

Capital Flow Management and Controls under the IMF Programme in Iceland

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[Abstract]

This paper discusses the causes and context of Iceland's much faster recovery and normalisation than the other GIIPS (Greece, Ireland, Italy, Portugal and Spain) in the Euro Crisis after the Global Financial Crisis (2008). Even though Iceland was under an IMF programme at the time of the crisis, it did not introduce short-term austerity measures, but instead introduced its own capital and financial regulations, in particular outflow controls. This paper analyses the effectiveness of the impact of Iceland's capital controls on GDP growth, the exchange rate (real effective exchange rate) and interest rates (government bond yields, call money and bank lending rates) on the basis of Bayesian VAR (autoregressive) models. The results show that during the period of capital and financial regulation in Iceland (2008Q4-2017Q1), the real economy (GDP/output) was less pro-cyclical and the exchange rate and financial markets were more stable than in the liberalisation period.

Key Words; Capital Controls, IMF Programmes, Conditionality

JEL: F32, 33, F34, F38

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Introduction

This paper analyses the background to Iceland's rapid recovery from the crisis in the aftermath of the Global Financial Crisis (2008), compared to other Euro Crisis countries. The objective of the paper is to assess the effect of the capital controls introduced in Iceland after the Crisis on the impact of net capital inflows on the real economy (GDP growth and industrial production), exchange rate and interest rates, based on econometric analysis (BVAR models). It will also show that the avoidance of short-term austerity measures and the flexible management of IMF programmes have contributed to Iceland's rapid economic recovery.

Iceland is almost the only country to have successfully introduced capital outflow controls on its own initiative under an IMF programme, and to have implemented them for eight years after the crisis ended, stabilising the country's economic and financial markets, and returning almost all macroeconomic and social indicators to their pre-crisis levels.

Iceland's capital flow management and controls differed significantly from those of a normal IMF programme in that it introduced capital outflow controls, the strongest and most unusual instrument of direct regulation, allowing no conversion into foreign currency and restricting the free flow of funds. These direct controls on capital outflows, as well as those on capital inflows from abroad, were far more effective than the indirect controls.¹

Prior to the outbreak of the Global Financial Crisis, Iceland had been pursuing a policy of capital and financial liberalisation with the aim of becoming the financial centre of Northern Europe, and higher interest rates than in the EU had led to a massive inflow of deposits and other capital from European countries. As a result, the country's main banking assets grew rapidly. The Global Financial Crisis and the subsequent Euro Crisis ended Iceland's prosperity and accelerated capital outflows in 2008.

Iceland's IMF programme differed significantly from the previous one in two main respects. First, it did not adopt strict austerity measures as is usual in IMF programs, but rather very moderate conditionality and constructive structural reforms aimed at restructuring actual financial institutions. Second, the IMF programme in Iceland gave the country a great deal of autonomy, it did not introduce harsh austerity measures, and the IMF programme implemented exceptional restrictions on capital transactions, particularly on outflows. This was not introduced as a conditionality in the Letter of Intent for the IMF programme, but rather as a recognition by the Icelandic government that without it the country would face imminent collapse. However, the IMF's reviews of the Stand-By Arrangement consistently urged the deregulation and liberalisation of capital controls from the outset, with a commitment to remove capital controls if conditions were met.

Iceland achieved a much more rapid recovery and normalisation than the other GIIPS (Greece, Ireland, Italy, Portugal, and Spain) countries affected by the Euro crisis, and the

¹ Ocampo & Palma (2008) clearly demonstrate the superiority of direct regulation over indirect regulation.

duration of support under the IMF programme was minimal. The IMF initially attributed this "success" to the country's rapid recovery and success, citing reasons completely unrelated to the crisis, such as the safety hedge provided by the Nordic-rooted social welfare policies in the country, which had a capital account crisis character. Moreover, in its post-program monitoring report, the IMF persistently pressed for the liberalisation of capital transactions. However, the government was very cautious about easing restrictions on capital transactions and continued to impose capital controls long after the end of the IMF programme, until March 2017². IMF now put as 'Capital controls with no predefined time frame were a critical part of the toolkit to restore monetary stability'³ The Icelandic experience shows that one of the factors that led to the success of capital controls was that they were introduced as a long-term measure, not merely a short-term one, to be taken by countries in crisis⁴.

Very few studies have discussed the Icelandic crisis and recovery in terms of IMF programmes and capital controls and have used econometric methods to show their effectiveness. Several research on this issue have been focused the historical and descriptive studies and most of them are descriptive in nature.

Benediktsson et al. (2017) provide detailed data on the changes in the asset composition and investment content of the banking sector before and after the crisis in Iceland, but not an assessment of capital regulation per se. Tan (2018) positively assesses Iceland as having achieved economic recovery and has also improved in terms of income distribution. However, there are few examples of such a positive assessment in academic papers. There is also an article that compares the Icelandic situation with Greece during the Euro crisis, but it is descriptive (Katsimi, 2015)⁵.

On the other hand, there is a variety of literature on capital controls or capital flow management and controls during the crisis in general, e.g., Ostry et al. (2011), Erten et al. (2019). However, there have been very few evaluations of Iceland's approach to capital regulation: Forbes (2019) mainly discusses the analysis of Iceland's macroprudential policies, but there is little literature on quantitative assessments of capital flow management and controls in Iceland using econometrics.

In this context, this paper analyses the background and consequences of Iceland's policies before and after the global financial crisis, the IMF program, and its own capital control measures. It also examines the impact of each financial balance item on the real

² Please see a short sheet titled 'Iceland: Spectacular Turnaround from Financial Meltdown.' (<https://www.imf.org/en/Countries/ISL/iceland-lending-case-study>) Although one of the IMF staff members acknowledged the capital controls measures introduced in Iceland were necessary in such an urgency, this is not yet reflected in official IMF documents of IMF; see Thomsen (2018).

³ However, the IMF's position towards capital controls is still too restrictive (see Bretton Woods Project, 2021).

⁴ Sigurgeirsdottir and Wade (2015) discussed on the background of capital controls continued for long period in Iceland.

⁵). It points out that while Greece was a eurozone crisis centred on government bonds, Iceland was originally a problem with the debts of the national banks (the three largest banks), and that in the latter case the government's short-term measures were more effective.

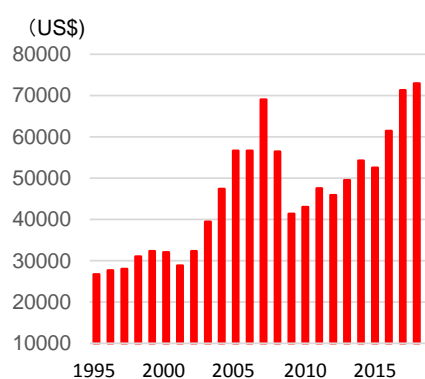
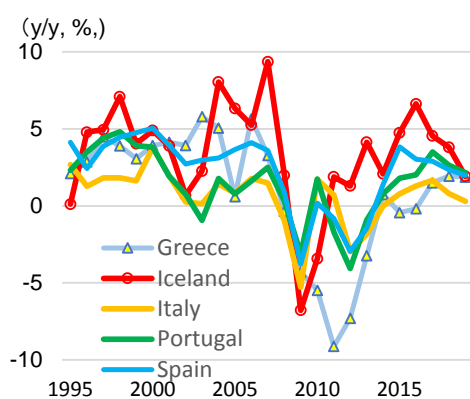
economy (GDP, industrial production), the exchange rate and financial markets (interest rates), based on Bayesian VAR models, and show the effectiveness of capital and financial controls, in particular the capital outflow controls, during the crisis in Iceland..

1. The Icelandic economy before and after the global financial crisis

1.1 The Icelandic economy and policies in the 2000s

In the 2000s, Iceland pursued financial and capital account liberalisation, along with the strengthening of its financial system and financial sector, to become a Nordic financial centre. In 2001, the country adopted an inflation target for its monetary policy and a floating exchange rate without intervention. As part of the financial liberalisation policy, three major commercial banks (Lands banki, Kaupþing banki and Glitnir banki) were privatised in 2002 and 2003. In the period 2003-2007, prior to the global financial crisis, all three banks dramatically expanded their investment banking activities, both domestically and internationally, and together with the acquisition of deposits, significantly increased their bond trading to foreign investors. As a result, the external debt of Iceland's four largest banks reached €140 billion in 2008. In the same period, Iceland's banking assets amounted to almost ten times the country's GDP.

As a result of the increase in global liquidity just before the Crisis, Iceland, a small country, experienced very large capital inflows for a country of its size. This led to a very high GDP growth rate of 7.2% on average in the period 2004-2007, just before the Global Financial Crisis (Fig.1). Also, by the mid-2000s, GDP per capita had risen substantially from \$32,018 in 2000 to \$69,054 in 2007 (Fig.2). After the crisis, Iceland recovered very quickly compared to the euro crisis countries, reaching the level at \$72,969 in 2018 (World Bank database).



In the case of Iceland, there are fundamental differences with Greece, which was hit by the Euro Crisis. First, as a non-EU/Euro country, Iceland had more policy freedom and was able to impose capital controls, whereas Greece was unable to do so as a Euro member

state. Second, since Iceland's private banks failed and were nationalised at the onset of the crisis, most of its external debt, in the form of deposits from foreign investors (i.e., liabilities), was erased from its balance sheet. Third, the country was not able to adjust its exchange rate, as Greece was, because of its Euro currency, and a significant depreciation of the exchange rate would have improved its export competitiveness and allowed it to run trade and current account surpluses. This allowed the country to accumulate foreign exchange reserves and to repay its external debt.

