13)	(0.18)
Time trend	0.39***	0.34***	0.22*	0.19***	0.04***	0.08**	0.01	0.09	0.10
	(0.10)	(0.09)	(0.12)	(0.07)	(0.01)	(0.03)	(0.02)	(0.11)	(0.10)
Lagged debt	-0.09**	- 0.07**	-0.03	-0.01	- 0.02**	-0.03***	0.01	0.01	0.02
	(0.04)	(0.03)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)	(0.06)	(0.05)
Output gap	-1.03**	-1.21***	-0.60*	-0.33*	-0.10	-0.33**	-0.19	0.11	-0.33
	(0.49)	(0.31)	(0.33)	(0.19)	(0.10)	(0.14)	(0.15)	(0.72)	(0.70)
Government fractionalization	7.60	3.09	-0.92	0.26	-0.67	-0.17	1.52	-2.23	0.14
	(5.13)	(3.05)	(4.08)	(1.87)	(0.74)	(1.24)	(0.94)	(7.24)	(7.08)
Output gap	1.27	2.04***	1.49**	0.80**	0.03	0.53*	0.35	0.58	0.89
*government fractionalization	(0.98)	(0.59)	(0.64)	(0.37)	(0.19)	(0.27)	(0.25)	(1.44)	(1.39)
Election year dummy	0.13	0.82**	0.72*	0.41*	0.17	0.26	-0.08	0.20	0.27
	(0.50)	(0.39)	(0.37)	(0.21)	(0.11)	(0.21)	(0.18)	(0.89)	(0.91)
N	25	25	25	25	25	25	25	25	25
R2	0.81	0.94	0.95	0.96	0.77	0.93	0.30	0.58	0.43

Source: OECD (economic data); World Bank (political data).

***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively.

- These equations also included an **election year** dummy, to test for political economy effects beyond the common pool model. In this model at least, the prevalence of elections has an effect on current expenditure, cyclically-adjusted current expenditure, and wage government consumption.

- **Legislative fractionalization** plays less of a role in generating fiscal pressure (Table 7). Repeating the previous exercise for legislative fractionalization leads to weaker conclusions, with only cyclically-adjusted government spending and transfers yielding positive and significant coefficients on the interactive term.

Table 7. Iceland: Cyclicality of Fiscal Policy and Legislative Fractionalization, 1980–2005

	Total expenditure	Current expenditure	Cyclically-adjusted current expenditure	Wage government consumption	Non-wage government consumption	Government transfers	Government investment	Overall balance	Cyclically-adjusted primary balance
Lagged dependent variable	0.12	0.41***	0.51***	0.39***	0.22	0.75***	0.40	0.25	0.22
	(0.18)	(0.13)	(0.16)	(0.14)	(0.16)	(0.12)	(0.26)	(0.19)	(0.26)
Time trend	0.34***	0.26***	0.22**	0.15***	0.04***	0.07**	0.01	0.08	0.09
	(0.09)	(0.08)	(0.09)	(0.05)	(0.01)	(0.03)	(0.02)	(0.07)	(0.07)
Lagged debt	-0.09**	-0.06**	-0.03	-0.01	-0.02**	-0.03**	0.02	-0.01	0.03
	(0.03)	(0.02)	(0.3)	(0.01)	(0.01)	(0.01)	(0.01)	(0.05)	(0.04)
Output gap	-3.88	-4.15	-3.45*	-1.76	-0.39	-1.71*	0.80	6.60**	6.33*
	(2.87)	(2.55)	(2.01)	(1.18)	(0.31)	(0.89)	(0.82)	(2.69)	(3.17)
Output gap	4.68	5.27	4.75*	2.41	0.39	2.17*	-1.08	-8.21**	-8.27*
* legislative fractionalization	(3.57)	(3.37)	(2.65)	(1.57)	(0.40)	(1.17)	(1.09)	(3.57)	(4.24)
Election year dummy	0.01	0.48	0.36	0.24	0.15*	0.15	-0.12	-0.08	-0.09
	(0.57)	(0.47)	(0.46)	(0.21)	(0.09)	(0.24)	(0.15)	(0.80)	(0.88)
N	25	25	25	25	25	25	25	25	25
R2	0.82	0.92	0.87	0.96	0.81	0.93	0.27	0.64	0.49

Source: OECD (economic data); World Bank (political data).

