

# Dealing with the benefits and costs of internationalisation of the Korean won<sup>1</sup>

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## 1. Introduction

In an integrated world with large international trade and capital flows, a country with an internationalised currency can enjoy many advantages. As currency internationalisation progresses, the foreign exchange risks and costs of foreign currency financing associated with foreign transactions are expected to decrease. Another important advantage of currency internationalisation is that it gets a country further away from “original sin”, that is, by allowing residents to borrow externally in local currency, it prevents the likelihood of a financial crisis caused by a sudden stop of foreign capital flows. As a result of capital account liberalisation in emerging market economies over the last 20 years or so, the integration of domestic and foreign financial markets has substantially deepened, increasing the incidence and severity of economic volatility arising from external shocks. The recent severe stress in the domestic financial markets of major currencies has led to a sharp withdrawal of foreign currency financing in emerging markets and heavy pressure on exchange rates and asset prices in them. Korea has been one of the emerging markets most affected, primarily due to its heavy reliance on external transactions. Recent episodes suggest that pursuing currency internationalisation may, therefore, be a strong instrument to cushion the adverse effects of external financial shocks and should be considered as one of the important policy issues in small open economies such as Korea.

However, currency internationalisation cannot be carried out without costs: the internationalisation of the local currency will adversely affect monetary and credit policy, as monetary policy independence can be significantly restricted. Furthermore, countries in the early stages of capital liberalisation and currency internationalisation tend to be more vulnerable to external financial shocks. Once the internationalisation of the currency has reached a mature stage, there is a reduction in the risk of exposure to speculative attacks by foreign capital. This implies that emerging market countries that lie somewhere on the scale between developed and undeveloped face the greatest likelihood of experiencing a foreign exchange crisis. Thus, it is important for developing countries to find a possible strategy for pursuing currency internationalisation that maximises the advantages while minimising the risks.

The Korean economy has become one of the world’s largest, with a huge volume of trade and capital flows. Korean financial markets are developing fast: the Korean banking market is the third largest in Asia, and its equity market and bond markets are among the largest. However, won-denominated transactions are relatively small given the scale of the economy and its high degree of openness, and the won is scarcely used outside Korea. As a result,

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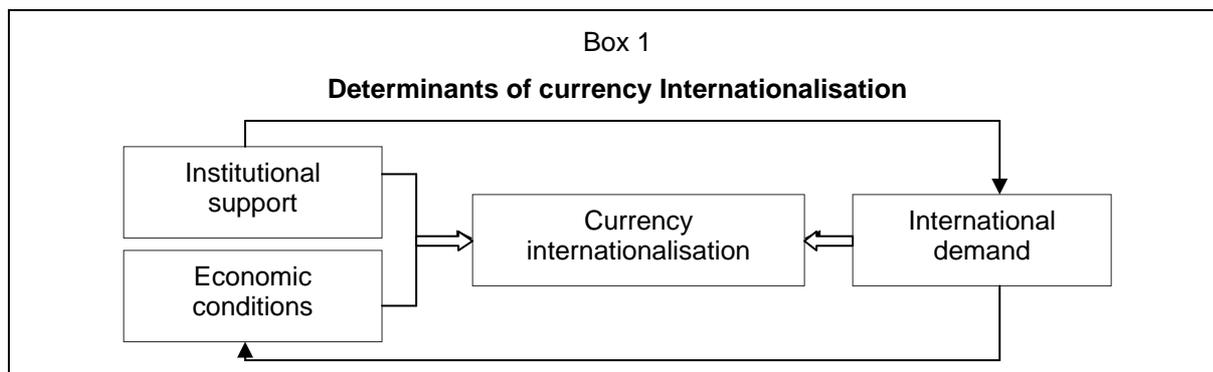
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disorderly exchange rate fluctuations and the currency mismatch problem persist, potentially posing the risk of bringing a high degree of volatility to the economy.

The sections below suggest the prerequisite conditions for the attainment of currency internationalisation in Korea, and delineate the distinctive features of currency internationalisation – including the benefits and costs – by extending the explanation to cover the Korean economy. Section 2 explains the progress of Korean won internationalisation from three aspects: the institutional conditions; the economic conditions; and the actual use of the won as an international currency. Section 3 analyses the benefits and costs of currency internationalisation using the recent experiences of Korea, while Section 4 explains the necessity of strengthening financial cooperation in Asia as a regional safety net in order to absorb the shocks from the global financial crisis. Section 5 closes the paper by attempting to set out some conclusions.

## 2. Progress of Korean won internationalisation

Progress in a country’s currency internationalisation can be described in terms of given conditions and the currency’s actual uses. The given conditions may be defined as institutional and economic conditions, while its actual uses are determined by its usage in trade invoicing, financial transaction denomination and other official use. Although institutional support and the economic performance of a country do not inevitably lead to the internationalisation of its currency, they are key requirements that are needed for the currency to become increasingly used internationally.



### Institutional liberalisation

In order for a currency to be used beyond the borders of the issuing country, there should be no institutional restrictions on foreign exchange trading. Financing – in particular, bond issuance or the extension of loans – should be allowed without any constraints and supported by an appropriate payment system. For instance, if a bank abroad wants to make transactions related to its Korean won position, it has to participate in an established “interbank payment system” that allows Korean won-denominated borrowing and lending without any restrictions.

It has been a while since Korea first allowed basic transactions, including the exchange of won abroad and the bringing-in and taking-out of won, in addition to won-denominated current transactions. However, the settlement of capital account transactions in won requires permission except for a few transaction types. “Free won accounts” are created exclusively for won-denominated securities investment and current account transactions by non-residents.

Table 1

**Institutional reforms on the internationalisation of the won**

Definition	Degree of liberalisation
Unit of account	Won-denominated current transactions: liberalised (1988~91) Won-denominated capital transactions: liberalised (1992)
Medium of exchange	Current account transactions: liberalised via “free won account” (1996) Capital account transactions: partially allowed <sup>1</sup>
Store of value	Deposits: liberalised via “free won account” (1999~2001) Borrowing: allowed up to KRW 30 billion (2001~07) Issuance of won-denominated securities by non-residents: allowed (2001~06)

<sup>1</sup> Payment and settlement in respect of investments in domestic securities and forwards via “non-resident won account for investment use only”; settlement of the domestic transaction in overseas trade office.

All won-denominated funds may be deposited in free won accounts, including foreign currency funds remitted from abroad or brought in by non-residents and exchanged for Korean won, as well as domestic means of payment acquired by non-residents from residents as the proceeds of current transactions. Non-residents may transfer funds to pay for won-denominated transactions with residents. However, transferring funds to pay for won-denominated transactions between non-residents is prohibited. Won fund-raising by non-residents is subject to regulation, although the ceiling on won-denominated loans to non-residents has been raised, and the threshold amount triggering the need for prior reporting to the BoK has been adjusted upwards to KRW 30 billion.