Instead of an economy based on a fragile "financial centre", which is highly vulnerable to global economic and market conditions, as was the case in the 2000s, Iceland is now aiming for sustainable growth through a tourism. The IMF has recently published a special report on Iceland on the development of the tourism sector; see IMF (2017b).

1.2 The Icelandic economy and bank nationalisation in the immediate aftermath of the financial crisis

With the onset of the Global Financial Crisis in 2008, the major commercial and savings banks failed and were nationalised. This was a capital account crisis with short-term capital outflows and a significant depreciation of the exchange rate, which led to a significant deterioration in the Icelandic economy. The outflow of capital led to a sharp depreciation of the exchange rate (Icelandic krona) ⁶(Fig. 3). In turn, import prices accelerated the rise in consumer prices, and inflation rose from an average of 4.7% CPI growth in 2000-2007 to an average of over 12% in 2008-9 (Fig. 4).

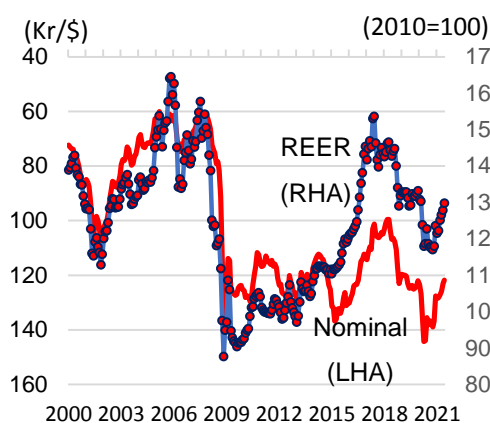


Fig.3:Iceland Nominal & REER
Source: FRED

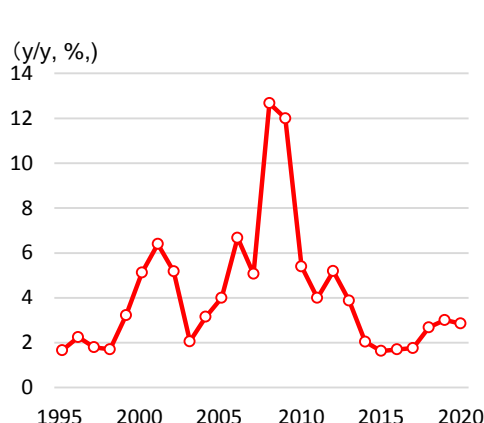


Fig.4 : CPI (Iceland)
Source: World Economic Outlook database (IMF)

The general government budget deficit, which averaged a surplus of 5 % of GDP in 2005-7, reached 5.6 % of GDP in 2008 but recovered to -1.8% in 2019 (Fig.5). On the other hand, the current account deficit widened from 2006 to 22.3% of GDP in 2008, partly

⁶ It should be noted that the exchange rate did not stabilise until early 2017, which may have justified the authorities' decision to extend capital controls, despite repeated requests from the IMF to do so.

reflecting the large surplus in the financial account (Fig. 6). The current account deficit in Iceland was much larger than the 14.5% deficit of Greece in 2008, however, the current account became surplus of 6.4% in 2019 in Iceland. The current account balance has improved significantly due to the increase in exports and tourism revenues following the depreciation of the currency after the crisis, and there is less need to maintain a capital and financial account surplus as was the case before the Crisis. The Icelandic government is now shifting from a policy of becoming the financial centre of Northern Europe to one of promoting the exploitation of its abundant natural energy resources.

In the aftermath of the Global Financial Crisis, the rapid withdrawal of capital from Europe accelerated, leading to a significant increase in non-performing loans (NPLs) and a financial crisis in Iceland.

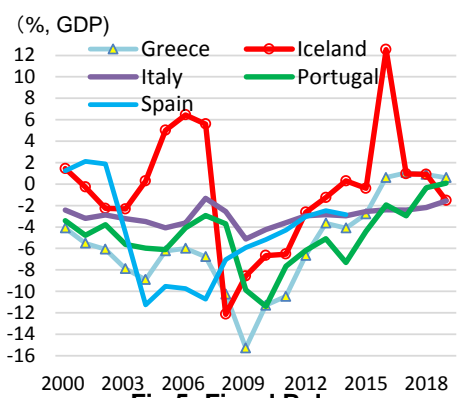


Fig.5: Fiscal Balance
Source: WEO database (IMF)

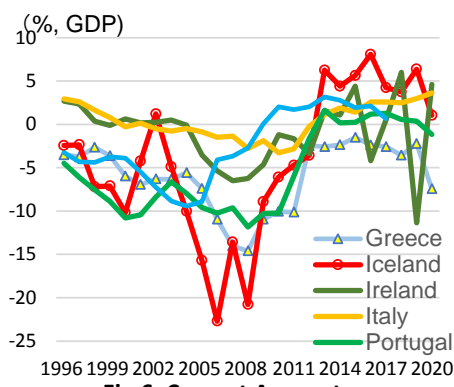


Fig.6: Current Account
Source: World Economic Outlook database (IMF)

As shown in Fig. 7, there was a significant outflow of short-term capital in portfolio and other investments in 2008-11. After the outbreak of the crisis, the government and the authorities were quick to bail out (in October 2008); the three main banks that had gone bankrupt by nationalising them. The first one, Glitnir banki, was nationalised at the end of September 2008, with the government taking a 75% stake for €600 million. In addition, on 7 October 2008, the financial supervisory authority took control of Landsbanki and on 9 October 2008 of Kaupping banki, the largest bank. Other savings banks and other institutions were also recapitalised and restructured.

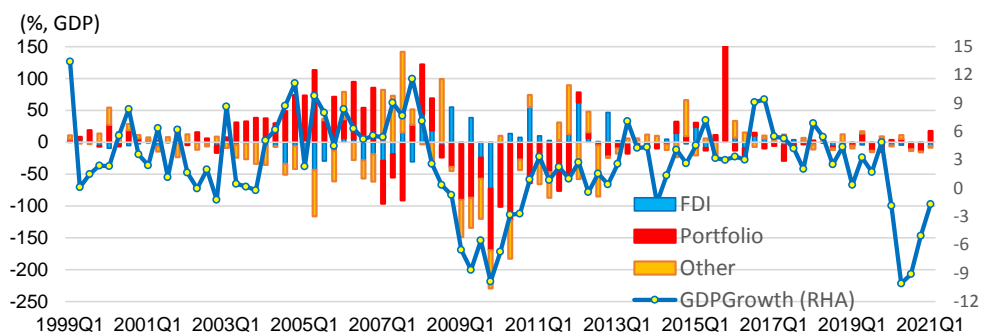


Fig.7: Iceland Financial Flows & GDP Growth
Note: Net inflows based on author's calculation. Sources: Central Bank of Iceland, IFS (IMF)

The fact that most of the major commercial banks in Iceland were state-owned after the crisis made it difficult for them to operate in a high-risk environment, unlike the private banks which tended to invest speculatively, and thus avoided the risk of international capital flows.

Fig. 8 shows that financial capital flows before and after the 2008 crisis had a significant impact on the exchange rate (real effective exchange rate, REER), which fluctuated significantly from the fourth quarter of 2008 to the first half of 2011 under the IMF programme, but since then capital flows have been relatively stable. Since then, capital flows have been relatively stable. However, from 2017 to 2019, the exchange rate (REER) appreciated, partly due to the liberalisation of direct capital controls since 2017.

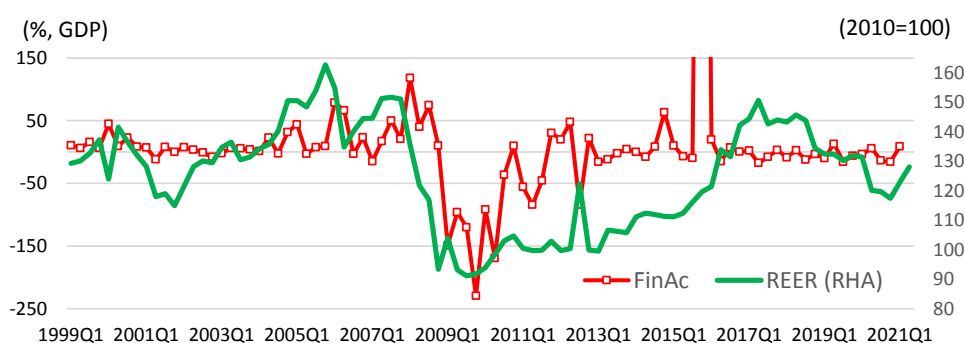


Fig8.: Iceland Financial Flows & REER

Sources: Central Bank of Iceland, IFS (IMF), BIS

1.3 Introduction of capital controls

In Iceland, capital account liberalisation was promoted from the 1990s to the 2000s. This was partly due to the aim of structural change in the national economy by shifting the economic structure from one based on the primary industry, mainly fishing, to financial services. Until the Global Financial Crisis (2008), there was a steady flow of funds into the country's financial institutions from Europe, and the country's major banks saw their balance sheets expand substantially. This was accompanied by relatively high levels of interest rates compared to the eurozone and other regions, and a significant increase in deposit account balances. However, with the onset of the crisis, capital outflows accelerated, and to deal with the depreciation of the exchange rate, capital flow management and controls, especially outflow controls were introduced. Since the 2008 crisis, the Icelandic government has implemented a series of capital controls, restrictions on foreign currency transactions and transactions in the domestic currency. These prohibit foreign exchange transactions other than for current account purposes.

