

# VOLATILE CAPITAL FLOWS IN KOREA

CURRENT POLICIES AND FUTURE RESPONSES

Edited by Kyuil Chung, Soyoung Kim,  
Hail Park, Changho Choi & Hyun Song Shin



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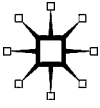
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**Edited by**

*Kyuil Chung, Soyoung Kim, Hail Park,  
Changho Choi, and Hyun Song Shin*

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# Contents

<i>List of Figures and Tables</i>	vii
<i>Preface</i>	xiii
<i>Notes on Contributors</i>	xxi

## Part I Overview

1 Overview of International Capital Flows <i>Kyuil Chung, Hail Park, and Changho Choi</i>	3
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## Part II Capital Account Liberalization and Its Consequences

2 Macroeconomic Effects of Capital Account Liberalization: The Case of Korea <i>Soyoung Kim, Sunghyun H. Kim, and Yunjong Wang</i>	27
3 Do Capital Inflows Matter to Asset Prices? The Case of Korea <i>Soyoung Kim and Doo Yong Yang</i>	51
4 Capital Flows in Korea after Capital Account Liberalization <i>Hail Park, Daeyup Lee, and Kyuil Chung</i>	83

## Part III Policy Responses before and during the Crisis

5 Capital Inflows and Policy Responses: Lessons from Korea's Experience <i>Kyuil Chung and Seungwon Kim</i>	119
6 Dislocations in the Won–Dollar Swap Markets during the Crisis of 2007–2009 <i>Naohiko Baba and Ilhyock Shim</i>	143

**Part IV Macroprudential Policy after the Crisis and  
Suggestion for Institutional Reform**

- 7 Why Macroprudential Policy? Brief Overview 179  
*Valentina Bruno and Hyun Song Shin*
- 8 Impact of FX-Related Macroprudential Measures in Korea:  
An Assessment 187  
*Changho Choi*
- 9 Mitigating Systemic Spillovers from Currency Hedging 217  
*Kyuil Chung, Hail Park, and Hyun Song Shin*

**Part V Epilogue**

- 10 The Second Phase of Global Liquidity and Its Impact on  
Emerging Economies 247  
*Hyun Song Shin*
- Index* 259

# Figures and Tables

## Figures

1.1	Trends in capital inflow: (a) Dollar amount; (b) percentage of GDP	10
1.2	Trends in volatility: (a) Standard deviation; (b) coefficient of variation	12
1.3	Capital inflow composition: (a) 1980–1989; (b) 1990–1999; (c) 2000–2010	13
1.4	Capital inflows to EMEs: (a) By type; (b) by region	15
1.5	Frequency of sudden stops (incidence): (a) All countries; (b) industrial countries; (c) developing countries	16
1.6	Determinants of capital flows to EMEs	17
1.7	Transmission channels affecting capital flows to EMEs	18
2.1	Balance of payments	29
2.2	Components of capital account	32
2.3	Impulse responses of NIA components	38
2.4	Impulse responses of price variables	39
2.5	Impulse responses of monetary variables	43
3.1	Patterns of gross capital flows in Korea	55
3.2	Total gross capital flows to GDP	55
3.3	Patterns of capital inflows in Korea	56
3.4	Foreign equity holdings	57
3.5	Foreign bond holdings	57
3.6	Patterns of capital outflows in Korea	58
3.7	Korea stock price index and foreign equity inflows	59
3.8	Korea government bond yield	59
3.9	Land price index of Seoul metro area	60
3.10	Won/dollar exchange rate and real effective exchange rate	61
3.11	Foreign reserves and money supply (M2)	61
3.12	Impulse responses to capital inflow shocks	70
3.13	Impulse responses to portfolio inflow shocks	72
3.14	Extended experiments	74



4.1	Gross capital inflows	85
4.2	Gross external liabilities	86
4.3	Gross capital outflows	87
4.4	Gross external assets	87
4.5	Net capital inflows	88
4.6	Balance of payments	89
4.7	Net international investment position	90
4.8	Changes in NIIP (accumulated): (a) Reserves excluded; (b) reserves included	92
4.9	Changes in NIIP caused by nontransaction factors (accumulated)	93
4.10	KOPSI and KRW/USD rate	95
4.11	Changes in NIIP caused by nontransaction factors— emerging markets	95
4.12	Capital type proportions: Korea	97
4.13	Capital type proportions: EMs	97
4.14	Cycle of capital inflows	99
4.15	Durations of capital inflow	100
4.16	Durations by phase	100
4.17	Durations of capital inflow: cross section	101
4.18	Durations by phase: cross section	101
4.19	Amplitudes of capital inflow	102
4.20	Amplitudes by phase	103
4.21	Amplitudes of capital inflow: cross section	103
4.22	Amplitudes by phase: cross section	104
4.23	Speeds of capital inflow	105
4.24	Speeds by phase	105
4.25	Speeds of capital inflow: cross section	106
4.26	Speeds by phase: cross section	106
4.27	Cyclical components of capital inflows: (a) Direct; (b) equity; (c) bonds; (d) loans	107
4.28	Dynamic correlations between capital inflows and coincident composite index	109
4B.1	Analysis of periodograms of Korean capital inflows	112
5.1	Balance of payments	120
5.2	Foreign capital inflows	121
5.3	Exchange rate and balance of payments	124
5.4	Foreign reserves	124
5.5	Overseas investment by residents	126
5.6	Capital outflows relative to GDP	127
5.7	Foreign exchange flows related to overseas investment	127
5.8	Overseas stock investment and related capital inflows	129