Non-residents are able to issue won-denominated securities (“Arirang” bonds) upon notification to the Ministry of Strategy and Finance. Residents and non-residents are able to issue won-denominated financial market instruments outside Korea (eurowon). However, payment for eurowon bonds should, in principle, be made in foreign currency, and payment for them in won requires prior notification to the BoK.

**Economic conditions**

The currency of a country with a large share in international output, trade and finance has a natural advantage in becoming an international currency. This is because the larger the country’s share of world exports, the greater the chance of its currency being used to invoice and settle international trade transactions (Grassman (1976)).

With respect to the real economy, Korea has emerged as a powerful country in the world economy, ranking 13th and 11th in terms of world GDP and trade volume, respectively (as of 2007). It has also become closely integrated with international markets, with respective ratios of about 75% and 18% of trade volume and capital flows to GDP. Korea’s economic scale is relatively small compared with neighbouring Japan and China, but it is larger than other Asian economies. Furthermore, as a result of liberalisation measures taken since the early 1990s, Korea’s financial markets are highly open and mature, which is exceptional among newly emerging economies. With regard to the size of the financial markets, Korea has larger stock and bond markets (in relation to GDP) than most of the BRIC group of countries (Brazil, Russia, India and China). Foreign investment accounts for more than 25% of the Korean stock market, a significantly larger proportion than any of the BRIC economies. In addition, among the emerging economies of the G20 countries, Korea is the only nation whose stock market has been included in the FTSE Developed Market Index.

Table 2

**Relative size of the economy and financial markets compared with US**

	GDP	Bank credit/ GDP	Non-bank credit/GDP	Stock capitalisation/ GDP	Bond capitalisation/ GDP	Trade/ GDP (%)	Capital flows/ GDP (%)
US	100	100	100	100	100	23	24
UK	18	336	68	93	28	39	155
Japan	33	225	46	55	116	29	16
France	17	200	41	61	64	45	54
Germany	22	257	52	32	51	74	42
Netherlands	5	364	74	73	71	115	86
Switzerland	3	357	72	165	43	93	167
Korea	7	202	58	42	48	75	18
China	20	N.A.	N.A.	30	19	65	13
Singapore	1	230	57	113	37	345	116
HK	1	334	68	368	18	344	256
Indonesia	3	48	10	19	15	47	7
Malaysia	1	216	56	116	57	175	30
Philippines	1	66	15	23	18	74	13
Thailand	2	168	44	55	25	112	12

Sources: IMF, *International Financial Statistics*; World Bank Financial Development Indicators.

**International use of the Korean won**

Although the volume of transactions in the foreign exchange market in Korea has increased remarkably, international use of the Korean won remains insignificant. In Korea, around 80% of imports and exports are US dollar-denominated, and the Korean won is rarely used as an invoice currency for exports and imports.

Won-denominated international bond issues and the cross-border liabilities of banks have also made very slow progress. The market for Arirang bonds (won-denominated bonds issued by foreign entities in Korea) is extremely small, constituting less than 0.1% of corporate bond issuance in Korea. The won eurobond market, trading a won-denominated bond issued by residents overseas, is also negligible, with a record of only three issues since 1999.

Table 3

**Currency distribution of foreign exchange market turnover**

Daily average in April, in billions of US dollars

	Traditional foreign exchange market						OTC derivatives <sup>1</sup>
	Total	Domestic	Offshore	Spot	Forwards	Swaps	Total
US	2,660	548	2,112	790	289	1,580	2,055
Euro area	1,139	264	875	420	137	582	811
Japan	510	170	340	206	61	242	367
UK	461	297	164	150	46	265	344
Switzerland	209	69	140	88	21	100	139
China	15	9	6	9	5	1	6
Hong Kong	86	73	12	16	6	64	74
Indonesia	3	2	2	1	1	1	2
Korea	34	27	7	15	10	9	23
Philippines	4	2	1	1	1	1	2
Singapore	38			8	3	26	30
Australia	205			53	20	132	167

<sup>1</sup> Currency options + currency swaps.

Source: BIS (2007).

Table 4

**Settlement currencies used for Korea's current trade**

In billions of US dollars and per cent

		1996	2000	2002	2004	2006	2007
Trade (A)	US dollar	228.4 (84.9)	277.5 (82.7)	281.8 (83.8)	417.1 (82.0)	552.1 (78.1)	639.9 (83.3)
	Yen	21.5 (8.0)	29.1 (8.7)	28.5 (8.5)	46.9 (9.2)	48.5 (6.9)	53.8 (7.0)
	Euro		6.3 (1.9)	19.0 (5.6)	34.5 (6.8)	46.4 (7.0)	59.9 (7.8)
	Won			0.3 (0.1)	0.6 (0.1)	1.6 (0.2)	1.9 (0.2)
Service, income and current transfers (B)	US dollar	55.6 (78.5)	73.0 (80.6)	74.4 (78.4)	108.1 (79.7)	137.8 (79.1)	173.5 (81.6)
	Yen	8.6 (12.1)	9.4 (10.3)	7.6 (8.1)	9.7 (7.2)	9.8 (5.6)	11.4 (5.4)
	Euro		0.8 (0.9)	4.7 (5.0)	7.3 (5.4)	12.7 (7.3)	16.3 (7.7)
	Won			0.3 (0.3)	0.6 (0.4)	1.3 (0.7)	2.0 (0.9)
(A)+(B)	US dollar	284.0 (83.5)	350.5 (82.3)	356.1 (82.6)	525.2 (81.5)	689.9 (82.8)	813.4 (82.9)
	Yen	30.1 (8.9)	38.5 (9.0)	36.2 (8.4)	56.7 (8.8)	58.3 (7.0)	65.2 (6.6)
	Euro		7.1 (1.7)	23.7 (5.5)	41.8 (6.5)	59.1 (7.1)	76.2 (7.8)
	Won			0.5 (0.1)	1.2 (0.2)	2.9 (0.3)	3.9 (0.4)

Source: Bank of Korea.

**3. The benefits and costs of currency internationalisation****3.1 The benefits of having an international currency**

Currency internationalisation offers various benefits, including saving the cost of hedging the foreign exchange risk inherent in external transactions and financial intermediation and, especially for small-scale open economies, lowering the amount of foreign exchange reserves needed to act as a buffer against external financial shocks.

The section below summarises the difficulties faced by countries that have been unable to internationalise their currencies, Korea in particular, at a time of global financial turbulence, and spells out why currency internationalisation is essential to a small open economy such as Korea.

### ***Eliminating the exchange rate risk in external transactions***

If the domestic currency can be used for invoicing and payment instruments, the country's exporters, importers, borrowers and lenders can eliminate the exchange rate risk inherent in international trading and financial transactions. However, in Korea, the won is rarely used as an invoice currency for exports and imports.