In Iceland, several capital controls have been introduced since autumn 2008 and the economy and markets have gradually calmed down. However, the exchange rate remained volatile in both nominal and real terms (Fig.3). In principle, the authorities focused on

regulating transactions in short-term capital by residents and foreign investors. As a result, FDI, which is essentially long-term capital investment, and currency conversions used in actual trade was not covered.

As shown in Table 1, The major capital control measures have been gradually relaxed since 2016 and deregulated in March 2017, while maintaining the supervision and regulation of the central bank. Particularly noteworthy is the shift since 2016 from a focus on direct regulation to indirect regulation, mainly through the central bank's Special Reserve Requirement (SRR). To date, Iceland has implemented a number of amendments basically to regulate short-term speculative movements in foreign investment.

Table 1 : Iceland: Capital Flow Management & Controls

Date	Contents
8-Oct-08	Central Bank restricts foreign currency trading; capital movements restricted (ISK10mn to 5mn)
8-Nov-08	Introduction of formal capital controls legislation; Short-term capital transfer prohibited Foreign currencies should be repatriated to Iceland
31-Mar-09	Amendment of the Foreign Exchange Law; exports limited to foreign currencies
10-Jul-09	Amendment of the Foreign Exchange Law; tightening of restrictions on illegal foreign exchange transactions
31-Oct-09	Amendment to Foreign Exchange Law; ban on trading in home currency offshore Exchange of foreign currency for FDI purposes permitted.
29-Apr-10	Amendment to Foreign Exchange Law; Limitation on amount of foreign currency acquired for travel purposes Decision on illegal offshore transactions
14-Jun-10	Amendment of Foreign Exchange Law and Customs Law; tighter control of foreign currency transactions Strengthen supervision and inspection of central banks
4-Apr-13	Amendment of the Foreign Exchange and Foreign Trade Law; Restriction on financial institutions' withdrawal of bonds from overseas Cautious capital liberalisation agreement by IMF/government authorities Conditional on (sounder banks + increased foreign exchange reserves)
4-Apr-13	Central Bank to intervene in foreign investors' rules on forex trading Allowing inflation-linked restructuring for more than 5 years
18-Jun-14	Restrictions on cross-border transactions in home currency
6-Mar-15	Restrictions on foreign exchange transactions by non-residents
Jun-15	Foreign Exchange for payment banned except trade of goods (removed in Mar 2017)
14-Jun-16	Restrictions on transactions in krona-denominated assets
17-Jun-16	Mandatory central bank depository system (URR)
19-Dec-16	Relaxation of income shifting rules on international capital movements (goods and services)
12-Mar-17	Deregulation of the Central Bank's compulsory deposit system (URR) in foreign currencies Central Bank restricts foreign currency trading; capital movements deregulated
27-Jun-17	Restrictions on overseas financial transactions (Central Bank reporting requirements)
2-Nov-18	Regulations on the Deposit of New Foreign Currency at the Central Bank
5-Mar-19	Amendments to the Restrictions on Transactions in Krona Denominated Assets Regulations
5-Mar-19	Reduced on the Central Bank's Special Reserve Requirement (SRR) on selected debt inflows (20% to 0%)
17-Mar-20	Regulations on countercyclical capital buffers of banks

Sources: Central Bank of Iceland, IMF(2020b)

Chinn-Ito KAOPEN (Capital Account Openness), a measure of financial openness, showed a significant increase in financial openness until the early 2000s, but the management and control of capital flows was introduced after the outbreak of the crisis in 2008Q4. Even under the IMF programme (2008-2011), capital controls were maintained until liberalisation in the first quarter of 2017, after which capital controls were partially relaxed (Fig.9). The introduction of capital controls discouraged the transfer of domestic funds abroad and gave the government and authorities time to nationalise the financial sector and develop regulations. This could be one of Iceland's most successful economic policies in the post-crisis period. As a result, Iceland's foreign exchange reserves have now recovered significantly (Fig. 10).

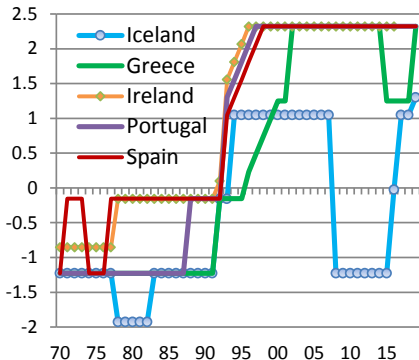


Fig.9: KAOPEN (GIPS+Iceland)
Source: Chinn,Ito Index (2020)

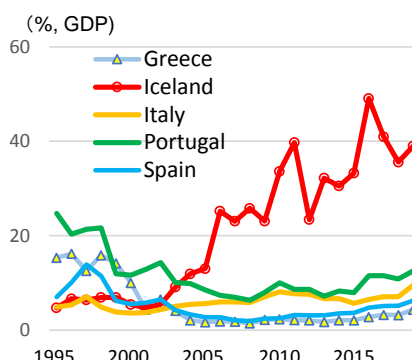


Fig.10 : Foreign Reserves
Source: World Bank database

The domestic savings rate in Iceland, which fell to single digits after the Crisis, has recovered to the 20% of GDP level for both the domestic savings and investment rates since 2015, and the savings-investment balance has rapidly normalised, most recently turning positive. This is a very early recovery compared to other GIIPS countries (Fig. 11 and 12). However, as Iceland has not yet adopted full domestic and foreign financial liberalisation like the Euro countries, it has only returned to pre-2008 levels (Fig.9) and some restrictions remain (e.g., non-resident central bank depositary system, restrictions on outward FDI investment and free outward investment by the household sector)⁷.

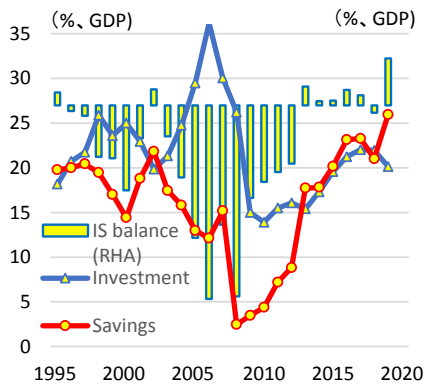


Fig.11: Savings & Invst. (Iceland)
Source: World Bank database

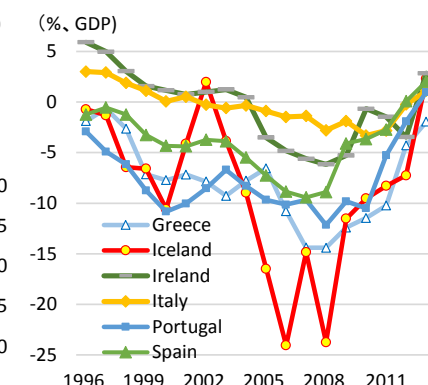


Fig.12: IS Balance (GIIPS+Iceland)
Source: World Bank database

1.4 Icelandic economy/society in the post-IMF programme

In the case of Iceland, the fundamental difference from Greece, which was hit by the euro crisis, is that Iceland is a common Nordic society based on social security and welfare policies. This is why Iceland's unemployment rate has traditionally been lower than that of the GIIPS countries, but after the Global Financial Crisis the economic situation

⁷ See IMF (2017a). The latest IMF report under Article IV(IMF 2021) described that a bill including some provision allowing the Central Bank of Iceland (CBI) to introduce temporary capital flow management and controls (CFMs) on outflows is now being introduced, which could be an effective tool to support macroeconomic adjustments in imminent crisis circumstances. The bill also gives powers to the CBI to determine the degree of restrictiveness of controls on derivative transactions, providing scope for their eventual easing and deepening of Iceland's foreign exchange market.

deteriorated significantly and the unemployment rate rose sharply to 8% . However, with the safety net of the welfare society, the unemployment rate has fallen significantly and has recently normalised to around 4% in 2019 (Fig.13). In contrast, the unemployment rate in the GIIPS (Greece, Ireland, Italy, Portugal, Spain) remains high at over 10% , even ten years after the outbreak of the Euro Crisis.

On the other hand, the Gini coefficient, which measures the degree of inequality in the distribution of income, originally showed a good distribution of income in Iceland, as in other Nordic countries such as Sweden, but deteriorated after the crisis. Today, however, the Gini coefficient in Iceland has generally improved and compares favourably with the levels in Nordic countries like Sweden (Fig.14).

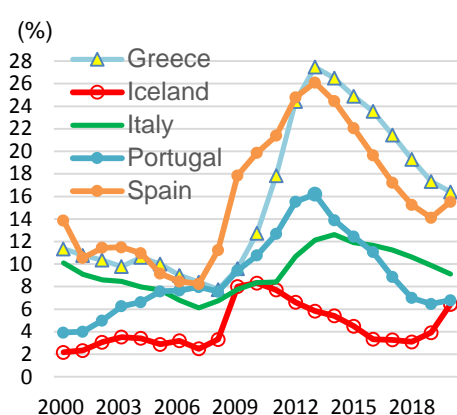


Fig.13 : Unemployment

Source: WEO database (IMF)

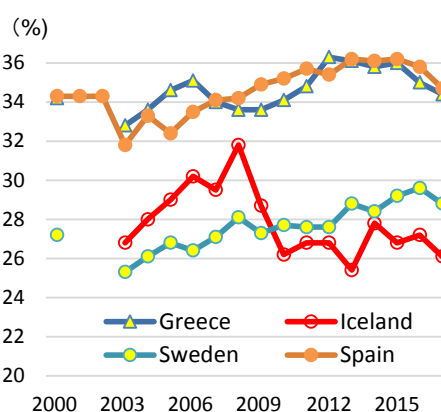


Fig.14 : Gini

Source: World Bank database

2. Iceland's IMF Program

2.1 Characteristics of Iceland's IMF Program

In October 2008, in the aftermath of the Global Financial Crisis, Iceland requested the IMF for assistance in view of the rapidly deteriorating economic and market situation. A loan under the Stand-By Arrangement, amounting to SDR1.4 billion (approximately US\$2.1 billion), was approved in November 2008. This was shortly after the collapse of the country's three main banks. The main points of the agreement were as follows.