5.9	Responses of banks' borrowings to overseas stock investment: (a) Response of banks' borrowing; (b) accumulated response of banks' borrowing	130
5.10	Responses of banks' long-term borrowings to overseas stock investment: (a) Response of banks' long-term borrowings; (b) accumulated response of banks' long-term borrowings	131
5.11	Responses of banks' short-term borrowings to overseas stock investment: (a) Response of banks' short-term borrowings; (b) accumulated response of banks' short-term borrowings	132
5.12	Responses of capital and financial accounts to overseas stock investment: (a) Response of capital and financial accounts; (b) accumulated response of capital and financial accounts	133
5.13	Exchange rate and borrowing conditions: (a) Exchange rate; (b) borrowing conditions	134
5.14	Foreign reserves: (a) Changes in foreign reserves; (b) level of foreign reserves	135
5.15	Balance of payments during crisis	136
5.16	Capital inflows during crisis, by sector	137
6.1	Daily transaction volume of FX swaps and cross-currency swaps and options in Korea	147
6.2	CIP deviations in the won-dollar FX swap market	148
6.3	CIP deviations in the won-dollar cross-currency swap market	148
6.4	Three-month forward discount rate, interest rate differential, and CIP deviation	156
6.5	CIP regime probabilities	158
6.6	CIP deviations	159
6.7	Cumulative effects of the Bank of Korea's US dollar loan auctions	168
6.8	Three-month CIP deviation, net sale of FX forwards, and available foreign reserves	170
7.1	Propagation of global liquidity	180
7.2	Claims of BIS-reporting banks on counterparties in countries as listed (March 2003 = 100)	180
7.3	Banking sector credit to nonfinancial borrowers in Spain (1992–2012)	181
7.4	Funding gap of Spanish banks	182
7.5	Foreign currency assets and liabilities of BIS-reporting banks by currency	183

7.6	Feedback created by currency appreciation in the presence of the risk-taking channel	184
7.7	Capital flows to banking sector in Korea by category of liabilities	185
8.1	External debts of foreign bank branches and domestic banks: (a) Foreign bank branches; (b) domestic banks	191
8.2	FX balance sheets of domestic banks at end-2010	193
8.3	FX balance sheets of foreign bank branches at end-2010	194
8.4	Transmission of FX-related macroprudential measures	195
8.5	Impulse responses to supply and demand shocks for domestic banks: (a) Short-term borrowings; (b) long-term borrowings	201
8.6	Impulse responses to supply and demand shocks for foreign bank branches: (a) Short-term borrowings; (b) long-term borrowings	202
8.7	Counterfactual analysis procedure	205
8.8	Impact of leverage cap on foreign bank branches: (a) Short-term borrowings; (b) long-term borrowings	206
8.9	Impact of leverage cap on domestic banks: (a) Short-term borrowings; (b) long-term borrowings	207
8.10	Impact of macroprudential stability levy on foreign bank branches: (a) Short-term borrowings; (b) long-term borrowings	208
8.11	Impact of macroprudential stability levy on domestic banks: (a) Short-term borrowings; (b) long-term borrowings	209
8.12	Impact of leverage cap on the banking sector: (a) Short-term borrowings; (b) long-term borrowings	212
8.13	Impact of macroprudential stability levy on the banking sector: (a) Short-term borrowings; (b) long-term borrowings	213
9.1	Components of capital flows to emerging economies	218
9.2	Components of capital flows	218
9.3	Lending and funding aggregates for the Korean banking sector	221
9.4	Foreign currency liabilities of the banking sector in Korea	221
9.5	Net capital flows in equity sector and foreign currency liabilities in banking sector	222
9.6	Stylized aggregate balance sheet of banking sector	223
9.7	Capital flows in the equity sector of foreign and domestic investors	225
9.8	New orders by shipbuilders and increase in foreign stock holding of domestic investors	226
9.9	Net sale of dollar forward contracts by shipbuilder	228

9.10	Estimated increase in banking sector foreign currency liabilities due to shipbuilders' hedging activities	229
9.11	Estimated increase in foreign currency liabilities due to hedging activity by shipbuilders and asset managers	230
9.12	Estimated and actual increase in banking sector foreign currency liabilities	231
9.13	Feedback loop generated by hedging activity	232
9.14	Capital flows and the Korean won exchange rate against the US dollar	233
9.15	Operation of the Exchange Stabilization Corporation	235
9.16	Transaction with credit guarantee from Korea Credit Guarantee Fund	240
9.17	ESC as central counterparty in forward transaction	241
10.1	Net "external" financing of emerging economies	248
10.2	International debt securities outstanding (all borrowers) by residence and nationality of issuer: (a) Brazil; (b) China	250
10.3	Straddling the border through international transactions	251
10.4	Global broad money and global liquidity: (a) Levels; (b) annual growth rates	255