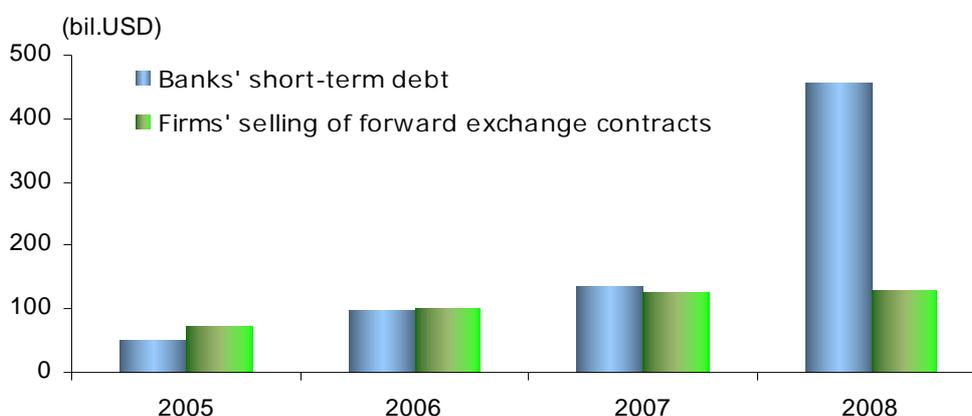
Because the invoice currency is usually a foreign currency, exporters need to hedge future export revenues.<sup>4</sup> The strengthening of the Korean won against the US dollar as from 2003 generated expectations of the won's further appreciation in the Korean foreign exchange market; such expectations were further built up by extensive sales of two types of forward exchange contract since 2007. During 2007, sales of forward exchange contracts by shipbuilders expanded greatly, influenced by brisk receipts of shipbuilding orders. At the same time, an increase in residents' foreign securities investment, due to the government's policy of encouraging overseas investment, and an increase in sales of overseas funds also led to increased sales of forward exchange contracts.

The increase in sales of such contracts, however, brought an unexpected result – an rise in short-term external debt. From the second half of 2007, the increased selling of forward exchange contracts by shipbuilders and investors with overseas assets drove up short-term external debt, because it increased foreign currency borrowing by banks seeking to adjust their foreign currency position.

This phenomenon can be explained as a “fallacy of composition” problem. Hedging actions that may seem perfectly rational from the standpoint of an individual firm could, in aggregate, have brought the negative externalities to the whole economy, including large imbalances in forward exchange markets and an accumulation of external debt.

Graph 1

#### **Firms' selling of forward exchange contracts and total external debt**



Source: Bank of Korea.

<sup>4</sup> Because importers find it comparatively easy to pass through the fluctuations in the exchange rate into changes in import prices, the hedging ratio for import transactions is relatively low compared with that for export transactions.

Table 5

**Volume of KIKO trading by exporters**

As of end-August 2008, in billions of won

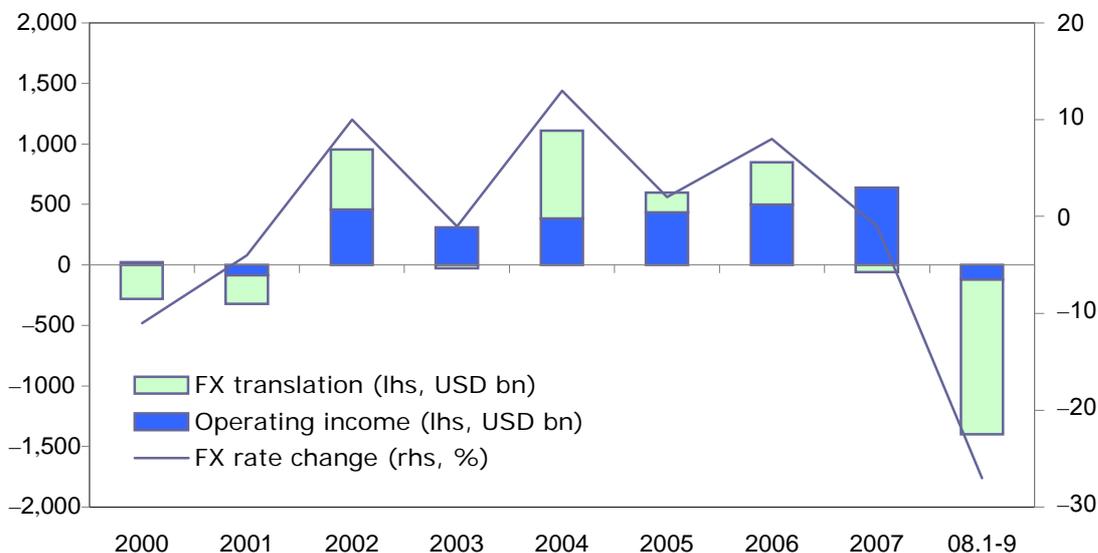
	Number of companies	Balance (USD bn)	Realised loss (a)	Valuation loss (b)	Total loss (a+b)
Small & medium-sized companies	47.1	5.9	506.2	778.4	1,284.6
Large companies	4.6	2.0	137.2	272.5	409.7
Total	51.7	7.9	643.4	1,050.9	1,694.3

Source: Financial Supervisory Service.

As an another example, the volume of currency option trading between Korean banks and exporting companies for the purpose of hedging foreign exchange rate risk, including KIKO (“knock-in/knock-out”) trading, has grown considerably since 2006. However, with the sharp rise in the exchange rate in 2008/9, some small and medium-sized companies that took out KIKO contracts have faced large losses.

If foreign transactions are not hedged, or if there are big forecast errors in the future exchange rate, temporary fluctuations in currency values result in significant fluctuations in corporate and financial institution earnings. Under the current accounting rules relating to foreign exchange translations, external transactions must be recorded on the balance sheet as of the date of transaction or the B/S recording. However, during a financial panic, such as the one we are currently experiencing, an abnormal amount of exchange differences that do not accurately reflect economic fundamentals frequently occur. Even when hedge accounting is used and exchange differences do not directly affect the net income, the loss is recorded in comprehensive income, thus affecting the overall financial ratios, such as the current ratio and debt ratio, causing a company’s financials to appear more at risk than they actually are. For example, in the case of an airline company, exchange differences may be so severe as to outweigh the operating income, resulting in a phenomenon called “wagging the dog”. Through this balance sheet effect channel, foreign exchange fluctuations can be the key factor in heightening the degree of economic volatility.