First, very modest conditionality was imposed, with maximum respect for the government's wishes, rather than the harsh austerity measures normally imposed by the IMF (Table 2). The performance criteria, which are normally strict, usually include the government's budget balance, but in Iceland the conditions were much simpler and less stringent, as they were not attached at the outset This has saved the country from severe austerity measures.

Second, the IMF did not force the kind of severe structural reforms normally seen in the Asian Crisis (1997/8) and allowed the nationalization and capital injection of three banks

whose profits had deteriorated sharply (Table 3)⁸. In contrast to the example of Indonesian banks which were restructured and liquidated during the Asian crisis, in Iceland the IMF made the injection of bank capital a structural condition and encouraged the reform of the banking sector, especially of the large banks which had been temporarily nationalised.

Third, the IMF allowed the introduction of capital (outflow) controls in its first Letter of Intent (November 2008) because the Icelandic crisis had resulted in rapid capital outflows and a significant depreciation of the krona. Iceland's implementation of capital (outflow) and exchange controls while under an IMF programme was a landmark, a capital account crisis marked by capital outflows.

The exceptional restrictions on capital outflows introduced in the IMF's programme can be attributed to the ownership and active involvement of the Icelandic government and authorities in the preparation of the programme.

During the Asian Crisis in September 1998, Malaysia introduced short-term capital outflow controls,. However, that were not in place under the IMF programme. Malaysia's recovery was quicker than that of other ASEAN countries and the exchange rate was pegged to the US dollar at a very low level compared to the pre-crisis period, so that the exchange rate level did not undermine competitiveness. Iceland's restriction on capital outflows differs significantly from the Malaysian case in that it was implemented under an IMF programme, making it a rather exceptional and valuable example.

Subsequent reports, however, have treated the capital control measures referred to in Letter of Intent (LOT, IMF 2008) as temporary, and have therefore repeatedly recommended that the government abolish or remove them once the immediate crisis was over, under the term "provisional".

Moreover, from the outset, the IMF programme cited a condition for the deregulation or removal of these capital control under the conditions that the financial system has stabilised, foreign exchange reserves have been restored to an appropriate level, and currency stability has been confirmed. This indicates that the IMF did not actively support the introduction of capital controls by the countries concerned in the face of the crisis to avert a crisis. For example, not only during the programme but also after the end of the programme, in the Third Monitoring Report (IMF 2013), the IMF identified the removal of capital controls as one of the most important issues. The report encouraged deregulation of capital controls, arguing that Iceland's asset mix was too domestic and that a more efficient allocation of assets could be achieved.

⁸ The IMF's conditionality to raise the policy rate to 18% at the height of the crisis was not enough to halt the currency's decline at all. in November 2008.

Table 2 : Iceland Quantitative Performance Criteria/ Targets

	2018		2019				2010		
	December		Mar	June	Dec		May 10		
	PC	Actual	[PCs]	Actual	PC	Prog	Actual	Prog	Actual
1 ΔNet financial balance (krona, bn)	-12	-117	-55	2	-55	-200	-167	-65	-48
2 Δ Net domestic Asset (krona, bn)								65	16
3 ΔCentral Bank Lending.(ceiling) (krona, bn)	25	2.1	50	28.9	50	42.6	30.3		
4 ΔLending to Govt. by Central Bank.(ceiling) (krona, bn)	25	7.8	25	-31.0	25	70.0	13.6	80	19.5
5 ΔInternational reserves (Ceiling) (US\$ mn)		-543	-600	-70		-475	-319	-325	-122
6 Contracting/ guaranteeing for new external debt (US\$ mn)	4,000	0	4,075	55	4,150	3,500	487	2,500	0
7 short-term external debt (Ceiling) (US\$ mn)	650	137	650	189	550	1,400	0	750	0
8 ΔNet Domestic Asset of Central Bank (US\$ mn)	0	0	0	0	0	0	0	0	0

	2010				2011				
	Sep	Oct	Nov	Dec.10	Mar.	Apr.	May	June	
	Prog.	Prog.	Actual	Actual	Prog.	Actual	Prog.	Actual	
1 ΔNet financial balance (krona, bn)	-120	-175	-140	-158	-121	-40	-11.9	-80	-55.4
2 Δ Net domestic Asset (krona, bn)	65	20	34	40	-15	35	-29.0	14	-40.0
3 ΔCentral Bank Lending.(ceiling) (krona, bn)									
4 ΔLending to Govt. by Central Bank.(ceiling) (krona, bn)	80	70	8.6	80.0	41.6	70	-14.0	70	-7.0
5 ΔInternational reserves (Ceiling) (US\$ mn)	-350	-425	-278	-580	812	-692	369.0	-480	904
6 Contracting/ guaranteeing for new external debt (US\$ mn)	2,500	3,500	55	2,500	1,486	2,000	0.0	2,500	1,000
7 short-term external debt (Ceiling) (US\$ mn)	750	1,400	0	750	22	700	0.0	700	0
8 ΔNet Domestic Asset of Central Bank (US\$ mn)	0	0	0	0	0	0	0.0	0	0

Sources: IMF Letter of Intent (Nov. 2008); 1st (Oct.2009), 2nd (Apr.2010); 6th (Aug.2011) reviews on Iceland.

Table 3 : IMF Structural Conditionality (Iceland)

November 2008	
Prior Actions	Completed by
1 Policy rate raised to 18%.	
2 Establishment of a bank restructuring committee of interested parties	
Structural Performance Criteria	
3 Capital injection into 3 banks + capital adequacy ratio of 10%	February 2009
4 Strengthening of banking supervision	March 2009
Structural Benchmarks	
5 Preparation of strategy for asset recovery	November 2008
6 3 banks supervised, audited and business plans prepared	15 January 2009
7 Evaluation of the three banks by an international auditing firm	January 2009
8 Preparation of medium-term financial improvement plan	June 2009
October 2009	
Prior Actions	Completed by
1 Monetary policy towards currency stability	
2 Strategy for the abolition of capital controls	
3 Medium-term financial recovery plan	
4 Capital injection into Kaupthing/ Islandsbank + 12% capital adequacy ratio	February 2009
Structural Benchmarks	
5 Capital injection into New Landsbankinn + capital adequacy ratio of 12%	November 2009
6 Completion of capital injection in saving bank	November 2010
7 Legislation on banking supervision, auditing and business of 3 banks	December 2009
8 Medium-term public debt management plan approved	December 2009
April 2010	
Prior Actions	Completed by
1 Capital injection into New Landsbankinn + 12% capital adequacy ratio	
2 Medium-term public debt management bill introduced	
Structural Benchmarks	
3 Local government financial framework set	December 2010
4 Capital injection into Byr/ Keflavik (savings bank) + 16% capital adequacy ratio	May 2010
5 Rehabilitation and capital injection into Non Bank	August 2010
6 Measures to strengthen compliance with Basel standards	March 2011
7 Legislation to strengthen restructuring of household debt	June 2010

Sources: Iceland Letter of Intent (Oct.2008); 1st (Oct.2009), 2nd (Apr.2010); 6th (Aug.2011) reviews

The Fourth Monitoring Report (IMF 2014) also discussed measures for liberalisation, such as stabilising the balance of payments and the asset structure of state-owned financial institutions. In this regard, the IMF finally acknowledged the importance of capital controls in a recent note, pointing out that Iceland's success was due to (i) the introduction of capital controls, (ii) the restructuring of the banking sector, (iii) the gradual improvement of the fiscal balance, and (iv) the social security system (see IMF 2019a). However, the IMF still regards the introduction of capital controls as a short-term and temporary measure and has not formally introduced them into the conditionality of IMF programmes. In this regard, Stiglitz and Krugman have also expressed their understanding of Iceland's capital controls and acknowledged the need for them (IMF 2011b).

2.2 Progress and Evaluation of the IMF Program

While IMF programmes usually take more than three years to complete in most countries, Iceland's programme was completed in less than three years, from November 2008 to August 2011, despite a temporary interruption due to the general election (April 2009). This shows that Iceland's economic and market stabilisation has proceeded at a relatively fast pace. The country's example contrasts sharply with that of Greece, which was placed under the IMF programme during the Euro Crisis, where severe austerity and structural adjustment policies led to a very poor economic and social recovery, with slow and very long-lasting unemployment and other social consequences. Iceland's success can be attributed not only to the stabilising effects of the capital controls mentioned above, but also to the fact that strict fiscal austerity measures were not imposed in a short period.

Since the end of the Icelandic programme, the IMF has continued to raise the issue of capital deregulation and liberalisation in its Post Program Reviews and in its Annual Survey Reports under Article IV (e.g., IMF 2013, 2014, 2015), encouraging the Icelandic authorities to move towards liberalisation. The IMF's main objective had been to restart capital account liberalisation as soon as possible. However, it was only in the period between October 2016 and March 2017 that Iceland relaxed its capital controls and turned towards liberalisation. For example, restrictions on offshore krona currency settlement were lifted. However, the IMF has not changed its view that the capital deregulation implemented in 2016/17 was also insufficient⁹. Behind the partial relaxation and liberalisation of capital controls, the decline in foreign exchange reserves had been halted and improved significantly compared to countries that experienced the Euro Crisis.