**Tables**

1.1	Trends of international capital flows	7
1.2	Capital inflows to EMEs	11
2.1	Forecast error variance decomposition of capital account	36
2.2	Forecast error variance decomposition of macroeconomic variables	40
2.3	Forecast error variance decomposition of monetary variables	44
3.1	Forecast error variance decomposition of capital inflows	77
3A.1	Descriptive statistics for data used in estimation	78
4.1	Valuation adjustments in gross external liabilities	94
4.2	Changes in NIIP caused by nontransaction factors	96
4.3	Cross correlations between cyclical components of capital inflow ( $t$ ) and coincident composite index ( $t + j$ )	108
5.1	Liberalization of capital flows in Korea	122
5.2	Overseas securities investment and related forward exchange sales	128
5.3	Currency swap arrangements between Bank of Korea and other central banks	136

6.1	Major policy measures taken in Korea to stabilize the foreign currency funding market	150
6.2	List of auctions using the Bank of Korea swap facility funded by foreign reserves	152
6.3	List of auctions using the Bank of Korea loan facility via the swap line with the Federal Reserve	153
6.4	Comparison of the two types of US dollar supplying auctions by the Bank of Korea	154
6.5	The estimation results of regime-switching CIP regressions	157
6.6	Summary statistics	160
6.7	Estimation results of three-month CIP deviation for the pre-crisis period	163
6.8	Estimation results of three-month CIP deviation for the crisis period	164
6.9	Estimation results of three-year CIP deviation for the precrisis period	165
6.10	Estimation results of three-year CIP deviation for the crisis period	166
6.11	Additional factors affecting three-month CIP deviations	170
8.1	Identification restrictions in a four-variable model	197
8.2	Forecast error variance decomposition of external borrowings	203
8.3	Cumulative effects of leverage cap	207
8.4	Cumulative effects of macroprudential stability levy	209
8.5	Cumulative effects of macroprudential measures on the banking sector	210
9.1	Underlying calculation for the increase in foreign currency debt of the banking sector attributable to hedging activity	227

# Preface

Korea was one of the countries hardest hit during the 1997 Asian financial crisis and it was again at the sharp end of the crisis in the global financial crisis of 2008. Taking into account the fact that capital flow reversals were the immediate trigger to cause financial turbulences in Korea during the periods of two crises, it is important to trace Korea's development model and the role played by the liberalization of its capital markets in order to understand Korea's experience.

Korea followed a state-led development strategy in the 1960s and 1970s, when financial repression was employed to allocate capital to strategic sectors. Capital controls were therefore an essential element of the early development model. However, as the state-led development model matured, the opportunities for easy catch-up tapered and there were attendant structural problems such as high inflation expectations and imbalances between economic sectors. In recognition of these structural problems, during the 1980s Korea began to shift the focus of its economic policy from growth to stability on the one hand, and from financial repression to financial deregulation and capital market opening on the other.

In the 1990s, Korea continued its policies of financial deregulation and liberalization but the financial sector remained weak with little commercial orientation. In addition, an overleveraged corporate sector with poor profitability that had grown under the financial repression did not improve much. Like other emerging market economies, Korea's financial system centered on the banking sector with little role for equity and debt capital markets. Against this backdrop, the Korean government's policy, which prioritized the opening of short-term funding markets, sowed the seeds of liquidity problems. In 1993, when the government expanded the scope for short-term overseas financing of firms that were associated with the settlement of capital goods imports, it continued restrictions on foreign investors' participation in long-term corporate bond markets and domestic firms' ability to secure long-term loans in the international capital markets. These policy initiatives increased the firms' reliance on

short-term financing facilities for foreign currency, which were provided by the banking sector. As a consequence, there was a massive currency and maturity mismatch in the 1990s.

In late 1996, signs of financial distress first surfaced in the overly invested *Chaebol* groups. Since most of their investment was financed by banks, the collapse of some *Chaebol* groups triggered concerns among foreign investors about the Korean financial system. This domestic turmoil combined with the external shocks emanating from the financial crisis in Southeast Asia and capital flight broke out in 1997. Therefore, the manifestation of the Asian financial crisis of 1997 in Korea was the consequence of a long period of accumulation of financial vulnerability, which caused the financial system to be highly undercapitalized and the corporate sector to be overleveraged. These structural problems and the currency and maturity mismatch of the banking and the corporate sectors left the economy vulnerable to external shocks. Given this condition, the squeeze of international liquidity triggered the liquidity and currency crises in Korea in 1997.