Graph 2

**Fluctuation in income of an airline company in Korea**

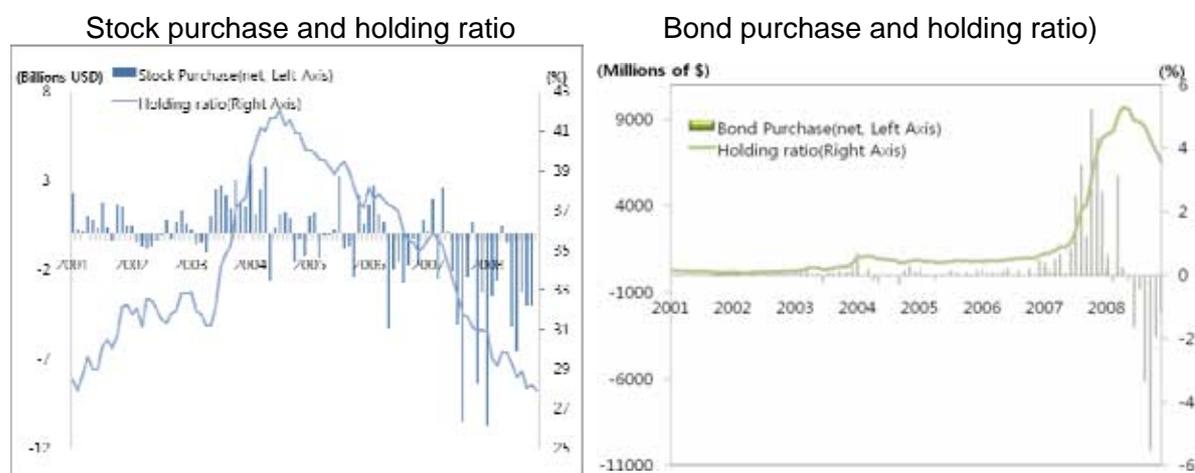
### Accessing international financial markets without exchange rate risk

If foreign investors are willing to invest in the country's domestic currency debt, domestic firms and financial institutions can access international financial markets without incurring exchange rate risk. However, in Korea, won-denominated international bond issues or the cross-border liabilities of banks have made very slow progress. The volume of won eurobonds (a won-denominated bond issued by residents overseas) is also negligible.

On the other hand, foreigners' investment in won-denominated assets rapidly increased after the opening of the capital market. Recently, a dramatic increase was registered in foreigners' net buying of Korean bonds, as a result of active arbitrage trading. While this phenomenon has had long-term positive effects on the market, by expanding the breadth and depth of the domestic bond market, it has also had negative effects, such as causing increased interest rate volatility in response to changes in foreign investors' investment patterns.

Graph 3

#### Amounts and proportion of market capitalisation held by foreigners



Source: Bank of Korea.

As foreign investors are de facto restricted from accessing the domestic won funding market, they are increasingly participating in the offshore non-deliverable forward (NDF) market. According to DeBelle et al (2006), the daily trading volume of NDFs for the Korean won is the largest among Asian countries, even though an NDF market for the Malaysian ringgit has developed in recent years. While foreign investors participate only in the NDF market, the hedging activity of foreign exchange banks has an effect on both the onshore and offshore foreign exchange markets. For example, the won/dollar exchange rate, which maintained a generally downward movement for most of 2007, trended upwards from mid-November that year, owing to the increase in non-residents' net purchases of NDFs.

Table 6

#### Volume of spot and NDF transactions

Daily averages, in billions of US dollars

	2003	2004	2005	2006	2007	2008
Spot <sup>1</sup>	2.6	3.9	4.5	6.3	8.3	7.8
NDF	1.3	1.7	2.6	4.2	6.2	9.4

<sup>1</sup> Only transactions through brokers.

Source: Bank of Korea.

Table 7  
**International investment position of Korea**  
 In billions of US dollars

	Liabilities				Assets			
	As of end-2008 <sup>p</sup>	Changes	Trade factors <sup>1</sup>	Non-trade factors <sup>2</sup>	As of end-2008 <sup>p</sup>	Changes	Trade factors <sup>1</sup>	Non-trade factors <sup>2</sup>
<b>Total</b>	601.3	-225.0	-102.6	-122.4	491.5	-105.3	-108.2	2.9
Direct investment	85.3	-36.7	2.2	-38.9	95.5	20.8	12.8	8.0
Portfolio investment	251.7	-204.9	-38.5	-166.5	75.4	-83.2	-23.1	-60.1
(Equity securities)	124.7	-195.4	-41.2	-154.2	47.9	-57.0	-6.4	-50.6
(Debt securities)	127.1	-9.5	2.8	-12.3	27.5	-26.2	-16.7	-9.5
Financial derivatives	14.3	9.4	-69.1	78.5	9.1	6.8	-54.7	61.6
Other investment	250.0	7.2	2.7	4.5	110.2	11.3	13.3	-2.0
Reserve assets	N.A.	N.A.	N.A.	N.A.	201.2	-61.0	-56.4	-4.6
External assets/liabilities in debt instruments <sup>3</sup>	380.5	-2.7	7.5	-10.2	348.2	-72.4	-56.4	-16.0
Short-term	151.1	-9.2	N.A.	N.A.	279.6	-53.5	N.A.	N.A.
Long-term	229.4	6.5	N.A.	N.A.	68.6	-18.9	N.A.	N.A.

<sup>1</sup> Changes in assets/liabilities by way of economic trades involving financial instruments. <sup>2</sup> Changes in assets/liabilities through price changes, exchange rate changes and other changes in volume. <sup>3</sup> Direct investment (equity capital), equity securities and financial derivatives are excluded from the total amount of Korean investment abroad. <sup>p</sup> = preliminary.

Source: Bank of Korea.

As of the end of 2008, the outstanding amount of foreign investment in Korea stood at USD 601.3 billion, a decrease of USD 225.0 billion from the end of 2007 (USD 826.3 billion). The sharp decrease in foreign investment in Korea was mainly attributable to a decrease in portfolio investment (-USD 204.9 billion) due to the weakening of the won against the US dollar and a fall in Korean stock prices, which brought about a decrease in the appraised value of stocks.

On the other hand, as of the end of 2008, the outstanding amount of Korea's external investment stood at USD 491.5 billion, a decrease of USD 105.3 billion from the end of 2007. In the decrease in portfolio investment (-USD 83.2 billion), losses of USD 60.1 billion reflected non-transaction factors attributable to the decline in international stock markets.

### ***Reducing the need for large foreign exchange reserves***

In a time of global financial unrest, developing countries are facing increasing financial difficulties, mainly due to their so-called "original sin", which prevents them from borrowing externally in national currency. The financial crisis in advanced markets has affected banking in emerging markets through three channels. The first is the reduction in net capital flows

from foreign investors to emerging markets. When financial crises erupt, in their rush to address balance sheet imbalances and reprice risk, foreign investors withdraw funds from emerging markets. The second channel is the dislocation in wholesale interbank markets. Since mid-2007, the issuance of bonds and syndicated loans by emerging market banks, including Korean banks, has fallen sharply. The third channel is the balance sheet effect caused by sharp currency depreciation. Emerging market banks may face (latent) losses from market risk exposures.