⁹ Even recently, the IMF has been reluctant to introduce capital control measures and has given no approval for the active adoption of capital outflow risks in emerging and developing countries hit by the Corona disaster (See Bretton Woods Project, 2021a).

3. Analysis and evaluation of Iceland's capital and financial controls

This section compares the period of capital controls in Iceland with the period before and after the capital controls and examines the extent to which capital movements have affected the real economy and financial market in Iceland. The period covered is from 1999 to 2019¹⁰. The analyses based on the Bayesian Vector Autoregression (BVAR) model are presented in this section, using impulse response functions and variance decomposition.

3.1 Variables and model

The analysis covers the period before the introduction of capital controls (1999Q1-2008Q4), the period of full-scale capital controls implementation (2008Q4-2017Q1), including the period under the IMF programme (2008-2011), and the period until recently after the removal of capital controls (2017Q2-2019Q4).

(1) Variables

The variables used in the analysis are as follows:

- Real GDP [GDP] (Seasonally Adjusted, 2015=100)
- Financial Account, Balance of Payments [FINAC] (net inflows, % of GDP)
- Foreign Direct Investment [FDI] (net inflows, % of GDP); Portfolio investment [Portfolio] (% of GDP); Other investment [Other] (% of GDP)
- Manufacturing production [Prod] (y/y growth rate, S.A.)
- Real Effective Exchange Rate [REER] (2010=100)
- Long-term (10-year) government bond yield [Bond] (%), Call Money Rate [Call] (%), Bank lending interest rate [Intrate] (%)
- KAOPEN¹¹ (an indicator of the degree of financial openness by Chin-Ito)

(2) Models

Model 1: Impact of net capital /financial inflows (FDI/ Portfolio/ Other investment) on real GDP, manufacturing production, Real Effective Exchange Rate [REER] ¹²

Model 2¹³: Impact of capital /financial inflows (net) on Real Effective Exchange Rate [REER]

Model 3: Impact of capital /financial inflows (net) on interest rates: long-term (10 years) government bond yield , call money rate, long-term bank lending (loan) rate

¹⁰ The period after 2020 has not been included in this analysis due to the impact of the Corona crisis.

¹¹ 'The Chinn-Ito financial Openness Normalized Index' (http://web.pdx.edu/~ito/Chinn-Ito_website.htm)

¹² The analysis based on the BVAR model analyses the impact on growth and output of capital (net) inflows of the sum of all net inflows of FDI, Portfolio / Other investment rather than by capital inflow item. This takes into account the possibility that FDI is nowadays used as a means of diverting short-term financial investment rather than necessarily long-term investment.

¹³ Models 2 and 3 are mainly used for the analyses on variance decomposition, which are presented in 3.3.

The lag order of the BVAR analysis is two period¹⁴, and each variable is measured in levels to maintain stationarity. The prior of the BVAR model is Litterman/ Minnesota, and the initial residual covariance is based on Univariate AR.

In the above analyses, all variables, including Financial account (FINAC), GDP growth, Industrial production (Prod) satisfy stationarity, which ensures robustness in the BVAR analysis.

3.2 Bayesian Vector Autoregression (BVAR) Analysis

3.2.1 Impulse response function (1) Impact of financial inflows on GDP

The impact of net financial inflows of capital (FDI, portfolio and other investments) on real GDP was measured using an impulse response function (Fig. 15). The analysis is based on quarterly data for the period 1999Q1-2019Q4 and examines the impact of capital inflows on real GDP over a period that includes the pre-crisis period of financial liberalisation (1999Q1-2008Q3), the period covering IMF Programme (1999Q1-2011Q3), the period under capital controls (2008Q4-2017Q1) and the post-crisis period including deregulation of capital controls (2011Q4-2019Q4) since 2017Q2¹⁵.

In the impulse response function of real GDP, short-term investment in other investments and FDI had a significantly larger impact on real GDP in the pre-crisis period (1999Q1-2008Q3) than in the later capital controls period. During this period, greater inflows of short-term capital provided the resources for active overseas business development through FDI, including mergers and acquisitions, but did not have a positive impact on domestic GDP.

The impulse response function of real GDP to short-term capital (portfolio/other investment) in 2011Q4-2017Q1 shows a smaller impact on real GDP than that before capital account liberalisation (1999Q1-2008Q3). In the most recent period (2011Q4-2019Q4), the impact of capital inflows on real GDP has been limited, despite the relaxation of capital controls and the shift from direct to indirect regulation.

The above results show that the impact of capital inflows on real GDP was not significant in either 2008Q4-2017Q1 or 2011Q4-2017Q1, indicating that that capital controls and various prudential regulatory measures have limited the impact of capital flows on real GDP and capital inflows did not have a pro-cyclical impact on the economy, and that the economy has become stable during this period.

¹⁴ The choice of period does not cover only the IMF programme period (2008Q4-2011Q3) and the capital deregulation period (2017Q2-2019Q4), given the impact on the analysis of fewer variables.

¹⁵ The period up to 2019 was chosen to take into account the economic impact of the Corona shock from 2020 onwards.

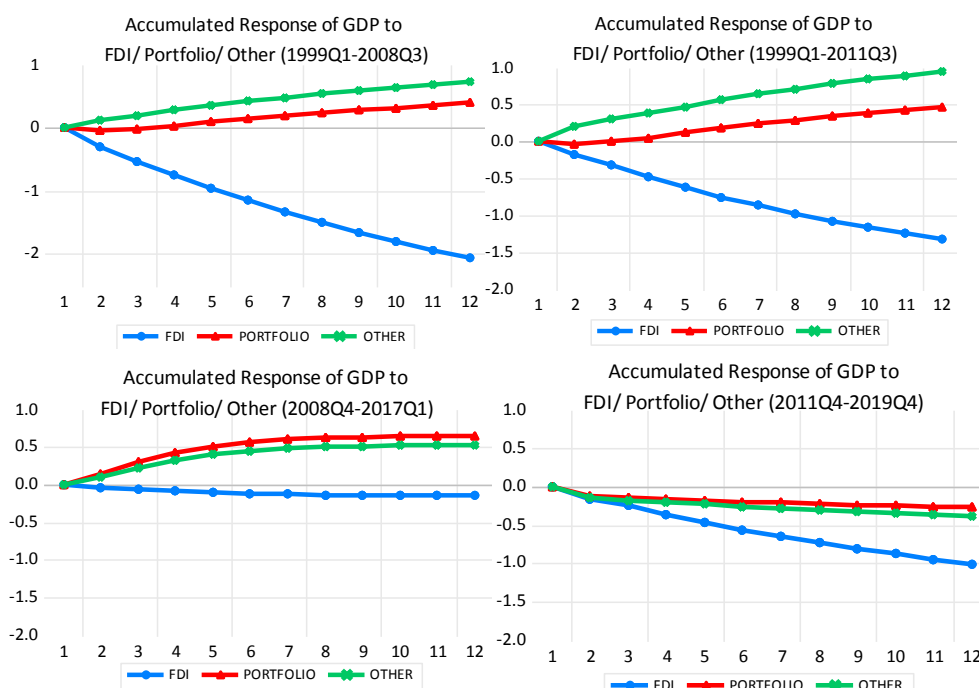


Fig. 15: Impulse response function of real GDP to Capital Inflows

3.2.2 Impulse response function (2) Impact of financial inflows on Manufacturing Production¹⁶

Before the introduction of capital controls (2000Q1-2008Q3), the contribution of portfolio investment to industrial production was relatively large, while during the period of just before and after the Crisis (2008Q1-2011Q3), the contribution of FDI to industrial production was limited (Fig.16). This result indicates that the real economy (production) was strongly affected by capital flows under capital account liberalisation. On the other hand, in the period when capital controls were introduced (2008Q4-2017Q1 and 2011Q4-2017Q1), the impact of capital inflows on industrial (manufacturing) production was relatively limited.

This can be explained by the fact that production activities became less dependent on capital inflows during this period. In the more recent period between 2011Q4 and 2019Q4, FDI has had a predominantly positive impact on production, while the impact of short-term (portfolio and other) investments has been smaller.

¹⁶This section covers the period up to 2019, but the period after 2017Q2 is not covered for industrial (manufacturing) production by the impulse response function and variance decomposition based on the BVAR model. This is due to the fact that industrial production statistics in Iceland have not been published since 2018.