***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively.

- Using the **government (coalition) majority** variable leads to stronger conclusions, similar to those pertaining to government fractionalization (Table 8).[8] Here again, the coefficients on the interactive terms of the four key variables of interest—current expenditure, cyclically-adjusted current expenditure, wage government consumption, and government transfers—display positive and significant signs, signaling a larger procyclical effect in the presence of sizeable coalition majorities in parliament. Indeed, in this case there is even weak evidence of a politically-induced increase in government investment during booms.

- Signs of politically-induced procyclicality also emerge from **consumption booms** (Table 9). As noted earlier, consumption booms—defined as deviations of the ratio of private consumption to potential output from the 25-year average—are quite pronounced in Iceland, and affect the revenue elasticity in a procyclical fashion. Table 9 shows that consumption does indeed lend itself to procyclical tendencies, that possibly operate through the elevated effect on revenue. Indeed, the evidence suggests larger coefficients for the interactive terms than for equivalent results with the output gap, and more statistically significant results, including for legislative fractionalization. Once again, the core components of spending—current expenditure, cyclically-adjusted current expenditure, wage government consumption, and transfers—stand out.

[8] Note that government fractionalization and the size of government majority measure different dimensions of common pool pressures and are only weakly correlated (0.44).

Table 8. Iceland: Cyclicality of Fiscal Policy and Size of Government Majority, 1980–2005

	Total expenditure	Current expenditure	Cyclically-adjusted current expenditure	Wage government consumption	Non-wage government consumption	Government transfers	Government investment	Overall balance	Cyclically-adjusted primary balance
Lagged dependent variable	0.11	0.38**	0.54***	0.37**	0.30*	0.65***	0.35	0.27	0.32
	(0.21)	(0.15)	(0.12)	(0.16)	(0.16)	(0.13)	(0.28)	(0.17)	(0.20)
Time trend	0.31 ***	0.29***	0.21***	0.17***	0.05***	0.07**	0.01	0.16	0.14
	(0.09)	(0.08)	(0.07)	(0.06)	(0.01)	(0.03)	(0.02)	(0.09)	(0.09)
Lagged debt	-0.09**	-0.07***	-0.02	-0.01	-0.02**	-0.03**	-0.01	-0.01	0.02
	(0.03)	(0.02)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)	(0.05)	(0.04)
Output gap	-0.95*	-1.00**	-0.63**	-0.23	-0.05	-0.43***	-0.27*	0.26	-0.35
	(0.54)	(0.39)	(0.30)	(0.17)	(0.09)	(0.15)	(0.16)	(0.70)	(0.58)
Government majority	-5.22	-1.54	-3.01	0.38	1.04***	-2.26*	0.13	7.90	4.50
	(4.73)	(3.20)	(2.48)	(1.74)	(0.36)	(1.14)	(0.86)	(4.89)	(4.23)
Output gap	1.01	1.32**	1.26***	0.46*	-0.08	0.59***	0.41*	0.12	0.65
* government majority	(0.88)	(0.59)	(0.44)	(0.24)	(0.12)	(0.20)	(0.22)	(1.16)	(0.96)
Election year dummy	0.34		0.63	0.29	0.11	0.28	-0.07	-0.33	-0.08
	(0.59)		(0.41)	(0.21)	(0.12)	(0.21)	(0.20)	(0.96)	(0.93)
N	25	25	25	25	25	25	25	25	25
R2	0.80	0.92	0.86	0.95	0.78	0.94	0.30	0.61	0.46

Source: OECD (economic data); World Bank (political data).