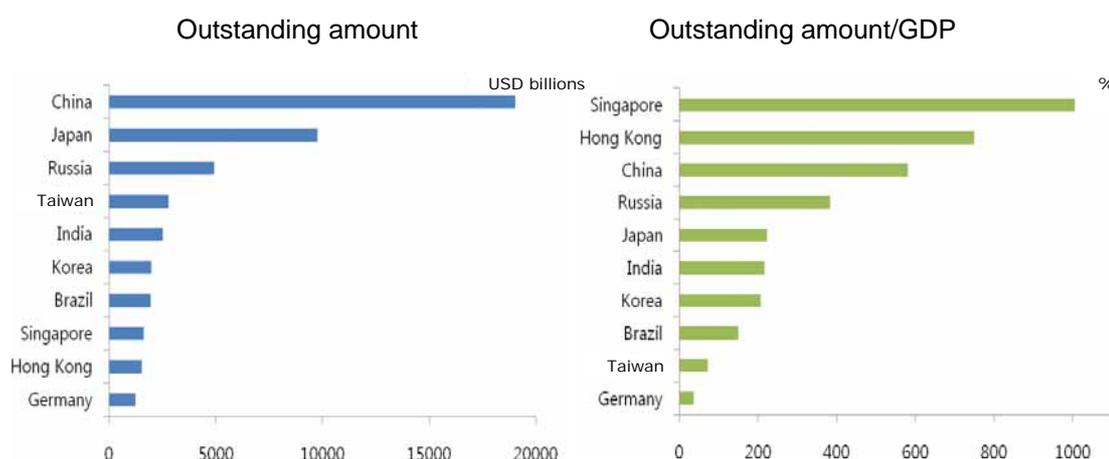
In the empirically prevalent scenarios of “double drain”, there is a strong linkage between an external drain (flight to foreign currency) and an internal drain (runs from bank deposits to currency) and causation may run in either direction; a banking crisis in one country can give rise to a currency crisis (and/or banking crisis) in another (Miller (1998)).

If a currency is not internationalised, a combination of internal and external drains can place extraordinary demands on a central bank’s funds. Sometimes, the central bank needs to act as a lender of last resort in the foreign currency to ease the imbalance between demand and supply in the foreign exchange market.

Central banks in developing countries cannot be the lenders of last resort for foreign currency as they have no power to *print* it. They can play only a limited role as the quasi-lenders of last resort in foreign currency if they have large foreign reserve holdings. However, even if they do hold massive foreign reserves, they could only use a limited amount of those reserves in the event of a crisis, due to their fear of losing those international reserves (Aizenman (2008)).

For emerging market countries which have not carried out currency internationalisation despite a heavy reliance on the global economy, holding a large amount of foreign exchange reserves is necessary as a safety net against external shocks.<sup>5</sup> Korea’s current international reserves stand at USD 258 billion (May 2008) – the sixth largest reserves in the world after China, Japan, Russia, India and Taiwan.

Graph 4  
Holdings of foreign reserves<sup>1</sup>



<sup>1</sup> As of the end of November 2008; for Korea, as of the end of January 2009.

<sup>5</sup> Rodrik (2006) pointed out that there is a social cost of self-insurance: the spread between private foreign borrowing costs and low yields on reserve assets. He insisted that the income loss to developing countries of accumulating foreign reserves amounts to close to 1% of GDP. According to the authors’ calculation, the social cost of holding foreign reserves in Korea climbed to around 1.5% of GDP during the third quarter of 2008.

Table 8  
**Ratio of foreign exchange reserves to GDP**  
 In 2007, in per cent

	Countries in the process of currency internationalisation					Countries with currency internationalisation			
Korea	Australia	Canada	New Zealand	Switzerland	Average	Japan	UK	Euro area	Average
27.0	2.7	2.9	13.2	22.0	10.2	21.8	1.8	1.8	8.4

Source: IMF, *International Financial Statistics*.

However, the ratios of foreign exchange reserves to GDP of countries with currency internationalisation or those that are in the process of internationalising their currency are relatively low when compared with those of emerging market countries, such as Korea.

### 3.2 The costs of having an international currency

#### Restrictions on the pursuit of domestic monetary policy

Once a country internationalises its currency and attracts an increasing flow of foreign investment and holdings, its ability to conduct an independent monetary policy will be severely restricted. According to Aizenman et al (2008), exchange rates among advanced countries have been relatively stable since 2000, thanks to the introduction of the euro, but many countries have gradually lost their monetary policy independence.<sup>6</sup> However, in Korea, under the freely flexible exchange rate system that has been in place since 1998, exchange rate stability has worsened as the index has declined, while its monetary independence has not been significantly affected.

<sup>6</sup> The extent of monetary independence is measured as the reciprocal of the annual correlation of monthly interest rates between the home country and the base country. Higher values of the index mean greater monetary policy independence.

$$MI = 1 - \frac{\text{corr}(i_i, i_j) - (-1)}{1 - (-1)}, \text{ where } i \text{ refers to the home country and } j \text{ to the base country.}$$

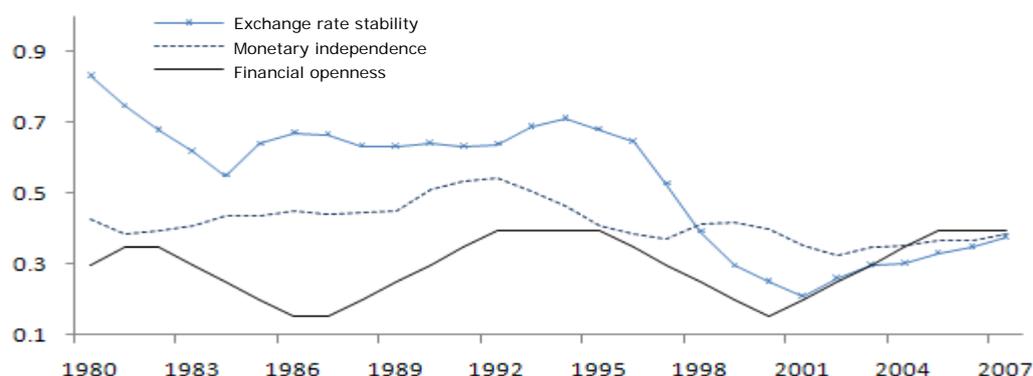
To measure exchange rate stability, annual standard deviations of the monthly exchange rate between the home country and the base country are calculated and included in the following formula to normalise the index between zero and one. Higher values of this index indicate more stable movement of the exchange rate against the currency of the base country.

$$ERS = \frac{1}{1 + \frac{\text{stdev}(exr)}{|d \log E_t / dt| + 0.01}}$$

For the measure of financial openness, we use the index of capital account openness designed by Chinn and Ito (2006, 2008). Higher values of this index indicate that a country is more open to cross-border capital transactions.

Graph 5

### Changes in Korea's trilemma indices



Source: Aizenman et al (2008).

However, when we apply a different method from Aizenman et al (2008), who measured monetary policy independence using correlations between US interest rates and domestic interest rates, Korea's monetary independence seems to be highly affected by volatility in foreign transactions.