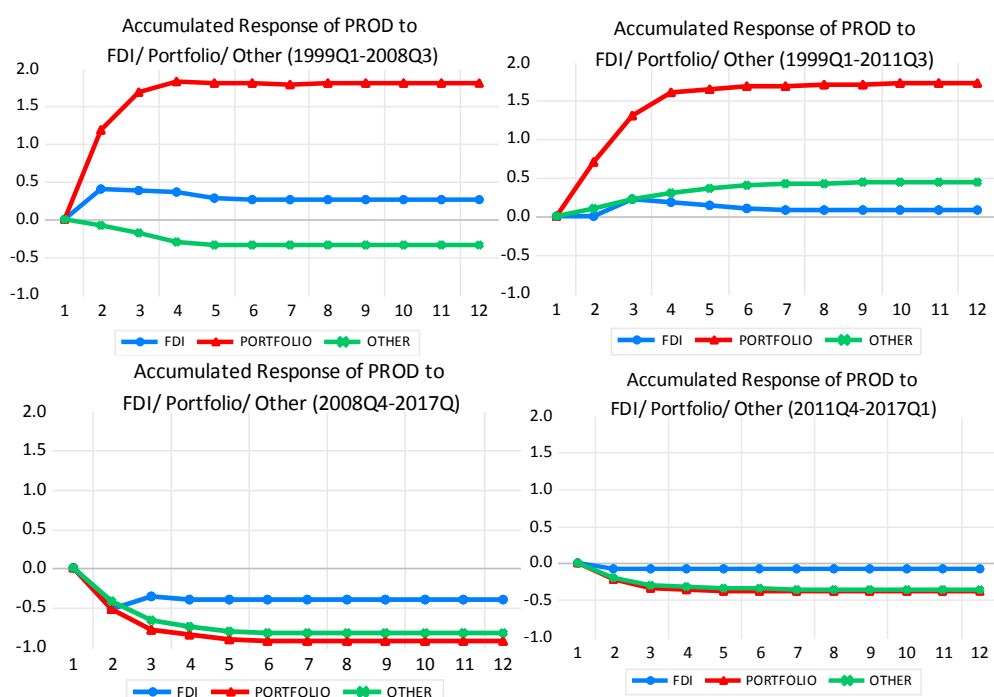


Fig. 16: Impulse response function of Industrial Production to Capital Inflows

3.2.3 Impulse response function (3) Impact of financial account items on Exchange rate (real effective exchange rate, REER)

The impact of capital inflows on the exchange rate (real effective exchange rate, REER) had been in the direction of depreciation during the capital liberalisation period (2000-2008Q3) before the Crisis (Fig.17). This can be attributed to the fact that Icelandic banks were active in short-term investment activities, using funds based on securities investments from abroad. The FDI had negative response to the impact of REER, which shows that large investment had been conducted before the Crisis (the period 2000-2008Q3).

During the period of 2008Q1- 2011Q3 (just before and during the Crisis under the IMF programme), such domestic banking activity ceased, and the exchange rate became dependent on all capital inflows, making the exchange rate (REER) more pro-cyclical to capital inflows. However, since the fourth quarter of 2011, the impact of capital inflows on the exchange rate (REER) has been very small (2011Q4-2017Q1), while FDI has had a slight downward impact on the exchange rate (REER). This trend has become even more evident in more recent periods (2011Q4 - 2019Q4), as inflows of short-term capital (portfolio and other investments) continue to have a limited impact on the exchange rate (REER).

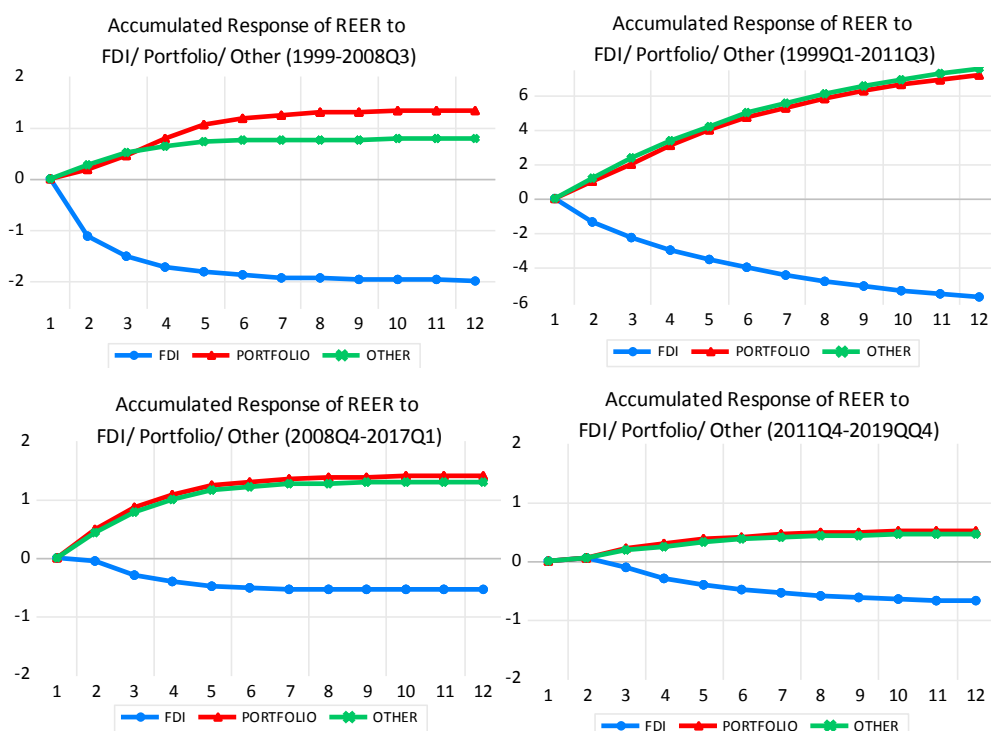


Fig. 17: Impulse response function of Real Effective Exchange Rate to Capital Inflows

3.2.4 Impulse response function (4) Effect of capital controls on interest rates

Before the capital controls (1999Q1-2008Q3), financial capital inflows (FINAC) [net] had a certain effect of lowering bond yields and raising interest rates (call rates and bank lending rates) (Figures 18-1, 18-2 and 18-3)¹⁷. This suggests that capital inflows may have been accompanied by investment in government bonds, leading to higher prices, lower yields and higher call money and bank lending rates. Between 1999Q1 and 2011Q3, capital inflows led to a substantial rise in yields on government bonds, as well as in call money and bank lending rates. This may reflect the lack of funds available for investment during this period due to the financial crisis under the IMF programme (2008Q4-2011Q3).

The impact of (net) capital inflows on the short-term call money rate and bank lending rates declined significantly during the period of capital controls (2008Q4-2017Q1) and subsequently between 2011Q4 and 2019Q4, with few significant responses. This indicates that the capital control measures taken by government authorities have contributed to stabilising financial markets.

¹⁷ This analysis looks at the impact of all capital inflows on the level of interest rates. It takes into account the recent blurring of the distinction between short-term and long-term investment, particularly in developed countries, and the possibility that recent FDI has been used as a means of diverting short-term financial investment, rather than necessarily long-term investment.

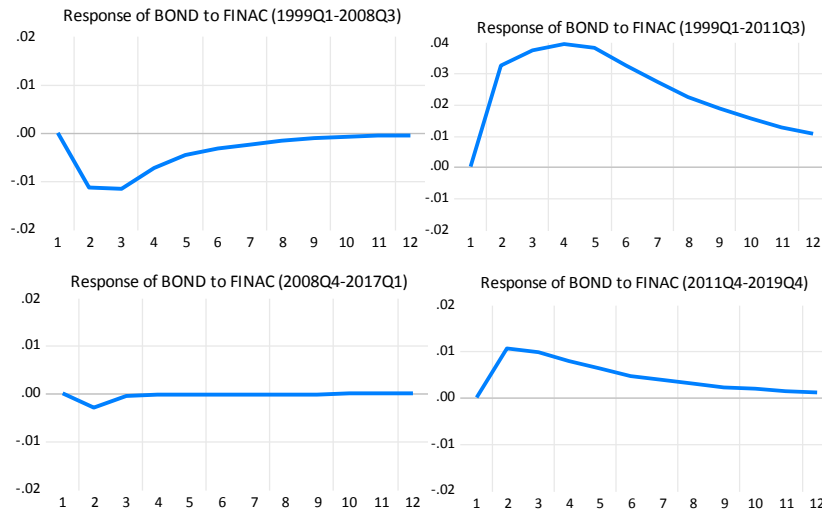


Fig.18-1: Impulse response function of 10Y Govt. Bond yields to the financial inflows

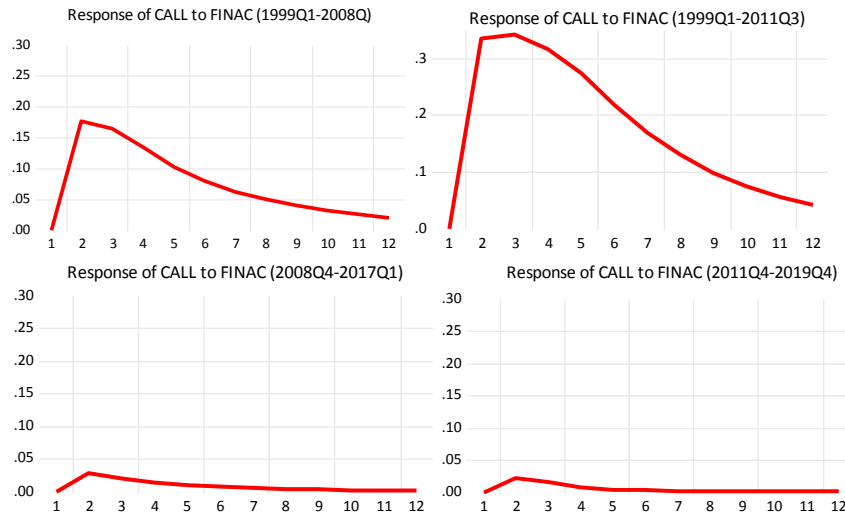


Fig.18-2: Impulse response function of Call money rate to the financial inflows

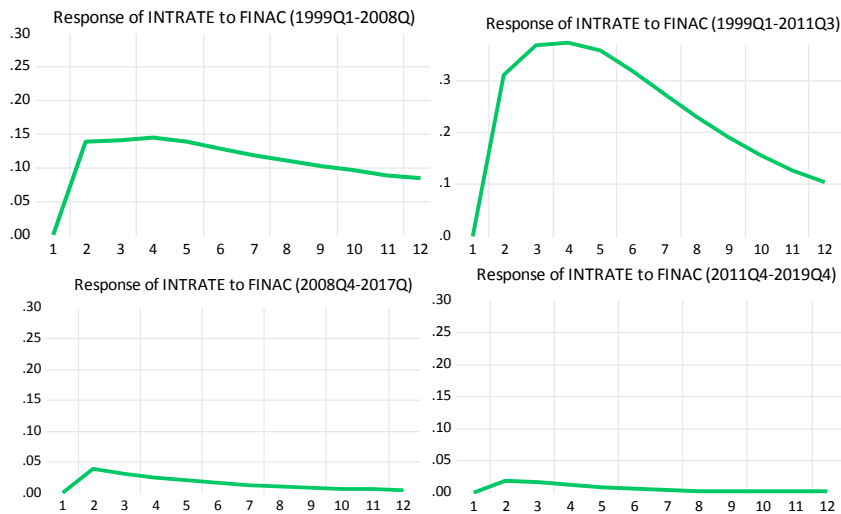


Fig.18-3: Impulse response function of Bank Lending rate to the financial inflows