***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively.

Table 9. Iceland: Cyclicality of Fiscal Policy and Consumption Booms, 1980–2005

	Current expenditure	Cyclically-adjusted current expenditure	Wage government consumption	Non-wage government consumption	Current expenditure	Cyclically-adjusted current expenditure	Wage government consumption	Non-wage government consumption
Lagged dependent variable	0.31*	0.54***	0.35**	0.73***	0.41**	0.72***	0.58***	0.85***
	(0.16)	(0.18)	(0.19)	(0.14)	(0.16)	(0.16)	(0.14)	(0.14)
Time trend	0.29***	0.25**	0.19***	0.05*	0.22**	0.13	0.10**	0.04
	(0.09)	(0.10)	(0.07)	(0.03)	(0.09)	(0.09)	(0.05)	(0.02)
Lagged debt	-0.07*	-0.03	-0.01	-0.03**	-0.06**	-0.01	0.00	-0.03*
	(0.04)	(0.03)	(0.01)	(0.01)	(0.03)	(0.02)	(0.01)	(0.01)
Private consumption boom 1/	-1.07***	-1.16***	-0.60**	-0.24	-4.62**	-4.79***	-2.48***	-2.51***
	(0.36)	(0.35)	(0.22)	(0.17)	(1.79)	(1.19)	(0.73)	(0.56)
Government fractionalization	-0.19	-0.07	0.44	-1.25				
	(2.81)	(3.41)	(1.62)	(1.04)				
Private consumption boom	1.74**	2.72***	1.38***	0.36				
* government fractionalization 1/	(0.74)	(0.71)	(0.46)	(0.35)				
Legislative fractionalization					-0.97	-5.52	-3.62	1.19
					(4.64)	(5.68)	(2.60)	(2.05)
Private consumption					5.82**	6.51***	3.36***	3.24***
* legislative fractionalization					(2.39)	(1.56)	(0.96)	(0.73)
N	25	25	25	25	25	25	25	25
R^2	0.92	0.94	0.95	0.92	0.92	0.94	0.96	0.94

Source: OECD (economic data); World Bank (political data).

***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively.

1/ Deviation of ratio of private consumption to potential output from average since 1980.

IV. Options for Reform

The previous section showed that—as predicted by theory—the combination of high macroeconomic volatility and prevailing political economy pressures distorts fiscal policy in Iceland, heightening procyclicality in core aspects of expenditure. More fragmented decision making creates a common pool problem, leading to rising expenditure ratios during booms. Macroeconomic volatility enhances these procyclical tendencies. Given the magnitude of the shocks faced by Iceland, fiscal policy needs to assume a far greater countercyclical bent to relieve the pressure on monetary policy (see Honjo and Hunt, 2006). A further issue is that more open economies have a greater demand for fiscal insurance (Rodrik, 1998) which could easily swell any political economy pressures. These factors together imply that Iceland would benefit from institutional reform geared toward curbing these procyclical features. Other have argued that the prevalence of boom-bust cycles often lead to uncertainty about the output gap and about the relevant elasticities, justifying rules pertaining to expenditure growth and a suitably conservative target for the fiscal balance over the cycle (Jaeger and Schuknecht, 2004).

Prior to discussing reform options, it is useful to review the recent experience of Iceland in the domain of fiscal institutions. Iceland initiated a series of budgetary reforms in 1992. It adopted "frame budgeting", a top-down approach whereby ministry-level expenditure ceilings are set at a relatively early stage in the process, forcing the ministries to prioritize different expenditure items and projects (see Box 2). At the outset, the minister of finance prepares the macroeconomic framework and brings proposals to the cabinet-level *Committee on Public Finances*—comprising the prime minister, the minister of finance, two other ministers, and the chairman and vice-chairman of the coalition parties—which decides on the aggregate expenditure envelope. Following negotiations, the cabinet then approves the individual frames. The budget is passed later in the year after a further review of the macroeconomic framework. It then goes to parliament, where amendments are permitted.

To bolster this framework, the government adopted fiscal rules pertaining to the growth of real expenditure from 2004. The real annual increase in public consumption is limited to 2 percent, while the growth in transfer payments is restricted to 2½ percent a year. Real targets are translated into nominal terms using ministry of finance forecasts of CPI inflation. The targets are defined on average over a number of years, however, meaning that temporary deviations are allowed. Also, there are no mechanisms in place for ensuring targets are met.