In Korea, Monetary Stabilisation Bonds (MSBs) were issued in order to absorb the expanded liquidity generated by the huge reserves. As a result, the asset and debt structure of the Bank of Korea is concentrated on foreign assets and MSBs. In consequence, the BoK's balance sheet has been vulnerable to domestic and foreign interest rate differences and exchange rate fluctuations. During 2004–07, when the won/dollar exchange rate was in a state of constant decline, the balance sheet position of the BoK shifted into deficit.

A central bank's balance sheet imbalances or prolonged deficit can place potential restraints on monetary policy. That is because severe deficits on the central bank's account may act as a constraint on raising the base rate even when a price rise is expected, resulting in a loss of confidence in monetary policy. Furthermore, the extra liquidity created by the large amount of interest payments on its obligations – MSBs in the case of Korea – would add inflationary pressure. As an alternative, in order to reduce the accumulation of MSBs, the disposal of foreign assets may be necessary, but this is not an easy option because the accumulation of reserves is precautionary in nature.

#### ***Worsening the capital inflows problem***

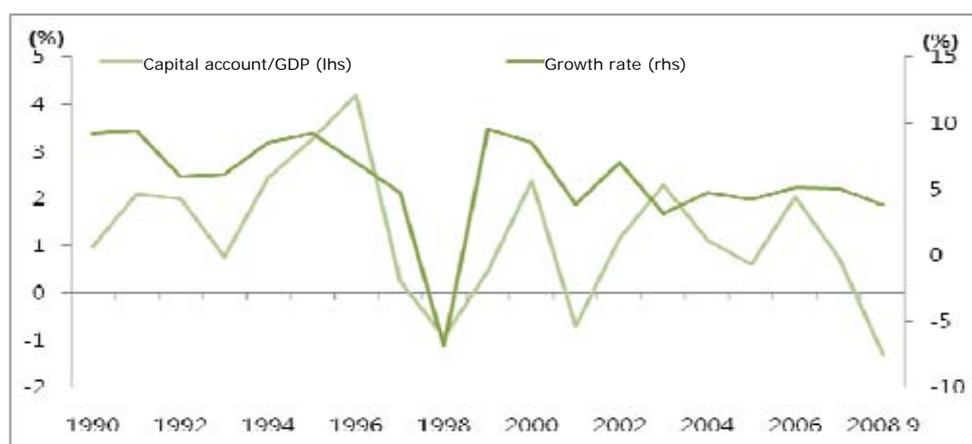
In order to pursue currency internationalisation, foreign exchange and capital liberalisation must first be undertaken. However, in the process of capital account liberalisation and currency internationalisation, there may be some side effects, including the so-called "capital inflows problem". In emerging market countries, excessive capital inflows induced by a high expected rate of return generate an overvaluation of the exchange rate relative to the real economy, stock market bubbles and a sharp drop in interest rates. On the other hand, in times of deteriorating economic conditions, excessive capital outflows may lead to a dramatic rise in exchange rates, a stock market plunge and a sharp rise in interest rates. Due to a high level of integration with international financial markets, emerging market countries may face sudden deleveraging on the part of foreign capital even when they have stable macroeconomic fundamentals.

Table 9

**Lagged correlations between capital flows and GDP growth**

	-2	-1	0	1	2
Capital inflows	-0.04	0.24	0.47	0.10	0.10
FDI	0.03	-0.04	-0.06	-0.05	-0.10
Stocks	0.12	0.26	0.14	0.07	0.04
Bonds	-0.17	0.24	0.42	0.08	0.09
Other	0.06	-0.12	0.33	0.08	0.08

Graph 6

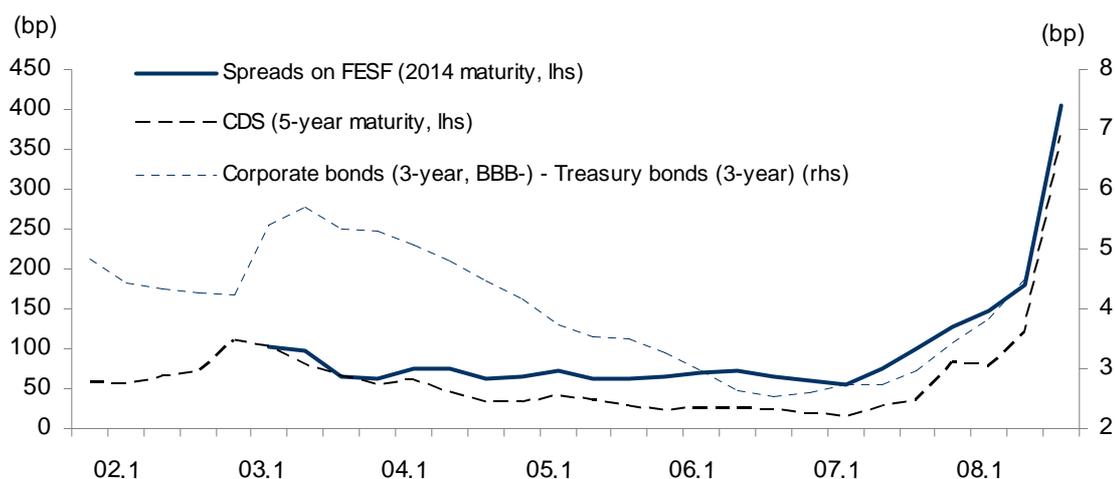
**Korea's capital account and GDP growth rate**

Source: Bank of Korea.

In Korea, international capital flows show a procyclical pattern – they get bigger in the expansion phase and smaller in the contraction period – which raises the potential risk of wild economic fluctuations. For example, capital flows to and from Korea are directly related to its GDP growth rate (adjusted for seasonal changes; compared with the same period of the previous year); borrowed funds from financial institutions, in particular, have a significant effect on economic fluctuations.

Furthermore, the fallout from the recent global financial crisis has affected Korea's financial markets and real economy. Owing to the evaporation of global liquidity, starting from September 2008, foreign currency borrowing conditions for Korean banks have severely worsened. The spreads and credit default swap (CDS) (five-year) premia on Foreign Exchange Stabilisation Fund (FESF) bonds (2013 maturity) have shown marked upward trends. Domestic credit spreads have also widened rapidly on corporate and bank bonds. This phenomenon is due to the heightened aversion to credit risk in line with the global financial market turmoil, the expanded supply of banks' financial debentures, and bond sell-offs by liquidity-strapped securities firms.

Graph 7  
Credit spread trends



Sources: Bank of Korea; Bloomberg.

#### 4. Currency and financial cooperation in Asia

Given the important benefits of currency internationalisation in emerging market economies as discussed above, it will be critical for Korea to steadily pursue internationalisation of the won once global financial markets regain stability.