In the aftermath of the Asian financial crisis and the IMF bail-out program, Korea implemented structural reform of the corporate and the banking sectors. As the fundamentals underpinning the Korean economy improved, trade increased sharply and Korea managed to run current account and budget surpluses in the improved economic climate. Nevertheless, the rosy picture masked continuing underlying structural problems such as the high degree of export dependence and weak competitive position of the financial sector.

Moreover, the improved economic fundamentals coincided with more permissive international capital market conditions that led to asset market booms and surging capital inflows. In particular, as the shipbuilding industry boomed and domestic investors increased their holdings of overseas financial assets (especially overseas equity claims), a new source of vulnerability opened up. Domestic shipbuilders and asset management companies began to implement currency hedging strategies that were designed to mitigate the impact of the rising value of the Korean won. Hedging in this context was achieved by selling dollars forward to banks, so that foreign exchange (FX) risk of long-term dollar receivables could be hedged. In turn, the domestic banks who bought the long-term dollar forward hedged their own exposures by short-term borrowing in dollars. In this way, when the aggregate country-level balance sheet was hedged against currency risks, there was a maturity mismatch, whereby the long-term dollar receivables of the shipbuilders and asset managers stood side by side with the short-term dollar liabilities of the banking sector.

Sectoral imbalances are important in this context. Korea ran current account surpluses in the run-up to the 2008 crisis, with the official sector (the government and the Bank of Korea) accumulating claims on nonresidents and with a significant net external surplus. However, the banking sector was accumulating short-term dollar liabilities. The fact that Korea was running current account surpluses during this period suggests that the current account at the country level is not a sufficient statistic for the vulnerability of a country to financial instability. Policymakers were slow to see the vulnerabilities building up due to the widening maturity mismatch in the aggregate balance sheet, in which long-term dollar receivables (say, from receivables due to the Korean shipbuilders) were matched by short-term dollar liabilities incurred by the Korean banking sector.

When the global financial crisis broke out in September 2008 with the failure of the US investment bank Lehman Brothers, the US dollar liquidity crunch hit Korean banks particularly hard. The deleveraging of the US banking sector and the withdrawal of dollar liquidity from global banks meant that the Korean banking sector was vulnerable to a run-like deleveraging scenario. The FX market froze and those entities dependent on US dollar funding were left severely exposed to rollover risk. The Korean authorities responded by intervening in the FX market using Korea's stock of foreign currency reserves, but there were limits to the effectiveness of the interventions due to the large size of the short-term liability stocks already in place. Compared to the size of the exposures, the foreign reserves (as large as they were at over 200 billion dollars) proved vulnerable to doubts about their sufficiency. Moreover, since the Korean authorities were not the lender of last resort for dollar liquidity, cooperation with the Federal Reserve on a currency swap was given high priority. The crisis was quelled when the FX swap with the Federal Reserve was announced in October 2008.

The common thread in the 1997 crisis and the 2008 crisis was the twin currency and maturity mismatches on the aggregate country balance sheet. However, the difference between 1997 and 2008 lies in the fact that the latter was inherently a global crisis that sucked in Korea, while the 1997 crisis was part of a more limited regional crisis and capital flight that owed to specific vulnerabilities in Korea itself. These lessons led to policy initiatives being implemented by Korean policymakers to mitigate some of the known vulnerabilities. Beginning in June 2010, the authorities in Korea introduced a sequence of macroprudential measures aimed at building resilience against its well-known vulnerability to capital flow reversals in the banking sector and to counter the associated disruptions to domestic financial conditions. The first policy measure (in June 2010) was a leverage cap on the notional value of FX derivatives contracts.



The second component was the levy on the noncore liabilities of the banks (the “macroprudential levy”), applied to the FX-denominated liabilities of the banking sector.

A number of lessons emerge from the Korea’s experience of the two recent crises. Economic development and growth that is not accompanied by a concomitant development of the financial sector (such as thick markets, competitive financial sector) can cause vulnerabilities to crises. To the extent that such financial development is not a natural consequence of the underlying real economy development, separate financial sector policies may need to be adopted to minimize vulnerabilities to external financial shocks. In particular, strict adherence to the usual textbook prescriptions for emerging economies on capital market liberalization, floating exchange rates, and financial liberalization proved to be insufficient in meeting the consequences of external shocks. These lessons explain the adoption of more pragmatic macroprudential tools, which as yet remain experimental and work in progress. Even among emerging economies, the divergent experiences on the adoption and consistent implementation of macroprudential tools remains a topic deserving of further examination by policymakers.

This volume focusses on important lessons for the smooth functioning of the global financial system with specific reference to emerging economies. In particular, the volume introduces Korea’s unique experience in navigating the turbulent waters of the global financial system in recent decades. Through the lens of Korea’s recent experience, broader questions concerning the functioning of global capital markets and the external borrowing of emerging economies take on clearer focus. By introducing the Korean experience in a systematic and thematic manner, this volume aims to shed light on the policy imperatives facing an open economy in the global financial system. The chapters in this volume have been selected or commissioned to address key policy challenges in this context, especially for emerging economies and policymakers, whose task it is to weigh the pros and cons of capital market liberalization and associated financial market policies.