Box 2. The Annual Budgetary Exercise in Iceland

Stage 1 (January–March). The ministry of finance receives expenditure proposals from ministries, and discussions take place. These typically reflect new obligations, initiatives, and revised plans for programs that have been added since the frames were decided the previous August, often arising the parliamentary stage.

Stage 2 (April). The ministry of finance prepares the first draft of the medium-term framework, based on macroeconomic assumptions and unchanged policies. The minister of finance puts together proposal for a decision by the cabinet-level Committee on Public Finances. The aim is to set an overall expenditure ceiling to target a particular fiscal balance. Accordingly, the minister of finance proposes amendments to individual ministry expenditure frames. Following discussions with ministries, who present their final proposals, the government passes the new expenditure frames.

Stage 3 (May–June). The ministries prioritize expenditure commitments within their allocated frames, and work out the financing details for each agency and project. Ministries complete their final budget proposals in June, which are then examined by the ministry of finance.

Stage 4 (August–September). The ministry of finance reviews the macroeconomic projections, especially wage and price developments. At this stage, the government may choose to adjust expenditures based on prospects.

Stage 5 (October–December). During this period, parliament (the *Althingi*) debates the government budget, in three separate readings. Much of the discussion takes place within the confines of the parliamentary Budget Committee, and amendments are proposed. In theory, the legislature has unlimited power to change the budget. The only amendments approved are those emanating from the government-controlled Budget Committee.

Stage 6 (ongoing). A supplementary budget for the current year is submitted to parliament concurrently with the budget for the following year, with deliberations taking place at the same time.

So far, this framework has not acted as a sufficient bulwark against overspending. The expenditure ceilings have not been respected, either at the central or local government level. The legislature is prone to altering budget targets during the parliamentary phase of the budget, typically at the behest of the government's own representatives on the *Budget Committee*, and deviations between the budget and outturns reflect the entrenched use of supplementaries (Suppanz, 2003; OECD, 2006).[9] [10] Ministries and agencies frequently overspend their budgets with few consequences, despite existing regulations. High revenue

[9] Over the four years 2002–05, expenditure surpassed budgeted amounts by 12 percent, 8 percent, 9 percent and 4 percent, respectively.

[10] Supplementary budgets are supposed to be limited to exceptional circumstances, in cases where "unforeseen circumstances, wage agreements, or new legislation make it necessary to resort to special fiscal measures not anticipated in the fiscal budget for the year" (*Government Financial Reporting Act*, 1997, Article 44).

growth over the past few years has lessened the resistance to added expenditure pressures. The medium-term framework is also weak, as targets are largely illustrative. While the *Government Financial Reporting Act* calls for a medium-term projections over four years, the targets are largely illustrative, not binding, and are not discussed in parliament. The budget lens is an annual one, not based on the previous year's projections.

How can Iceland improve its budgetary institutions? As a commitment country, it can start by looking to other commitment countries for emulation. In line with countries like Belgium, Finland, Ireland, and the Netherlands, multi-party coalitions are the norm in Iceland, and fragmentation is accordingly high (recall Table 4). As noted in Section II, the literature shows that commitment countries in particular benefited from rules-based frameworks as well as external agencies and committees that aided in fiscal policy formulation or coordination.