However, the recent crisis has demonstrated that financial globalisation can cause “collateral damage” to emerging market economies: countries which are open to international financial capital tend to have greater vulnerability to a sudden reversal of capital inflows. Considering this risk and the fact that no individual country’s reserve accumulation is sufficient to meet precautionary objectives, strengthening regional financial cooperation and building up a regional safety net should be considered top priorities.

##### Economic rationale for regional currency cooperation in East Asia

Over the last few decades, the East Asian region has developed as a new growth pole for the world economy. However, the prolonged turmoil in the global financial market has eventually worked to weaken Asian economies through various channels. Despite their relatively healthy fundamentals, those economies are suffering severe liquidity constraints in foreign currency. Consumption and investment have weakened through shrinking liquidity, rising capital costs and a decline in household wealth. A contraction in the import demand of advanced countries has led to a pronounced decline in Asian export growth.

If Asian economies cannot sustain their growth and do not contribute to world economic recovery, the possibility of a more prolonged global recession cannot be ruled out. In order to prevent deep downturns of the global economy, it is necessary to have a regional safety net to absorb the shock from the global crisis to Asian economies. Regional financial cooperation is essential to avoid double mismatches of maturities and currencies in this time of global financial unrest.

Table 10

**Economic interdependence among Asian countries**

	Trade		Long-term debt securities		Equity securities	
	East Asia 3 <sup>1</sup>	East Asia 9 <sup>2</sup>	East Asia 3 <sup>1</sup>	East Asia 9 <sup>2</sup>	East Asia 3 <sup>1</sup>	East Asia 9 <sup>2</sup>
Korea	31.2	51.0	5.7	17.3	16.7	50.2
China	46.3	41.2	6.7	48.8	5.4	56.9
Hong Kong	57.2	99.8	25.0	28.6	10.9	16.4
Indonesia	31.5	64.9	3.4	10.3	5.6	30.6
Malaysia	23.9	60.9	4.5	28.0	8.7	35.1
Philippines	31.1	62.7	2.1	8.0	7.3	16.1
Singapore	22.2	58.0	11.0	26.1	13.2	25.3
Taiwan	18.2	82.5	2.4	7.0	4.0	39.9
Thailand	27.7	53.3	3.6	13.7	9.5	31.4
United States	19.2	28.3	12.3	16.6	12.3	16.6
Japan	22.8	44.5	1.6	4.4	0.4	1.1
European Union	5.6	8.2	9.3	14.2	4.2	4.8
United Kingdom	6.9	11.2	8.1	13.2	3.9	5.0

<sup>1</sup> Share of Asia 3 (Korea, China and Japan) in each country's total trade, long-term debt securities and equity securities. <sup>2</sup> China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand.

Source: IMF, Coordinated Portfolio Investment Survey (CPIS); IMF, Direction of Trade Statistics.

**The path to strengthening regional financial cooperation in Asia**

Since the 1997 Asian financial crisis, regional financial cooperation has been pursued by governments and central banks through diverse forums and arrangements such as the Chiang Mai Initiative (CMI), the Asian Bond Fund (ABF) and the Asian Bond Market Initiative (ABMI).

The CMI, which established mutual currency swap networks between central banks of the ASEAN+3, a process that began in May 2000, was set up to provide short-term loans when a member country encountered financial difficulties or found itself in need of short-term liquidity. However, the institutional settings are insufficient and the policy framework too weak to effectively cope with the emergence of foreign currency liquidity problems in the region.

Despite mutual currency swap lines amounting to USD 84 billion (in a total of 17 cases under the CMI), as of the end of September 2008 there had been no record of any execution. Currently, various options are being investigated to advance the framework of this regional liquidity support arrangement (CMI Multilateralisation).

Table 11

**Mutual currency swap contracts under the CMI**

In billions of US dollars

	Korea	Japan	China	Thailand	Malaysia	Philippines	Indonesia	Singapore	Total
Korea	0	13	4	1	1.5	2	2	0	23.5
Japan	8	0	3	6	1	6	6	3	33
China	4	3	0	1.5	2	4	0	0	16.5

In a further move, the ABF was launched in June 2003 to boost investments in a basket of Asian issuers' US dollar-denominated bonds. In August 2003, the ABMI was agreed with the aim of promoting the development of domestic and regional bond markets in order to recycle the huge amount of accumulated regional savings and foreign reserves in Asia. Local currency bond markets in Asia have developed remarkably during the past decade. However, they are still in their infancy in both size and quality compared with those of advanced countries, and could not effectively promote the circulation of Asian investments within the region (Hyun and Chang (2008)).

To mitigate the malign shock of the global financial turmoil, international swap facilities with major central banks have recently been established. In Korea, following on from the establishment of a reciprocal currency swap arrangement with the Federal Reserve (up to USD 30 billion) on 30 October 2008, a swap facility between the BoK and the People's Bank of China for an amount up to CNY 180 billion / KRW 38 trillion was announced on 12 December 2008. On the same day, the maximum amount of the existing bilateral won/yen swap arrangement with the Bank of Japan was increased from USD 3 billion to USD 20 billion.

For the won/renminbi or won/yen swaps to be effective, the currencies should be used as invoice currencies, at least in the Asia region. Needless to say, increased use of the local currencies for trade settlement among Korea, China and Japan will reduce transaction costs by cutting out foreign exchange conversion charges and will increase the stability of bilateral exchange rates. However, the currency of trade settlements is determined privately between buyers and sellers, which makes it difficult for policymakers to intervene in the trade market. For instance, the won/yen market was created in 1996 but closed just four months later due to liquidity shortages – Korea considered creating it again in early 2007, but it failed to catch on because of low trading volumes and had little impact in terms of reducing transaction costs.

In order to expand local currency transactions in the Asia region, especially transactions between the won, renminbi and yen, residual regulation of foreign exchange transactions should be eased to a similar level. The deregulation of foreign capital transactions may facilitate the adoption of local currencies in line with the large scale of the external transactions of each country.

Table 12

**Comparison of foreign exchange liberalisation in Japan, Korea and China**

	Transaction denominated in local currency		Settlement in local currency		Holding of local currency by non-residents	
	Current account transactions	Capital account transactions	Current account transactions	Capital account transactions	Deposits	Borrowings
Japan	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions	Partially restricted
Korea	No restrictions	Reporting required	No restrictions	Partially allowed	No restrictions	Reporting required if KRW 30 billion exceeded
China	Allowed for Hong Kong residents	Restricted	Allowed up to CNY 20,000	Restricted	Allowed for Hong Kong residents	Restricted

**5. Concluding remarks**

This paper has evaluated the standing of the Korean won as an international currency. Although Korea's share in international output, trade and finance has increased remarkably, the international use of the Korean won has so far been insignificant, even in the Asia region.

The potential benefits and costs of currency internationalisation have been discussed with reference to some recent episodes in the development of the Korean economy. Under the influence of the global financial crisis, a number of emerging economies that suffer from a shortage of dollar liquidity have been severely affected, and Korea is among them. Attaining Internationalisation of a currency may be considered as an ultimate step in order to prevent the adverse effects of foreign exchange shortage in small open economies such as Korea.