3.3 Analysis by Variance Decomposition

3.3.1 Variance Decomposition of real GDP

The impact of net capital inflows (FINAC) on real GDP is analysed by variance decomposition for each period, based on the same BVAR model¹⁸ (Table 5). This analysis shows that in the pre-crisis period before the introduction of capital controls (1999Q1-2008Q3), the impact of financial capital inflows (FINAC) on the real GDP was 6.1%. However, during the period 1999Q4-2011Q3, which includes the Crisis period (under the IMF programme), the impact on real GDP became higher at 5.9% in the 10th period of variance decomposition.

In contrast, in the capital control period (2008Q4-2017Q1), the share of net capital inflows fell to 2.6% in the tenth period of decentralisation. Moreover, in the capital control period following the end of the IMF programme (2011Q4-2017Q1), the share of capital inflows fell further to 0.15%, though the share of overall level of capital flows has increased slightly to 0.08%, in the more recent period (2011Q4-2019Q4). This period may also be influenced by the relaxation of capital controls from direct to indirect since 2017.

These results show that the impact of capital inflows on the real GDP is significantly lower under capital controls than during the capital account liberalisation period. In other words, GDP growth was more stable during the capital controls period, unaffected by pro-cyclical short-term capital flows.

Table 5: Variance Decomposition of real GDP (Iceland)

	[1999Q1-2008Q3]			[1999Q4-2011Q3]			[2008Q4-2017Q1]			[2011Q4-2017Q1]			[2011Q4-2019Q4]		
	S.E.	FINAC	GDP	S.E.	FINAC	GDP	S.E.	FINAC	GDP	S.E.	FINAC	GDP	S.E.	FINAC	GDP
1	2.572	8.973	91.027	2.958	2.255	97.745	3.909	1.886	98.114	3.210	0.135	99.865	2.449	0.038	99.962
2	3.01	7.427	92.573	3.46	4.303	95.697	4.33	1.992	98.008	3.584	0.109	99.891	2.913	0.203	99.797
9	4.54	6.107	93.893	4.80	5.820	94.180	4.82	2.558	97.442	4.025	0.148	99.852	4.510	0.088	99.912
10	4.66	6.051	93.949	4.87	5.877	94.123	4.82	2.563	97.437	4.030	0.148	99.852	4.648	0.083	99.917

Source: Author's Calculation based on the IFS database (IMF), FRED

3.3.2 Variance Decomposition of Manufacturing Production¹⁹

As shown in Table 6, the impact of net capital inflows on manufacturing production was significant in the before and that includes the Crisis periods (1999Q1-2008Q3, 1999Q1-2011Q3), with shares of 5.6% and 1.3%, respectively in the tenth period of variance decomposition.

In the period of capital controls (2008Q4-2017Q1), however, the impact of net capital inflows on production became generally smaller with 1.9 % in the 10th period. After the end of the IMF programme under capital controls (2011Q4-2017Q1), the share was also low at

¹⁸The reason for using all capital inflows rather than by financial account item in this analysis is that the distinction between portfolio investment and other investment as short-term capital and FDI is considered to be of little relevance in the case of advanced economies, as short-term financial investment through foreign direct investment (FDI), which is considered to be long-term investment, is becoming more common.

¹⁹ As statistics on industrial production (manufacturing) have not been published since 2018, this analysis uses statistics up to 2017.

2.0%²⁰. This result indicates that during the period of capital controls, production was stable and unaffected by capital inflows.

Table 6: Variance Decomposition of Manufacturing Production (Iceland)

	[1999Q1-2008Q3]			[1999Q1-2011Q3]			[2008Q4-2017Q1]			[2011Q4-2017Q1]		
	S.E.	FINAC	PROD	S.E.	FINAC	PROD	S.E.	FINAC	PROD	S.E.	FINAC	PROD
1	9.904	3.145	96.855	11.250	0.347	99.653	11.110	1.409	98.591	8.414	1.765	98.235
2	10.205	5.068	94.932	11.54	1.036	98.964	11.408	1.747	98.253	8.564	1.949	98.051
9	10.253	5.562	94.438	11.57	1.293	98.707	11.445	1.862	98.138	8.580	1.995	98.005
10	10.253	5.562	94.438	11.57	1.293	98.707	11.445	1.862	98.138	8.580	1.995	98.005

Source: Author's Calculation based on the IFS database (IMF), FRED

3.3.3 Variance Decomposition of Real Effective Exchange Rate (REER)

The impact of net capital inflows (FINAC) on the real effective exchange rate (REER) was relatively large in the pre-capital controls period (1999Q1-2008Q3), accounting for a share of 2.7 per cent in the tenth period of the variance decomposition (Table 7). However, in the capital control period (2008Q4-2017Q1 and 2011Q4-2017Q4), the share of net capital inflows was smaller, at 1.5% and 0.23% respectively in the tenth period of the variance decomposition. After the end of the IMF programme (2011Q4-2019Q4), which included a period of capital deregulation, the share fell further to 0.11%. The results show that the foreign exchange rate (REER) during the capital controls period was relatively insensitive to capital inflows.

Table 7: Variance Decomposition of REER (Iceland)

	[1999Q1-2008Q3]			[2008Q4-2017Q1]			[2011Q4-2017Q1]			[2008Q4-2019Q4]			[2011Q4-2019Q4]		
	S.E.	FINAC	REER	S.E.	FINAC	REER	S.E.	FINAC	REER	S.E.	FINAC	REER	S.E.	FINAC	REER
1	8.515	1.875	98.125	9.493	0.725	99.275	9.845	0.134	99.866	7.993	0.477	99.523	7.731	0.021	99.979
2	9.027	2.516	97.484	10.40	1.050	98.950	10.215	0.177	99.823	9.113	0.745	99.255	8.472	0.034	99.966
9	9.174	2.677	97.323	11.12	1.457	98.543	10.354	0.231	99.769	10.794	1.280	98.720	9.271	0.113	99.887
10	9.174	2.677	97.323	11.12	1.458	98.542	10.354	0.231	99.769	10.822	1.288	98.712	9.278	0.114	99.886

Source: Author's Calculation based on the IFS database (IMF), BIS

3.3.4 Variance Decomposition of Interest rates (Government Bond Yield, Call money rate, Bank lending rate)

In the pre-crisis period (1999Q1- 2008Q3), the shares of net capital inflows (Finac) to long-term government bond yields (Yield), Call Money and Bank Lending Rate were 5.5%, 12.9% and 13.0% respectively in the tenth period of the variance decomposition. (Table 8). During this period, short-term call money rate and bank lending rate were strongly influenced by capital inflows, a trend that continued in the period 1999Q1-2011Q3, while government bond yields were less affected by capital inflows.

However, in the period of capital controls (2008Q4-2017Q1), their impact on other interest rate levels was reduced: the shares of net capital inflows (Finac) to long-term

²⁰Official data on manufacturing production in Iceland is not available from 2018 to the present, so the analysis is up to 2017.

government bond yields (Yield), Call Money and Bank Lending Rate were 0.3%, 1.4% and 2.0% respectively in the tenth period of the variance decomposition.

In the period 2008Q4-2019Q4, which includes the period of deregulation of capital controls, the impact of capital inflows was relatively limited, with the share of government bonds at 0.89%, call money at 2.7% and bank lending rates at 2.8% in the tenth period of the variance decomposition. However, this trend has changed slightly in the more recent post-IMF programme period (2011Q4-2019Q4), with the share of government bonds at 1.7%, the call money rate at 5.2% and the bank lending rate at 15.4%. The significant impact of capital inflows on bank lending rates can be attributed to the increased demand for funds following the end of the crisis and the increase in economic activity.