The chapters in the volume have been contributed by different authors, but the structure remains the same. Each chapter covers the stylized facts, causes of the problems, policy responses and their effectiveness, or policy suggestions. The volume itself is divided into five parts. Part I provides the overview, which lays out the key issues. Following the overview, the volume progresses in chronological order, covering Korea’s experience in financial liberalization, crisis management, and postcrisis policies. Parts II–IV focus on precrisis and postcrisis lessons. The volume concludes with the fifth and final part, the epilogue. In the epilogue, we revisit the

issues of capital flows and financial liberalization and note how the pattern of financial intermediation has undergone changes since the global financial crisis, and how vulnerabilities have changed with the changes in the pattern of financial intermediation.

Part I, by Chung, Park, and Choi, provides an overview of international capital flows from the Korean perspective. The chapter begins with a thorough review of the literature on capital flows. In particular, the chapter classifies capital flows into two groups—between advanced economies (AEs) and between AEs and emerging market economies (EMEs)—and focuses on the latter. The chapter highlights the gap between the textbook view of capital flows as having the function of risk sharing and growth enhancement and the realities seen on the ground. The chapter also examines the stylized facts of downhill flows, flowing from advanced economies to emerging economies, and the determinants of international capital flows.

Part II focuses on the Korean experience. The chapter by Kim, Kim, and Wang begins with an analysis of the consequences of capital flow liberalization in Korea for capital market development and for the economy as a whole. The chapter draws on the recent history of Korea in the 1980s and 1990s to contrast the relatively closed period of the 1980s with the period of greater liberalization of capital flows in the 1990s. A closer empirical examination of the recent history reveals that the increased liberalization in the 1990s is associated with capital inflows that coincide with the boom in consumption and investment, an increase in output, appreciation in nominal and real exchange rates, and worsening of the current account.

Kim and Yang present an empirical study of the period 1999–2007. They find that capital inflows during this period are associated with an increase in stock prices and with limited effects on house prices. In addition, they conclude that capital inflows had only a limited impact on nominal and real exchange rates and liquidity.

Park, Lee, and Chung examine the pattern of capital flows in the 1990s and 2000s and show how the pattern of capital flows has evolved during that period. They point out that capital inflows to Korea has a large non-FDI component compared to other emerging market economies, suggesting a greater share of portfolio flows and bank loans. As well as the composition effect, they show that the pace of capital inflows has been faster in the case of Korea, increasing the vulnerability to sharp capital flow reversals. In addition, the authors find a strong procyclical element in capital flows to Korea implying a role for policy measures that are aimed at dampening the procyclical elements in capital flows.

Part III of the volume then turns to the policy responses of Korean authorities and presents a detailed examination of the tools used and the evidence that surrounds the effectiveness of the tools. One such tool was capital outflow liberalization designed to neutralize the massive volume of current account surplus and foreign portfolio inflows. Another tool that gained widespread usage among emerging economies in the region after the Asian financial crisis was the accumulation of foreign reserves, often accompanied by FX market intervention aimed at mitigating exchange rate volatility. Nevertheless, Chung and Kim note that the capital outflow liberalization eventually resulted in the increase of external debt, and foreign reserves were used very limitedly because of the so-called fear of losing reserves.

Baba and Shim provide another perspective on the liquidity crunch in 2008 through an examination of the dislocations in the FX swaps market (FX swaps and cross-currency swaps). The initial response to the 2008 crisis was intervention by the Korean government and the Bank of Korea in the FX market using the foreign reserves held in Korea. This response was further bolstered by the swap agreement with the Federal Reserve. In examining the evidence, Baba and Shim attribute the quelling of the liquidity crisis to the swap agreement with the Federal Reserve. The analysis allows a reconsideration of the modern lender of last resort (LOLR) function, when the authorities do not have the issuing abilities in the currency that is used as the numeraire in the debt contract. This chapter also reminds us that the importance of the US dollar as an international currency lies partly in its role as the unit of account of debt contracts, even when neither the borrower nor the lender is a US resident entity.

Part IV begins with an examination of the procyclicality of financial systems and the rationale for macroprudential policies in the Korean context. This part examines in greater detail the structural factors in Korea that link corporate hedging needs with the increased capacity for banks to take on short-term foreign currency debt. The hedging needs of exporting firms receive special attention.

Bruno and Shin emphasize the importance of global liquidity and how the balance sheet management by international banks implies a transmission channel of global liquidity from financial centers to local emerging capital markets. Bruno and Shin emphasize the link between exchange rate changes and financial conditions when there is a structural bias toward use of foreign currency debt. When borrowers have a currency mismatch (such as through the motive to hedge export receivables), then an appreciation of the local currency entails a reduction in debt in local currency terms, which translates to stronger balance sheets for borrowers and hence a greater debt capacity. In this way, currency appreciation is

often linked with increased external borrowing. The authors also provide a narrative of the push factor in capital flows in terms of global liquidity conditions.