However, pursuing internationalisation of the local currency could further damage the effectiveness of monetary policy, which is already being experienced due to the large scale of capital flows. Moreover, in its early stages, internationalisation of the won may hinder rather than help the stabilisation of the domestic capital market.

Thus, it is important for Korea to find a possible strategy for pursuing won internationalisation while maintaining a safety net. One possible way is to strengthen regional financial cooperation involving the Korean won. Other measures are also necessary, such as strengthening prudential regulations and minimising regulatory arbitrage across countries.

## **Appendix: The relationship between foreign and domestic liquidity**

In order to investigate the relationship between foreign and domestic liquidity, we applied a VAR analysis for the period from the first quarter of 2000 to the last quarter of 2008, using spread data from the BoK and CDS data from Bloomberg. Parameters are arranged in order, starting with spreads on Foreign Exchange Stabilisation Fund (FESF) bonds, the stock price index, and spreads on domestic corporate bonds. Almost all parameters turned out to have unit roots, hence we took log differences in them. We specify the optimal lag length as 1, according to the Akaike information criterion (AIC) and Schwarz criterion (SC).

The impulse responses of each parameter – spreads on FESF bonds (SPREAD FESF), spreads on domestic corporate bonds (SPREAD BBB), and the stock price index (KOSPI) – are exhibited on the next page.

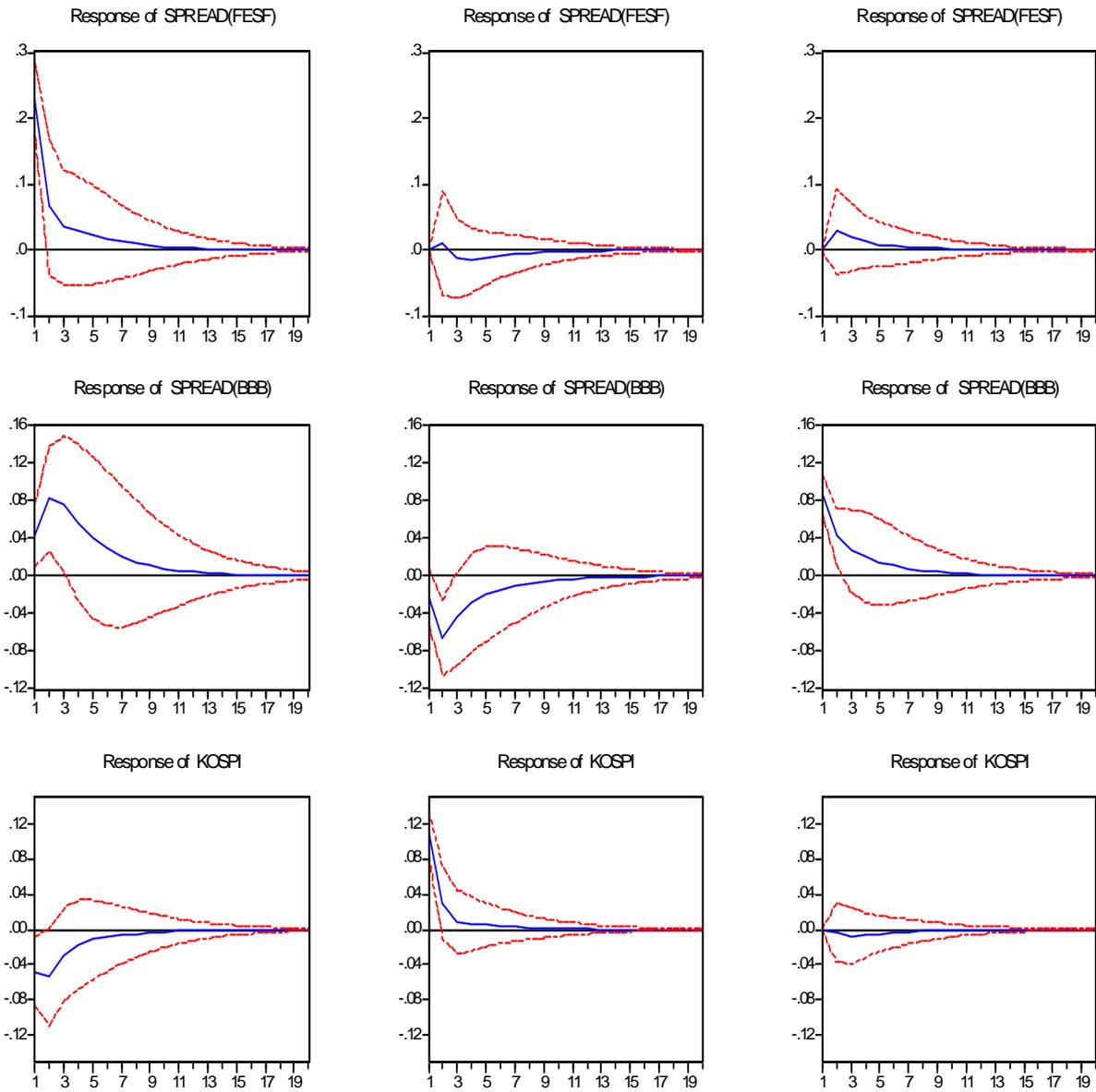
The results of the VAR analysis correspond to what we expected: first, the impulse response of spreads on foreign currency borrowings (SPREAD1) moved in a positive direction for SPBBB, a negative direction for KOSPI, and then completely disappeared around the 10th quarter. In a similar manner, spreads on bonds (SPREAD BBB) had a positive response in reaction to spreads on foreign currency borrowings (SPREAD1) while having a negative impact on KOSPI during the 15-quarter period. However, the stock price index (KOSPI) showed a negative shock impact on both spreads on foreign currency borrowings (SPREAD1) and spreads on bonds (SPREAD BBB).

This phenomenon can be explained by the so-called “financial accelerator” theory. A weak link to international financial markets, in the sense of insufficient amount or value of assets that can be accepted as collateral by foreigners, can limit the smoothing of external shocks.<sup>7</sup> In particular, if a certain external shock, such as the current international financial turmoil generated by the subprime crisis, makes foreigners start withdrawing their investments/loans from an emerging economy, the value of the assets in the emerging economy decreases, which results in a lowering of the value of collateral, inducing further sell-offs of the emerging economy’s assets held by foreigners. Concurrently, this feedback causes exchange rate depreciation and deteriorates the balance sheets of the emerging economy’s domestic agents through the decline in asset prices and the ballooning of domestic currency denominated foreign debts. The deterioration of domestic agents’ balance sheets now shifts over into the standard “financial accelerator” channels, causing a further shrivelling-up of domestic credit.

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<sup>7</sup> See Caballero (2000).

## Results of impulse response (SPREAD FESF) (SPREAD BBB) (KOSPI)



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