In terms of the breadth of their institutional reforms, Belgium and the Netherlands represent the most appropriate role models for Iceland. Both countries have strengthened their commitment technologies through complementary combinations of institutional reforms, fiscal rules, and recourse to independent agencies. They used negotiated fiscal contract underpinned by fiscal rules and fiscal policy is influenced by independent entities. They are two of the three EU countries to use independent forecasts and are the only two countries to have adopted formal rules dealing with positive revenue windfalls (Hallerberg, Strauch, and Von Hagen, 2001). In Belgium, an independent entity (the *High Council of Finance*)—comprising officials from the finance ministry, other ministries and agencies that deal with economic policy, the CPB, and the governor of the central bank—set fiscal targets for each level of government, for the short, medium, and long term, which the coalition government agreed to adopt. The Netherlands introduced rigid four-year expenditure ceilings separately for central government spending, social security, and healthcare, and allowed the independent *Central Planning Bureau* to provide forecasts for the parties to use before elections, during coalition formation, and to underpin the annual budget process. Another external group (*Study Group of the Budget Margin*) was instrumental in pointing out problems in the old framework, and inspiring the recent reforms (Hallerberg, 2004). In a sense, Belgium and the Netherlands represent "best practice" in the area.

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

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

- **Strengthen the expenditure rules**. Ideally, the expenditure rule would be couched in terms of explicit multi-year expenditure ceilings that are binding on ministries, unlike the current illustrative rules that are seldom met. In practical terms, the government could set rolling 3–4 year nominal expenditure ceilings for each frame, adding up to an overall target. The ceilings should be binding on ministries, and the current practices of using supplementaries and altering the frames at the legislative stage should be eschewed. Each new budget would add the ceiling for one additional year and the scope for revising already-agreed targets would be limited. Realistic contingency funds could be included in the budget for emergencies, including unanticipated cyclical factors and forecast uncertainties. There could also be a contingent rule, ensuring that positive shocks to revenue did not lead to overspending.

- **Switch to nominal, rather than real, ceilings**. Nominal ceilings ensure that changes in inflation do not lead to revisions in targets. For a start, nominal ceilings have the advantage of transparency, which aids enforceability. Nominal rules are most beneficial when cyclical stabilization is a goal since the higher inflation leads directly to lower real expenditure in a countercyclical manner. This is especially important in Iceland, given the side effects of high interest rates and the concomitant need to relieve pressure on monetary policy. Ideally, for countercyclical purposes, the nominal ceilings could be set based on the central bank's target for CPI inflation.

- **Use a stakeholder committee to suggest targets for the different levels of government**. Such a committee could involve officials from the ministry of finance, the local governments, and the central bank. It would serve as a coordinating device across different levels of government, while also offering recommendations on the overall stance of fiscal policy, especially over the medium term.

- **Lay out a medium-term fiscal objective to be attained over the life of the government**. If a coordinating fiscal policy committee as suggested above exists, its targets could be adopted, or at least form the basis of discussions, and these targets could be incorporated into coalition agreements. Presently, coalition agreements contain only vague references to fiscal policy. Greater political ownership would also shield against expenditure pressures at the parliamentary level, following the introduction of the government's budget. Such an approach would also segue naturally into the medium-term framework underpinned by expenditure ceilings.

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

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

V. CONCLUSION

This paper opened with the observation that fiscal policy needed to shoulder a greater share of the fiscal stabilization burden in Iceland. In this light, Iceland's experience with volatility and procyclicality suggests the need for an improvement in its fiscal framework. Expenditure, especially the government wage bill, has risen precipitously, and—in accord with the literature—often in a procyclical manner related to the fragmentation of political decision-making. Iceland's high degree of macroeconomic volatility reinforces these tendencies. Large boom-bust cycles also lead to procyclical revenue elasticities, making underlying fiscal policy appear healthier than is actually the case, further contributing to latent spending pressures.

Iceland could look to the experiences of countries like Belgium and the Netherlands in curbing politically-motivated expenditure pressures. These countries, endowed with a political architecture similar to that of Iceland, focused on an institutional framework that twinned formal fiscal rules with the use of committees and bodies outside of government to aid in fiscal policy formulation. Iceland could consider an array of policies including: (i) establishing binding nominal expenditure rules and eschewing the use of supplementary budgets; (ii) using a representative fiscal policy committee to negotiate medium-term fiscal targets across different levels of government; (iii) embedding fiscal targets in coalition agreements, and enacting fiscal policy with a medium-term bent; and (iv) using independent fiscal forecasts. These policies have proved a recipe for success elsewhere.