Choi provides a preliminary empirical assessment of the impact of FX-related macroprudential measures introduced in Korea since 2010. He focusses on the impact of these measures on the maturity structure of foreign currency denominated liabilities of the banking sector. The author finds evidence that the macroprudential measures lead to a sizeable reduction in short-term bank capital inflows, while causing much smaller or nearly no reduction in long-term bank inflows. These results imply that the macroprudential policies have helped to mitigate vulnerabilities to external financial conditions by improving the foreign currency funding structure of the banking sector.

Chung, Park, and Shin examine in greater detail the institutional background to the financing of export receivables and currency hedging. From 2005 to 2007, Korean shipbuilders had a large volume of dollar receivables, but they were long-term dollar receivables. To hedge the exchange rate risk in these long-term dollar receivables, the shipbuilders sold the long-term dollar claims to the banking sector; however, the banks would then engage in maturity transformation by borrowing short in dollars. In this way, although the currency mismatch could be eliminated, there was still a maturity mismatch. In this context, Chung, Park, and Shin consider possible reforms to the hedging needs arising from export receivables that obviate the need to increase short-term FX bank liabilities. In particular, they examine the working of the Exchange Stabilization Corporation (ESC), which provides hedging services to private sector actors. The ESC is designed to hold assets that are denominated in both foreign and domestic currencies. The authors emphasize that by judiciously adjusting the currency composition of assets, the ESC can provide currency hedging to private sector firms while at the same time insulating itself from the currency mismatch entailed by accepting such transactions.

Part V is an epilogue to the volume and examines the changes in the pattern of financial intermediation that has been taking place in recent years in the aftermath of the global financial crisis. Shin contrasts the first phase of global liquidity, which was driven by the activities of internationally active banks, with the second phase of global liquidity, when the main role has switched to the activity of asset managers who provide credit through the purchase of debt securities. In the aftermath of the global financial crisis, the cross-border activity of global banks has been subdued even as measures of volatility have subsided to postcrisis lows. In contrast, the issuance of debt securities, especially by emerging

market nonbank borrowers, has been very active. In turn, the epilogue points out further repercussions of bond issuance activity, when greater claims are made by corporate borrowers on the domestic banking system. Shin points out that by borrowing from international capital markets and passing on the funding to other domestic players, these firms effectively play the role of surrogate intermediaries.

Although the focus of the volume is on Korea's experience, the validity of the lessons drawn is broader in that the policy considerations are more general. To this extent, the lessons discussed in this volume should hold wider applicability to policymakers in other countries. In addition, the framework of the book, organized around the notion of the procyclicality of the financial system, suggests that the conventional distinction between advanced and emerging economies may not be so clear cut. The recent active debate among advanced economy policymakers attests to the importance of procyclicality and financial stability in advanced economies. In this broader context, the issues discussed in this volume will be of relevance in the debates on the relative weight given to financial stability in macroeconomic policy frameworks.

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Part I

# Overview

# Overview of International Capital Flows\*

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## Introduction

The purpose of this book is to explore how Korea has managed international capital flows over the last two decades. Unfortunately, less than ten years after Korea had barely recovered from the aftermath of the 1997 Asian financial crisis, the country was hit by yet another crisis, the global financial crisis. There were many causes for these two crises, but international capital flows were prime among them. Therefore, a good understanding of capital flows in and out of Korea during the last two decades is essential to derive some useful lessons from Korea's experiences. However, before exploring capital flows in Korea, we first provide an overview of international capital flows in general in order to place the Korean case in a broader context.

International capital flows occur primarily either between advanced economies (AEs), or between AEs and emerging market economies (EMEs). Capital flows between AEs have significant implications for understanding the global financial crisis, as is clearly documented in the "global banking glut" hypothesis,<sup>1</sup> which argues that European banks' reallocations of capital into the US mortgage market, mostly funded by their US subsidiaries in the US financial markets, were the direct cause for the US subprime mortgage crisis. Nonetheless, it has long also been contended that global imbalances were the remote cause for the global financial crisis, a view famously dubbed the global saving glut hypothesis.<sup>2</sup> Global imbalances literally refer to current account imbalances between AEs and EMEs. In hindsight, however, underlying these current



account imbalances were also capital flows, which mirrored current account conditions.

Reflecting this observation, the G20 has set a policy dialogue agenda for dealing with global imbalances, involving for example the Framework and the Reform of the International Monetary System. The former discusses ways of coordinating individual countries' macropolicies to keep their current account imbalances within appropriate levels. The latter concerns the management of global liquidity, strengthening the role of Special Drawing Rights (SDRs), and improving the governance structure of international decision-making bodies such as the International Monetary Fund (IMF). Against this backdrop, we focus here on the general features of capital flows involving AEs and EMEs, which provides a more plausible lens with which to assess capital flows in Korea. Despite the importance of capital flows between AEs, they are beyond the scope of this book.