Table 8: Variance Decomposition of Interest Rates (Iceland)

	[1999Q1-2008Q3]			1999Q1-2011Q3]			[2008Q4-2017Q1]			[2008Q4-2019Q4]			[2011Q4-2019Q4]		
	S.E.	FINAC	Bond	S.E.	FINAC	Bond	S.E.	FINAC	Bond	S.E.	FINAC	Bond	S.E.	FINAC	Bond
1	0.316	4.234	95.766	0.306	0.436	99.564	0.309	0.259	99.741	0.276	0.379	99.621	0.292	0.995	99.005
10	0.398	5.459	94.541	0.434	3.440	96.560	0.369	0.293	99.707	0.444	0.890	99.110	0.387	1.706	98.294
	S.E.	FINAC	Call	S.E.	FINAC	Call	S.E.	FINAC	Call	S.E.	FINAC	Call	S.E.	FINAC	Call
1	1.641	7.228	92.772	1.722	5.070	94.930	1.286	1.120	98.880	1.083	1.553	98.447	0.500	4.353	95.647
10	2.153	12.865	87.135	2.386	21.662	78.338	1.554	1.418	98.582	1.397	2.267	97.733	0.549	5.216	94.784
	S.E.	FINAC	Loan	S.E.	FINAC	Loan	S.E.	FINAC	Loan	S.E.	FINAC	Loan	S.E.	FINAC	Loan
1	0.775	3.683	96.317	1.097	1.469	98.531	1.210	1.418	98.582	1.002	1.651	98.349	0.291	12.797	87.204
10	1.740	13.013	86.987	2.050	27.068	72.932	1.585	2.007	97.993	1.405	2.831	97.169	0.379	15.389	84.611

Source: Author's Calculation based on the IFS database (IMF), FRED

The above analysis of the variance decomposition of net capital inflows confirms that during the period of capital controls, the impact of capital inflows on the real economy (GDP growth, manufacturing production), the exchange rate and financial markets is reduced, and pro-cyclical fluctuations in each variable are avoided.

3.4 Summary of the Analyses

The analyses based on BVAR model show that before the introduction of capital controls, there were large inflows of funds, including investment from foreign financial institutions, which were a major determinant of economic growth, but it was pro-cyclical and risky during the period 2000Q1-2008Q3. When the Crisis hit, it led to a deterioration of economic and financial markets due to significant exchange rate depreciation and capital outflows (capital account crisis) in Iceland. However, due to the capital controls introduced after the Crisis, the impact of capital flows on the economy and financial markets proved to be much more limited than in the early years of capital and financial liberalisation. After the introduction of capital controls, the impact of short-term capital flows on the real economy has been minimised, indicating that capital controls have been effective in reducing short-term capital flows.

This confirms that the introduction of capital and financial management and controls has greatly reduced the volatility of capital flows into the domestic economy and financial markets, thereby contributing to the stabilization of the domestic economy and financial markets.

4. Iceland's success and lessons to be learned

Iceland is almost the only country to have successfully introduced capital controls, particularly capital outflows, under the IMF programme during the Global Financial Crisis and the Euro crisis. Furthermore, Iceland did not introduce drastic austerity measures during the IMF programme (2008-11) but kept them to a minimum level. As a result, the economy and markets have recovered rapidly, achieving much higher real GDP growth and social stability than Euro crisis hit countries (Greece, Ireland, Italy, Portugal, Spain [GIIPS]) countries hit by the Euro Crisis²¹. Today, almost all of Iceland's indicators, including GDP growth, income levels (GDP per capita), fiscal and current account balances, foreign exchange reserves and other social indicators (unemployment, Gini coefficient, etc.) have recovered to pre-crisis levels, and the indicators in Iceland are better than those of other Euro countries.

The Icelandic experience shows that maintaining the independence of national governance and introducing controls on capital outflows, even under an IMF programme, can be an effective policy instrument for countries facing a capital account crisis. Despite repeated recommendations from the IMF to liberalise capital controls after the end of the IMF programme (August 2011), the Icelandic government continued to impose capital controls until the economy and market stabilised, resulting in a rapid economic recovery and stability in 2017. Moreover, it is noteworthy that to date Iceland has implemented indirect capital controls, such as Special Reserve Requirement (SRR) at the Central Bank, to control short-term inflows and outflows of funds, thereby addressing short-term speculative risks.

If Iceland had followed the IMF's advice and lifted its capital controls earlier, the country would not have achieved such a stable growth. However, Iceland's experience with IMF programmes has been largely unused in its programmes until recently. (e.g., Argentina's IMF programme since 2018).

In view of the above, the introduction of management and control of capital flows, including exchange controls on short-term capital movements, is essential if a small country such as Iceland is to achieve stable growth in the long-term. Capital controls need to be implemented not only in times of crisis, but also for a relatively long period of time after the crisis has occurred, as in the successful experience of Iceland. The importance of introducing capital controls, especially during a crisis on the capital account, is an issue that should be seriously considered by all countries, not just small ones²².

Capital flow management and controls are still maintained in Iceland, mainly through central bank supervision, including indirect controls such as the Special Reserve

²¹ The IMF held a conference in Iceland in 2011, after the Icelandic programme had ended, as an example of a successful crisis-experienced country (see IMF, 2011). However, the content of the conference was still that capital controls were undesirable and urged immediate deregulation and liberalisation.

²² See Grabel (2016) for a discussion of the need to introduce capital controls in several countries.

Requirement (SRR). In addition, the need to maintain capital and financial account surpluses, as was the case before the crisis, has diminished, as the current account balance has improved substantially in recent years due to increased exports and tourism revenues resulting from a weaker currency.

Conclusion

This paper uses statistical and econometric analysis to assess and analyse Iceland's early recovery after the global financial and capital account crises, despite the experience of the IMF programme, by introducing strong regulatory measures, including restrictions on capital outflows.

The objectives of this paper are to assess the effectiveness of the capital controls introduced in Iceland and to show that the flexible management of IMF programmes, avoiding short-term austerity measures, contributes to a rapid economic recovery. This paper analyses the background and consequences of Iceland's policies before and after the Global Financial Crisis, the IMF program, and the country's implementation of its own capital control measures. In addition, it should be noted that capital controls have been carefully relaxed and liberalised in Iceland over a very long period, and various capital and exchange controls remain in place.

Analysis based on the BVAR models shows that before the introduction of capital controls, there were large capital inflows and short-term capital flows from banks were the main determinant of real economy and markets, which was pro-cyclical and risky. However, during the period of capital controls (2008Q4-2017Q1), the impact of short-term capital flows on the economy and financial markets was limited. In addition, the introduction of capital flow management and controls have contributed to the stabilisation of the domestic economy and financial market in Iceland.

Prior to the outbreak of the Global Financial Crisis in 2008, Iceland had been pursuing capital and financial liberalisation with the aim of becoming a financial centre of Nordic region. However, following the Global Financial Crisis, the country's prosperity changed dramatically, and capital outflows accelerated, plunging the country into crisis, and placing it under an IMF programme from November 2008 to 2011. Iceland's IMF programme differed significantly in two main respects.

First, the conditionality was very moderate, without the sharp austerity measures usually associated with IMF programmes, and the structural reforms were constructive, aimed at restructuring financial institutions²³. Second, as mentioned above, strict capital controls

²³ This contrasts with the Asian crisis (1997/8), when IMF programmes (Thailand, Indonesia and Korea) typically conditioned structural reforms that were not directly related to the shortage of foreign exchange reserves, thereby aggravating the crisis in the countries concerned.)

were introduced with the main aim of controlling capital outflows for a relatively long-term (more than 7 years).

The IMF programme in Iceland gave the country a great deal of autonomy and did not introduce any strict austerity measures, but it did introduce exceptional restrictions on capital transactions, particularly on outflows. This was not an explicit conditionality in the Letter of Intent for the IMF programme, but was implemented by the Icelandic government in recognition of the imminent collapse of the country without it. The IMF, on the other hand, has encouraged the relaxation and liberalisation of capital controls at every review during and after the programme.

Iceland achieved a much faster recovery and normalisation than the other GIIPS affected by the Euro crisis (Greece, Ireland, Italy, Portugal and Spain), and the duration of the IMF programme was minimised to less than three years (November 2008 - September 2011). Initially, the IMF attributed this "success" to the country's rapid recovery and success, citing reasons unrelated to the nature of the crisis as a capital account crisis, such as the Nordic roots of social welfare policies in the country as a safety hedge. Moreover, in its report after the end of the programme (August 2011), the IMF persistently pressed for the liberalisation of capital transactions.²⁴ However, the government was very cautious about lifting restrictions on capital transactions and continued to impose capital controls for a long time (more than eight years) after the end of the IMF programme, until 2017Q1.

Today, foreign exchange and capital transactions have been eased to pre-crisis levels, but not all financial and capital transactions have been liberalised in Iceland as in the EU and Euro countries. On the other hand, even recently the IMF has never acknowledged that Iceland's "success" was the introduction of capital controls, only that it was due to a strong government ownership commitment to the programme²⁵.

The Icelandic experience should encourage the IMF to fundamentally change the way it manages its programmes, especially in the event of a capital account crisis. The IMF should fundamentally change its policies towards countries in crisis, from the application and management of traditional programmes based on unnecessary austerity and capital and financial liberalisation to the adoption of proactive fiscal policies and capital flow management and controls to promote long-term sustainable economic growth, together with a detailed manual of tools for crisis prevention²⁶.

²⁴ See IMF reports (2011~2016)

²⁵ See Thomsen (2018). The IMF seems to have only recently engaged in a serious dialogue with relevant institutions and others about the utility of capital flow management (Furness, 2019). This may have considered the failure of Argentina in the recent past. However, there is still little prospect of introducing emergency capital and financial regulations in the IMF conditionality itself. This may be because foreign investors and the financial community see crises in countries as opportunities to increase their profits, and it is not in their interest for the IMF to introduce capital and financial regulations in its conditionality.

²⁶ The IMF has yet to publish detailed guidelines on the methods and operations in introducing capital flow management and controls.

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*denotes written in Japanese.