References

Alesina, Alberto, and Roberto Perotti, 1995, "Fiscal Expansions and Adjustments in OECD Countries," *Economic Policy*, Vol. 21, pp. 205–48.

Annett, Anthony, 2002, "Politics, Government Size, and Fiscal Adjustment in Industrial Countries," IMF Working Paper 02/162 (Washington: International Monetary Fund).

———, 2006, "Enforcement and the Stability and Growth Pact: How Fiscal Policy Did and Did Not Change Under Europe's Fiscal Framework," IMF Working Paper 06/116 (Washington: International Monetary Fund).

Balassone, Fabrizio, and Mauro Francese, 2004, "Cyclical Asymmetry in Fiscal Policy, Debt Accumulation, and the Treaty of Maastricht," *Temi di Discussione No. 531*, (Rome: Banca D'Italia).

European Commission, 2006a, "Public Finances in EMU, 2006," *European Economy*, No. 3. (Brussels: European Commission).

———, 2006b, *The EU Economy 2006 Review: Adjustment Dynamics in the Euro Area, Experiences and Challenges*, Brussels: European Commission.

Fabrizio, Stefania, and Ashoka Mody, 2006, "Can Budget Institutions Counteract Political Indiscipline," *Economic Policy: A European Forum*, Vol. 21, pp. 689–739.

Gali, Jordi, and Roberto Perotti, 2003, "Fiscal Policy and Monetary Integration in Europe," *Economic Policy: A European Forum*, Vol. 37, pp. 533–72.

Hallerberg, Mark, 2004, Domestic Budgets in a United Europe: Fiscal Governance from the End of Bretton Woods to EMU (Cornell: University Press).

———, Rolf Strauch, and Jürgen von Hagen, 2001, "The Use and Effectiveness of Budgetary Rules and Norms in the EU Member States," report prepared for the Dutch Ministry of Finance by the Institute of European Integration Studies.

———, 2004, "The Design of Fiscal Rules and Forms of Fiscal Governance in European Union Countries," ECB Working Paper No. 419 (Frankfurt: European Central Bank).

Honjo, Keiko, and Benjamin Hunt, 2006, "Stabilizing Inflation in Iceland," IMF Working Paper 06/262 (Washington: International Monetary Fund).

Indridason, Indridi H., 2005, "A Theory of Coalitions and Clientelism: Coalition Politics in Iceland, 1945–2000,"*European Journal of Political research*, Vol. 44, pp. 439–64.

Jaeger, Albert, 2001, *Cyclical Fiscal Policy Behavior in EU Countries,* IMF Staff Country Report No. 01/201 (Washington: International Monetary Fund).

———, and Ludger Schuknecht, 2004, "Boom-Bust Phases in Asset Prices and Fiscal Policy Behavior," IMF Working Paper 04/54 (Washington: International Monetary Fund).

Jonung, Lars, and Martin Larch, 2004, "Improving Fiscal Policy in the EU: The Case for Independent Forecasts," Economics Papers No. 210, (Brussels: European Commission).

Lane, Philip R., 2003, "The Cyclical Behavior of Fiscal Policy: Evidence from the OECD," *Journal of Public Economics*, Vol. 87, pp. 2661–75.

Morris, Richard, and Ludger Schuknecht, 2007, "Structural Balances and Revenue Windfalls: The Role of Asset Prices Revisited," ECB Working Paper No. 737 (Frankfurt: European Central Bank).

Organization for Economic Cooperation and Development, 2006, *Economic Survey: Iceland*, (Paris).

Rodrik, Dani, 1998, "Why Do More Open Economies Have Bigger Governments?" *Journal of Political Economy,* Vol. 106, pp. 997–1032.

Suppanz, Hannes, 2003, "Controlling Public Expenditure in Iceland," Economics Department Working Paper No. 360 (Paris: OECD).

Talvi, Ernesto, and Carlos Vegh, 2000, "Tax Base Variability and Procyclical Fiscal Policy," NBER Working Paper No. 7499 (Cambridge, Massachusetts: National Bureau of Economic Research).