International capital flows have a wide range of aspects that deserve in-depth scrutiny, but this chapter will present only a select review, thereby setting the stage for discussions in subsequent chapters. Specifically, we focus on three key aspects of international capital flows that are most relevant to understanding capital flows in Korea. First, we consider theoretical explanations of why capital flows occur, and examine how they hold up with real world data. Second, we document some stylized facts about international capital flows to EMEs, and look at how they have evolved over time. Last, but not least, we investigate the key driving forces behind international capital flows to EMEs, and draw some policy implications.

### **Theory and Reality**

Our focus in this section is to introduce a general theory explaining why international capital flows arise, and to then compare the theory with the reality to derive a useful workhorse for subsequent discussions. According to the balance of payments identity, the current account mirrors the capital plus the financial accounts; the current account is conceptually net savings (savings – investment). Thus, an exploration of savings and investment behaviors renders theoretical clues for the understanding of capital flows.

Though theoretical models provide predictions concerning the behaviors of capital flows and their consequences, they may not be consistent with the facts observed in the real world. We will therefore compare the theoretical predictions with the empirical findings. Finally, we will examine the world balance of payments data broken down into that for two groups, AEs and EMEs, which will give us a summary picture of capital

flows between these two groups. This brief sketch will provide a useful guideline for analyzing the issues discussed in this section.

### *Theory*

Conventional theory concerning international capital flows draws heavily on the maximizing models that became common in the field of international economics in the early 1980s. These views, which follow the neoclassical model tradition, include the intertemporal approach to the current account and the open-economy version of the Real Business Cycle model.

For our discussion we adopt the intertemporal approach. The intertemporal approach to the current account tells us that economic agents make decisions on adjusting their savings and investments in order to maximize their life-time utility. In this approach, capital flows are a reflection of economic agents' decision-making as to consumption and investment over long-term horizons (Obstfeld and Rogoff, 1996). This theory of course assumes that market distortions to the economy do not exist, and that economic agents have full access to information on market conditions, which might be untrue in the short-term but will eventually be realized in the long-term.

This approach suggests three implications with respect to international capital flows. The first relates to consumption smoothing. Economic agents make adjustments to their current and future consumption (savings) in order to maintain a certain level of consumption over both periods. The same could be the case with countries: individual countries can smooth out their consumption by utilizing international capital flows. Countries faced with temporary slumps are able to do so through overseas borrowing, and countries facing temporary booms through overseas lending. The second implication concerns growth enhancement through allocative efficiency. Free capital movement across borders facilitates a more efficient allocation of resources and thereby stimulates economic growth and the development of financial systems (Mishkin, 2009). These direct benefits are accompanied by several other collateral benefits, such as stronger discipline in macroeconomic policies, improved governance structures, and greater competition. The third implication relates to the direction of resource flows. Given EMEs' strong investment demand and high productivity of capital, we can easily predict capital flows from capital-abundant AEs, where the returns to capital are low, to capital-scarce EMEs where these returns are high.

These theoretical foundations have provided powerful motivations for EMEs to implement capital account liberalization over the last three decades.

### *Reality*

These traditional views cannot, however, explain certain phenomena in reality. Although consumption smoothing is the first benefit expected from international capital flows, the former has in fact turned out to become more volatile, especially in EMEs. Specifically, if risk can be shared through international capital flows, the ratio of volatility of a particular country's consumption to the volatility of its GDP growth should fall, or the correlation between a country's growth in consumption and the growth of world output (or world consumption) should be larger than the correlation between the country's consumption growth and its own output growth after capital liberalization. While some of the literature presents empirical evidence of improved risk-sharing in industrialized countries since the opening of their capital markets, such cases are rarely found in EMEs or developing countries.<sup>3</sup> Second, even though international capital flows may facilitate economic growth, it appears that they also cause higher instability in the financial markets of many EMEs, increasing the likelihood of crisis. This was clearly evident in the Asian financial crisis and the recent global financial crisis. Third, unlike the prediction of theory, it has been observed that capital has moved not only from AEs to EMEs (downhill flows) but also from EMEs to AEs (uphill flows) since the 2000s. Various studies<sup>4</sup> have emerged to explain the reasons for these uphill flows. Some of the reasons cited are institutional deficiencies in EMEs, higher true returns of capital in AEs, and EMEs' desire to hold safe assets in AEs.

This inconsistency between the conventional view and reality has led to the emergence of alternative views, which have gained traction over time. According to these new views, the allocative efficiency of the neo-classical tradition holds only where market distortions do not exist. Since there are many distortions in EMEs, however, critics argue that the predictions of conventional theory have little to do with the real world. They even assert an absence of uniform evidence for the hypothesis that financial globalization delivers a higher rate of economic growth.<sup>5</sup> The disparities between theory and reality and the existence of contrasting views indicate that we need a comprehensive and balanced view of international capital flows in order to understand the full picture.

### *World Balance of Payments*

The foregoing observations motivate us to look at the balance of payments data of world economies divided into AEs and EMEs, which is crucial

for grasping the overall features of international capital flows. Under the principle of double-entry bookkeeping for the balance of payments, the sum of the current account and the aggregate capital account (capital and financial accounts + changes in reserves) should equal zero. This concept is useful for identifying the characteristics of capital flows between AEs and EMEs that are the primary causes for global imbalances.

Table 1.1 presents the evolution of balance of payments from 1990 to 2012. Countries surveyed for this purpose are divided into two groups: 23 AEs and 57 EMEs. Detailed examination of the balances of payments of these countries reveals substantial differences in capital flow patterns between the 1990s and the 2000s. During the 1990s, AEs and EMEs registered slight current account deficits, indicating that global imbalances were not pronounced back then. During this period, current account balances were determined mainly by the characteristics of individual countries, for example, whether they were manufacturing powerhouses or resource-exporting countries. The current account deficits in both groups were compensated for with capital and financial accounts surpluses. One notable feature is that EMEs' reserve holdings, represented by negative numbers in their changes in reserves, were small during this period. This indicates that the so-called global saving glut phenomenon was not apparent during the 1990s.

**Table 1.1** Trends of international capital flows (billion US\$)

	1990s (Annual avg.)	2000s (Annual avg.)	2007	2008	2009	2010	2011	2012
<b>Advanced economies</b>								
Current account	-32.8 (-0.2)	-369.6 (-1.2)	-462.0 (-1.2)	-553.9 (-1.4)	-219.5 (-0.6)	-167.2 (-0.4)	-208.8 (-0.5)	-183.6 (-0.4)
Capital/financial accounts	63.6 (0.3)	431.4 (1.4)	403.8 (1.1)	539.0 (1.4)	340.4 (0.9)	377.9 (1.0)	535.3 (1.3)	288.7 (0.7)
Changes in reserves	-30.8 (-0.1)	-80.0 (-0.3)	-20.6 (-0.1)	-51.0 (-0.1)	-247.3 (-0.7)	-183.0 (-0.5)	-236.9 (-0.6)	-151.6 (-0.4)
<b>Emerging market economies</b>								
Current account	-54.0 (-1.0)	342.5 (3.0)	619.0 (3.9)	662.6 (3.5)	443.8 (2.5)	376.0 (1.7)	359.9 (1.4)	335.4 (1.3)
Capital/financial accounts	121.6 (2.3)	164.5 (1.4)	544.6 (3.4)	93.2 (0.5)	390.8 (2.2)	581.5 (2.7)	405.6 (1.6)	209.3 (0.8)
Changes in reserves	-67.3 (-1.3)	-490.7 (-4.3)	-1,125.6 (-7.1)	-716.7 (-3.8)	-727.6 (-4.1)	-884.5 (-4.1)	-713.4 (-2.8)	-421.5 (-1.6)

Notes: 23 advanced and 57 emerging market economies; percentage of GDP in parentheses.

Source: IMF, IFS.

The 2000s in contrast has seen serious global imbalances, as AEs have recorded large deficits in their current accounts while EMEs have posted significant current account surpluses. AEs' current account deficits have been offset by surpluses in their capital and financial accounts because EMEs have sent their funds to purchase safe assets in AEs. AEs have also usually held small amounts of foreign reserves, with their flexible exchange rate systems functioning as shock absorbers. As a result, the changes in their reserve assets have shown small negative numbers. In the case of EMEs, the twin surpluses in their current accounts and their capital and financial accounts have led to huge volumes of foreign reserve holdings. The reason is that rapid exchange rate appreciations due to foreign capital inflows have motivated their central banks to implement smoothing operations in the foreign exchange markets, which have resulted in accumulation of foreign reserves. These reserves have then been reinvested in the financial assets of AEs (uphill flows), which is represented in large negative changes in their reserves. However, it seems that global imbalances have improved slightly since the global financial crisis, although we cannot be sure whether this is an established trend.

The world balance of payments data suggest certain implications: First, from the perspective of EMEs, capital inflows due to the twin surpluses have posed serious threats to their conduct of macroeconomic policy at least since the 2000s. Second, as long as the capital and financial accounts record surpluses, and their sizes grow continuously, policymakers in EMEs must remain on the alert for sudden capital flow reversals. Finally, the increasing amount of EME holdings of AE financial assets can be another destabilizing factor in the international economy, which must be addressed in an urgent manner.

Taken together, international capital flows between AEs and EMEs can be categorized into two types—(i) downhill flows from AEs (private sector capital) to EMEs, and (ii) uphill flows from EMEs (reserve assets) to AEs. The former is the primary focus of this book. Although important, the latter, reinvestment of EMEs' reserve assets in the safe assets of AEs, necessitates a separate study in the context of the reform of the International Monetary System.

### **Stylized Facts of Downhill Flows**

Based on the theory and the reality of international capital flows reviewed in the previous section, let us now identify the stylized facts of capital flows from AEs to EMEs over the last three decades. The data indicates that downhill flows have had the following features: increasing magnitude